



PEDAGOGY AND STUDENT
SERVICES FOR
INSTITUTIONAL
TRANSFORMATION:



Implementation
Guidebook



FOR FACULTY AND
INSTRUCTIONAL STAFF



Emily Goff and Jeanne L. Higbee
EDITORS

Pedagogy and Student Services for Institutional Transformation:
Implementation Guidebook for Faculty and Instructional Staff

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Pedagogy and Student
Services for Institutional
Transformation:
**Implementing
Universal Design in
Higher Education**

Jeanne L. Higbee and Emily Goff
EDITORS

A free download of the book that provides the accompanying
text to this guidebook can be found at

<http://cehd.umn.edu/passit/docs/PASS-IT-Book.pdf>

Introduction to the PASS IT Project

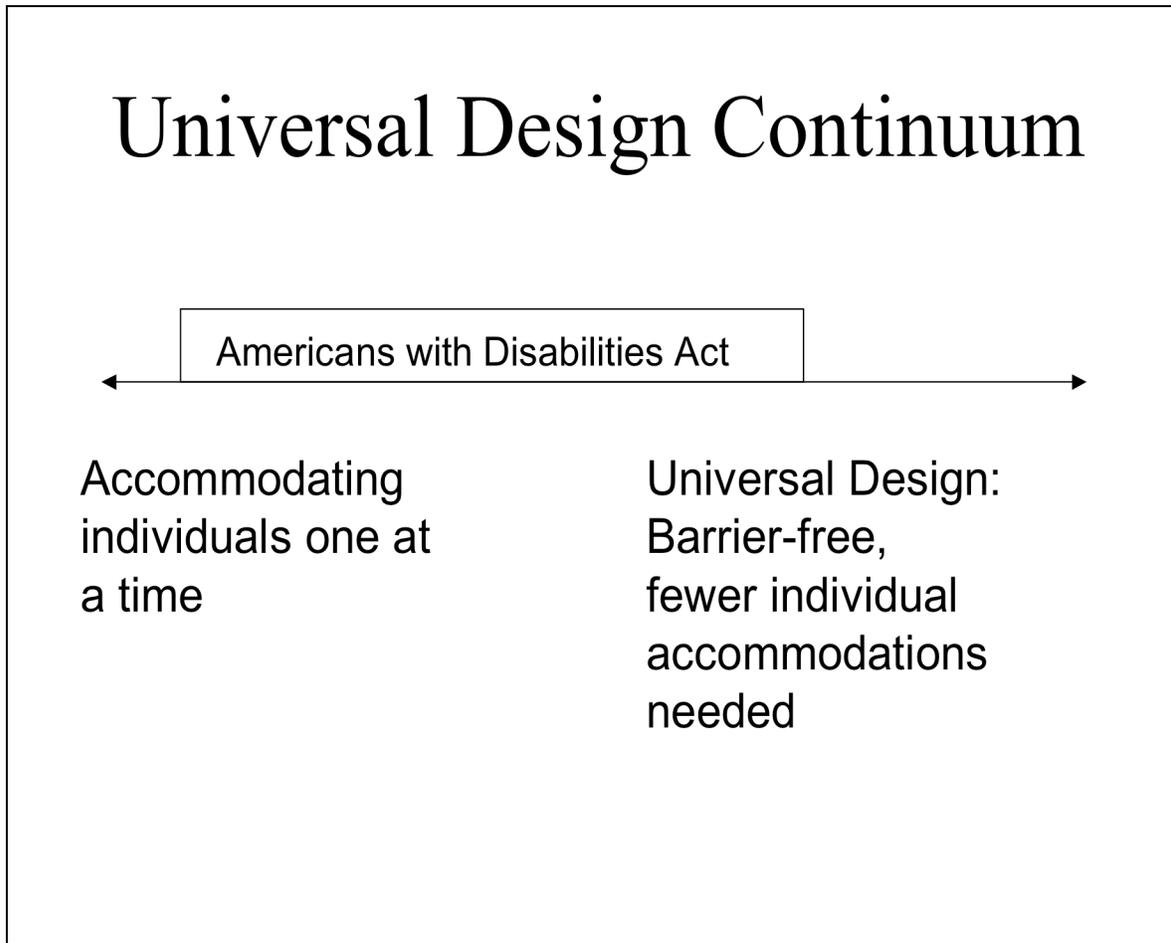
The Pedagogy and Student Services for Institutional Transformation (PASS IT) project began as a collaboration at the University of Minnesota among faculty and staff of the former General College (Higbee, Lundell, & Arendale, 2005), the Center for Research on Developmental Education and Urban Literacy (CRDEUL; <http://www.cehd.umn.edu/crdeul>), and the staff from the Disability Services Office. PASS IT builds on a previous grant project funded through the U.S. Department of Education's Office of Postsecondary Education (grant # P333A990015), Curriculum Transformation and Disability (CTAD; Higbee, 2003; see <http://www.gen.umn.edu/research/ctad> for *Workshop Facilitators Guide* and other resources).

The goal of the PASS IT project, which is funded by the U. S. Department of Education (grant #P333A050023ACT1), has been to enhance access, participation, and success in higher education for students with disabilities by providing professional development for postsecondary administrators, faculty, and staff related to the theory and practice of Universal Design (UD) and Universal Instructional Design (UID). Project deliverables include:

- A scholarly book (Higbee & Goff, 2008; <http://www.cehd.umn.edu/passit/docs/PASS-IT-Book.pdf>)
- This guidebook as well as another guidebook for implementation of UD in student development programs and services (Goff & Higbee, 2008 a & b)
- An extensive bibliography (<http://cehd.umn.edu/passit/resources.html>)
- A resource list for "Disability, Higher Education, and the Law" (<http://cehd.umn.edu/passit/resources.html>)
- An explanation of assistive technologies and related tools (<http://cehd.umn.edu/passit/resources.html>)
- A video documenting the potential of Universal Instructional Design (<http://cehd.umn.edu/passit/videos.html>)

Please refer to the PASS IT Web site (<http://www.cehd.umn.edu/passit>) for further information and to download PASS IT resources free of charge.

Figure 1. PowerPoint slide of Universal Design Continuum. This image shows a continuum with “Accommodating individuals one at a time” on the far left and “Universal Design: Barrier-free, fewer individual accommodations needed” on the far right. “The Americans with Disabilities Act” spans the continuum favoring the left side more than the right.



How to Use This Guidebook

This guidebook was created as a companion to *Pedagogy and Student Services for Institutional Transformation: Implementing Universal Design in Higher Education* (<http://www.cehd.umn.edu/passit/docs/PASS-IT-Book.pdf>), which provides lengthier introductions to UD and UID as well as chapters pertaining to theoretical foundations and issues related to implementation (e.g., barriers to student disclosure of a disability, coordination of efforts between academic affairs and student affairs, “the digital divide”). The purposes of this guidebook are twofold: (a) to encourage individual faculty and instructional staff members to implement UID in their classrooms by providing tools created by professional colleagues in a broad array of academic disciplines and sharing their insights, and (b) to provide support for professionals in the areas of postsecondary disability services and faculty and staff development who want to provide training in the implementation of UID. Following the sections that serve as an introduction to UD and UID, the guidebook offers first-person accounts from PASS IT Summer Institute participants who have implemented UID on their own campuses. The intent of these accounts is to demonstrate how UID can work in fields as diverse as art and mathematics, physical therapy and business. The guidebook closes with tools that can be used by individuals implementing UID in their classrooms, scenarios and case studies for initiating conversations regarding the implementation of UID, PowerPoint slides for making professional development presentations on the topics of UD and UID, and a reference list. A more extensive bibliography is downloadable from the PASS IT Web site (<http://cehd.umn.edu/passit/resources.html>).

This guidebook is made available electronically as well as in print format for ease of use with screen readers and also to provide connections to related electronic resources.

Introduction to Universal Design

PASS IT refers to institutional transformation because too often institutions overlook their own responsibility in examining how they operate to exclude people of historically underrepresented social identities, including people with disabilities (see Chapter 2 by Evans & Chapter 3 by Hackman in *Pedagogy and Student Services for Institutional Transformation: Implementing Universal Design in Higher Education*). Universal Design (UD) began as an architectural concept, a proactive response to legislative mandates as well as societal and economic changes that called for providing access for people with disabilities (Center for Universal Design [CUD], 2007) by rethinking how spaces are designed rather than providing modifications and accommodations “on demand” or after the law requires them. UD promotes the consideration of the needs of all potential users in the planning and development of a space, product, or program—an approach that is equally applicable to architecture or education. It

Figure 2. UID Guidelines

Universal Instructional Design

- Create a respectful learning environment
- Determine essential course components
- Establish clear expectations and feedback
- Develop natural supports for learning, including through use of technology
- Use multiple teaching strategies
- Provide multiple types of opportunities to demonstrate knowledge
- Encourage contact between students and faculty

Source: North Carolina State University, 1997; based on Chickering & Gamson, 1987

also supports the notion that when providing an architectural feature—or educational service, for that matter—to enhance accessibility and inclusion for one population, we are often benefiting all occupants or participants. One of the most often cited examples is the curb cut, which is used by people on roller blades or skate boards, parents pushing strollers, travelers hauling luggage, people making deliveries with hand carts, and others, as well by people with disabilities. Similarly, many people benefit from the provision of automatic doors, elevators, drinking fountains at several heights, door handles instead of knobs, and so on.

The principles of Universal Design (CUD, 1997), are: (a) equitable use, (b) flexibility in use, (c) simple and intuitive use, (d) perceptible information, (e) tolerance for error, (f) low physical effort, and (g) size and space for approach and use. These principles have been adapted to education through a number of models that emerged in the last decade, including Universal Design for Learning (UDL; Center for Applied Special Technology, n.d.; Rose, 2001; Rose & Meyer, 2000), Universal Design for Instruction (UDI; Scott, McGuire, & Shaw, 2001, 2003), and Universal Instructional Design (UID; Silver, Bourke, & Strehorn, 1998). We do not see these models as competing, but rather as complementary—all with much to offer. This guidebook focuses specifically on one of these models, UID.

Introduction to Universal Instructional Design

Jeanne L. Higbee

Perhaps the best way to explain UID is to begin by brainstorming about the diversity of students participating in higher education today and some specific challenges that may at times be related to students' myriad and intersecting social identities, but that in reality may be experienced by many students of varying backgrounds at any time. Examples of potential barriers to academic achievement might include test anxiety, slow reading speed, distractibility, poor time management, organizational deficits, and lack of access to computers or to the Internet. Each of these examples could be linked to one or more disabilities, but could also pose serious threats to academic success for students who do not have disabilities as well. Implementing UID involves considering all of the possible strengths and challenges that students bring to the educational experience and then designing programs, curricula, and courses in a way that reduces or eliminates potential roadblocks. UID's guiding principles, which are based on the work of Chickering and Gamson (1987), can assist in achieving this goal. They include: (a) creating welcoming classrooms; (b) determining the essential components of a course; (c) communicating clear expectations; (d) providing timely and constructive feedback; (e) exploring the use of natural supports for learning, including technology, to enhance opportunities for all learners; (f) designing teaching methods that consider diverse learning styles, abilities, ways of knowing, and previous experience and

Figure 3. Example of Student Information Sheet

**TEMPLATE
STUDENT INFORMATION SHEET
COURSE
INSTRUCTOR**

I hope that you will be willing to share the following information with me so that we can work together to ensure your success in [name of course here]. –[instructor signs here]

Name: _____ Nickname: _____

Major: _____ Career goal, if known: _____

Phone number preferred in case of emergency: _____

Why did you enroll in this class?

What knowledge and/or skills do you hope to gain as a result of participation in this course?

What grade do you expect to earn in this class? _____

How many hours per week do you plan to study for this course? _____

Is there anything that I should be aware of that might have an impact on your participation in this course (examples: a documented disability, absences for religious observation or athletic competitions representing the institution)? If so, please describe/explain:

I authorize [instructor name here] to communicate with me via telephone or e-mail.

Signature: _____ Date: _____

I also encourage you to come to office hours or contact me via e-mail or phone if you have any questions or concerns or if I can otherwise be of assistance. My e-mail address and phone numbers are provided on the course syllabus. I look forward to hearing from you and getting to know you better!

background knowledge; (g) creating multiple ways for students to demonstrate their knowledge; and (h) promoting interaction among and between faculty and students. The following paragraphs provide some concrete examples related to implementing each of these principles. These examples are not meant to be exhaustive, merely illustrative. Further examples are provided in the first-person accounts to follow.

Welcoming Classrooms

When students perceive that they are considered “different” and believe that any differences are interpreted as “deficits” by others, it will be difficult to feel welcome and to participate fully in the classroom. (For discussion of the medical model of disability that implied deficit and other issues related to social justice in the classroom see Chapter 2 by Evans & Chapter 3 by Hackman in *Pedagogy and Student Services for Institutional Transformation: Implementing Universal Design in Higher Education*). It is important that the instructor expresses a commitment to equal access and provides the opportunity for students to share concerns privately and confidentially. Thus, standard syllabus statements such as those related to serving students with disabilities are important (see Chapter 6 by Mark Pedelty in *Pedagogy and Student Services for Institutional Transformation: Implementing Universal Design in Higher Education*), but may not go far enough to encourage students to disclose an aspect of social identity that they consider highly personal. (For further discussion of barriers to disclosure see Chapter 30 by Alexandrin, Schreiber, & Henry in *Pedagogy and Student Services for Institutional Transformation: Implementing Universal Design in Higher Education* and the film *Uncertain Welcome*, <http://cehd.umn.edu/passit/videos/uw-high.html>) The use of a form like the “Student Information Sheet” (see figure 3) that can be completed outside of class and handed to the instructor on the way into the classroom before the next class period enables students to share information about a disability or any other aspect of social identity without being overheard by other students, and opens the door for further contact with the instructor.

Providing time for student introductions on the first day of class can be another means of making all students feel welcome, but can put considerable pressure on students who are shy, students whose cultural heritage might prohibit the sharing of some kinds of information, and students who realize upon a quick visual scan of the classroom that there are not many or *any* other students of their race or ethnicity (or of any historically underrepresented group, for that matter) present. Instructors need to be cognizant of the challenges that ice breaker activities pose for some students and consider disclosure, communication styles, mobility, and other issues when designing these activities. On the other hand, it is also often assumed that large course sections prevent the use of activities that promote student engagement. Large classes do not have to be limited to lecture formats; dyads and small group activities can be

Figure 4. Examples of Student-Generated Guidelines for Classroom Behavior

- 1. Turn off and put away all cell phones and other electronic devices.**
- 2. Use laptop computers for note taking only, as appropriate. Otherwise laptops should be closed or on "stand-by" during class. Do not use class time to check e-mail, etc.**
- 3. Recognize one person at a time to speak.**
- 4. Do not interrupt other class members or the teacher.**
- 5. Listen respectfully to other points of view. "Put downs" and other derogatory remarks will not be tolerated.**
- 6. Arrive on time for class and stay for the entire class period.**
- 7. No sleeping in class.**
- 8. Cheating is a form of stealing and hurts everyone.**

just as effective in large lecture halls as in small seminar classes and present opportunities for students to get to know one another. Another typical task for the first day of class is reviewing guidelines that govern class discussion and other classroom management issues. Involving students in developing their own guidelines is another way to promote student engagement. Rather than including faculty-crafted guidelines in the syllabus, student-created guidelines can be brainstormed and then handed out during the next class period (see Figure 4). This activity can also lead to student-initiated conversations regarding academic integrity and behaviors that constitute cheating.

Essential Course Components

There are numerous factors that can play a role in determining essential course components, which should be easily translated into course objectives. For some fields of study professional standards may dictate essential components, while for other courses that serve as prerequisites it is necessary to provide the foundation needed for the classes to follow. Some essential components will be content based, while others may be skill based. For example, in an introductory psychology course content-based objectives might include that students will “become acquainted with prominent psychological theories and the theorists who espoused them” and “be able to define key psychological concepts.” Skill-based objectives could include that “students will use higher-order thinking skills to analyze, synthesize, and evaluate course materials and real-life problems.” In some courses essential components may include developing proficiency in completing physical tasks (e.g., drawing blood in a nursing clinical), while in other courses the focus may be academic skills such as writing or computation. One of the questions that frequently arises in the discussion of essential components is related to time: Does it matter how quickly the task is completed? For example, “time-and-a half” for taking tests is a typical accommodation for students with many different types of disabilities. Can extended time be provided for *all* students in the class so that students with disabilities do not need to be segregated on test days unless they need a less distracting environment? (And, meanwhile, are there steps that can be taken to reduce distractions as well, so that students with disabilities can choose to remain in the classroom with their peers?) When considering what are *really* the essential components of a course it is important to consider issues like whether speed matters and how information is shared and mastery is measured, instead of merely doing things in the ways that they have always been done.

Because many institutions use standardized course and teacher evaluations, students may never have the opportunity to provide feedback regarding essential components. At the end of the academic term students can be asked to indicate on a Likert-type scale the extent to which they believe that objectives specific to the course have been met. Conducting this type of evaluation can be very helpful in determining what really is essential and

Figure 5. Summary of Assignments and Associated Point Values

SUMMARY OF ASSIGNMENTS			
PSTL 1280			
DR. JEANNE L. HIGBEE			
May-June, 2007			
<i>Date Due</i>	<i>Assignment</i>	<i>Point Value</i>	<i>Earned</i>
5/21	In-class activities	10	_____
5/22	In-class activities	10	_____
5/22	Study Guide (SG) 1 for Chapter (CH) 1	20	_____
5/22	Quiz (Q) 1	50	_____
5/23	In-class activities	10	_____
5/23	SG 2 for CH 2	20	_____
5/23	Q 2	50	_____
5/24	In-class activities	10	_____
5/24	SG 3 for CH 3 & 4	20	_____
5/24	Q 3	50	_____
5/29	In-class activities	10	_____
5/29	Essay 1	60	_____
5/29	SG 4 for CH 5 & 6	20	_____
5/29	Q 4	50	_____
5/30	In-class activities	10	_____
5/30	SG 5 for CH 7	20	_____
5/30	Q 5	50	_____
5/31	In-class activities	10	_____
5/31	SG 6 for CH 8 & 9	20	_____
5/31	Q 6	50	_____
5/31	Road map for final project	10	_____
6/4	In-class activities	10	_____
6/4	Essay 2	60	_____
6/4	SG 7 for CH 10 & 11	20	_____
6/4	Q 7	50	_____
6/5	In-class activities	10	_____
6/5	SG 8 for CH 12	20	_____
6/5	Q 8	50	_____
6/6	SG 9 for CH 13 & 14	20	_____
6/6	Q 9	50	_____
6/6	Final Project	100	_____
6/7	Final Exam	100	_____
Drop lowest quiz score: _____			
Attendance Record: _____ Absences (not to exceed 2)			
POINT TOTAL: (before subtracting 1 quiz)		1050	_____
POINT TOTAL: (after subtracting lowest quiz)		1000	_____
FINAL LETTER GRADE:			_____

whether students believe that instructors are delivering what they promise in the course syllabus.

