Universal Design for Learning:
A framework for good teaching
A model for student success

Marla Roll, Director, Assistive Technology Resource Center & Co-PI
Craig Spooner, Coordinator
Colorado State University

U.S. DOE-Funded Grants

- ACCESS Project: Ensuring that students with disabilities receive a quality higher education
- Transitions Project: Opportunities for Student Success (OPS)
  - Helping students with ASD, TBI, and significant LD transition to higher education

Goals for Today

- Share what we’ve learned about implementing UDL
- Learn from you how you are implementing UDL at PSD
- Help us prepare for work with General Ed. teachers
Defining UDL

Universal Design for Learning

is a set of principles and techniques for creating inclusive classroom instruction and accessible course materials.

History of UDL

- Universal Design (UD)
  - Accommodate the widest spectrum of users without the need for subsequent adaptation
  - Access to public buildings, city streets, television...

- Universal Design for Learning (UDL)
  - Inclusive pedagogy
  - Applies to both teaching and technology
UDL’s 3 Principles

1. **Represent** information and concepts in multiple ways (and in a variety of formats).
2. Students are given multiple ways to **express** their comprehension and mastery of a topic.
3. Students **engage** with new ideas and information in multiple ways.

---

**Representation**

- Presenting ideas and information in multiple ways and in a variety of formats
  - Lectures
  - Group activities
  - Hands-on exercises
  - Text + Graphics, Audio, Video
  - Distribute class notes ahead of time
  - Usable electronic formats (e.g., Word, PDF, HTML)
What makes a document Universally Designed?

- Searchability
- Copy and Paste
- Bookmarks or an Interactive Table of Contents
- Text to Speech capability
- Accessibility

Expression

- Students expressing their comprehension in multiple ways
  - “Three P’s”: Projects, Performances, Presentations
  - Mini-writing assignments
  - Portfolios/Journals/Essays
  - Multimedia (text/graphics/audio/video)
Engagement

Engaging students in multiple ways
- Express your own enthusiasm!
- Challenge students with meaningful, real-world assignments (e.g., service learning)
- Give prompt and instructive feedback
- Use classroom response systems (i-clickers)
- Make yourself available to students during office hours in flexible formats

#3: Engagement

Technology that can support representation, expression, & engagement

Examples:
- Text Help’s Read and Write Gold - http://www.texthelp.com/videotours/rw10marketing/int
  ro/IntroStream_en.html
- Don Johnston’s Read:Outloud - http://www.donjohnston.com/products/read_outloud/in
  dex.html
- Don Johnston’s Write:Outloud & Co:Writer
- Inspiration - http://www.inspiration.com/WebInspirationClassroom
CAST’s examples of technology and UDL

- “Goal is to create offer alternative ways to access, use and engage with learning content”
- “Print-based environment makes this difficult; digital media & computer technologies make for a malleable curriculum.”
  - UDL Book Builder
  - Science Writer
  - UDL Editions
  - UDL Guidelines and Lesson Builder

What does technology provide the instructor?

- Interactive ways to provide content
- Multi-modal delivery of content
- Scaffolding
- Differentiated instruction
- Ability to capitalize on individual learning styles

Additional rationale for considering technology:

- Video, images, text, hands-on experiences address varied learning styles
- NIMAS
  - http://aim.cast.org/learn/policy/federal/what_is_nimas
  - http://www.doe.mass.edu/edtech/assistive/nimas.html
- Site licenses – cost effective; enhances UDL when available to all students
What does technology provide the student?

- Tools for Representation
  - electronic study tools, concept mapping, text to speech; multi-modal output

- Tools for Expression:
  - use of images, voice recognition, other...

- Engagement:
  - students are often drawn to technology
  - encourages interaction with content

Who needs it?

Student Diversity

- Ethnicity & Culture
- Gender
- Nontraditional
- ESL/Native language
- Learning Styles
- Disabilities
ESL / Native Language

- Potential barriers to comprehension
  - For both students and instructors
  - Affects written and verbal communication

Learning Styles

1. Visual
   a) Visual-Linguistic (reading and writing)
   b) Visual-Spatial (graphs and pictures)
2. Auditory (listening)
3. Kinesthetic (touching and moving)

Multiple Intelligences

- Howard Gardner, Harvard, 1983
- Categories
  o Verbal/Linguistic
  o Visual/Spatial
  o Musical/Rhythmic
  o Logical/Mathematical
  o Bodily/Kinesthetic
  o Interpersonal
  o Intrapersonal
  o Naturalistic
Disabilities

- Both short-term and long-term, apparent and non-apparent
  - Mobility impairments
  - Blindness/Visual impairments
  - Deafness/Hearing impairments
- Learning Disabilities
- Attention Deficit Disorder (ADD/ADHD)
- Autism Spectrum Disabilities
- Traumatic Brain Injury (TBI)
- Post Traumatic Stress Disorder (PTSD)

Disabilities in P-12

<table>
<thead>
<tr>
<th>Type of Disability</th>
<th>2007-08</th>
</tr>
</thead>
<tbody>
<tr>
<td>All disabilities</td>
<td>13.4</td>
</tr>
<tr>
<td>Specific learning disabilities</td>
<td>5.2</td>
</tr>
<tr>
<td>Speech or language impairments</td>
<td>3.0</td>
</tr>
<tr>
<td>Mental retardation</td>
<td>1.0</td>
</tr>
<tr>
<td>Emotional disturbance</td>
<td>0.9</td>
</tr>
<tr>
<td>Hearing impairments</td>
<td>0.2</td>
</tr>
<tr>
<td>Orthopedic impairments</td>
<td>0.1</td>
</tr>
<tr>
<td>Other health impairment</td>
<td>1.3</td>
</tr>
<tr>
<td>Visual impairments</td>
<td>0.1</td>
</tr>
<tr>
<td>Multiple disabilities</td>
<td>0.3</td>
</tr>
<tr>
<td>Deafness</td>
<td>*</td>
</tr>
<tr>
<td>Autism</td>
<td>0.6</td>
</tr>
<tr>
<td>Traumatic brain injury</td>
<td>0.1</td>
</tr>
<tr>
<td>Developmental delay</td>
<td>0.7</td>
</tr>
</tbody>
</table>


Disabilities in Higher Education

- National statistics*
  - 11.3% of undergraduates report some type of disability
- Colorado State University**
  - 8%-11% (ACCESS research, 2007-10)
  - Non-apparent disabilities are by far the largest proportion and growing
  - Even among students who say they have a disability, few seek accommodations

CSU Psychology Undergraduates: What helps you learn?

- Information presented in multiple formats
- Instructor actively engages students in learning
- Instructor relates key concepts to the larger objectives of the course
- Instructor begins class with an outline
- Instructor summarizes key points
- Instructor highlights key points of instructional videos

CSU Psychology Undergraduates: What engages you?

- Strategies that increase engagement
  - i>clicker questions
  - Asks questions
  - Videos
  - Partner/group discussion and activities
  - In-class mini writing assignments
UDL is...

- A framework for inclusive pedagogy and accessible course materials
- A set of practices that...
  - Reach and engage the maximum number of learners
  - Recognize and anticipate classroom diversity
  - Emphasize flexible and customizable curricula

What can UDL accomplish?

- Cast a wider net to “catch” a more diverse set of learners
- Make learning more active and engaging
- Make learning and the materials of instruction accessible and usable by more students
- Help reduce the need for individual accommodations
Thank you!

Marla Roll  
marla.roll@colostate.edu  
970-491-2016

Craig Spooner  
craig.spooner@colostate.edu  
970-491-0784

accessproject.colostate.edu