ACCESS

Colorado State University

How do **you** teach?

Do you create a learning environment in which...

1. ideas and information are represented in multiple ways?

- ☐ Your course syllabus clearly describes the content and your expectations of the students.
- ☐ You present information in multiple formats (e.g., lecture, text, graphics, audio, video, hands-on exercises).
- ☐ You begin each lecture with an outline of what will be covered.
- ☐ You summarize key points throughout the lecture, and tie these points to the larger course objectives.
- ☐ You post electronic equivalents of paper handouts and required reading assignments in alternative formats such as audio and video.
- ☐ You employ technologies (e.g., i-Clickers, RamCT) that enhance learning.

2. students can express their comprehension in multiple ways?

- ☐ You encourage students to demonstrate knowledge and skills in ways other than traditional tests and exams (e.g., written essays, projects, portfolios, journals).
- ☐ Your assessments measure students' achievement of the learning objectives, as they are stated on the syllabus.
- ☐ You incorporate technologies that facilitate class communication and participation.
- ☐ You allow assignments to be submitted electronically.

3. students have multiple opportunities for engagement?

- ☐ You express enthusiasm for each topic you teach, and explain its real-world significance.
- ☐ You challenge students with meaningful assignments.
- ☐ You create a class climate in which student diversity is respected.
- ☐ You give prompt and instructive feedback on assignments.
- ☐ You supplement lecture and reading assignments with visual aids (e.g., photographs, videos, diagrams, interactive simulations).
- ☐ You make yourself available to students during office hours in flexible formats (e.g., face-to-face, email, online chat, telephone).

If you answered YES to most or all of these questions, congratulations! You are reaching more students through the principles of **Universal Design for Learning**.

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ACCESS to Postsecondary Education through Universal Design for Learning

Universal Design for Learning: A Concise Introduction

Introduction

Universal Design for Learning (UDL) is a set of principles that guide the design of inclusive classroom instruction and accessible course materials. UDL's three principles are: 1) *multiple methods of representation* that give learners a variety of ways to acquire information and build knowledge; 2) *multiple means of student action and expression* that provide learners alternatives for demonstrating what they have learned; and 3) *multiple modes of student engagement* that tap into learners' interests, challenge them appropriately, and motivate them to learn (Center for Applied Special Technology, 2011c).

Historical Development

Universal Design for Learning (UDL) traces its origin to the Universal Design (UD) movement of the 1990's. The term "universal design" was coined by architect and designer Ron Mace at the Center for Universal Design at North Carolina State University (Burgstahler, 2008; Center for Applied Special Technology, 2011b). Mace and his colleagues defined UD as "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" (Center for Applied Special Technology, 2011a).

Foundational Concepts

Following passage of the Americans with Disabilities Act (ADA, 1990), UD became popular with the architects and designers who labored to make public buildings and city streets accessible for the first time in American history. Three critical insights that emerged from the work of that period have come to define Universal Design:

1. Most retrofitting and "adaptation" could have been avoided if designers had planned for accessibility from the beginning. Mace suggested a design ideal in which the needs of a diverse audience should be *anticipated.* Thus, a chief characteristic of Universal Design

is that it "proactively builds in features to accommodate the range of human diversity" (McGuire, Scott, & Shaw, 2006, p. 173).

2. Modifications to the built environment—automatic door openers, curb cuts, entry ramps, universal-height drinking fountains, and others—are beneficial to many people, not just those with disabilities. Indeed, people today routinely use door openers to enter a building when their hands are full, just as skateboarders use curb cuts and children visiting the hospital can drink water from a fountain without assistance. Similarly, commuters in noisy airports and students in quiet libraries rely equally on TV closed captioning. Each of these conveniences was originally conceived as a disability accommodation.

3. Disabilities have less to do with individual deficits—what some people can't do that others can—and more to do with environmental barriers that obstruct people's ability to function effectively and participate fully in society (United Nations, 2006 - Preamble E). Universal Design helps level the playing field by removing unnecessary barriers.

From UD to UDL

In recent years, the UD philosophy has found fertile ground in the field of education. Elementary school teachers and university professors alike have adopted UD "as a conceptual and philosophical foundation on which to build a model of teaching and learning that is inclusive, equitable, and guides the creation of accessible course materials" (Schelly, Davies, & Spooner, 2011, p. 18).

If the goal of UD is the removal of barriers from the physical environment, the goal of UDL is the elimination barriers from the learning environment. As David Rose, one of UDL's founders, has stated, "UDL puts the tag 'disabled' where it belongs—on the curriculum, not the learner. The curriculum is disabled when it does not meet the needs of diverse learners" (Council for Exceptional Children, 2011).

"Universal" benefits

The obstacles faced by students with disabilities (for example, study materials that are not in electronic formats, uncaptioned video, PDF files that do not contain any real text and therefore cannot be searched or read aloud by text-to-speech software) are often the same obstacles encountered by students who possess different learning styles, use the latest computer technologies, or whose native language is not English. UDL benefits many students—hence the "universal" in Universal Design for Learning.