Clear Expectations

Listing course objectives on the syllabus is but one way that teachers can communicate expectations. Syllabi should also document exactly how each component of the course is measured and weighted in the final course grade. Either in the syllabus or on separate assignment sheets grading rubrics must be specified at the point the assignment is made or the forthcoming test is announced. In Chapter 10 of *Pedagogy and Student Services for Institutional Transformation: Implementing Universal Design in Higher Education* DeLong discusses her own questions as a student trying to decipher assignments, and then her journey as an instructor assigning writing.

Some students with disabilities have organizational deficits, but so do many other students as well. In addition to recommending that students maintain a calendar, whether on paper or electronically, faculty can assist students by providing a summary of all assignments with due dates and point allocations, if applicable (see figure 5).

Timely and Constructive Feedback

When instructors fail to provide timely feedback, it is not surprising that students begin to see assignments as “busy work” or fail to see the connection between taking quizzes or exams and demonstrating mastery of course content. If grading rubrics are spelled out clearly in advance, it becomes a simple matter to create formats for providing feedback. In Chapter 11 of *Pedagogy and Student Services for Institutional Transformation: Implementing Universal Design in Higher Education*, Duranczyk and Fayon provide examples of rubrics based on mathematical standards for use in college algebra.

When developing the schedule for a course, it is important for instructors to consider their own needs as well as those of students. Papers, essay exams, portfolios, and other assignments that will require extensive grading time should be assigned at a point in the academic term when the faculty member will be able to commit the necessary time to provide feedback to assist student learning. If that period of time does not exist, then instructors should reconsider why they are giving the assignment. What will the student learn if adequate feedback is *not* provided in a timely fashion? Is the assignment really an essential component of the course?

Diverse Teaching Methods

Research (e.g., Higbee, Ginter, & Taylor, 1991) indicates that many students prefer learning through visual and interactive means to reading text and listening to lectures (see figure 6). Thus, at the college level there is often a mismatch between how faculty members teach and how students learn most

Figure 6. Learning Styles Self-Report

Learning Styles: Self-Report

Instructions: Below are seven descriptions of different learning styles. Select the three descriptions that are most like you. Assign a value of 1 to the description most like you, a 2 to the one that offers the next best description, and then a 3 to the third description in order of preference.

_____Print—A person who is print oriented often learns best through reading and writing. This is the learner who loves to read books, newspapers, or magazines, and retains easily the information that is read.

_____Aural—A person who is aurally oriented generally learns best through listening. Individuals who like lectures because they remember what is said or who enjoy learning from audio tapes probably are aural learners.

_____Interactive—Individuals who learn best through verbalization usually are interactive learners. These people like to talk and discuss ideas with other people. Collaborative learning exercises and small group discussions are possible means through which interactive individuals learn best.

_____Visual—A person who is visually oriented learns best through observation. People who like to see information presented in visual formats such as pictures, slides, graphs, tables, or demonstrations, or who like to learn from television or film probably are visual learners.

_____Haptic—Individuals who learn best through the sense of touch are generally haptic learners. Haptic persons assimilate information through a “hands on” approach to learning. This is similar to “tactile”; however, tactile refers only to touch through the fingers while haptic implies touch through the entire hand. Although not generally recommended as a study strategy, haptic learners may benefit from typing their notes, etc.

_____Kinesthetic--A person who is kinesthetically oriented learns best while moving. People who prefer to move around or have to move some part of their body while processing information probably are kinesthetic learners.

_____Olfactory—Individuals who learn best through the senses of smell and taste are olfactory learners. People who vividly associate some information with a particular smell or taste probably fall within this learning style.

Adapted from: James, W.B., & Galbraith, M.W. (1985). Perceptual learning styles: Implications and techniques for the practitioner. *Lifelong Learning*, 8(4), 20-23.

effectively. Learning is also reinforced when students have the opportunity to learn the same information in multiple ways and through repeated exposure to the same material. Regardless of students' individual learning style preferences, *all* students benefit from the use of multiple modalities to disseminate knowledge. An example of using multiple methods to teach the same information might be having students do reading in the course text and defining key terms in their own words, then assigning sets of key terms to small groups and showing a contemporary video that illustrates the definitions. Following the video the students share in their small groups and decide which scenes from the video to present to the rest of the class. After each group discusses its terms and the scenes selected, other class members have the opportunity to suggest additional situations in the film that fit the key terms. Ideally the exam over this material would then use application-level questions that involve scenes from the film, and students can facilitate the review of this material for the exams. Any recent videos are required to be captioned for access for people with hearing impairments. The Descriptive Video Service (DVS) has also been providing oral descriptions of a catalogue of films for people with visual impairments. However, new technologies continue to pose challenges in continuing this service (DVS Home Video, n.d.).

In *Pedagogy and Student Services for Institutional Transformation: Implementing Universal Design in Higher Education*, several chapter authors describe alternative teaching styles, including inquiry-based learning in physics (see Chapter 5 by Higbee, Chung, & Hsu); metaphoric thinking in art (see Chapter 7 by James & Kader); simulations in legal studies and history (see Chapter 8 by Miksch & Chapter 9 by Arendale & Ghery); and computer-assisted instruction in mathematics and psychology (see Chapter 12 by Kinney & Kinney & Chapter 13 by Brothen & Wambach). Each of these teaching styles can also be used in conjunction with more traditional teaching methods.

Natural Supports

Natural supports for learning can take many forms. Frequently technological supports come to mind, such as those provided by course Web sites; online bibliographies, readings, videos, and other resources; and assistive technologies such as screen readers and voice synthesizers (see PASS IT Web site for further information on assistive technologies, <http://cehd.umn.edu/passit/docs/techHandout.doc>). However, as Duquaine-Watson points out so eloquently in Chapter 34 of *Pedagogy and Student Services for Institutional Transformation: Implementing Universal Design in Higher Education Multiple Modes to Demonstrate Knowledge*, titled "Computing Technologies, the Digital Divide, and 'Universal' Instructional Methods," for some students these technologies serve as challenges or barriers rather than supports. Appropriate training must be provided for students who have not encountered these technologies previously, and in a way that is nonthreatening and free of embarrassment or inadvertent disclosure of financial or other status.

Figure 7. Final Class Project Options

Ideas for Final Project: PSTL 1289

The final project is due on the second-to-last day of class, June 11th. Students can choose to turn in a project in writing (or piece of original artwork, etc.) or to present the project in class, whether individually or in groups of two or three (depending on the preference of the student). No late projects will be accepted. Students are required to turn in their idea or "road map" (10 points) for the final project by June 5th to have it approved. Possible projects include:

1. Choose a favorite TV show or movie or children's picture book and describe how it illustrates a chapter in the text. Include key terms. Show a TV or film clip or use a series of clips for a class activity, or share the children's book with the class.
2. Write a song, poem, or short story, or write a children's book of your own, that reflects the theme of a chapter of the text. Sing, recite, or read it aloud to the class. (If you are not comfortable sharing orally with the class, you have the option to turn the poem or story in as a written project, or to perform the song in my office instead of in front of the class, or to turn in an audiotape.) You will also need to turn in a paper copy of your work.
3. Develop a comic book or graphic novel to illustrate a topic covered in class.
4. Describe a perfect world, a Utopian society. Use key terms from your text in your description. Provide specific examples. Or write a short story that takes place in what you consider a perfect world. Describe a day in the life of a main character.
5. Present a skit or make a video that demonstrates some aspect of the course.
6. Develop a game (or a "game show") based on course content. Have the class play for 10 to 15 minutes. (See me about "prizes.")
7. Create and facilitate a class activity related to a topic from the course (e.g., survival exercise, cerebral hemisphere activities, ethical dilemma).
8. Read a novel related to the course content and relate the book to the content of the course by presenting either an oral or a written "book report" or a skit in which you portray a character in the book.
9. Maintain an "electronic journal" and write in it every day of the course about how you relate the course content to your own life. Your journal should be typed when you turn it in.
10. Write a 5-page research paper on a topic from the class. Be sure to cite your sources and provide a separate (6th page) reference or works cited page. (I can provide a handout on using MLA or APA style, if needed.)
11. Create a collage that illustrates a topic from the course as it relates to your own life. Present and explain the collage to the class or write a 2-page paper to explain the collage to me.
12. Use your imagination to create your own idea for a project!

Grading: 100 points: Keep in mind that this represents 10% of your course grade. Your project should reflect significant effort. If you work in a group, your project should reflect the efforts of all members of the group.

Criteria: 50% content; 25% creativity; 25% preparation, organization, presentation (for written projects that are not performed orally, this also includes grammar and spelling)

Other forms of supports can include teacher-crafted study guides; handouts, including of PowerPoint slides used for lecture; small-group exercises and other activities to illustrate course concepts (e.g., simulations); in-class reviews for tests; and opportunities to retake or correct tests or revise papers. When considering appropriate supports, it is important to establish that the purpose of the support mechanism is to encourage learning.

Multiple Modes to Demonstrate Knowledge

Means of assessing knowledge or skill development are not limited to testing procedures. Just as there are many forms of tests (e.g., essay, short answer, fill-in-the-blank, multiple choice, true-false, matching, problem-based, open-book, take-home, computer-generated, practical or clinical demonstrations), there are also myriad other ways to demonstrate learning. For example, simulations can be used as a teaching tool or natural support, but they can also be used as an assessment device. Traditionally, faculty use tests and papers more commonly than other assessment mechanisms such as oral reports, presentations, and projects (whether individual or group); games; or the development of multimedia or various art forms such as music, story telling, poetry, dance, or other performance, or photography, drawing or painting, collage, and so on. One strategy is to enable students to demonstrate what they know by incorporating many different types of assignments and exams into the course syllabus. Another method is to provide choices and encourage students to use the methods that will best highlight their unique talents and ways of knowing, and that also may better reflect the types of activities that will demonstrate their achievements in the world of work (see figure 7). Some faculty are wary of providing these choices because of the inherent difficulty in comparing “apples and oranges” for grading. However, if clear grading rubrics are designed and communicated to students in advance, this need not be a barrier to more creative approaches.

Interaction Among and Between Students and Faculty

A number of ideas for encouraging communication have been discussed in earlier portions of this section of the guidebook (e.g., involving students in creating their own discussion guidelines, use of the “Student Information Sheet”). In the early weeks of a course it is important to structure any discussion and small group activities to ensure that everyone participates. Beginning with dyads and triads enables students to become better acquainted with just one or two other students first. Providing a specific task with clearly stated directions and outcomes and goals benefits all students and promotes participation. Later, as students grow more familiar and comfortable with one another and with course content, a more free-flowing approach may be possible, but initially creating activities that literally require participation by each member of the group can help establish desired patterns of behavior. Faculty must also remain

Figure 8. Activity to Create a Welcoming Environment

Getting to Know You

PSTL 1086: First-Year Experience Course for Student Athletes

Dr. Jeanne L. Higbee

About Jeanne:

1. I am
 - a. single, no children
 - b. married, no children
 - c. married, 5 children
 - d. married, 2 adult "children"
 - e. divorced, 2 adult "children"

2. One or more former student-athletes whom I have taught, counseled, and/or advised have gone on to
 - a. perform (gymnastics) in Cirque de Soleil
 - b. be honored as a Superbowl MVP
 - c. win Olympic gold (swimming)
 - d. win a world championship (discus)
 - e. all of the above

3. Little known facts about me include that I
 - a. was entertained by Roslyn Carter in the White House in 1980
 - b. have eaten dinner with Ruben ("The Hurricane") Carter and have hosted an "intimate" (i.e., fewer than 30 people) wine and cheese party for Jane Fonda
 - c. went to high school with Jerry Harrison of "Talking Heads" and film director and producer Jerry Zucker (*Airplane* and *Ghost* are but 2 of his films)
 - d. was a volunteer at the 1996 Olympics
 - e. all of the above

About You:

Pair up with someone you did not know before entering the room—you may *not* work with a teammate!

1. Name
2. Hometown
3. Whatever personal information you feel comfortable sharing
4. Favorites—e.g., song, performer, food, color, movie or TV show
5. Role models who have influenced you
6. Something about you that we will not be able to forget

observant during these discussions to be sure that all students are included and that their viewpoints are valued. Encouraging communication between students and faculty is not always easy. Many standardized evaluations of teaching purportedly measure students' perceptions of the "accessibility" of the faculty member, but what does that *really mean*? Some students unrealistically expect that when they send an e-mail message at virtually any time of day or night, they will receive a speedy response. On the other hand, a student experiencing a true crisis may have no way to contact a faculty member outside of regular office hours. One consideration for faculty is whether or not to provide non-work telephone numbers on the course syllabus. Most students would not consider calling a faculty member at home unless a crisis had arisen, while for students with disabilities having this opportunity for access may be critical. Some faculty members even encourage phone calls at home up to a certain time of night rather than feeling tied to e-mail and to promote more direct communication. Each faculty member must decide how accessible he or she wants to be and what channels to use. But for all students, not just those with disabilities, establishing rapport with a faculty member can be a key factor in enhancing achievement and retention.

Voices From the Classroom

The following section includes first-person accounts from postsecondary educators across the country who are using Universal Instructional Design in their classrooms. These accounts are broken into three separate sections reflecting the sometimes-unique needs of different disciplinary areas. Although there are different needs and challenges in universally designing courses depending on the subject, there is also a tremendous amount of overlap and it is probable that educators will find something useful in the stories from their peers in even the most dissimilar classroom environments.

Experiential Education

The educators represented in the first grouping come from a wide variety of disciplinary areas that share a common thread: they all involve experiential education. Many of these disciplinary areas also require field placements or practica for students as well as meeting professional standards that are outside of the control of the instructor. Applying the principles of Universal Instructional Design (UID) in experiential learning programs, courses, and settings, whether in applied social sciences (e.g., social work), the allied health professions, or education, can pose a unique set of challenges. From the standpoint of the UID guiding principles, obstacles can include:

1. Ensuring that sites for experiential learning (e.g., clinical, practicum, internship, student teaching) are not only accessible, but that supervisors and colleagues will provide a welcoming learning experience
2. Adhering to international, national, state, and local professional standards and accreditation requirements when considering essential components
3. Communicating expectations through the course syllabus for diverse experiential settings, each with its own set of unique expectations
4. Providing for timely and constructive feedback from the on-site supervisor as well as the faculty member and addressing any inconsistencies in the two
5. Ensuring that natural supports are in place on site and that they are accessible to students with disabilities
6. Enabling students to utilize their own preferred learning styles and ways of knowing in a setting that may be prescriptive in nature, with its own "ways of doing things", primarily because of the organizational mission
7. Allowing for multiple formats for demonstrating knowledge when standards require a prescribed procedure
8. Ensuring ongoing communication among faculty member, on-site supervisor, and the student. Unfortunately, without necessarily intending to, many experiential learning settings discourage participation from students with disabilities.

It is ironic that many of the “helping professions” that serve populations of people with disabilities are not welcoming to prospective professionals with disabilities.

In order to eliminate barriers to participation in experiential learning we offer the following suggestions for faculty members responsible for courses that include practical experiences:

Ensure that experiential learning placements are not guided by stereotypes of disability.

- Make regular visits to experiential learning sites.
- Provide UID guidelines to on-site supervisors and discuss specific means of implementation for each site.
- Create checklists and other natural supports to assist students in understanding expectations and adhering to professional standards.
- Meet together with students with disabilities and their on-site supervisors so that both the provision of accommodations and the requirements of the site are clearly understood by all.
- Develop a calendar of evaluation benchmarks and provide evaluation forms and other tools to ensure that evaluation procedures are formative as well as summative.
- Provide safe, confidential opportunities for students to evaluate experiential sites.

Nancy Sharby

Associate Clinical Professor
Northeastern University

The title of the course that I teach is: Health Education Promotion and Wellness. It is a required course for 5th-year students in Physical Therapy. This course focuses on understanding health promotion and wellness, illness prevention, and educational methodology with application to a variety of health and educational settings. Students will develop a working knowledge of public health and policy issues that affect patient health and illness. Students will learn the basics skills needed to develop an educational program for clients, community members or professional students. Outcomes will include: writing mission statements, developing goals, performing needs assessments, writing objectives, developing teaching strategies, implementing program plans and evaluating the outcomes. Students will apply this knowledge to produce a teaching module and to develop a program that can be used to affect public policy and improve the health of the community.

In order to create a welcoming classroom I developed a syllabus that is accessible to all students and included a welcoming statement in the syllabus. I spend time at the beginning of the first class establishing a welcoming climate for learning. On the first day of class I ask the students to write a brief letter to me describing the best practices that support their learning. I also ask each one to attach a photo so that I can do my best to learn their names (this is a real challenge for me). I establish ground rules for participation that keep all students safe and willing to participate and I work to make these expectations explicit.

All of the essential components of the course are stated as course objectives. Each objective stands alone as a required skill and addresses only one competence. Because this is an education course, I have an in-class activity where the students are asked to match course objectives to learning activities and outcome measures (assignments). They will be asked to identify any objectives without a learning activity or an outcome measure. Conversely they will also be asked to identify any outcome or activity that is not tied to an objective. Some of the essential course components for this course are that students be able to:

- Identify health risks and needs of individuals, groups, and communities by evaluating epidemiological evidence.
- Describe the health risks that arise from biological, biobehavioral, and social factors.
- Design and implement health promotion, disease prevention, and wellness programs that are evidence based and appropriate to the needs of the audience.
- Select appropriate health promotion and illness prevention activities

- Perform a needs assessment to identify health care needs, and develop appropriate intervention programs.
- Assess the effectiveness of education and health promotion programs for clients and students.
- Identify the role of stress as a health risk and implement a program of relaxation and stress management
- Apply knowledge of behavior change theories to develop a client-centered health promotion program that is respectful of the client's goals, preferences, and culture.
- Describe different cognitive styles, adult learning theories and active teaching and learning methods.
- Develop effective learning experiences including writing goals and objectives, developing effective teaching strategies, and evaluating outcomes.
- Educate others about health promotion, wellness, and health maintenance using a variety of teaching methods
- Understand the barriers to effective access to good health and the importance of health care advocacy.
- Demonstrate effective written, verbal, and interpersonal communication skills.
- Demonstrate the qualities of leadership, professionalism, and effective team membership.

