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Learning Outcomes:

• Understand Universal Design for Learning and inclusivity concepts
• Create accessible word documents
• Create accessible PDFs from a word document
• Create accessible PDFs from a scanned text (book, articles, etc.)
• Learn how to check accessibility in Word and PDFs
What is Universal Design for Learning (UDL)?

Universal Design for Learning (UDL) is a framework to improve and optimize teaching and learning for all people based on scientific insights into how humans learn.

Principles:

• Presentation – to offer learners various ways of acquiring information and knowledge – “the what”
• Expression – to provide students alternatives for demonstrating what they know – “the how”
• Engagement – to tap into students’ interest, challenge them appropriately, and motivate them to learn – “the why”

- Center for Applied Special Technology (CAST)
## Guiding Principles

<table>
<thead>
<tr>
<th>Universal Design for Learning – eliminate barriers from the <em>learning</em> environment</th>
<th>Universal Design – eliminate barriers from the <em>built</em> environment</th>
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<tbody>
<tr>
<td>Pre-design courses to reach all learners</td>
<td>Retrofitting courses to meet the needs of some learners</td>
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<tr>
<td>Learning differences are a continuum of which students with disabilities are a part</td>
<td>Students are part of a binary: with or without disabilities</td>
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(Burgstahler, 2008; Eitzen, Kinney, & Grillo, 2016)
Why Use UDL?

• "Everyone is disabled in some way, and most people are likely to encounter serious disabilities as they age."
  • Such as injuries, situational disabilities (noisy room, one hand is occupied, misplaced your glasses, particularly fatigued), or technology not cooperating

• Survey of individuals with a mental health diagnosis enrolled in college in past five years:
  • 64% of those who did not graduate claimed a direct relationship with a mental-health-related reason
  • 50% did not disclose mental health conditions to their college
  • 45% did not receive support or accommodations

• 12.5% of working-age Americans with disabilities have attained a Bachelor’s degree or higher
  • Compared to 31.2% of their peers without disabilities

(Bias & Mayhew, 2005; Miller & Lang, 2016; Erickson, Lee, & von Schrader, 2012)
Research Support

• Research on benefits of UDL in higher education is limited as of yet... self-evident?

• Technology-assisted instruction can improve outcomes
  • Physics class using clickers/discussions scored 10% higher on final exam than traditional lecture class
    • Gender gap in performance disappeared in class using clickers
  • Various tools that engage students inside and outside of class can increase both perceived and actual learning outcomes
    • Examples: interactive texts, eBooks with text-to-speech, brief content podcasts
  • Learners can master skills in half the time with interactive videos as compared to non-interactive media
  • For highly demanding content, multiple but complementary modalities can aid learning

(CAST, 2011; Izzo, 2012; Dean, Lee-Post, & Hapke, 2017; Rose, 2001; Rappolt-Schlichtmann et al., 2013; Kennedy et al., 2014; Tindall-Ford et al., 1997)
Universal Design for Learning

**Affective networks:**
THE WHY OF LEARNING

How learners get engaged and stay motivated. How they are challenged, excited, or interested. These are affective dimensions.

- Stimulate interest and motivation for learning

**Recognition networks:**
THE WHAT OF LEARNING

How we gather facts and categorize what we see, hear, and read. Identifying letters, words, or an author’s style are recognition tasks.

- Present information and content in different ways

**Strategic networks:**
THE HOW OF LEARNING

Planning and performing tasks. How we organize and express our ideas. Writing an essay or solving a math problem are strategic tasks.

- Differentiate the ways that students can express what they know

(CAST, 2011)
Universal Design for Learning Guidelines

Provide Multiple Means of Engagement
Purposeful, motivated learners

Provide options for self-regulation
- Promote expectations and beliefs that optimize motivation
- Facilitate personal coping skills and strategies
- Develop self-assessment and reflection

Provide options for sustaining effort and persistence
- Heighten salience of goals and objectives
- Vary demands and resources to optimize challenge
- Foster collaboration and community
- Increase mastery-oriented feedback

Provide options for recruiting interest
- Optimize individual choice and autonomy
- Optimize relevance, value, and authenticity
- Minimize threats and distractions

Provide Multiple Means of Representation
Resourceful, knowledgeable learners

Provide options for comprehension
- Activate or supply background knowledge
- Highlight patterns, critical features, big ideas, and relationships
- Guide information processing, visualization, and manipulation
- Maximize transfer and generalization

Provide options for language, mathematical expressions, and symbols
- Clarify vocabulary and symbols
- Clarify syntax and structure
- Support decoding text, mathematical notation, and symbols
- Promote understanding across languages
- Illustrate through multiple media

Provide options for perception
- Offer ways of customizing the display of information
- Offer alternatives for auditory information
- Offer alternatives for visual information

Provide Multiple Means of Action & Expression
Strategic, goal-directed learners

Provide options for executive functions
- Guide appropriate goal-setting
- Support planning and strategy development
- Enhance capacity for monitoring progress

Provide options for expression and communication
- Use multiple media for communication
- Use multiple tools for construction and composition
- Build fluency with graduated levels of support for practice and performance

Provide options for physical action
- Vary the methods for response and navigation
- Optimize access to tools and assistive technologies

(CAST, 2011)
Key Questions

THINK ABOUT HOW LEARNERS WILL ENGAGE WITH THE LESSON:
1. Does the lesson provide options that can help all learners regulate their own learning?
2. Does the lesson provide options that help all learners sustain effort and motivation?
3. Does the lesson provide options that engage and interest all learners?

THINK ABOUT HOW INFORMATION IS PRESENTED TO LEARNERS:
4. Does the information provide options that help all learners reach higher levels of comprehension and understanding?
5. Does the information provide options that help all learners understand the symbols and expressions?
6. Does the information provide options that help all learners perceive what needs to be learned?

THINK ABOUT HOW LEARNERS ARE EXPECTED TO ACT STRATEGICALLY & EXPRESS THEMSELVES:
7. Does the activity provide options that help all students act strategically?
8. Does the activity provide options that help all learners express themselves fluently?
9. Does the activity provide options that help all learners physically respond?
How to make a Word document accessible

• Open up a current word document

• If you don’t have one, download a mock document from: library.uoregon.edu/calendar
How to make a PDF accessible

• Open up a current PDF
How to make a scanned PDF accessible

• Best to use Adobe Acrobat for existing pdfs from scanned documents

• For newly scanned documents, change settings that scan for OCR
Thank you!

Educational Technology & Canvas Support
Knight Library, room 19
LMS-support@ithelp.uoregon.edu
(541) 346-1942
library.uoregon.edu/cmet/edtech
How can you use UDL to inform the design of instruction and materials?

• Examples:
  • Create documents such as your syllabus and lecture notes in multiple electronic formats (Word, PDF, HTML)
  • Mix up the method on how you instruct
  • Have multiples ways for a student to show that they have learned the concept (test, presentation, online quizzes, website creation, skit)

Can you think of anything?