UDL is about providing options. In the words of David Gordon, a director at the Center for Applied Special Technology (CAST), "Options are essential to learning, because no single way of presenting information, no single way of responding to information, and no single way of engaging students will work across the diversity of students that populate our classrooms. Alternatives reduce barriers to learning for students with disabilities while enhancing learning opportunities for everyone" (Council for Exceptional Children, 2011).

UDL does not advocate any single teaching practice; rather, it combines today's best approaches for engaging students and challenging them to think critically. It helps instructors meet the learning needs of a diverse student body through a combination of instructional modalities, formats, and technologies. To many people, UDL is simply good teaching! (Ohio State Partnership Grant, 2011)

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From Theory to Practice: UDL "Quick Tips"

Based on *Universal Design for Learning Guidelines* by the Center for Applied Technology (CAST)

	Objectives & Benchmarks	Instructional Materials	Teaching Methods	Assessment Methods
	To provide optimal challenges	*To ensure equal access*	*To provide effective instruction*	*To accurately measure progress*
Representation	Describe objectives in ways that are clear and specific	Provide options in the way information is presented	Provide options for building knowledge	Use assessments that accurately measure knowledge development
Key Concept: Present ideas and information in multiple ways	When establishing goals and objectives, begin by making a list of the knowledge, skills, and (if applicable) attitudes you want your students to achieve.	Present information in multiple formats, including text, graphics, audio, and video.	Whenever possible, tie new concepts to prior knowledge.	Develop assessments directly from the objectives, even before designing course content.
The Neuroscience: "recognition networks"	Sort the list into two categories: need-to-know (essential) and nice-to-know (important, but not essential).	Make handouts and materials available well in advance of lecture and related class activities.	Provide structure to the material: highlight key concepts and explain how they relate to course objectives.	Consider alternatives to traditional quizzes and exams.
The Goal: Knowledge building	Differentiate between broadly-stated goals and specific learning objectives	Post lecture outlines (not necessarily complete notes) prior to class, which students can use as a framework for note taking.	Learning is more than a "spectator sport." Make it "active" and participatory.	Provide instructions for assignments both verbally and in writing.
	Objectives should be "SMART": Specific, Measurable, Achievable Relevant, and Timely.	Create a glossary of terms for your course and link to it from the content pages of your website.	Start each lecture with an outline of material to be covered and conclude each session with a summary of key points.	Monitor the effectiveness of instruction, e.g., "1-minute papers," quick surveys using clickers, mid-semester evaluations, etc.
	Consider the wide range of abilities, backgrounds, and experiences of your students when designing activities and assignments.	Develop a list of frequently asked questions for students.	Use technology to increase and enhance learning opportunities (RamCT discussion and quiz tools, clickers, SmartBoards, etc.).	Provide clear expectations and feedback.
	Develop a syllabus that clearly states policies, procedures, expectations, due dates, and learning objectives.	Design electronic materials to be accessible to a wide range of users and display technologies. Structure materials for easy information access.	Consider representing key concepts graphically as well as verbally.	Create a grading rubric and a set of examples of what constitutes quality work.

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Engagement	Establish objectives that motivate students to learn	Provide options in the ways students can interact with instructional materials	Provide options for building motivation and engagement	Use assessments that accurately measure emotional (attitudinal) development
Key Concept: Tap into students' interests, challenge them appropriately, and motivate them to learn	Become familiar with student resources on campus, including the Office of Resources for Disabled Students, the Assistive Technology Resource Center, the Academic Advancement Center, the Learning Assistance Center, and others.	Ensure that examples and content used in class are relevant to people from diverse backgrounds and experiences.	Create a welcoming class environment. Learn students' names, if possible, and use their names when calling on them. Arrive early to class and greet students as they enter. Stay a few minutes after to take questions.	When applicable, have students explore the meaning and value of their learning experiences to themselves and to society.
The Neuroscience: "Affective networks"	Invite students (both in writing and aloud) to speak to you if they have learning challenges.	Use online discussion groups to extend "contact time" Set standards for quality.	Encourage greater cooperation among students and contact between students and faculty.	For experiential learning activities, explore growth in the "affective domain" through reflection papers.
The Goal: Attitude building	Understand what is and is not an "appropriate accommodation."	Consider recording lectures and posting them as a podcasts.	Use technology to increase class communication (clickers, RamCT discussions, etc.).	Have students relate new concepts and information to their own lives and the lives of those affected.
	Consider the professional goals, personal interests, and values of students. Consider student diversity—age, gender, culture, language, and ability—when writing objectives.	Provide captioning or transcripts for videos.	Create some "energy" during lecture (e.g., humor, anticipation, suspense) to increase attention and recall.	Give prompt, ongoing, and instructive feedback to support learning and self-assessment.
		Check for ancillary electronic materials (CD-ROM and web content) to accompany your textbook.	Illustrate abstract concepts with concrete examples. Point to real-life examples from your own experiences and those of the students.	
		Make a detailed course syllabus available in the department or on the Web *prior* to the first day of class.	Invite guest speakers to share their perspectives on the topic at hand; Use technology to connect them with students via an online discussion.	
			Share your enthusiasm for the topic by citing personal experiences, research results, related news, etc.	
			Offer office hours in flexible formats: face-to-face, email, telephone, etc.	

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