I have developed clear, explicit descriptions for homework assignments and items to be graded and provide these in writing. I have established and maintained standards of behavior for the classroom and recitation section. I use formative assessment so that the students have feedback during the semester on how well they are meeting the expectations and to provide constructive feedback and to give feedback on written assignments and verbal participation. This semester I am going to ask for "worksheets" to be handed in on a regular basis that summarize students' problem solving activities they have participated in during class or recitation and also to utilize peer feedback. We use an online learning system, Blackboard (Bb). I upload all the PowerPoints to this site in advance of class. I can also upload various extra readings, and all assignments. Students can communicate with me via Bb I can set up learning teams that communicate with each other on Bb.

One challenge of implementing UID in this course is that in a large lecture class of 80-90 students it is hard to maintain class interest, enthusiasm and participation. It is easy for the inattentive folks to drift off and to create distractions for classmates. Students who have are not native speakers of English or have language processing impairments sometimes can't keep up and follow the teacher if the content is all verbal, even if you use PowerPoint. The shy, anxious, or culturally different students usually do not participate in large class discussion. Classroom management can be a real challenge, which also

challenges those who are struggling to learn and they may just give up. In the end you have a lot of folks who are not paying attention. I have found that throwing out interesting questions to discuss only gets the extroverts to talk. So I now use a lot more small group activities including problem solving and group discussion. This year I think that I am going to ask the students to take different positions on a topic and challenge each other. Another challenge I face is this is not a hard science or therapeutic course so the students do not value the “soft” subjects. I am going to ask a lot more application questions this year, and require that they tell me, “Why do you think this is important? Why do you think you need to know this? How will this help your career as a PT?”

I would offer the following suggestions to others teaching a similar course:

- Be flexible—you will try a lot of things that do not work, so you need to make adjustments as you go.
- Students learn differently so be prepared to modify activities and assignment accordingly if you feel it is appropriate.
- Be creative.
- Maintain your standards: If you think that speaking in a group is an essential course component, they make them do it. Just find a way that supports them to do it.
- Keep on trying. You are going to make a lot of mistakes along the way.
- Get support from others. Work in teams if you can.

Karen Moroz

Assistant Professor
Concordia University

EDUC 487, Reading Across the Content Areas, is a course that focuses on helping undergraduates who will be teaching in varied content and grade levels create classroom environments where formative and summative assessments are used, in conjunction with effective reading comprehension strategies, to help students effectively understand the texts they are asked to read. Typically there are 15 students in a given semester who take the class that includes lecture, participation in small and large group discussions and activities, written tests, student presentations, group projects, and a field experience. The course addresses essential components related to specific content area standards and looks at making information more comprehensible for the students these future teachers will be working with. The primary foci of the class include learning about different learning styles and how to meet the varied needs of students through the use of scaffolding techniques, graphic organizers, and comprehension strategies. These approaches are modeled by the instructor and practiced by the students throughout the course, allowing students to apply what they are learning to their future classrooms. At the end of the course, students are able to show competence in (a) writing focused objectives using the SIOP

model, (b) communicating clear expectations, (c) preparing and scaffolding lessons to meet specific content objectives connected to state and/or national standards for their specific content area, (d) incorporating graphic organizers, (e) creating a variety of interactive lessons and assessment tools, (f) meeting varied learning modalities, and (g) implementing reading/thinking strategies.

Throughout the course the elements of UID are implemented in a variety of ways. First, in order to begin creating a welcoming classroom, part of the first class session is spent having students pair up by finding the person in the room who has a recipe card with the coordinating drawing for the caption written on their recipe card. Once paired with another student, each individual shares their name, content area, feelings about starting the semester, and their ideas about why they are in this specific course. These conversations then lead to a large group activity where students discuss why they chose their content area, what good readers do, and how they, as a future teacher, foresee helping students enjoy the content they are teaching by helping them more fully understand the required reading. To further create a welcoming classroom, I use self-disclosure leads to increased rapport between instructor and students and to increased student self-disclosure that continues throughout the semester.

This comfortable classroom environment encourages students to ask clarifying questions about assignments and topics being covered. While this comfort level exists, it is still very important that I communicate clear expectations, both verbally and in writing, so as to minimize the amount of confusion students may face. Therefore, the course syllabus specifically explains all assignments and includes rubrics so students have the information upfront. I have continued to refine assignment descriptions. These revisions are guided by my assessment of how students complete each task and by student feedback. Assignment descriptions are also refined as a result of learning experiences like the PASS IT Summer Institute that offer new ideas about how to approach a given assignment or how to word it more effectively so as to more clearly illustrate what is expected of students. For example, in initial versions of the syllabus, students were asked to research state and national standards for their given content, but little was then done with those standards in an explicit manner. Now students are asked to research the standards and bring them to class on a daily basis. I am now more intentional about the use of the standards, frequently asking students to discuss them, to make connections to classroom readings, and to revisit them as they work on each assignment. This more explicit use of the standards has led to an increase in student ability to write effective lesson objectives and to a clearer understanding of the importance of keeping classroom goals at the forefront of all classroom plans.

Another element of UID that is modeled throughout this course is the importance of constructive feedback. Throughout the course students are reminded of the importance of using formative assessment to guide their instruction with future students. Many conversations are held, and examples are offered about how constructive feedback allows students of all ages to know

what they need to continue to work on within a given area of understanding. It is so crucial that students who will be teaching understand the importance of offering speedy and specific feedback. I work hard to model this type of feedback as well so all students are able to personally understand the benefits of receiving suggestions for improvement and the opportunity to learn from that feedback before forging ahead to the next assignment.

Along with the ongoing feedback, students in this course also benefit from natural supports. These supports include an outline of each class session that is shared in the syllabus, allowing students to use it as an anticipatory guide and/or as a post-class review. Students also have the ability to access documents that are created during class activities as an electronic document that is sent by the instructor shortly after the class session.

The final, and probably most predominate element of UID implemented in Reading Across the Content Area, is the use of teaching methods that consider diverse learning styles, abilities, ways of knowing, and previous experience and background knowledge. Throughout this course I use research based reading comprehension strategies and ask students to track their thinking using these varied strategies. For example, as students fill out a “What I **K**now, What I **W**ant to Know, What I **L**earned” (KWL) chart, they are tapping into their background knowledge on the given topic and setting a purpose for their reading. By varying these strategies it allows diverse learning opportunities for students, differentiates the instruction for varied abilities, and allows students to achieve the desired objectives in a number of engaging ways.

By structuring this course in a manner that honors the UID principles, I believe that students achieve the course objectives and are able to foresee numerous ways they will be able to apply what they are reading about and seeing modeled in class to their own future classroom. While expanding their knowledge base, students are asked to complete a field experience where they work one on one with a student in the age range they believe they will ultimately teach. This experience has proven successful in allowing students to more fully understand the needs of students in relation to reading skills and in practicing many of the strategies being taught in class. The student learning from this field experience is captured in journals of the meetings and with a synthesized journal of the learning experience as a whole.

Reading Across the Content Areas is a course that lends itself incredibly well to the elements of Universal Instructional Design. By implementing numerous elements, and by continuing to refine the course with the elements in mind, I am able to model for students effective instruction that will ultimately end up in their own classrooms-impacting countless numbers of young minds.

Theresa M. Leko

Coordinator of Service-Learning and Student Development
Concordia University

This course is a two credit elective under Student Support Services called Leadership Development . It is taught by the Coordinator of Service-Learning and Student Development who has experience in leadership training. The purpose of the course is to teach students how to become effective leaders on campus and/or develop their leadership skills for the future. All student leaders on campus are invited to take the course. Other students are welcome to take the course, too.

The course was piloted as part of the Athlete Mentoring Program in the fall of 2006. Student athletes with GPAs of 3.0 or higher were nominated to mentor first-year student athletes. This course was a requirement for the athlete mentors. Due to feedback from the students and coaches and logistical challenges, the Athlete Mentoring Program is taking a less formal approach for 2007-2008. As part of this approach, the course is no longer required for athlete mentors; however, it is still highly encouraged for them.

The official course description of Leadership Development (SSS 200) is "learn about your own leadership potential and build skills in conflict management, boundary-setting, team-building, group facilitation, stress management, and morale boosting. Apply concepts in ethics, servant leadership, emotional intelligence, and leadership styles to your own life and roles today while developing strengths for your future." This class includes a service-learning component. The course incorporates the philosophies of Robert K. Greenleaf, Wayne Hastings, and Ron Potter, and other leadership theorists.

The pedagogy of the course consists of hands-on activities, large and small group discussions, role plays, games, videos, etc. Lecture is minimal and is used only to introduce or define concepts. Practical application is important for this class. Students are able to apply concepts to leadership roles on campus, such as mentoring, and through a service-learning component. The service-learning component provides them with the opportunity to research a community need and design a plan for meeting that need.

To create a welcoming classroom, the instructor learns the names and faces of her students as well as their likes and dislikes and other individual characteristics. The instructor shares information about herself, too. During the upcoming year, the instructor will administer a whimsical questionnaire about herself so that the students feel more comfortable with her. The instructor will also facilitate interactive activities, which allow the students to get to know one another and discuss issues such as inclusiveness, cultural norms, and teamwork. Through a visioning and goal-setting exercise, the students will have the opportunity to communicate what they would like to get from the course.

Essential Course Components

In order to address the essential course components, the syllabus outlines the objectives, teaching methods, structure, and requirements of the course. The instructor reviews the syllabus thoroughly with the students on the first day of class. She gives reasons for the course components and explains their relevancy

to the course, the students' leadership roles, or to a typical workplace. The students complete a midterm evaluation to assess how the class is meeting the objectives, Universal Instructional Design principles, and their personal goals. The instructor makes adjustments based on the feedback from the midterm evaluations.

Communicating Clear Expectations

During the visioning exercise, students set values and rules for the class. As mentioned above, the instructor outlines other expectations in the syllabus and reviews them with the students. This includes a general code of conduct. Before communicating an expectation, the instructor reflects on the purpose of the expectation and how much flexibility is possible. She informs the students of the reason for the expectation. Students are also provided with rubrics and/or step-by-step instructions for assignments. The instructor reminds the students of the expectations throughout the semester.

Providing Constructive Feedback

At the end of each class period, students are asked to evaluate their own participation in the class by using a given checklist. They are also instructed to write one "nugget" or one thing that they learned on the back of the checklist. The instructor provides written feedback on the forms and returns them to the students at the next class. The instructor also provides written feedback on reflection question assignments, the service-learning project plan, and final projects. This is highly important in order for students to develop their leadership skills. The instructor acts as a mentor to the students in this way.

Providing Natural Supports

The students receive the syllabus and other documents via e-mail so that they can convert them to a format that is comfortable for them. (i.e., hard copy, special software, etc.) The institution is a laptop university, so all students have equal access to technology. The institution utilizes a Web-based program called WebCT to post assignments, syllabi, and other documents for specific classes. The instructor hopes to utilize WebCT more in the coming year. Because the course does not have a required textbook, this will be a natural place to post articles, lecture notes, and other materials for students. The instructor would like to try posting notes beforehand, but leave specific areas blank and have the students write in the missing words during class. This would help students pay closer attention in class and retain the information better.

Use of Diverse Teaching Methods

The teaching methods in this class are based on Howard Gardner's multiple intelligences. They include role plays, games, videos, visual arts, small group discussions, interactive exercises, article critiques, service-learning activities, and pre- and post-reflections, plus more.

Offering Multiple Means of Expression

Students are graded on participation, reflection questions, service-learning project plans, and final projects. Because this class is preparing students for leadership roles in the workplace, there is a strong focus on clear and thorough writing; however, the course also encourages creativity with presenting the information. The instructor does not give tests or quizzes in the course.

The students grade themselves on participation with guidance from the instructor. They also grade each other on their group project, which is the service-learning project plan. The instructor grades the other assignments and the final project. Each assessment method contributes equally to a student's final grade.

Promoting Interaction Among Students and Between You and the Students

The instructor communicates with the students on a weekly basis. To encourage more interaction, she hopes to incorporate some light-hearted questions in her weekly e-mails to students. Students are also invited to meet with the instructor. Whenever the instructor is not facilitating or observing an activity, she joins in with the students. She plans to participate in service-learning activities with the students in the coming year.

Evaluation

The effectiveness of implementing Universal Instructional Design in this course will be evaluated by using an assessment tool that asks the students how the course met each of the eight Universal Instructional Design principles. The goal will be to have a mean of 3.0 or higher (good to excellent) on all eight principles of the assessment.

Recommendations

This course requires practical application of the concepts. Students must be able to practice leadership either through in-class games and exercises, leadership roles on campus, service-learning activities, or other activities. By incorporating practical application into the course through a variety of teaching methods, the instructor is naturally fulfilling some of the principles of Universal Instructional Design.

Karen A. Myers

Associate Professor, Higher Education
Saint Louis University

The Student in Higher Education is a graduate course in the Higher Education Administration program at Saint Louis University. Although it is required for the Masters in Student Personnel Administration degree, we encourage doctoral students in Higher Education Administration to enroll as well.

The intent of the course is to familiarize students with today's higher education setting and strategies for enhancing these environments to maximize student learning and development. The course introduces students to the exploration and analysis of attitudes and characteristics of the college student population in the context of higher educational institutions in the United States. Theoretical concepts and empirical findings are examined that help to describe the college student in relation to changing demographics, culture, and development. Throughout the course, attention is paid to the impact of the campus environment on diverse student populations and a variety of student groups.

This 3-semester-hour course is offered once a year in the fall semester, one night per week for 16 weeks. Enrollment varies from year to year, with an average enrollment of 15 students (both Masters and Doctorate). As I begin my fourth year as a faculty member at Saint Louis University, I will teach the course for the fourth time this fall. At least 25% of the course is online via the Blackboard Learning System. Students use the Blackboard site for class discussions, submitting assignments, retrieving readings and Web site links, and posting materials they wish to share with the class.

In all of my classes, I attempt to teach and model UID principles. To assist the campus community in incorporating UID into their daily practices, the Saint Louis University PASS IT team developed three checklists for faculty, staff, and students respectively that provide examples of UID techniques. Here are some of the ways in which I infuse UID principles into The Student in Higher Education course.

Creating a Welcoming Classroom

I begin by sending welcome e-mails to the students prior to class providing them with a list of required textbooks and other pertinent information. I try to be personable and friendly, and I bring a big jar of candy to each class. This lightens the mood and tends to keep them awake! At the first class meeting, we do an introduction exercise related to their common interests. I use and encourage humor, compliment student participation, and let them know from the outset that social justice, equality, and access are important and expected in this class and that all voices will be heard.

Addressing Essential Course Components

I provide class sessions and assignments that meet intended learning outcomes listed, allow students to select preferred assignments and methods of delivery, and allow them to weight their own grades via an assignment contract

Communicating Clear Expectations

To communicate my expectations as clearly as possible, I develop and disseminate a comprehensive user-friendly syllabus and post the syllabus on the Blackboard course site prior to beginning of the course. I also post on Blackboard a video that shows me explaining my teaching style. As a class, we decide what

assignments will most appropriately match the intended learning outcomes. I then provide clear written and audio explanations of course assignments, and I post grading rubrics for all assignments on the course site.

Providing Constructive Feedback

Providing constructive timely feedback not only is the responsibility of an instructor, but in my opinion it is essential for student growth and success. I provide students with completed grading rubrics including written comments in a timely manner (i.e., preferably at least one week prior to due date of next assignment), discuss in class general overall strengths and weaknesses of completed assignments, and ask students to complete peer evaluations of their team members, I also encourage students to submit assignments to me and to their classmates (if they are comfortable doing so) at least one week prior to the due date to get their peers' and my initial edits and feedback, then resubmit their revised assignments.

Providing Natural Supports

I post all reading materials (except text books) and Web site links on the Blackboard course site. With student permission, I post some completed student assignments (e.g., book reviews, movie reviews) from previous semesters on the Blackboard site so that other students may review them and learn from them. I provide all handouts in large print, all PowerPoint slides in UID format (i.e., few words per slide, sans serif font, large bold print), and all PowerPoint handouts with no more than two slides per page. I allow ample time for exams and assignments and am available to students via e-mail, phone, Blackboard, and in person for assistance

Using Teaching Methods That Consider Diverse Learning Styles

I utilize a constructivist approach to teaching by providing information and having students construct meaning from new information based on their prior knowledge and experiences. I utilize multimodal teaching techniques including lecture, large group discussion, small group discussion, pair and share, role playing, case studies, games, exercises, guest speakers, panels, movies, videos, podcasts, vodcasts, Flash, and Webcast.

Offering Multiple Ways for Students to Demonstrate Their Knowledge

Students may self-select methods for demonstrating what they have learned. This includes papers, presentations, PowerPoints, online presentations, team assignments, poster sessions, role playing, and development of Web sites, games, exercises, binders, handbooks, brochures, and case studies.

Promoting Interaction Among Students and Between You and the Students

I make a concerted effort to be available to the students, and I encourage conversation and assistance via e-mail, phone, Blackboard discussion board,

chatrooms, and in person. I encourage students to share their assignments with their peers and with me prior to submission for feedback and exchange of ideas.

Benefits

Students and teachers benefit from the inclusion of UID in that all students are included and welcomed, and no student is singled out to receive specific accommodations. Students may prepare prior to classes and are provided choices to be successful. They have access to me and to other students, and they give and receive feedback to/from other students and exchange ideas and experiences. One of the most exciting and rewarding benefits is when the students are able to teach and model UID themselves. While experiencing UID principles in our class, many students develop ideas about how they can “spread the UID word” on campus and in their work. As I model UID in our class while we simultaneously discuss UID principles relating to the physical and human aggregate components of campus culture, students begin to think of ways that they can put this new knowledge into practice. Seeing those light bulbs go on and witnessing the UID movement in action on our campus through the efforts of my students not only is heartwarming for me but beneficial to us all.

