Lesson 4: Universal Design of Instruction

PURPOSE

The purpose of this lesson is to increase your awareness of principles of Universal Design and their application in education. By reflecting on your own course while reading the Lesson Content, you will be guided to consider possible modifications to your course. By sharing and discussing course modifications with other participants, you will develop an awareness of additional strategies and applications of the principles of Universal Design in education.

Question to REFLECT upon while reading the CONTENT

In what ways might your selected course apply the Universal Design principles?

CONTENT

Students in academic classes come from a wide variety of ethnic and racial backgrounds. For some, English is not their first language. In most classes, there are students with many types of learning styles, including those who are primarily visual or auditory learners. In addition, increasing numbers of students with disabilities are pursuing postsecondary education. All of these students want to learn and their instructors share this goal. How can instructors design instruction to maximize the learning of all students?

The field of Universal Design can provide a starting point for developing an appropriate model for instruction. This body of knowledge can then be applied to instructional design in order to help instructors create courses where lectures, discussions, visual aids, videotapes, printed materials, Web resources, and field work are accessible to all students.

WHAT is UNIVERSAL DESIGN?

Designing any product or service involves the consideration of many factors including aesthetics, engineering options, environmental issues, safety concerns, and cost. Often the design is created for the "average" user. In contrast, Universal Design is "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design."

Universal Design can be considered an approach to designing the environment and products that takes into consideration the changes experienced by everyone during their lifetime. Rather than focus on adapting things for an individual at a later time, an accessible environment is created from the beginning. When designers apply Universal Design principles, their products and services meet the needs of potential users with a wide variety of characteristics.
Disability is just one of many characteristics that an individual might possess. For example, one person could be five feet four inches tall, female, forty years old, a poor reader, and deaf. All of these characteristics, including her deafness, should be considered when developing a product or service she might use.

Making a product or service accessible to people with disabilities often benefits others. For example, sidewalk curb cuts, designed to make sidewalks and streets accessible to those using wheelchairs, are today more often used by kids on skateboards, parents with baby strollers, and delivery staff with rolling carts. (If television displays in airports and restaurants were captioned, they would benefit people who cannot hear the audio because of a noisy environment as well as those who are deaf.)

**PRINCIPLES of Universal Design**

At the Center for Universal Design at North Carolina State University a group of architects, product designers, engineers, and environmental design researchers established the following set of principles of Universal Design to provide guidance in the design of environments, communications, and products. They can also be applied to academic programs and instruction.

1. **EQUITABLE USE.** The design is useful and marketable to people with diverse abilities. For example, a Web site that is designed so that it is accessible to everyone, including people who are blind, employs this principle.

2. **FLEXIBILITY IN USE.** The design accommodates a wide range of individual preferences and abilities. An example is a museum that allows a visitor to choose to read or listen to the description of the contents of a display case.

3. **SIMPLE AND INTUITIVE USE.** Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level. Science lab equipment with control buttons that are clear and intuitive is a good example of an application of this principle.

4. **PERCEPTIBLE INFORMATION.** The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities. An example of this principle not being employed is when television programming is projected in noisy public areas like academic conference exhibits without captioning.

5. **TOLERANCE FOR ERROR.** The design minimizes hazards and the adverse consequences of accidental or unintended actions. An example of a product applying this principle is an educational software program that provides guidance when the user makes an inappropriate selection.
6. LOW PHYSICAL EFFORT. The design can be used efficiently and comfortably, and with a minimum of fatigue. For example, doors that are easy to open by people with a wide variety of physical characteristics demonstrate the application of this principle.

7. SIZE AND SPACE FOR APPROACH AND USE. Appropriate size and space is provided for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility. A science lab work area designed for use by students with a wide variety of physical characteristics and abilities is an example of employing this principle.

UNIVERSAL DESIGN applied to EDUCATION Universal Design principles can be applied to many products and services. The following paragraph is a definition of Universal Design in education.

"In terms of learning, Universal Design means the design of instructional materials and activities that make the learning goals achievable by individuals with wide differences in their abilities to see, hear, speak, move, read, write, understand English, attend, organize, engage, and remember. Universal Design for learning is achieved by means of flexible curricular materials and activities that provide alternatives for students with differing abilities. These alternatives are built into the instructional design and operating systems of educational materials; they are not added on after-the-fact" (Research Connections, No. 5, Fall 1999, p. 2, Council for Exceptional Children).

