



# Instructional Technology for Developing Universally Designed Course Materials

## **SLATE Conference**

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# Objectives for our session

- Define instructional technology
- Relate how concepts of universal design for instruction provides for an inclusive learning environment
- Determine methods for employing instructional technology within course materials to meet universal design principles
- Recall resources for learning about universal design for instruction and instructional technology



# What is Instructional Technology?

**Instructional technology** is "the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning," according to the Association for Educational Communications and Technology (AECT) Definitions and Terminology Committee.<sup>[\[1\]](#)</sup>



# What types Instructional Technology do you already employ in the classroom?

- Blackboard Learning Management System
- Blackboard Collaborate (Formally Elluminate Live!)?
- What other technologies do you use?



# How do implement and evaluate the technology you use?

The ASSURE model incorporates Robert Gagne's events of instruction to assure effective use of media in instruction. [\[2\]](#)

**A** — Analyze learners

**S** — State standards & objectives

**S** — Select strategies, technology, media & materials

**U** — Utilize technology, media & materials

**R** — Require learner participation

**E** — Evaluate & revise



# Analyze Learners

What are some ways you analyze your learners?





# Needs Assessment and Learning Styles

**All students have unique learning needs**

- ESL students,
- international students,
- non-traditional students,
- students with older computer technologies,
- students with disabilities,
- students with a learning style that differs from the instructor,
- all students



# What is Universal Design?

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 Universal Design, North Carolina State University







# Universal Design for Instruction

- “UDI is the proactive design and use of inclusive instructional strategies that benefit a broad range of learners including students with disabilities.” (Scott, McGuire, & Shaw, 2001) [\[3\]](#)
- Nine Principles based on:
  - Principles 1-7 adapted from the Center for Universal Design
  - Principles 8-9 based on comprehensive review of several literature bases including work of Chickering and Gamson (1987)



# Universal Design for Instruction

- Principle 1 : Equitable Use
- Principle 2 : Flexibility in Use
- Principle 3 : Simple and Intuitive
- Principle 4 : Perceptible Information
- Principle 5 : Tolerance for Error
- Principle 6 : Low Physical Effort
- Principle 7 : Size and Space for Approach and Use
- Principle 8 : A Community of Learners\*
- Principle 9 : Instructional Climate\*

(Scott, McGuire, & Shaw, 2001)\*



# Methods for Implementing UDI

## Principle of UDI

- Principle 1 : Equitable Use
- Principle 2 : Flexibility in Use
- Principle 3 : Simple and Intuitive
- Principle 4 : Perceptible Information
- Principle 5 : Tolerance for Error

## Examples of Methods

- writing, posters, presentations
- concept maps, groups, outlines
- grading rubrics, reminders, outline
- websites that are accessible, HTML
- practice exercises, study skills



# Methods for Implementing UDI

## Principle of UDI

- Principle 6 : Low Physical Effort
- Principle 7 : Size and Space for Approach and Use
- Principle 8 : A Community of Learners\*
- Principle 9 : Instructional Climate\*

## Examples of Methods

- Screen & document structured
- moderately combining text and graphics, visual and media literacy
- study groups, discussion groups, project groups, chat room
- Statements related to accessibility, diversity, netiquette, direct and timely feedback



# UDI and Instructional Technology

Tools faculty and staff use to create instructional materials:

- Microsoft Office (Word, PowerPoint, Excel, OneNote)
- Adobe: Creative Suite, Acrobat, Captivate, eLearning Suite
- Apple iLife, iWork, Final Cut Studio
- TechSmith's Camtasia, SnagIT, Jing
- SoftChalk Lessonbuilder
- [Matrix of Tools and Resources based on the Universal Design for Instruction principles](#)
- [eLearning Tools, Free Technology Toolkit for UDL in All Classrooms](#)



# UDE Resources

Universities and groups best known for their research related to UDL and UDI

- Center for Applied Special Technology, CAST - <http://www.cast.org/index.html>
- University of Washington, DO-IT Center – <http://www.washington.edu/doit/Faculty/Strategies/Universal/>
- Colorado State University - <http://accessproject.colostate.edu/udi/>
- Center on Postsecondary Education and Disability, University of Connecticut – <http://www.udi.uconn.edu/>
- University of Wisconsin Milwaukee - <http://access-ed.r2d2.uwm.edu/>
- Merlot Elixr, Case Stories: [Universal Design for Learning](#)



# Review and conclude

- **Instructional technology** = theory and practice of design, development, utilization, management, and evaluation of processes
- **Universal Design for Instruction** provides a more inclusive learning environment by meeting students needs and learning styles
- **Methodology** should include assess audience, objectives, strategies, materials, utilization, learner participation, evaluation, and revisions
- To review **resources**, tools and literature the references page, links in this presentation, or search for the following terms: Universal Design for Instruction (UDI), eLearning Tools, UDLtechtoolkit, and WebAccess



# References

1. D. Randy Garrison and Terry Anderson (2003). *E-Learning in the 21st Century: A Framework for Research and Practice*. Routledge. ISBN 0415263468.
2. Assure - Instructional Design Model. (n.d.). Retrieved October 11, 2011, from <http://www.instructionaldesign.org/models/assure.html>
3. University of Connecticut, Center on Postsecondary Education, UDI Online Project. (2010, November). Applying universal design for instruction to online and blended courses. Presented at the 16<sup>th</sup> Annual Sloan-C International Conference on Online Learning in Orlando, Florida. [www.udl.uconn.edu](http://www.udl.uconn.edu)