Challenges

Challenges may arise with the use of UID as well. There is a fine line between natural supports and accommodations. In order to be inclusive to all students at all times, students in the class and I must provide all information in accessible formats so that no student is excluded from the lesson, assignment, class session, etc. How does one go about doing this without thinking about individual accommodations? Removing all barriers to inclusion at the development stage of the course and of each assignment may be the answer.

Evaluation

For the past year, I have utilized the UID evaluation provided through PASS IT at the end of all of my classes, including this course, and will continue to do so. I am surprised yet humbled when I do not receive “perfect” scores on my UID practices. Although I may think that I am incorporating UID principles in the best possible way, the students often do not think so. I will continue to improve my UID practices and will continue to discuss UID implementation and possible changes with students throughout semester and make appropriate adjustments.

Recommendations

I encourage faculty to utilize the suggestions I mentioned. Discuss UID ideas with other teachers, colleagues at other institutions and with students. Model and teach UID in all classes. Let students know what you are doing. Be transparent. Students will assist you in improving as you proceed in this course and as you plan future courses.

The majority of my classes, including The Student in Higher Education, are comprised of part-time graduate students who are full-time student personnel professionals. Some of the students are faculty members at other institutions. My recommendation to them and to all college student educators is to ask yourself this question, "Have I excluded anyone today?" By using UID in our programs and curricula, we will be able to respond with a confident, "No" every time.

Deborah Greenwald

Associate Professor
Northeastern University

Supervision of Advanced Fieldwork is the course in which I plan to implement UID. This is a seminar course of 6 to 10 doctoral students. In this course, students provide case presentations on clients they are working with, including detailed process notes of therapy hours, video or audio tapes of sessions, videos of role playing a therapy session with another student, peer supervision of fellow students, and presentation of a class discussion on a topic of their choice relevant to therapy.

The course is a seminar in which students present their cases, listen to their peers' cases, and are supervised in a group format, with ample discussion of the significant issues in each case, including the therapist's responses, and alternate ways of responding. All students in the course are involved in a 20-to 24-hour practicum at a mental health facility, hospital, or school, working with clients either as a therapist or as someone performing psychological assessments.

In order to create a more universally-designed curriculum I plan to address the following aspects of UID by making these adaptations to the seminar course:

Creating a Welcoming Classroom

- Already do: Asking students to write what their goals are for the course and what they would like to work on, helping them personalize the course goals so that will feel more empowered in the course
- Plan to do: Emphasize that there are a variety of styles and approaches to counseling and that the goal of the course is to help them improve their skills and approach to counseling, and become more comfortable in their style, as well as develop other ways of working with people.

Communicating Clear Expectations

- Already do: List of course requirements

- Plan to do: Be more specific about what skills and what level of performance is expected.

Providing Constructive Feedback

- Already do: I make detailed comments on the case study, process notes, and video presentations and e-mail them to each student following their class presentations, commenting on what they did well as well as what they might have addressed differently.
- Plan to do: Add individual meetings mid-way through the course in order to get a clearer sense of how the student is experiencing her/his work, performance in the course, and response to feedback.

Providing Natural Supports

- Already do: Videos/tapes of sessions and of role playing allows for in vivo learning and my feedback is always given in written form as well as verbally in class, so that students can review and comment.
- Plan to do: Involve students in role playing in class, with students also filling the role of on-the-spot supervisors, with stop-action to discuss and improve therapy.

Using Diverse Teaching Methods

- Already do: Many of the things listed in the previous sections along with having more experienced students use their already-developed knowledge to empathize with others and provide information and suggestions.

Offering Multiple Ways for Students to Demonstrate their Knowledge

- Already do: Case presentations, process notes, video/tapes of sessions, role playing tapes, topic presentations, class participation with comments on other students' cases
- Plan to do: Invite students to write comments or suggestions regarding cases, for those who need more time to respond.

Promoting Interaction Among Students and Between You and the Students

- Already do: There is a great deal of interaction in this course, typically, as the students already are very familiar with each other and with me. This is promoted by inviting students to give feedback to each other before I do, referring to comments students have made to highlight and acknowledge their contribution, and contrasting the clientele or style, etc., of one student's placement with those of others, to stimulate discussion.

- Plan to do: Ask students to write down comments as student gives presentation, video so that they will each be ready to enter vigorously into the discussion.

Business, Mathematics, and Science

The group of educators represented in this section come from the fields of business, mathematics and science. Again, this is a diverse bunch, but they share many common ideas and challenges when implementing Universal Instructional Design. Many of the courses taught by these educators are gateway courses into the science, technology, engineering, and mathematics (STEM) careers in which people with disabilities are underrepresented. For this reason it is especially important that postsecondary business, math, and science educators be equipped to create inclusive classroom environments in which every student has the chance to succeed. The first person accounts in this section address a number of very different reflections of Universal Instructional Design but all of them are overcoming similar challenges.

For very different reasons, the content of courses in business, math and science can be difficult to access for students with visual impairments. In the case of science courses, students are frequently asked to interpret graphs with data that can be difficult to read via screen reader or to interact with images such as differently colored cells under a microscope that can be impossible to differentiate for someone who is color blind. In business education, the use of tables and charts can be confounding to students who use screen readers. In mathematics, the use of formulas and mathematical notation can offer another set of visual challenges. In each of these disciplinary areas, careful planning to ensure that charts and graphs can be read by screen reading software and the provision of rich text descriptions for all images can make a world of difference for students who would otherwise be excluded.

Another shared concern for these disciplinary areas is the need to cover large amounts of required information that students *must* master in order for them to progress to the next level in a predetermined sequence of courses. In one case, an instructor is required to cover over 20 chapters of introductory accounting information in order for her students to be able to proceed through the course sequence. Covering this amount of material in a single semester can feel very overwhelming for both instructors and students. However, a very important means for addressing this challenge is by focusing on those *must*-master items and making them explicit to students as essential course components.

A third issue of shared concern for the business, math, and science areas is the challenge in promoting success for underrepresented students. Many students enter into these classrooms uncertain of their ability to succeed and unaware of the relevance of the topic for their studies or their lives. The attention to creating respectful learning environments, the creation of multiple means of expression and the goal of reducing the need for individual accommodations are all ways in which Universal Instructional Design can create a more inclusive learning environment that fosters success for every learner.

Veronica Udeogalanya

Chair, Department of Economics & Finance
City University of New York- Medgar Evers College

I teach a course called Principles of Microeconomics, which is a School of Business core course in which students learn foundational concepts in economics and the framework for economic issues and policies. The majority of students in the course are business majors. The critical knowledge and competencies that I expect my students to have at the end of the course are to demonstrate a clear understanding of basic economic concepts by:

- Applying economic concepts to solve economic problems relating to individual consumers, business firms, and governmental agencies.
- Interpreting graphs and developing economic models; and recognizing the applicability of these models to the economy.
- Presenting coherent arguments using economic principles and laws as supporting evidence.
- Working collaboratively with peers to develop and solve economic problems.

Creating a Welcoming Classroom

My classroom is a learner-centered environment. I begin by sharing my experience of how I got there and what made me succeed. I tell my students that they can do it, too. I distribute an index card requesting their names, cell phone numbers, e-mail, GPA, learning style (if they know), and any form of disabilities that they have that might impact their success in the course. This gives me access to my students. I give them my own information, thus letting them know that they can reach me any time. It is amazing to see how much private information I gather from these index cards. I meet one-on-one with them to reassure them that I will be mindful of their disclosure as we progress through the semester. I reinforce the welcoming environment throughout the 15 weeks. Moreover, I tell them that it is a partnership and remind them of their responsibilities in the partnership. I make it a point of duty to treat all my students with respect. I make them feel welcome.

The first day of class is crucial for my students and me. Most of these activities take place on that first day. I distribute the syllabus, discuss it, and quiz the students on its content with 5 points. I then give a learning style inventory list, collect and discuss it in that first day of class. I use my findings from this survey to refine my instructional methods and my assessment of student knowledge. This exercise has proven to be very useful for the students and for me.

Addressing Essential Course Components

I make sure that my students understand all the essential components of this course. I constantly encourage them to use their highlighters to note essential components of each chapter. I share with them upfront what they need to know to be successful in the course. I reinforce this every class section.

Communicating Clear Expectations

I communicate the expectations of the course with my students before the course begins, during the semester, and after with a quick survey. I let them know what I expect from them and I solicit from them what their expectations are. I ask them consistently what they feel and how I am doing encouraging anonymous feedback. There are no ambiguities about the expectations; hence I have had very few complaints about student grades. When I ask a question during a class discussion, I demonstrate the difference between an A, B, or C answer. I encourage my students to strive for the A answer because that keeps them focused on success. This strategy has enlivened our class discussions. It has also encouraged my students to volunteer answers and the light in their eyes when they are right makes it all worth the effort. Even when their answers are wrong, they are eager to participate.

Providing Constructive Feedback

I get my students to commit to spending one hour of their time every day the class meets to review what was covered that day. I encourage students to send e-mails to me as they review if they have questions or concerns. I give immediate feedback and it has been very helpful. I give take-home review tests in small increments as the course progresses. It makes the students read the text and their lecture notes in search of the correct answers. By the time they get to the final examination, they have practiced all essential aspects of each chapter so that the outcome is positive for all the students.

Providing Natural Supports

I use the smart carte (laptop, projector, DVD/CD, etc.) everyday in class. Some students are slow note takers so I project my lecture notes as PowerPoint. After each class, I e-mail my lecture notes to my students. I prepare handouts on formulas, equations, definitions of key concepts and worked examples for them. The course is activated on the Blackboard so that students have access to relevant information. The recommended textbook has several online resources that provide flash cards of key concepts, study guides, and end-of-chapter questions and answers that assist student learning. These resources are deliberately chosen to make learning easier for the students.

Using Teaching Methods That Consider Diverse Learning Styles

The exercise that I do with the learning styles during the first day of class enables me to know the learning styles of my students. This is because we

discuss the different learning styles and most students are surprised to know what their style is. I enter these in my record book against each name and refer to it after each test. Based upon the results of the learning style inventory, I adjust my teaching methods accordingly. By breaking the content of the course into smaller bits, the review tests help my students to master new content faster. Furthermore, because students are performing varied tasks, they are involved. The diversity of activities gives students the opportunity to demonstrate their strengths in different but significant ways. I break each class section into three parts: giving information and ideas based on essential components of the course; collaborative exercises and projects; and the reflective activities (e.g., writing essays). I leave 5-10 minutes at the end of each session for the students to give a five-point summary of what they have learned. I collect these and it gives me a sense of who is listening and who I need to focus on.

Offering Multiple Ways for Students to Demonstrate Their Knowledge

The learning style inventory gives me the opportunity to know my students and how best they learn. Also, it allows me to use varied and relevant assessment tools to test their knowledge. For those who are visual learners, I assign more individual research projects, short essay-type assignments, oral presentations, and opportunities to apply materials to real-life contexts. For those who are auditory learners, I assign more of true/false, multiple choice, matching, fill-in questions. For the students who are tactile learners, I assign more model building, exhibits, simulations, role playing. I do give general tests but I am mindful of each student's strength and weaknesses.

Promoting Interaction Among Students and Between You and the Students

During the first day of class, I emphasize and encourage my student to communicate with me. The syllabus contains all my information and I emphasize it throughout the semester. I collect their e-mail addresses on the index cards and make it a point to e-mail them at least twice a week. Also, if any of my students did not attend class, I e-mail a quick "we missed you today. Is everything alright?" They love this and it encourages them to reach out to me when they are unable to come to class. Transparency and flexibility have been the keys to engaging my students. I acknowledge those who communicate with me in class to encourage the others.

Recommendations

The following are my suggestions for implementing UID

- Make conscious effort to make students welcome.
- Study your students' strengths and weaknesses and channel such knowledge to helping them succeed.
- Know your students' learning styles and modify your teaching methods accordingly.

- Minimize your lecture time while maximizing experiential components and reflective activities.
- Break down the content into manageable chunks so that students can learn faster.
- Assess student learning frequently and give immediate feedback.
- Encourage student input and participation.
- Involve the quiet students and help them understand the significant role they play.
- Enter each new class with an open mind recognizing that each student is unique.

Irene Mary Duranczyk

Assistant Professor

University of Minnesota

I have been teaching developmental mathematics, introductory and intermediate algebra, for the past 20 years. It dawned on me in early 2002-2003 that the reason that students often end up in developmental mathematics because of gaps in their conceptual understanding of mathematics or in their ability to accurately carry out the symbolic manipulation of algebraic expressions and equations. Students with gaps in conceptual knowledge and accuracy in the implementation of algebraic processes often have beliefs and attitudes about mathematics that confound their progress in the field. All of these areas can and are addressed by Universal Instructional Design.

A UID Assessment Example From Algebra

In both mathematical thinking courses (e.g., logic) and algebra courses students are given the opportunity to create a semester-long project that can be explored using the tools and techniques that make up the class core content. I have come to observe that some students are successful in demonstrating skill acquisition on “tests” of course content while other students are successful in demonstrating skill acquisition on “project-based” activities related to real life interests and concerns. For instance, some students can demonstrate the ability to solve a system of linear equations with two or three variables on a typical academic test while other students can demonstrate the same skills with additional interpretation of results that are meaningful to them by comparing cell phone services, payment plans for purchasing a car (or house, boat, etc.) with and without a down payment and with a variety of 12, 24, 36, or 48 month payments or 10, 20 30, or 35 year plans.

While teaching algebraic or mathematical thinking skills to students planning on careers that do not have a mathematical base, we should not demand calculus-based mathematics; mathematical thinking is the essential component that students need. The ability to quickly recall and apply algebraic

algorithms is important but is not essential. When these application come up in real life, students will be able to look up the formula or consult resources before tackling the application. The skills they will need are mathematical thinking, critical thinking, an ability to analyze a problem and project reasonable solutions. Promoting the acquisition of these skills I believe is a key component of our undergraduate mathematics course work.

Another major activity that I have incorporated into my teaching is renaming tests as “assessment: first draft” and incorporating individual and group components in the assessment. First, just the renaming of the test as a “first draft” relieves some anxiety from the experience. After all, it can be revisited. It is the beginning of the process. I count the first draft equally with any additional versions so the performance on the first draft does count. The final grade for the assessment will be the average of first, second, or third drafts, depending on how many the students need to or how many times they choose to revisit the assessment. On test day, because I teach in 2-hour blocks, I give students the option of using the entire 2 hours on their assessment individually or to use the last 20 minutes going over the assessment with another person in the class. At that time I give students a different colored pencil to make any changes or alterations to their work. I want it in different colors so that I can see what the student did alone and what is the product of shared thinking. Sometimes correct answers are crossed out. This would indicate that a student was not secure in the knowledge or the concept. It becomes part of the learning and reflective process.

The second and third drafts must include the symbolic work, multiple representations if applicable, and a narrative of the student’s thinking process and the reasoning behind the symbolic manipulation steps. I want students to narrate their thinking so that I can have a window into their processes and help move their natural ways of approaching problems forward or challenge their thinking and intersect their natural selection of words with mathematical language. This process puts the emphasis on mastery of skills rather than “performance” on a given day. This process benefits all students.

Suggestions for Others

It is important to remember that each student in the class has multiple social identities, so there will be some identities and challenges unknown to you that will intersect with the development of skills, interests, and engagement in the course. The following guidelines undergird my approach to mathematical thinking course work:

- Have multiple pedagogical approaches to each topic, skill, and concept.
- Have multiple approaches to demonstrate mastery or competency in each topic, skill, or concept. Expect all students to participate to some degree in each approach but show mastery or competency using at least one approach.

- Utilize a combination of group work, individual tasks, and small group work to advance the intersection of students' natural language about mathematics with formal mathematical language and concepts.
- Encourage the development of problem solving skills through observation, analysis, and interpretation.
- Incorporate reasoning and proof.
- Provide opportunities for the communication of mathematical concepts, skill, and ideas.
- Make connections of academic mathematics with students' lived experiences and the real world.
- Connect multiple representations of mathematical concepts through the use of words, numbers, symbolic notation, diagrams, and graphs.

Bryan Johns

Mathematics Professor

Seattle Central Community College

MAT is the second quarter of a two-quarter algebra sequence at the developmental math level. The course is a prerequisite to our intermediate algebra course; one other quantitative reasoning course is required after the intermediate course to be granted an AA degree from our institution.

Most of the students enrolled in this course either did so via placement test or they completed the first course in the sequence. A few students are required by their certificate programs to pass this course. Most students hope to transfer to a 4-year institution. The students in the course are very diverse; around 50% are non-White, 60% are women, 80% are part-time students, and their ages range from 16 to over 60 years old. I usually have a few students who disclose a disability.

Currently, the math instructors at Seattle Central are testing a new software in this course. The Washington Mathematic Assessment and Placement (WAMAP) is a Web-based mathematics assessment and course management platform. This system is designed for mathematics, providing delivery of homework, quizzes, tests, practice tests, and diagnostics, with rich mathematical content. Students can receive immediate feedback on algorithmically generated questions with numerical or algebraic expression answers. Also provided are direct e-mail links from instructor to students as well as a chat room where all can participate in mathematics discussions.

This system will facilitate Universal Instructional Design in that:

- All assignments, schedules, and the syllabus can be accessed in one place throughout the quarter. This reduces confusion about the expectations for the course, when an assignment is due, and what the homework assignments are. Students with vision problems can enlarge text, students

- with Attention Deficit Disorder (ADD) can access the material in a less stimulating environment, and students who speak English as a Second Language can go at their own pace and use dictionaries or translators.
- WAMAP allows the instructor to send group or individual e-mails. Therefore, I can send a hint on homework or send a reminder about tests to all students. I can also communicate with them individually encouraging them to see me during office hours and setting up extra tutoring.
 - WAMAP will allow students into a password-protected site that allows them to see their individual grades as soon as they are posted.
 - I am able to set up a chat room where students can communicate with each other and with me in a non-threatening environment.
 - The most powerful tool in the WAMAP arsenal is the creation and implementation of online homework and testing. Instructors can create and share math questions with other instructors, forming assignments that can be graded by the computer. Every student can do the online assignment at any time. All students see different versions of the same questions to discourage cheating. Students have as much time as they need to complete these activities, removing the anxiety that many feel when taking a math test.
 - WAMAP also allows me to link to other helpful Web sites that might be of help or interest to students. My students can access the textbook Internet resources. I can refer my students to our department Web site for old placement exams and trusted tutors.