When designing classroom instruction or a distance learning class, strive to create a learning environment that allows all students, including a person who happens to have a characteristic that is termed "disability," to access the content of the course and fully participate in class activities. Universal Design Principles can apply to lectures, classroom discussions, group work, handouts, Web-based instruction, fieldwork, and other academic activities.

Below are examples of instructional methods that employ principles of Universal Design. Applying these strategies can make your course content accessible to people with a wide range of abilities and disabilities, ethnic backgrounds, language skills, and learning styles.

1. INCLUSIVENESS. Create a classroom environment that respects and values diversity. Put a statement on your syllabus inviting students to meet with you to discuss disability-related accommodations and other special learning needs. Avoid segregating or stigmatizing any student. Respect the privacy of all students.

2. PHYSICAL ACCESS. Assure that classrooms, labs, and fieldwork are accessible to individuals with a wide range of physical abilities and disabilities. Make sure equipment and activities minimize sustained physical effort, provide options for operation, and accommodate right- and left-handed students and those with limited physical abilities. Assure the safety of all students.
3. DELIVERY METHODS. Use multiple modes to deliver content. Alternate delivery methods, including lecture, discussion, hands-on activities, Internet-based interaction, and fieldwork. Make sure each is accessible to students with a wide range of abilities, disabilities, interests, and previous experiences. Face the class and speak clearly. Provide printed materials that summarize content delivered orally. Provide printed materials early to allow the student to prepare ahead of time.


5. INTERACTION. Encourage different ways for students to interact with each other and with you. These methods may include in-class questions and discussion, group work, and Internet-based communications.

6. FEEDBACK. Provide effective prompting during an activity and feedback after the assignment is complete.

7. DEMONSTRATION OF KNOWLEDGE. Provide multiple ways for students to demonstrate knowledge. For example, besides traditional tests and papers, consider group work, demonstrations, portfolios, and presentations as options for demonstrating knowledge.

Employing Universal Design principles in instruction does not eliminate the need for specific accommodations for students with disabilities. There will always be the need for some specific accommodations, such as sign language interpreters for students who are deaf. However, applying Universal Design concepts in course planning will assure full access to the content for most students and minimize the need for specific accommodations. For example, designing Web resources in accessible formats as they are developed means that no re-development is necessary if a blind student enrolls in the class; planning ahead can be less time-consuming in the long run. Letting all students have access to your class notes and assignments on an accessible Website can eliminate the need for providing materials in alternative formats.

EXAMPLE
Employing Universal Design principles to fully include one group of students can generate unanticipated benefits to others. Consider this list of students who might benefit from captioning on your course videotapes.

✓ Students for whom English is a second language. Often their reading skills are better than their spoken English skills.
✓ Students who are deaf. By reading what they cannot hear, captioning provides access to deaf students.

✓ Students with visual impairments. Captioning is generally not useful for students with visual impairments, but there is one exception. Students who are deaf and have low vision (i.e., they can see large print) can benefit from captioning if the captions are large enough for them to see.

✓ Students watching the videotape in a noisy environment. By reading what they cannot hear, students watching the tape in a noisy environment will benefit from captioning.

✓ Students who have learning disabilities. Some may comprehend material better when they both see text and hear it spoken aloud.

SUMMARY

Employing Universal Design principles when initially designing a course, using instructional strategies for inclusiveness, physical access, delivery methods, Web pages, interaction, feedback, and demonstration of knowledge, creates an accessible environment and can minimize the need to alter it later for individuals with special needs.

POSSIBLE DISCUSSION

Provide a very brief description of your selected course; and, a summary of your reflections on how your course does (and/or might be changed to) incorporate the principles and instructional strategies of Universal Design.

FURTHER INFORMATION

- Read answers to frequently asked questions, explore case studies or access additional resources regarding universal design
- Learn more information about Universal Design
- Learn more at UCO’s Disability Support Services website
- Learn more at UCO’s DSS Handbook for Faculty & Staff
- View resources for helping instructors accommodate students with disabilities in specific academic activities

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