Challenges and Future Steps

It is important that all information posted to the WAMAP site be accessible to students. I will need to get feedback from students to make sure that this platform is helping students to be more engaged in the mathematics classroom. In order to measure the success of this endeavor, I will do a pre- and post-course evaluation asking students to identify barriers to their math learning and after the course ask them how the use of WAMAP addressed these barriers.

Terrence Richard Blackman

Mathematics Instructor
Medgar Evers College

The school at which I teach, Medgar Evers College, is a center for the development of community-based educational paradigms in the metropolitan New York City region. The Mathematics Department of Medgar Evers College—and by extension its faculty—has gained considerable experience in terms of pedagogy and practices in teaching undergraduate mathematics as well as in the design of broad instructional programs that meet the needs of a student population that is at once nontraditional and very diverse but, at the same time,

highly motivated and talented. In general, the challenges that face the Mathematics Department are not unlike those facing other academic departments: specifically, the problem is to design and implement a complete instructional program that is capable of successfully meeting the students with the mathematical skills and knowledge that they bring to the institution as entering freshmen and, subsequently, developing within them the knowledge and confidence in mathematics that they will need to negotiate successfully the constantly increasing technological and quantitative requirements that society imposes. Because of the central role that mathematics plays in the academy in general and the critical nature of that role at Medgar Evers College in particular, the Department of Mathematics has developed several organizational and instructional strategies which, even at the current levels of implementation, serve to enhance the effectiveness of the instructional program in mathematics from elementary algebra through calculus.

This course Intermediate Algebra And Trigonometry is designed to provide non-science students with an in-depth approach to intermediate algebra and trigonometry. It attempts to impart to these students sufficient skills and training in algebra for the study of introductory, non-calculus based courses in computer applications, statistics, accounting and other areas of business, and social sciences, and to facilitate their transition to more advanced studies in these fields. Applications and the use of calculators are stressed to prepare students for the types of problems they will encounter in these fields.

Evaluation is based on the following criteria:

- Assignments: Assignments for this are posted and graded online using the Maple T.A. (a Web-based system for creating tests and assignments, automatically assessing student responses and performance). For an example see <http://mapleta.mec.cuny.edu/classes/math136-602su07/>.
- Exams: There is a departmental midterm and final examination. Students must pass the final exam in order to receive a passing grade in this course. The final exam is a 40 question multiple choice test which covers every topic in the syllabus. A score of 28 and above is the minimum required to pass the course.

What do I do? I begin each class with an interactive reading of the syllabus. This reading is an attempt to establish the parameters of the class. I use a tablet PC, and projector notebook software in an effort to have a measure of flexibility to change the physical configuration of the classroom. I also read aloud. I make a concerted effort to memorize names of students and have a student exchange of numbers and e-mail addresses. I introduce students to the math department and introduce students to tutors. I have them create a math biography and register with the Web-based system. Students then download a notebook viewer and save class notes to a jump drive. I explain my open office policy and we end with an in-class problem set with essential components of the lecture, which is mirrored by the online assignment for that lecture

How do I teach? My approach to teaching has as its foundation the following ideas. The purpose of teaching is to facilitate understanding. Understanding, properly understood is measured not simply by the capacity to memorize and recite facts presented, but by the ability to critically engage with, and to utilize those facts in diverse spheres of endeavors. My preference therefore, is to emphasize depth of understanding. My experience has taught me that when one has mastered some, however small, aspect of mathematics, the confidence that is gained is easily translated into other areas. Given enough time, motivation and help anyone can and will learn. My role is to discern for each student the measures in which these quantities must be allotted. The following perspectives are always present in my teaching: the relationship between the particular course to the discipline as a whole; the applicability of the course content to the "real world"; the notion of mathematics as a universal language and a cultural inheritance of all human beings; and communicating the intrinsic beauty of mathematical ideas and the joy inherent in doing mathematics. In order to translate these general ideas into a working program, I adopt in my teaching the following practices:

- References to the manifestation of mathematical ideas in popular culture are frequently used.
- Wherever possible, attempts are made to integrate the use of technology in the classroom. However it is key that the technology not function as a substitute for the genuine grappling with ideas. Technology is a tool of mathematics and the teaching of mathematics ought not to be overwhelmed by its use. Students must not only be consumers of technology, but also producers.
- Time for individual consultation with students is clearly delineated and constantly stressed. Here it is important to project the attitude that views such consultation as the norm rather than the exception. It is only through such consultation that one can clearly identify areas of student weakness and strength. Individual consultations also provide an atmosphere in which those weaknesses can better be resolved and strengths more effectively amplified.
- Great care must be taken, to present a demeanor characterized by patience and create an environment that nurtures students. This stance not only aids in the effective articulation of important ideas, but it also conditions one to being genuinely respectful of and open to the thoughts of the students on the conduct of the class.
- An insistence on practices within the classroom that contribute to the creation of an atmosphere conducive to learning. For example, punctuality, civility, the elimination of distractions such as cellular phones, legibility and neatness in presentation of work, and the use of appropriate language for the expression of ideas.

Finally, it is my philosophy that I must be engaged in ongoing study not only at the disciplinary level but also with respect to identifying and documenting barriers to student success. This entails conducting research that seeks to identify practices that lead to student success as well as being flexible enough to find ways to incorporate these into how I teach.

Suggestions for Others Teaching Mathematics

- More frequent coursework assessment and repetition of assessments aid student learning.
- Rapid feedback to both student and instructor aids student learning.
- Universal accessibility adds a flexibility, which aids student learning.
- Classroom time is freed up for discussion of subject matter
- Students are able to better monitor their own progress and this promotes student learning.
- More generally, this regime promotes familiarity with standard software packages useful for quantitative studies.
- It places expertise in foundational topics at students' fingertips.

Axely Congress

Physics Professor
Adams State College

The purpose of the Systems Analysis and Design course is to introduce students to technological innovations and the societal issues surrounding their use in our society. Topics include the history of computers, current computer technology and terminology, the Internet, and societal issues related to computer use, such as security, privacy, intellectual property rights, ethics, health, information integrity, cyber terrorism, and the environment. For each societal issue, multiple viewpoints are explored, and both the benefits and risks of computer use in our society are discussed. A look at emerging technologies and the personal computer (PC) of the future is also included. This course is also designed to educate existing and future business managers and information technology (IT) professionals on the tremendous impact ethical issues play in the use of information technology in the modern business world. Students within the course receive purpose and relative meaning behind the foundation of information technology, as well as acquiring an invaluable guide for professionals who deal with information on a day-to day-basis.

In order to create a welcoming classroom I have students introduce themselves in order of seating, and then I test their attention by having them recall the names of all of the students in the class. It breaks the ice with the students and me right from the beginning, and at the same time, it lets them know that they need to pay attention. The essential course components and expectations are introduced through an in-class Q&A over the syllabus. This allows for all of the students to get directly involved from the start, and helps to

mold or tailor the course to better suit the needs of that specific class. While the students are adding and subtracting items from/to the syllabus via our initial dialogue, I ask the students why they would like to change the things they want to change, all the while getting to know them (and their learning styles) at the same time.

MarySusan Potts-Santone
Assistant Academic Specialist
Northeastern University

General Biology 1 is a large lecture course currently comprised of two sections with 250 students in each. Lecture meets for three 65-minute periods per week for 14 weeks. Each student is also enrolled in a lab of roughly 20 students that meets for between 2 and 3 hours per week. A teaching assistant (TA) administers the lab sections. The course is made up of mostly first-year students with a few upperclassmen. It is a required course for students majoring in Nursing, Pharmacy, Health Science, and Mechanical Engineering. Others typically enrolled include transfer biology students and students looking to fulfill their science requirement.

The presentation of material generally involves lectures using PowerPoint along with animation and video. There is also a substantial Blackboard component to the course that includes all course materials (syllabus, contact information, handouts) as well as course and chapter objectives, study guides, and supplementary activities to enhance understanding. Grading is based on lecture exams and final exam, laboratory, and quizzes.

Creating a Welcoming Environment

I introduce myself, my background, my TAs, and encourage students to come see me. I also have students introduce themselves to each other and exchange contact information so that they might feel comfortable contacting someone for notes and course information. I am also adding a statement to the syllabus about my willingness to make accommodations for students with disabilities and reading this statement aloud to reinforce this message.

Essential Course Components

This course is the first in a series on which the other courses build. I make the essential components available on a chapter-by-chapter basis on the Blackboard site. Another essential component of this course is learning how to succeed in the first year of college, which involves note taking, using Blackboard, and studying.

Communicating Clear Expectations

I stress high expectations for each student. I review with the students both course and classroom policies that are outlined in the syllabus and on

Blackboard. I stress the importance of students' ownership of learning and my role as facilitator. I also stress the importance of classroom behavior and minimizing distractions such as ringing cell phones.

Natural Supports

I use study guides that are posted at the beginning of units and use Blackboard to remind students. I have students reflect on the personal ways in which they might be challenged along with having them complete a survey of learning styles if they have not already done so. They then turn in an index card identifying their style and the strategies they plan to use to master the materials for the course. I have reformatted the quizzes to improve readability and have eliminated timed tests over Blackboard.

Multiple Means of Expression

I ask questions as the lecture goes on and wait for answers to engage students. I also require students to discuss the lab activities as they are being performed to enhance understanding for all students. Students are given traditional tests as well as being graded on labs and other activities.

Challenges

The biggest challenge is the size of the lecture and the limitations that it places on time for grading assignments in any other format than multiple choice. However, I recommend using as many strategies as feasible while realizing that some are simply not possible in this format. Consider the use of UID in labs as much as possible.

Jay T. Hatch

Associate Professor
University of Minnesota

Ecological Evaluation of Environmental Problems is a laboratory-based, introductory environmental science course taken as a liberal education requirement primarily by non-science majors. Total enrollment is limited to 36 students. Typically, students meet for three 50-minute periods of "lecture" and one 3-hour period of laboratory each week.

While the course's overarching theme is sustainable living, its main goals are to get students to discover how scientists construct and validate knowledge and how they can use aspects of scientific inquiry to become informed, engaged citizens. Thus, the course's essential outcomes are for students to be able to: (a) access science materials and produce summaries from them that will help them learn scientific concepts and apply them to sustainable living problem-solving exercises; (b) interpret meaning from a complex data set; (c) organize a complex data set so that someone else can interpret meaning; (d) produce thoughtful, content-rich, well-organized written, oral, or other descriptions of the major

ecological principles and concepts studied in the course that show how the concept or principle can be used in the analysis of a sustainable living problem; (f) given a sustainable living issue, produce a communiqué that adequately delineates the issue, identifies the immediate and root causes of it, describes its impacts on current and future natural capital, formulates realistic interventions that move us toward sustainable living, describes how their lives and the lives of their children will be affected depending on what interventions are carried out; and (g) produce a scientific laboratory report acceptable for a 1xxx level college course.

Communicating-to-learn is a major learning strategy for this course. Less than 25% of the "lecture" time involves actual lecture-style delivery. The remainder of the time is spent carrying out activities that include pair and group interactive, problem solving, assessments and challenges of preconceptions; and small-group to whole-class critical thinking exercises. To prepare for each day's class time, students develop answers to a series of relevant questions and do a problem-solving exercise, a reflective essay, or an environmental issue thumbnail that they build upon in class. Students choose which work they will submit for grading.

The laboratory component of the course is field-based. Students visit urban lakes, streams, and forested areas, where they work in groups of two to four to make observations and collect data that will allow them to assess the environmental status of the sites. In the laboratory, they work in groups of two to three to process samples, test hypotheses, organize and interpret data with the help of computers, draw conclusions, and discuss their limitations. Upperclass undergraduates assist the instructor in guiding students through the field and laboratory work and with the production of formal laboratory reports.

Two of the most important UID strategies I employ in the course are (a) use of small group (two-four students) to tackle field/laboratory work, and classroom problem-solving exercises, and (b) allowing students to select which kinds of assignments they will submit for grading.

Most students who take this course are not majoring in science or even related fields. Many exhibit science anxiety; others just don't like science. Group work, especially outdoors (when guided and monitored), helps these students overcome their fear and dislike of science. Having various small groups take on various aspects of data collection and laboratory processing usually fosters camaraderie among most of a lab section. Students with physical disabilities participate as members of groups where partitioning of labor is the norm. They take on important tasks that they can perform at the site and in the lab and allow others to perform certain physical tasks that they cannot. Sometimes, with the help of their group members, they engage in tasks that they thought they could not do.

Having a variety of types of assignments from which students can choose helps in several ways. Foremost, it is a student-centered approach. Because the assignments include a way of learning processes, students can align them with

their learning style preferences. Because the assignments have flexible formats of expression, students are not forced into a single type of communication (though they are encouraged to try more than one type, and, in an exception to the rule, lab reports must be written and follow a standard format). The challenge, of course, is to come up with alternative assignments that lead to similar learning outcomes and are based on reasonably similar levels of rigor. It has taken me years to develop my existing repertoire.

Social Sciences and Humanities

Some instructors in the areas of Social Sciences and Humanities have found that many of their teaching peers held damaging preconceived notions about their ability to transform their teaching through Universal Instructional Design (UID). The eight principles of UID seek to eliminate or ameliorate obstacles to learning so that all students in the class will have an enhanced educational experience. Students with disabilities confront and often overcome the limitations imposed by their disability, but other limitations result from the assumptions of instructors concerning the student's disability. These instructor assumptions prevent or limit the implementation of UID and are detrimental to the education of all students, not just those with a disability. The assumptions take into account the challenges that students with disabilities might have with courses but ignore the fact that other students have the same challenges to varying degrees. Often, these assumptions involve looking at courses and teaching methods from the instructor's perspective, not the students' perspectives. These assumptions are as follows. For each assumption UID examples and related UID guiding principles are provided.

Assumption 1. The relevance of our course content is obvious to students. Just because the instructor has worked hard to make the course relevant, will students see it that way? Is the relevance based on student interest, or teaching methodology (e.g., case studies, simulations, inquiry methods), or on an instrumental benefit (e.g., satisfies degree requirements, necessary knowledge or skills for career)?

- UID Examples: Provide academic and nonacademic readings that discuss the relevance of subject matter to contemporary life; give assignments in which students make connections between the course content and their own lives; talk about ways that the discipline may have privileged or excluded various ways of collecting, analyzing, interpreting, and disseminating information; discuss with students how topic is relevant to you (instructor) and brainstorm ways that it may be relevant for students personally and/or professionally; have students choose their own contemporary problem, issue, or hot topic to discuss in small groups—the instructor later connects the problem to the course content; have students do reflective writing on why they should do well in this course and later have a discussion on that topic.
- UID Principles: Create a welcoming classroom climate, determine essential components of the course, explore ways to incorporate natural supports for learning, and provide varied instructional methods.

Assumption 2. Students come to class creative, motivated, inquisitive—eager to learn and participate, and the instructor's function is to supply the content. If this is not happening in a class, instructors may make negative

attributions to the students, but the instructor's conduct and methodology have great influence on student motivation.

- UID Examples: Diverse interactions promote creativity; rewards and incentives (e.g., random bonus points) can increase motivation, mystery, and inquisitiveness. Model openness, flexibility, love of the mystery of your discipline, and even doubt; provide opportunities for students to talk with their peers about how they think through creative problems; provide opportunities for students to share their unique perspectives, experiences and approaches to learning; have students work individually or in groups on complex, open-ended projects that synthesize course content; provide practice and feedback for every stage of projects.
- UID Principles: Creating a welcoming classroom climate, explore ways to incorporate natural supports for learning, provide varied instructional methods, and encourage faculty-student contact.

Assumption 3. Students with disabilities are limited in their ability to learn course content and participate in class activities. Just as instructors often assume students who have not done well on tests are intellectually limited, they assume that requests for accommodations indicate student limits that cannot be overcome. What seems like a student's limitation may be the limitations of our assignments, delivery style, or classroom environment .

- UID Examples: Build in supports for important course features. Practice quizzes can improve a students' ability to perform on multiple choice tests. Prior knowledge of class discussion topics enables a non-speaking student to prepare her voice synthesizer.
- UID Principles: Explore ways to incorporate natural supports for learning, provide varied instructional methods, provide a variety of ways for students to demonstrate knowledge, and use technology to enhance learning opportunities.

Assumption 4. Students have adequate strategies for reading text, taking notes, taking tests, completing assignments, and participating in discussions and small group activities. If we truly examined all our students, we would find many of them lack these basic skills. It may be difficult to distinguish behaviorally between other student characteristics and what typically is defined as disability.

- UID Examples: Help students understand small group dynamics and provide structure and strategies for working together; have groups share successful strategies for reading, note taking, and test taking; model strategies for reading texts—create chapter outlines, stress the importance of bold type and graphs, have teaching assistants or Supplemental Instruction leaders point out how they read; model note taking by providing outlines of lecture notes.

- UID Principles: Explore ways to incorporate natural supports for learning, provide varied instructional methods, and provide a variety of ways for students to demonstrate knowledge.

Assumption 5. The best teaching method for a particular content is that through which the instructor successfully mastered the content when he/she was a student. However, very few undergraduates will become college instructors and probably do not greatly resemble their instructors' academic ability or learning style. Instructors need to incorporate a variety of alternative teaching strategies.

- UID Examples: Instructors can read a UID guidebook; do ongoing reflection about their own history of learning; become aware of students' approaches to learning; include a reflective part to each assignment in which students write about the successes and problems they encountered when doing the assignment; have an all-class discussion about problems and successes with an assignment, delivery style, or classroom environment; identify the core concepts to teach and determine what technique(s) may enhance learning; participate in professional learning circles to practice engaged learning strategies.
- UID Principles: Provide varied instructional methods, provide a variety of ways for students to demonstrate knowledge, and encourage faculty-student contact.

Assumption 6. There is one most effective way to assess knowledge. Saying that multiple-choice questions or essay questions are good or bad methods of assessment misses the point. Various aspects of course content may be effectively assessed through different methods. Assessment techniques should correspond to course goals and creating good assessments should be an ongoing research and development process.

- UID Examples: How important to course goals is having a timed test? Provide diverse modes of assessment over the semester, which may include tests, papers, short writing assignments, in-class activities, and individual or group projects. Each mode should have practice assignments so that students understand how to be successful. Consider carefully how a specific learning outcome would be effectively assessed and link the learning outcome to the assessment technique
- UID Principles: Determine the essential components of the course, provide a variety of ways for students to demonstrate knowledge, and use technology to enhance learning opportunities.

Assumption 7. Every student can think about our course material at an abstract level. Students may not be putting things "together" that we assume they are—Fact A + Fact B does not necessarily lead to Revelation X. If we want students to think, behave, write, etc., abstractly, we need to teach them to do so.

- UID Examples: Giving students instruction and practice at the final forms of behavior we expect brings the whole class closer together and depends less on the advantages or disabilities students bring to it. Have students apply abstract course concepts to events, experiences, and issues with which they are already familiar. Intentionally discuss how the current topic (content area) connects to previously learned topics, current world events, and their personal experiences. Use engaged learning strategies that provide concrete examples of the abstract theory/issue being discussed in class. Subdivide a comprehensive assignment into smaller concrete assignments that build toward this comprehensive assignment.
- UID Principles: Determine the essential components of the course, provide clear expectations and feedback, explore ways to incorporate natural supports for learning, provide varied instructional methods, and provide a variety of ways for students to demonstrate knowledge.

In the following sections, instructors from a variety of fields in the social sciences and humanities share the ways in which they are overcoming these damaging assumptions about teaching and learning in their classrooms.

Karen A. Lemke

Instructor

Adams State College

Adams State College is in a unique circumstance of having both a 2-year college and 4-year college mission to serve the region's higher education needs. Adams State is one of two 4-year colleges in Colorado that offers a comprehensive developmental studies program. As is true of many colleges, many of our students come to college with a high school diploma but still need preparation to be successful with college-level reading, writing, and mathematics requirements. Many students are from linguistically diverse backgrounds—many speak Spanish as their first language, and many are of the first generation in their family to attend college.

As a learner of languages myself—I'm slowly learning Spanish—I recognize basic vocabulary building is essential. Jet-lagged bleary-eyed students from overseas attempt to navigate the bookstore, the cafeteria, and the myriad idioms of our complicated U. S. and unique regional cultures, and even U. S. born students may find middle-class concepts and fancy words like "syllabus" challenging and intimidating. In the first weeks of classes students brought many examples of words they needed to know. I came upon the idea to create an open Friday vocabulary lesson to create a space for students to ask about any and all words they experience throughout the week. In this section I will describe how I use Universal Instruction Design principles in this vocabulary class.

The name of the course is "College Reading and Writing Level I" and is designed for students whose diagnostic test scores indicate they need additional support with both reading and writing strategies. The course objectives include learning to employ a variety of invention, writing and revision strategies, to develop a thesis statement, to fulfill the thesis statement in a multiple paragraph essay, to write simple and compound sentences with accuracy, to comprehend and respond to a variety of texts, to recognize vocabulary at the high school level or above, to employ a variety of active reading strategies, and to identify and participate in transforming counterproductive perspectives about reading and writing. This vocabulary lesson I am about to describe lays the foundation for many of the stated objectives of the course.

The procedure of the lesson is as follows, and once students learn the procedure it becomes a consistent piece of their language work for the week. In the first week of school I distribute a sheet of paper (and post electronically on a WebCT shell for all students to be able to access—there is also first week hands-on lesson in the computer lab on technology that will be used in the class) which shows the exact format I expect students to follow: typed, double spaced, Modern Language Association (MLA) heading in the upper left-hand corner with name, date, class name and assignment and 5 vocabulary words accompanied by their dictionary definitions, reasons why they were chosen, and sentences with the word used in context. There is also a citation for the dictionary or source in which the student found the definition to begin to attribute sources without plagiarizing. Students are told to keep track of words they experience throughout the week, whether they are from readings assigned in my class, encountered on the TV or magazines or overheard at the cafeteria or from other class readings. Each week they are to turn in 5 words or up to 10 words to receive additional credit for a possible 40 out of 20 points per week.

On the following Friday, many students bring these typed lists of words to class. We are fortunate to have access to a classroom with a Smart Board computer project system, and we begin to list on the board examples from the student lists—all students give at least one word per week. We begin by spelling the word—most students give the pronunciation a try, but it's easy to spell it out if things get complicated. I adjust the font to 24 and type as the first student spells a word. Then I begin modeling how I would figure a new word out—I pose questions. For example, if the word is "mononucleosis," I may begin by asking "What words do we know that have the same ending -sis?" Students then list other words that end in -sis. Then we figure out the word's part of speech—I've already told students that 99% of new vocabulary will be nouns, adjectives and verbs—the other parts of speech (conjunctions, prepositions, articles, interjections—we have a laugh about how they can learn interjections on their own outside of class if they wish) are fairly limited—once you learn the basics, you don't learn many new ones, and adverbs are almost always just adjectives with an -ly on the end. So we figure out the -sis words are things and therefore nouns. I change the font color of the word on the projector to blue so I can keep

all nouns blue, verbs green and adjectives red so there is also a sorting pattern and help students recognize other word ending patterns as they emerge. After we've figured out its part of speech, I look at components within the word—using the highlight on the screen, I select just the “nucleo” part of the word and say it reminds me of the word nucleus, so maybe this has something to do with cells or nuclei, and then I do the same with highlighting “mono” and saying it reminds me of other words like monologue, and make the connection to being a single/one. After I've guessed at the definition, students can take no more suspense and we hear the dictionary definition of the word, comparing it to what we predicted it might mean. Often other connections ensue—“my brother had mono once”, “isn't that the kissing disease?” “what class did you learn that word in?” so students are interacting with each other and knitting together more significance for each of the vocabulary words. If we're not satisfied with the dictionary definition, we are able to right click on the word to check Microsoft's “look up” feature, or even jump on the Web to copy/paste into dictionary.com or Wikipedia until we get the answer we're looking for. Sometimes we even delve into the word's history, first usage, etymology and how its usage and meaning has changed through time. Once on the Web, there are audio pronunciation keys and audio clips, so learners can hear the word pronounced as many times as they wish. I once even created an on-the-spot visual demonstration—the word was “mobius” and I cut a strip of paper, twisted it and taped it to pass around to students to experience the definition in hand. Students also write down on the back of their paper to be handed in the notes from class—they're practicing notetaking and making a class dictionary of all words the students collectively encountered each week. The final portfolio of the class includes all 15 of these weekly dictionaries to document a semester's worth of words.

Where do we see evidence of UID in this lesson? Regarding criteria one, creating a welcoming classroom, the whole community is invited to participate—in fact, sometimes children of students attend the class when local K-12 classes are off for the day. I send the message that vocabulary is for everybody—we are all continuing to learn new words, even the professor. The format is meant to reduce intimidation and make confusion a starting point of the learning process. Since the classroom has a bigger boundary on Fridays, students may start to realize all classrooms can expand and open. For criteria two, addressing essential course components, students can hardly write simple and compound sentences if they can't recognize nouns and verbs—this simple lesson helps students get very comfortable with the basic building blocks of sentences and breaks that frustration of not having fluency in the academic meta-language we use to describe their sentences. Many of the vocabulary words come directly from the readings in the class—directly tying into reading comprehension and active reading strategies. Additionally, the course objective of transforming counterproductive perspectives is achieved through tackling affective barriers of frustration, fear, shyness, and previous patterns or perceptions of failure.

The third and fourth principles of clear communication of expectations and constructive feedback occur with the sample example available in paper form and electronically ahead of time, the consistent weekly pattern, the in-class immediate feedback, the comments on their returned written work, and through collaboration with classmates as we all tackle the challenges of figuring out what these words mean. Immediate tangible feedback—on the board, modeling and giving feedback, how to read, how to decode your reading, what do you know about this already, modeling and checking their work, students giving each other feedback, statement in syllabus, weekly pattern, refer to these things on the day of class

Number five, natural supports for learning occur through making information available ahead of time, and electronically, and using Web-based resources such as reference Web sites and their visual, verbal, and audio components as well as tools built into the Microsoft Word software (font colors and sizes, word look up/synonyms/antonyms. Students do need necessarily need to have a disability to benefit from these supports—whether a student is an English language learner who wants to practice vowel pronunciation, or a student preparing for the Graduate Record Examination who wants to feel more confident with words he or she has only seen in print—many people benefit from the varied resources to which they have access.

Number six, regarding teaching methods that consider diverse learning styles, abilities, ways of knowing, and previous experience and background knowledge, the students create the content of the lesson based on the words they choose that are new to them. Students prepare their contributions ahead of time so they can spend as much time as they need to collect and assemble their work. Students collaborate as they guess and piece together each others' definitions before learning the "official" dictionary definition. Students also learn subtle nuances of denotation versus connotation, literal versus metaphorical usage, and how nouns, verbs, and adjectives can become etymologically interrelated. There is color-coded visual representation of the words, sorting into categories of parts of speech, kinesthetic note-taking, much out-loud spelling and discussion, collaborative problem solving, peer correction and encouragement, stimulating interest in the lives and words of students outside of this class, and a written and electronic record of ideas that took place during class.

For criteria eight, students demonstrate their knowledge through the multiple means of written work, discussion, spelling, inductive and deductive guessing/hypothesizing, note taking, and having a space to share connections to ideas related to the new words they are experiencing. Finally, for criteria nine, this lesson promotes much interaction not only among the students and the instructor but invites the campus community to "play" our vocabulary game with us. The second semester that I taught this class I began to advertise on the school Web portal a challenge not only to my enrolled students but any student or staff or community member to stump me—the gauntlet thrown—that I dare

anyone to come to my class with a word we can't figure out. This humorous approach shows students openness, a welcome environment, my fallibility and resilience, my willingness to admit I don't know a word but I'm not afraid to say so and to figure it out, and how no word is unreachable—there are many resources and ways to figure out new words.

Starting fall semester 2007 I plan to use the UID course evaluation template. I can compare pass rates and/or student satisfaction prior to implementing UID interventions to pass rates and/or student satisfaction in the UID enhanced course.

I model that I don't know all words, and I model interacting with words. Many people assume "teachers are supposed to know the words" but they see me as a searcher on the journey just like them—giving them an opportunity to identify with someone who has had success with things that presently challenge them. Students then come to challenge the instructor—I pull up real tools these students can work with, co-investigating language with them. I create a consistency—every Friday—we may be struggling with stuff on Monday and Wednesday, but we know what will happen Friday, and it will be fun, systemic. We allow English language learners to have a space to ask questions and learn the material.

Thomas Brothen

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University Of Minnesota

Background: This account deals with the redesign of a course required of all psychology majors. Due to curriculum changes in 2005-2006 in the Department of Psychology, the major project course was to drop from 4 to 3 credits in fall semester 2007. This course had been the source of dissatisfaction for departmental administrators, faculty, and students alike. The credit change and concerns about the course indicated that a basic redesign of the course would be the best approach. Upon taking responsibility for this task, I decided to incorporate UID principles throughout the design process for its first offering in fall semester 2007. In this account, I describe how I incorporated basic UID elements into the course.

Creating a Welcoming Classroom

Surveys of students had indicated that they approached the major project course with trepidation. They needed it to graduate but had heard that the task of writing the paper was difficult and the staff was intimidating. I designed two components to deal with these concerns. First, the initial class day is designed not only to inform students of class procedures and requirements, but also to model an important aspect of the course—collaboration and discussion. After brief introductions, students break into groups of four for about 5 minutes. Their task is to each come up with three "facts" about themselves—two correct and

one incorrect. Each student presents these “facts” to the other group members whose task is to determine which is false. This task serves as an icebreaker, as a model of group processes that continues throughout the semester, and as a metaphor for their task of assessing information as they research and write their papers. Second, the students’ first graded course assignment is to answer three questions: 1. “How do you think your psychology degree will be valuable to you personally?” 2. “What kind of career(s) do you see yourself pursuing after you graduate?” 3. “Do you have an idea of what topic you would like to write about for your Major Project? Say what it is or why you don't.” The assignment is delivered online with BlackBoard’s WebVista and is due the first week of class. My task is to spend the weekend reading, commenting on, and grading the submissions (190 in spring!). The objective of this marathon grading project is to establish an immediate contact with each student, showing them that their professor is interested in them and willing to spend time toward that goal, and setting the tone for the rest of the semester. The assignment grading “stakes” are low (1% of final grade) and nearly every student who finishes it gets the maximum points.

Addressing Essential Course Components

The course has two basic purposes—to serve as a capstone experience in which students reflect on their psychology degree programs and their future goals and as a supportive environment in which they write their senior papers. This is made very clear to students on the first day of class and in all written course materials. To help them reflect, students read a book that provides an overview of the field of psychology. To make sure they read it in a timely fashion, I created simple WebVista online reading quizzes in true false format that students take as many times as they like (with high scores counting toward their grades) before an early semester deadline. They also read a journal article about evaluating psychology degree programs and complete a writing assignment that asks them to put their degree experience into this context. The main part of the course for students is writing their papers and several assignments take small steps toward their practicing or acquiring the requisite skills. For example, they have American Psychological Association (APA) style exercises on document formatting, writing with inclusive language, and searching the literature with PsychInfo.

Communicating Clear Expectations

The course’s information hub is the WebVista online site. All written materials such as class calendar, grading standards, writing aids, etc., are there. I took special care in creating these materials so they would be easily accessible to students using screen readers. Doing this, I believe, made me more conscious about clarity of presentation for all students. On the first class day, students receive a paper copy of the class calendar that refers them to the course Web site for details.

Providing Constructive Feedback

A major thrust of the course is to provide students with timely and helpful feedback. The goal is to insure that students have the skills necessary to write good papers. If they lack some of those skills, our task is to point out what they need to do or refer them for writing assistance at the campus writing center, not fix it for them. Accordingly, the online quizzes tell students which items on an attempt they got wrong and where to look in the book for the right answer. Because they can take the quizzes as many times as they like, they can work toward mastery and get 100% of the available points. Also, students submit their assignments, including their draft and final paper, online and get comments and grades returned online. A more complete description follows.

Providing Natural Supports

Four techniques comprise the supports available to students. First, the WebVista course site makes all information about requirements available in a variety of formats. Students can use screen readers to access it online or print it out if that is most useful to them. In addition, the three overview class sessions that all students attend at the start of the semester are made available on the Web site for students wishing to review them and for students who miss them. Second, the laboratory section leaders are the primary contacts for students as they work on their papers. Course assignments are designed to bring students into close contact with their section leaders. For example, students have to write paper proposals and schedule individual meetings with section leaders to discuss them. Third, in lab sessions throughout the semester, students work in base groups of four. These groups include students who made similar responses as to their goals in the initial assignment. Fourth, students post their reactions to assignments and other issues to a WebVista discussion board (discussion to follow).

Using Teaching Methods That Consider Diverse Learning Styles

For years, the major project in psychology course has been taught in one way for all students. They had to design an empirical research project, and write it in APA style as if they had actually performed it. They had to state hypotheses, say how they would analyze the data, and discuss what it meant. The project leaned heavily on the skills necessary for students going on to graduate work in basic research psychology. In the revised course, students can choose among three options: (a) the research lab option in which they work with faculty members on their research programs and write a paper reflecting that experience, (b) the community service option in which students work in social service agencies and write about some issue stemming from that, and (c) an individual interest option in which they write a paper reflecting their own personal or occupational interests. This broadening of choice takes into account

not only what students are interested in doing but also what they feel capable of doing.

Offering Multiple Ways for Students to Demonstrate Their Knowledge

I have approached this element of UID from a developmental perspective. In the course, I have 10 writing assignments, reading quizzes, and a poster session presentation on the paper counting towards the final grade. The goal of all of them except for the final paper and the presentation is to determine where students are on a particular skill and then help them scaffold their current abilities with the feedback and assistance the course staff gives them on assignments. For example, the reading quizzes may be taken as many times as students desire to gain the maximum points. The feedback they get on them directs them to areas of the book to which they need to pay more attention. Also, several assignments require students to use correct APA style. I provide examples and an online textbook they can access to find the exact rules and advice from the book's author on how to implement them.

Promoting Interaction Among Students and Between You and the Students

One goal of the first assignment (previously described) is to help students feel more comfortable about seeking help and advice from me. An additional course requirement is for students to meet individually with their section leaders twice during the semester to discuss their papers. Students work in base groups during the lab sessions so that the section leaders can visit groups and talk with them in a more intimate setting than the entire 22-student class. Finally, students have an optional assignment to post their thoughts and questions to an online discussion board for reactions from other students and course staff. This is voluntary and designed to create a source for ideas and potential collaboration. Although there were not a great number of postings during the first semester, I found that for each posting, there were a hundred readers. I told this to the second semester students and the rate of posting increased greatly.

Specific Suggestions for Others

When designing a new course or a new version of an old course, it is important to take a UID approach. I did this primarily with how I structured assignments. As previously noted, the assignments diagnose student needs and give them practice and feedback on improving their skills. In addition, the method by which they are "delivered" to students, graded, and returned to them follows UID principles. First, each assignment is prefaced in class with a group assignment. For example, students download from the course Web site and work in the computer classroom on a list of "scrambled" references to put them in the proper APA format. Immediately upon finishing and printing them, the section instructor gives groups feedback in a non-graded context. That pre-assignment is followed by a graded assignment covering the same skills.

Each individual assignment is delivered by WebVista along with clear instructions to students. This eliminates the problem arising from students unable for a variety of reasons to come to class when a paper assignment is handed out. Students submit the assignments online in Word file format. Section leaders use "Insert Comments" and "Track Changes" to provide feedback on the files and return them to students electronically. Students use this feedback to remediate their difficulties with writing or APA style. This process is useful to all students because the usual vagaries of lost assignments, etc., are avoided. The benefits to students with disabilities that interfere with their reading scribbled comments on 12 point font paper assignments are obvious. I am closely watching all aspects of these procedures and the course in general throughout its first offerings this year. Self-evaluation will be paramount and students' evaluations crucial.

UID is an extremely useful organizing strategy for designing or redesigning courses and technology can be a large part of that. Because teaching and learning technology is changing so fast, instructors must keep up with the changes but also be aware of the limitations. For example, I found using Track Changes and Insert Comments within WebVista were not saved when returned to students. This problem was solved by downloading files, editing them, and then uploading to WebVista for return to students. There is much to consider and learn, but the rewards are great.

Kristin Bransford

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Concordia University

This course Adolescent Psychology examines the developmental phenomena of adolescence, it's physiological, emotional, cognitive, social, parent-child, and vocational dimensions, and incorporates a service-learning component with an alternative high school. Adolescent psychology is an elective within the psychology major and required for specified K-12 education majors. The goal of this course is to increase students' understanding and appreciation of adolescents thereby enhancing the students' interactions with adolescents in a variety of settings including family, school, and society at large.

The student will:

- Summarize the major issues surrounding the nature of adolescent development
- Identify and summarize the major issues surrounding adolescent biological, physical, and cognitive development
- Identify and summarize the major issues surrounding social, emotional, moral, identity, and personality development
- Recognize various adolescent problems and issues related to adolescent stress, health, and mental health

- Recognize the effects of families, peers, schools, religion, gender, and culture on adolescent development and motivation

Creating a Welcoming Environment

Because this course incorporates a service-learning project with students enrolled in a local alternative high school, it was crucial that I establish a welcoming environment from day one. I really wanted to create this supportive learning environment for my students with the long-term goal of expanding this environment to the service-learning collaboration with the high school students. To establish this welcoming environment, I spent considerable time on the introductions of everyone in the class, including my professional experiences, and having students interact to learn about each others' strengths and experiences with youth. After spending sufficient time with introductions, I reviewed the course syllabus and discussed the importance of using support services and staying connected with me via e-mail or voice-mail. I encouraged students to send me their questions regarding the course and assignments and emphasized the importance of sharing current research and events with each other throughout the course. I ended with a handout asking each student to describe how they will use their strengths in the service-learning project, their personal and professional goals for taking this course, and their strategies for staying engaged and being successful in the course. I encouraged the students to keep a copy of this handout and periodically review their strategies and goals that they listed.

To continue the interaction between students, I had each student complete a questionnaire with a series of questions beginning with the statement "When I was 16." These questions provided the focus for our discussion on the second day of class with the learning objectives of gaining perspectives on the range of adolescent experiences and to encourage more discussion between students. I found that spending several days developing a community of learners appeared to encourage students to discuss issues and establish comfort in asking questions during the class period.

Several weeks after the semester began at Concordia, we started the collaboration with the alternative high school students. To create a welcoming environment for these high school students, I spent the first session having all students introduce themselves and then having fun with the icebreaker two truths and a lie. Once students started to feel comfortable with each other, the service-learning collaboration project goals were discussed.

Addressing Essential Course Components

The primary change that I incorporated in my essential course components was to review and refine the learning outcomes for the course and then determine if my course schedule really reflected what is emphasized in these learning outcomes. From this reflection, I determined that additional engaged learning strategies should be included in the course schedule to gain a

deeper understanding of the concepts and ability to apply these concepts when working with adolescents. These engaged learning strategies, including double entry journals, role play exercises, and deeper processing strategies, have been included in the course schedule. I found that including these engaged learning strategies and practicing various problem solving models encouraged students to learn the material and to ask deeper-level questions that probably wouldn't have been asked during a lecture on the material.

Upon completing this course, the student will be able to:

- Identify the methodology used by developmental psychologists to conduct research and apply these concepts to an individual research project
- Understand the role of cognitive development and social cognition in adolescent development
- Understand the components of information processing theories and emotional intelligence and their impact on adolescent development
- Understand the dimensions of adolescent self-understanding and identity development
- Understand the dimensions of self-esteem and self-concept in adolescent development
- Understand the theories of moral development and their impact on adolescent development
- Understand adolescent physical development including the psychological dimension of body image
- Understand the impact of gender and sexuality on adolescent development
- Understand the impact of families and peers on adolescent development
- Understand the impact of culture on adolescent development
- Understand the role of school in adolescent development, including achievement motivation and bullying
- Understand the impact of various adolescent problems on adolescent development
- Apply adolescent psychology theories to assignments and a service-learning project
- Apply adolescent psychology theories to the student's future occupational setting

Communicating Clear Expectations

During the first class period every student is provided with a printed syllabus thoroughly describing all course assignments with the due dates and grading information, a course schedule outlining the reading assignments, lecture topics, and exams, and a description of the academic integrity policy and class expectations. In addition, the syllabus includes a worksheet listing all assignments with their corresponding point values so students can calculate their grade throughout the semester. I really encouraged students to take responsibility in their learning.

To assist the students in understanding the learning goals and academic assignments associated with the service-learning project, I have divided this larger project into several smaller assignments. Each smaller assignment includes a detailed description of the requirements for successful completion of the project and due dates. The project is divided into the following sections: (a) submit a list of 5 peer-reviewed journal articles; (b) submit 5 journal article papers outlining the important research findings in two or three paragraphs and summarizing how you will use this research in the development of your project in two or three paragraphs; (c) submit project; (d) submit research symposium poster; and (e) participate in research symposium. I found that dividing this large assignment into parts allowed students to focus on each aspect of the assignment and to ask for feedback throughout the semester. This process appears to have increased the quality of research on the topic and the public service announcements.

Providing Constructive Feedback

Starting the first day of class, I encouraged students to e-mail me any questions or concerns regarding the course or course assignments. It is my policy to return e-mails as soon as possible to ensure prompt feedback to their questions or concerns. My prompt feedback appears to have encouraged students to frequently e-mail me and continue the learning dialogue when class is not meeting. In addition, I frequently e-mail class updates providing additional information and feedback regarding assignments, service-learning issues, etc., to keep the students engaged and informed about the course. These e-mails appeared to encourage students to feel comfortable discussing their questions and concerns during class.

To help the students feel successful in the use of test-taking strategies, the completion of course assignments, and their service-learning collaboration role, I have encouraged more dialogue during the class period to ask questions and get feedback from me and other students.

Providing Natural Supports For Learning

To provide additional structure and support for my class lectures and note taking, I sent outlines of my lectures to all students. The lecture outlines allowed students to participate more effectively in class discussions that supplemented the lectures. Another natural support that I provided to all students included sending an outline of the exam objectives and the structure of the exam. In addition, all students were allowed extended time to complete the exam. Finally, I discussed strategies for deeper processing of the course material, using the structure of the chapters in the text to better understand the content, and test taking strategies before the first exam. It appeared that some students felt a greater sense of self-efficacy in their academic success as they learned more strategies for learning, retaining, and applying course information.

Using Teaching Methods That Consider Diverse Learning Styles

I teach this course using a variety of teaching strategies and methods including lectures and large group discussions, small group work, engaged learning strategies, viewing and discussing selected videos, and service-learning. I try to balance these teaching methods throughout the course so that all students can use their strengths to learn the course material. To facilitate a greater understanding of the content in a video, I provided a set of questions to answer during and after the video. These questions also provided the structure for discussing and applying the material to the learning objectives.

To assist students in gaining a greater understanding of the reading assignments, I required students to complete double-entry journal reflection papers for each assigned article. These reflection papers required students to cite quotes from the article and then discuss how each quote relates to information in their text, to themselves, to their future professional role, or to our service-learning project. In addition, students were required to write a conclusion on how this article helped them understand an aspect of adolescent development or how to be more effective in their service-learning project. This assignment enhanced the learning outcomes of the service-learning project and encouraged students to read and understand the articles at a deeper level.

Before I used any engaged learning strategy, including role play exercises, I provided students with a handout describing the activity and discussed the learning goals for the activity. While using any engaged learning strategy, I processed the learning with the students and encouraged their questions and feedback on the strategy.

Finally, the strengths identified by each student at the beginning of the semester that they bring to the classroom from their previous experiences were emphasized throughout the service-learning project to enhance the collaboration between college and high school students. Students shared their strengths when needed to effectively complete the public service announcement. Technological skills, research skills, interpersonal skills, and creativity were all essential for the success of this project. This sharing of strengths really encouraged students to teach and learn from each other.

Offering Multiple Ways for Students to Demonstrate Their Knowledge

I assess students' knowledge in a variety of ways including exams, double-entry journal assignments, service-learning project, final exam, and classroom assignments. The final grade for the semester includes a balance of examinations and written assignments. The exams are primarily short answer and essay questions to facilitate deeper learning of the course material.

In addition, throughout the semester students practiced and discussed various problem solving models, bullying interventions, and learning techniques to demonstrate their knowledge and ability to apply these strategies when working with adolescents. After practicing each strategy, I facilitated a discussion on the learning that occurred and answered questions regarding the strategy and

ways to effectively use this strategy when working with adolescents. Students often expressed that they really appreciated practicing these strategies and that these exercises helped them learn the course material more effectively.

Promoting Interaction Among Students and Between You and the Students

To promote a sense of community and interaction among my students, I use small group work, engaged learning strategies, and classroom discussions. In addition, I frequently send e-mail messages to all students encouraging them to send me their questions or concerns regarding the course content or assignments. I respond promptly and reinforce that their question or concern is important enough that I would like to bring it up in the next class period. Students seemed very pleased that I would take their concern or question seriously enough to discuss with the entire class. This practice has encouraged students to send frequent e-mails and has enhanced the understanding of assignments and course content.

Because the service learning project is a collaborative project between college and high school students, there were frequent interactions during these sessions. Students exchanged e-mail addresses and were encouraged to send their public service announcement ideas and questions to all members of the group throughout the semester. I required all e-mails to include a copy to the high school teacher and me. I found that the collaborative nature of the service-learning project encouraged students to form study groups to prepare for the exams. This was a natural progression that occurred from this collaboration and benefited students in their academic success.

After returning examinations, I had students reflect on their study habits for the exam. I encouraged students to meet with me to review their responses and to get additional feedback regarding test taking strategies and learning strategies. I found that students benefited from reviewing their preparation, or lack of preparation, after returning their exam and were often very interested in discussing new strategies for learning the course material.

David L. Ghere

Associate Professor of History
University of Minnesota

My primary teaching responsibility is Perspectives in American History, a freshman-level multicultural survey of American History with 35-40 students in each class. As such, the essential components of the course include conveying appropriate historical content including vocabulary, key concepts, and important personalities, as well as developing historical analysis by assessing how situations change over time, making connections of cause and effect, and recognizing the relationship between events and their larger context. Other essential components correspond to my goal of improving student academic skills such as identifying key points, summarizing narratives, improving writing

ability, and developing critical thinking skills. Finally, my teaching methods result in other essential components such as distinguishing between historical myth and historical reality, comparing multiple diverse perspectives, and promoting student-centered learning by giving voice and choice to students.

Perspectives in American History incorporates a variety of active learning situations, particularly through the use of classroom simulations, role playing questions, analysis of historical documents, and small group activities. In the simulations the student confronts the historical situation, weighs the various arguments, and reaches comparable conclusions to those in the real experience. The issues examined and argued in the simulations are key points for the long essay questions on the exams so students can utilize their simulation experience along with their factual knowledge and understanding of concepts. The historical documents and speeches have been selected and edited to highlight specific points for class discussion. Working on group activities students share ideas and improve their own understanding by explaining issues to other students. Some students display skills and abilities in these situations that deserve evaluation and recognition.

A typical 2-hour class is organized into four 20-30 minute segments with a 10-minute break about halfway through the class. The first and third segments are predominately lecture with frequent instructor questions. The second and fourth segments consist of a classroom activity, a document analysis, discussion of a short writing assignment, video clips, or student presentations. Classroom simulations require one segment to conduct and a second segment to discuss the lessons learned. This organization and the class size (35-40) enables me to utilize a variety of teaching methods and maintain student interest and involvement in the class.

Perspectives in American History has weekly short writing assignments that consist of two basic types. The first type requires students to identify key points or summarize events from a two- to three-page section of the text. The second type asks students to assume a particular role (given the background information from the assigned reading) and reflect on what their actions or decisions would be in that situation. These assignments gradually enhance the students' organization and analysis skills, as well as their critical thinking and creativity. They are keyed to issues in the textbooks as well as topics for class discussion. This promotes the students' completion of the reading assignment and enhances their ability to contribute to the class discussion.

The long essay questions on the exams focus on broad themes that require students to consolidate and compare information and ideas over the span of a historical period. The long essay question is announced one week in advance of the exam so students can organize their thoughts and look for evidence to support their arguments. This practice not only develops the students' writing skills, but enables the instructor to have much higher expectations about the preparation for the essay and the quality of the arguments. Review sheets assist students in effectively organizing study time,

promote student visits to instructor office hours, and result in a more obvious connection between increased preparation and higher grades on exams. Review questions are keyed to textbook chapters and increase student use of the textbook in preparing for the tests.

UID Example - Extended Time on Tests

I used to give tests that students were required to complete within the normal class time. After studying UID and determining the essential components of the course, I realized that I was creating artificial constraints on my students that were irrelevant to the goals for my course. The purpose of my tests is to assess the students' knowledge of the historical content and their ability to conduct historical analysis and comprehend historical developments. The speed with which they complete the test is irrelevant. Limited timed tests advantage fast writers while disadvantaging thoughtful, meticulous writers as well as those less familiar with the English language and some students with a disability. In addition, giving additional time on tests relieves some aspects of test anxiety. As a result, all of my students have the opportunity for extended time on tests.

This policy is implemented very simply and conveniently. I announce in the syllabus and in class that any students who are not finished with the test at the completion of the normal 2-hour class can come to my office for an additional hour. I design my tests to take the average student between 75 and 90 minutes to complete. Some students finish more quickly and a few are still working at the end of 2 hours. The few who are still working go to my office and finish up while I do whatever work I would normally be doing in my office. I always reserve a conference room for the hour after the test, just in case I have too many students for my office. In the past 10 years, I have only had to use the conference room on a couple of occasions and only for 15 minutes or so. One note of warning: I used to give unlimited time until I had a student who kept checking and rechecking his answers and rereading his essays until I had to force him to turn in his test.

The combination of extended time on tests and announcing the long essay a week in advance allows me to ask more comprehensive questions for the long essay. I can expect the students to compare and contrast developments over the full range of the period being examined. I can expect a better integration of information from class and from the textbook. I can expect poor essay writers to come to the test prepared to write their best essay. Finally, I'm treating all my students equally without advantaging some and disadvantaging others.

Patricia James

Associate Professor

University of Minnesota

When I teach General Arts, one of my main goals is for students to learn to appreciate and critically discuss and write about a variety of works of art. General Arts is an introductory art course that fulfills liberal education requirements in the humanities, and it is likely to be the only art class that most of my students will take at the university. Instead of expecting students to learn an established body of knowledge, such as art historical periods or technical information, I ask them to construct an understanding of various works of art by starting with the direct experience of looking at them as visual texts. To make sense of art, students need to know how observe visual information, think metaphorically, use multiple perspectives, deal with ambiguity, and make connections between personal, cultural, and contextual knowledge. I think of these as the essential components of my class. Although it may seem that college students should already know how to do these processes, there are often gaps in their knowledge and abilities.

There are diverse abilities, background knowledge, and learning styles that I have to take into consideration as I teach. Many of the 40 students are immigrants who may not have learned visual conventions of Western art. In addition, I have had students with limited vision in the class who can see shapes and lights and darks, but not details. Students who are used to multiple choice tests often are uncomfortable with open-ended interpretations that are part of understanding art, and dualistic thinkers who believe in right or wrong answers become frustrated with ambiguity. Even the influence of popular culture can inhibit students' ability to look for meaning in art.

No matter what their cultural or educational backgrounds are, students' first response to unfamiliar art often is: "I like it" or "I don't like it." If all of my students are to reach a deeper understanding of art and be able to write about it, I need to back up and help them really look at art, construct meanings based on multiple kinds of information, and become comfortable with ambiguity. To do so, I have students engage in a number of exercises that give them practice in the essential components, and which also help them gain confidence, trust their own senses, cope with their weaknesses, build on their strengths, and learn from each other.

One of the major assignments in my class is a critical paper about a work of modern art at the Minneapolis Institute of Art. Students engage in diverse activities before they write this paper, including informal writing exercises, videos and slides, small group discussions, and visits to a campus museum and a gallery. They also write three short papers focused on separate parts of the critical process: observation and description, formal analysis, and interpretation. Although the focus of the class is primarily visual art, I play world music everyday so that students can think about art through another mode.

Looking at One Painting

I can't take for granted that students know how to go beyond skimming visual information to look carefully at images. To insure that students are starting from the same place, I begin the semester with works of art that few students have seen before. One that I particularly like is George Tooker's "The Subway" (1950), which is a mysterious painting of lonely-looking, undifferentiated people who seem trapped in a lifeless underground space of hallways, stairs, and a turnstile. At first glance, the scene seems to be realistic, but after a series of exercises, students can see that it is a highly-stylized, complex, abstract image with meanings that go beyond the immediate subject matter.

To help students learn to carefully look at art, I first ask them to list 15 things that they see in a slide I show of the painting. Although this may seem at first to be an unnecessary process (after all, it's right there in front of them!), students learn that it takes time to see obvious details and more subtle nuances. I then ask students to call out what they see as I point to the items on the slide. This activity helps students spend extended time looking at the painting, guides students who are having difficulty seeing the image, and make looking at art a shared endeavor.

To further engage their minds in the painting and help them understand metaphoric thinking, I ask students to do something very strange: to write as if they are one smaller part of the painting. In the case of "The Subway," they can write about any one of the lonely people in the space or as if they are an article of clothing, the stairway, a hand, a wall, or even the air around the people. Starting their paragraphs "I am. . .," students free write for about 5 minutes. I often put on soft music so that students are relaxed as they write. I encourage students to think about what this entity might be feeling, thinking, smelling, fearing, caring about, etc. Then I ask students to read their "I am" paragraphs to two or three people sitting near them. To students' surprise, their paragraphs are often very expressive, especially when they include rich sensory information. Although "The Subway" is a painting from an unfamiliar time period, the "I am" writing helps students make empathic connections to the emotional content of the piece and learn to trust their own senses and interpretations.

Depending on how much time we have, I ask volunteers to let me read their paragraphs out loud to the class. I do the reading myself so that students can hear their own writing and all 40 students can hear the words in the large classroom. After I read, I comment on use of language, metaphors, and different approaches to interpretation. Both common and dissimilar themes emerge, which help students understand that interpretation is both a social and an individual process. This activity creates a sense of shared exploration and meaning construction that informs other activities over the semester.

To further challenge students' habitual ways of looking at art and help students understand formal analysis, I turn the slide of the painting upside

down. When an image is inverted, the formal qualities of the work, such as lines, shapes, colors, and values, become disconnected from the literal meaning of the objects and symbols, and it is easier to see how a work is composed. When I ask students what they see in the upside-down image, they first point out literal objects that they remember from the upright image, but they gradually begin to perceive subtle shapes and color relationships. They see that shapes are not only the obvious objects—they can be points within the picture that we connect with our eyes. Using a long ruler, I show a number of instances where there are “hidden” structural shapes. When I turn the slide upright again, it is as if students see a new picture. Now, they are better able to perceive relationships between the formal structure of the work, the subject matter, and the deeper meaning of the work.

To learn to interpret “The Subway,” students to tell me everything they remember about the 1950s and I fill in with some of my personal memories. Post-World War II, the Cold War, “Father Knows Best,” and Joseph McCarthy become part of the larger understanding of the time. International students have different understandings of the era that add to the richness of the discussion. Gradually, we make connections between students’ “I am” writing about themes like loneliness, conformity, fear, and paranoia, and the cultural climate that George Tooker expressed in his painting. All of these activities help diverse students take ownership of the process of thinking about art.

Implementation Tools

This section of the guidebook contains a variety of tools to facilitate the application and dissemination of Universal Instructional Design. Opening this section are a series of classroom based scenarios and experiential learning case studies to help instructors to reflect on their practice. There is also a template for evaluating student's perception of the use of UID in the classroom. This is followed by suggestions for the creation of fully accessible tables, charts, and Web content. There is also a piece that addresses the creation and use of accessible PowerPoint presentations. This section closes with a list of PowerPoint presentations, created in conjunction with this guidebook, which illustrate the use of Universal Instructional Design in a number of specific disciplines. Educators are welcome to use any and all of these materials and to share them with others as long as PASS IT is recognized as the source.

Classroom-Based Scenarios

As a group, using Universal Instructional Design (UID) guidelines as a framework to guide your discussion, discuss how you might respond to the situation described in each of the following scenarios. Then consider how the situation might have been different if UID was implemented from the outset.

Scenario 1: Disclosure

A student who came in late and was sitting at the back of the classroom comes up to you at the end of the first day of class and hands you a note and waits for you to read it. The note says, "I did not understand anything in class today because I am deaf."

Scenario 2: Disclosure of a "Hidden" Disability

After returning the first test, a student approaches you and says s/he has a disability and needs to retake the test with extended time.

Scenario 3: Using Film in Class

You plan to show several films in your course this semester to illustrate course content and engage students. On the first day of class you learn that one of the students in your class is blind. What do you do?

Scenario 4: "Disruptive" Behavior, Version A

During a small group discussion, a student with a psychological disability known only to you starts screaming at group members. Following the outburst, the student is quietly crying while the eyes of all the students—including the members of the other small groups—are on him/her.

Scenario 4: “Disruptive” Behavior, Version B

During a small group discussion, a student with a psychological disability known only to you starts screaming at group members and then storms out of the classroom crying.

Scenario 5: Making “Exceptions” to Course Requirements

As an accommodation for a disability, a student with a documented anxiety disorder asks to be excused from all oral presentations in front of the class, whether group or individual, and to write papers instead. As the teacher of the course, how would you respond? In the future, what might you do differently to prevent the need for this question to arise?

Scenario 6: Interaction Strain

You have become aware that a student with multiple disabilities that impact mobility and speech is no longer participating in class discussion and is frequently isolated during small group activities. Other students seem unsure about how to approach the student.

Scenario 7: Field Experience/Service-Learning/Experiential Education

You are supervising the experiential learning component of a course or degree program. One of the on-site supervisors calls you to say that a student is unable to come for the third time in three weeks. The student has called the on-site supervisor in advance each time and explained, but the supervisor is questioning how the student can complete the field experience requirement. You know that the student has chronic asthma.

Scenario 8: Inadvertent Disclosure

A colleague inadvertently reveals to you that a student in one of your classes has a hidden disability. The student has never disclosed the disability to you. You realize that this knowledge explains a number of facets of the student’s performance in the course, and is likely to influence your future interactions with the student. What, if anything, do you do with this piece of information?

Scenario 9: Web Design

You have devoted many hours over the summer to create the Web site for your course; it is attractive and engaging, and you have received numerous compliments from colleagues. At the end of the first week of class a student with a disability informs you that the Web site is set up in a way that makes it virtually impossible to access the information on the site using a screen reader.

Experiential Learning Case Studies

The following case studies can assist in promoting discussion in varied disciplinary areas that involve experiential learning:

Case 1: College Student Personnel

Pa is a graduate student who uses a wheelchair. She is interested in pursuing a career in college student affairs and aspires to become a dean of students someday. She refuses an internship in Disability Services and requests a placement in Student Activities or Residence Life instead.

What are the unique features of college student personnel programs that may create an unwelcoming environment for Pa?

What are the essential components of an internship in residence life or student activities that may be perceived as barriers?

As the faculty or staff member in charge of internship placements, how would you respond?

As the Director of Residence Life, how would you respond?

As the Director of Student Activities, how would you respond?

Case 2: Physical Therapy

Marge is a first-year physical therapy student who is taking a cadaver anatomy course which includes both a lecture and a lab component. She has low vision and is legally blind, but is independent in mobility and self care. She uses multiple devices to assist her to learn.

What are the unique features of physical therapy education that may create an unwelcoming environment for Marge?

What difficulties do you anticipate that Marge will have in this course?

How can you find out prior to the first day of class what might be helpful to her?

How will you make adjustments in your teaching so that you do not have to make accommodations after the course has begun?

How will the changes you make help other students?

Case 3: Special Education

Sean is a second-year college student who is majoring in special education. He is taking a theory course that involves lots of reading and understanding concepts. He is very good at expressing his ideas in class, but his papers are not well written and he does not score well on multiple-choice exams. He has a history of mediocre grades and you know he is smarter than he demonstrates.

What are the unique features associated with getting a degree in special education that may create an unwelcoming environment for Sean?

How can you create a welcoming environment for him in your class?

How can you adjust your teaching methods to support his learning?

How you adjust your assessment methods so he can effectively demonstrate what he knows?

How will these strategies affect other student's learning?

Case 4: Rehabilitation Counseling

Alex is a student in a rehabilitation counseling program and has depression and anxiety. He takes medication which helps with his symptoms, but can also make him drowsy. Some days he still struggles and it can be hard for him to get up in the morning, concentrate and stay focused. His performance fluctuates between days when he does well, and times when he does not. He does not like to reveal his illness or to ask for help.

What are the unique features of rehabilitation counseling education that may create an unwelcoming environment for Alex?

How can you make a welcoming environment for students like Alex?

What teaching accommodations can you include in your course?

What testing accommodations can you use in your course?

What are the essential outcomes of your course that cannot be modified to meet Alex' needs?

Case 5: Nursing

Johti is a bright young woman majoring in nursing. She immigrated to the U.S. from India when she was 12 years old. She is a hard worker and very motivated to do well in her classes, but reading and writing in English are hard for her. It

takes her a lot longer to read and do her assignments and sometimes her writing is poor.

What are the unique features of nursing education that may create an unwelcoming environment for Johti?

How can you create a welcoming environment in your course for her?

What accommodations can you build into the course that will help her to learn?

How can you modify your assessments to help her demonstrate what she knows?

How will these accommodations help other students?

Case 6: College Counseling and Student Development

Carlos is deaf and communicates via a sign language interpreter. He is interested in pursuing a career in counseling in higher education and wants to do his practicum and internship in college counseling centers.

What are the unique features of counseling education that may create an unwelcoming environment for Carlos?

As the faculty or staff member in charge of practicum and internship placements, how would you respond?

As the potential on-site supervisor, how would you respond?

Figure 8. Student Evaluation of Course Objectives/Essential Components: Example From Psychology and Personal Development

Evaluation of Course Objectives/Essential Components											
PSTL 1289: Psychology of the American Experience											
Dr. Jeanne L. Higbee											
For the following course goals stated on the syllabus, on a 1 to 10 scale where 1 = "not at all" and 10 = "outstanding," please evaluate the extent to which PSTL 1289 accomplished each goal:											
	<u>Not at all</u>					<u>Outstanding</u>					
Students will become acquainted with prominent psychological theories and the theorists who espoused them.	1	2	3	4	5	6	7	8	9	10	
Students will be able to define key psychological concepts.		1	2	3	4	5	6	7	8	9	10
Students will explore psychological concepts within the framework of diversity.	1	2	3	4	5	6	7	8	9	10	
Students will explore psychological aspects of current and historical events within the U.S.		1	2	3	4	5	6	7	8	9	10
Students will become familiar with basic psychology research methodologies.	1	2	3	4	5	6	7	8	9	10	
Students will be introduced to basic statistical concepts such as central tendency and correlation.		1	2	3	4	5	6	7	8	9	10
Students will apply psychological theory and concepts to their own development and relationships.	1	2	3	4	5	6	7	8	9	10	
Students will learn to identify key ideas in a psychology textbook.		1	2	3	4	5	6	7	8	9	10
Students will use higher-order thinking skills to analyze, synthesize, and evaluate course materials and real-life problems.	1	2	3	4	5	6	7	8	9	10	

A Basic Introduction to Web Content Accessibility

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This basic overview discusses some Web content accessibility issues that often arise in accounting and other business education contexts. Similar issues also apply more generally to almost any education or practice context.

Web Content Accessibility

Web content is the text, images, forms, sounds, video clips, and other information embedded in a Web page or Web application. The Web content generally is accessible if users are able to hear it or see it, navigate through it, and interact with it to accomplish certain tasks. The W3C Web Content Accessibility Guidelines (WCAG) (see <http://www.w3.org/WAI/intro/wcag.php>) explain how to make Web content accessible to people with disabilities.

In general, visual Web content (e.g., text, video, and pictures) are accessible to persons who are blind if it can be rendered effectively through a screen reader or other assistive technology. Audio content can be rendered accessible to persons who are deaf if closed captioning or other visual text is provided. For persons who use mobile devices or are physically unable to use a mouse, alternative keyboard shortcuts are necessary to enable navigation and other forms of Web page interaction (e.g., see <http://www.w3.org/Mobile/>).

Web Content Accessibility Issues

My own disciplinary area is accounting, but any of the Web accessibility issues related to accounting are equally applicable to other areas of study. Much accounting information is presented in the form of text and tables. Increasingly, accounting textbooks and financial reports also employ images and various multimedia objects. The following paragraphs briefly discuss the related accessibility problems and solutions. Interested readers can visit the W3C Web site for further information on how to implement these and other features.

Text. Visual users rely heavily on visual cues to navigate through the logical, sequential, hierarchical, or other structure of a text. This helps readers understand the context of a particular piece of text and integrate different related parts. The following list provides some common structural cues in text documents:

Heading 1

Heading 2

Heading 3

Heading 4

None (paragraph text)

A person who is blind will not be able to access these structural cues if they are provided only visually (e.g., through various font-related features such as bold, italic, and size). Such structural information must also be formally embedded somewhere in the text document, so that the structural information is independent of its visual presentation. Therefore, cascading style sheets or other structural markup should be used to designate headings, subheadings, lists, emphasis, and so on, so that screen readers can convey the relevant structural information. Microsoft Word, for example, provides various options for creating ordered and unordered lists, outlines, headings, and so on. Such available features also make it much easier for authors to update and structure their documents consistently.

Tables. Tables can be an effective way to present complex data sets in highly structured columns and rows. To help make tabulated information more accessible, the HTML table markup should include a CAPTION, TITLE, or SUMMARY that describes the table in one or two sentences. A good summary will describe the column and row relationships in the table. In addition, the table row and column headings need to be explicitly marked up in HTML so that a screen reader can provide the row and column context of a given cell. This orienting information will make it easier to comprehend, integrate, and navigate through the tabular information.

It is important to recognize, however, that even with proper HTML markup, some tabular information may remain at least partly inaccessible to some users. For example, a person who is blind might be able to access the particular row and column context of a given table cell, but remain unable to “scan” the table as quickly as a visual user. Sometimes quick scanning may be necessary to detect data trends or other configural patterns. Tables with nested rows and columns (multiple embedded rows and columns) can pose especially difficult problems for configural processing with a screen reader. For example, the following table includes nested row headers:

Sales, Cost of Sales, and Gross Margin for Jim's Drug & Foods, by Business Segment and Year (\$ in thousands)

Business Segment	Account	2009	2008	2007
Drugs	Sales	\$5,123	\$5,049	\$4,834
	Cost of sales	3,042	2,891	2,788
	Gross margin	\$2,081	\$2,158	\$2,046
Groceries	Sales	\$9,074	\$7,756	\$6,701
	Cost of sales	\$6,182	\$5,289	\$4,421
	Gross margin	\$2,892	\$2,467	\$2,280

When reading a particular cell with a screen reader, the user might have difficulty accessing or remembering all of the row-related context. In some (but not necessarily all) cases, it may be possible to restructure a table to make configural processing easier for those who must access it with a screen reader.

Provide a text equivalent for every nontext element. In order to make nontext elements perceivable, text equivalents must be provided for every audio clip, video clip, image, applet, or other program. The W3C Web Content Accessibility Guidelines provide implementation guidance for numerous nontext elements.

Caveat: Web Content Accessibility Depends on Interdependent Components

Even when Web content developers take great pains to follow the current Web Content Accessibility Guidelines, the Web content might not be accessible to some users. In order for Web content to be effectively accessible, multiple interdependent components must function well together. These components include Web authoring tools, Web content, Web browsers, assistive technologies, and Web page content accessibility evaluation tools. For example, if the assistive technology cannot effectively utilize a particular type of HTML structural markup, or if it does not interface well with a particular browser, the structural information might not be accessible to the user.

Accessible PowerPoint Presentations

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University of Minnesota

Advances in technology are making it possible for instructors to incorporate multimedia elements into almost every presentation. In many cases, these presentations are enriching the experience for learners. However, it is important to ensure that these tools are used in a way that maximizes their accessibility for learners. Microsoft's PowerPoint has become a ubiquitous element both in the classroom and in conference presentations to teaching peers. There are a few guidelines that can help instructors to ensure that their PowerPoint presentations are constructed with the principles of Universal Design (UD) in mind.

First, make sure that the audience can easily read the text in the slides. This means limiting the text in each slide so that it will be large enough to be read. An often-used guideline is that each slide should contain no more than six lines of text with six or fewer words per line. Typically headers should be in 44- or 40-point font and text should be no smaller than 28-point font to be readable from the back of the room, or when reduced in size for handouts that include 3 to 6 slides per page (depending on whether lines for notes are provided). The font used for the text should be a sans serif font such as Helvetica, Tahoma, or Arial. Using black text on a white background will also increase readability and should be used in place of two-color schemes, which might be completely illegible for people who are colorblind.

Second, carefully consider the use of non-text visual cues in the presentation. Photographs, video or audio clips, and clipart are easily inserted into the presentation, but can be a distraction or even a barrier to accessibility for some members of the audience and to those who use screen-reading software to access the presentation. The use of these multimedia tools should be restricted to those items that really add to the meaning of the presentation, rather than just as "cool" or decorative elements. Any visual items should be described in detail either underneath the object or through the use of Alt-text. These descriptions should be rich enough to convey the meaning of the image to those who cannot see it, but should not interpret the visual image beyond what is readily apparent to the viewer. Any video should be closed captioned or accompanied by a written transcript, which should also be supplied for any audio clips.

Third, consider distributing handouts of the presentation, making sure to have large-print options should any of members of the audience have visual impairments. Providing a few copies of the presentation on CD or online would allow those audience members who use screen readers to fully access the presentation. Providing these handouts or electronic copies of the presentation allows the audience membersto follow the presentation without feeling pressure

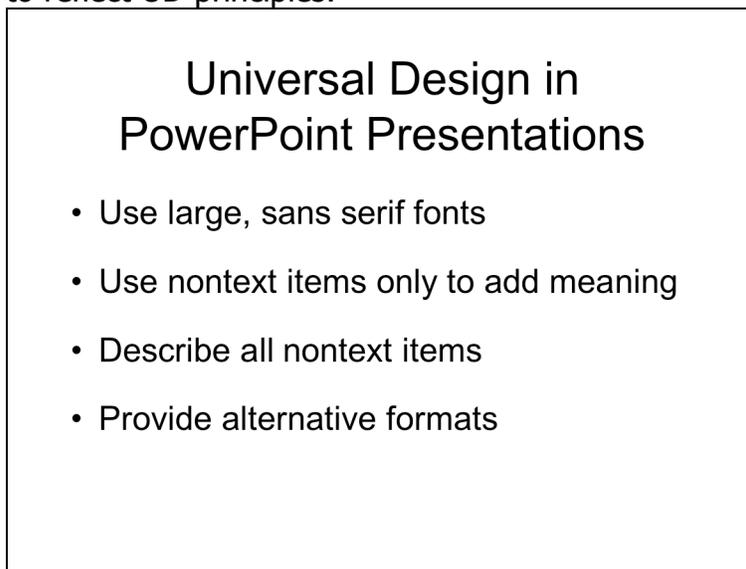
to write the copy from the PowerPoint presentation and frees them to pay more attention to the presentation and engage in related discussion. All participants benefit. Although it is important to consider sustainability issues, by printing handouts with 6 slides per side or 12 slides per sheet of paper, presenters may be using less paper than would be required by audience members to take notes.

Here is a slide that does NOT follow the guidelines:



In this case, the text is in two columns, which would be very confusing to a screen reader that reads from left to right. The small text on a visually busy background is difficult to read. There is a piece of clipart of an instructor pointing to a blackboard in front of two students in a classroom that does nothing to add meaning to the presentation.

Here is the same information from the first slide after it has been adapted to reflect UD principles:



In this case, the slide is black print on a white background, providing maximum readability for the entire audience. The language of the bullet points has been simplified to convey the same meaning with fewer words. The clipart has been removed and the result is a clean-looking slide that is free from unnecessary, distracting elements.

Of course, there are many cases in which visual elements can inform and enhance a presentation. In these cases, it is essential that a rich text description accompany the slide. This can be done using Alt-text or it can be included in the presentation on the following slide. Here is an example of a photo accompanied by the description within the presentation:



Description of Previous Visual

The previous slide is a photograph of a street corner with yellow painted curbs and white striped crosswalks. At the crosswalks the sidewalk and curbs are modified so that their height descends to street level and that area is unpainted.

It is important to remember that the purpose of using PowerPoint is to communicate more effectively and easily with the audience; following the guidelines of Universal Design will ensure that the presentation is available to *all* members of the audience.

PowerPoint Presentations

Full Presentations are available for download from:
<http://cehd.umn.edu/passit/presentations.html>

Implementing
Universal Instructional Design:
Resources for Faculty

Implementing UID in
“Psychology and Personal
Development”

**Humanities and
Social Science
Small Working Group**
7 Deadly Assumptions
that interfere with
creating courses in UID

Case-Based Business
Application

Essential Components, Barriers,
and Solutions

Science Working Group

Challenges and Solutions
UID in Science

Implementing Universal
Instructional Design in
Teaching Mathematics

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