



Introduction to Universal Design for Learning

UDL

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Presenter

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Key Learning Objectives

- Understand the basic concepts of UDL
- Explore examples of a UDL Lesson
- Discuss free resources



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Universal Design for Learning

“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.”


CAST

[UDL At A Glance](#)



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Affective Networks
The "WHY" of learning

Multiple Means of Engagement


"Why" of learning


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Engagement

- The **WHY** of Learning
- Engages the Affective Networks
 - Recruiting Interest
 - Sustaining Effort & Persistence
 - Self-regulation



Affective Networks
The "WHY" of learning


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Engagement – Recruiting Interest

- Presented information needs to engage a learner
- Teachers incorporate ways to gain attention and engagement
- Learners differ in their interests
- Alternate methods are needed to recruit learner interest



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Engagement – Recruiting Interest

- UDL Checkpoints
 - Optimize individual choice and autonomy
 - Optimize relevance, value, and authenticity
 - Minimize threats and distractions



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Engagement – Sustaining Effort & Persistence

- Learning requires sustained attention and effort
- More motivated students can better regulate attention
- Learners differ in ability to self-regulate



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Engagement – Sustaining Effort & Persistence

- UDL Checkpoints
 - Heighten importance of goal and objectives
 - Vary demands and resources to optimize challenge
 - Foster collaboration and community
 - Increase mastery-oriented feedback



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Engagement – Self-regulation

- Important to develop the learner's abilities to regulate their own emotions and motivations
- Some learner's need help developing these skills
- When self-regulation is addressed, application of UDL principles are more successful



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Engagement – Self-regulation

- UDL Checkpoints
 - Promote expectations and beliefs that optimize motivation
 - Facilitate personal coping skills and strategies
 - Develop self-assessment and reflection



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Recognition Networks
The "WHAT" of learning

Multiple Means of Representation


"What" of learning


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Representation

- The **WHAT** of Learning
- Engages the Recognition Networks
 - Perception
 - Language & Symbols
 - Comprehension



Recognition Networks
The "WHAT" of learning


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Representation – Perception

- Information is not always presented in formats that are accessible and easy for all learners to understand
- Key information should be equally distinguishable to all learners
 - Present information in different modalities
 - Information should be in a format that is adjustable by the learner

Representation – Perception

- UDL Checkpoints
 - Offer ways of customizing the display of information
 - Offer alternatives for auditory information
 - Offer alternatives for visual information

Engagement – Language & Symbols

- Understanding of linguistic and non-linguistic concepts will be clear for some learners but not others
- Vocabulary, graphs, math symbols, pictures, images will be meaningful to some but not others
- Use of a single form of representing information creates inequalities in the learning environment
- Multiple forms of representation is essential for accessibility, but also clarity and comprehension



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Engagement – Language & Symbols

- UDL Checkpoints
 - Clarify vocabulary and symbols
 - Clarify syntax and structure
 - Support decoding of text, mathematical notation, and symbols
 - Promote understanding across languages
 - Illustrate through multiple media



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Engagement – Comprehension

- Learners need to participate in active information processing skills
 - Attending
 - Integrating new information with prior knowledge
 - Categorizing information
 - Active memorization
- Scaffolds are necessary to allow all learners access to the information

Engagement – Comprehension


- UDL Checkpoints
 - Activate or supply background knowledge
 - Highlight patterns, critical features, big ideas, and relationships
 - Guide information processing and visualization
 - Maximize transfer and generalization



Strategic Networks
The "HOW" of learning

Multiple Means of Action & Expression


"How" of learning


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Action & Expression

- The **HOW** of Learning
- Engages the Strategic Networks
 - Physical Action
 - Expression & Communication
 - Executive Functions



Strategic Networks
The "HOW" of learning


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Action/Expression – Physical Action

- Physical access to textbooks, workbooks, worksheets, educational software
- Learners with physical disabilities, blindness, dysgraphia, dyslexia, or executive functioning supports may be limited in accessing physical curriculum components
- Use of assistive technology will provide a seamless interface when lesson materials have been properly designed



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Action/Expression – Physical Action

- UDL Checkpoints
 - Vary the methods for response and navigation
 - Optimize access to tools and assistive technologies



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Action/Expression – Expression & Communication

- There is no one-size-fits-all way of expressing information for all learners to fully understand
- Alternate modalities for learners to easily express:
 - Knowledge
 - Ideas
 - Concepts



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Action/Expression – Expression & Communication

- UDL Checkpoints
 - Use multiple media for communication
 - Use multiple tools for construction and composition
 - Build fluencies with graduated levels of support for practice and performance



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Action/Expression – Executive Functions

- Reduction in executive capacity is compromised due to:
 - Management of lower level executive skills
 - A higher level disability or lack of fluency with executive strategies
- UDL framework expands executive capacity by:
 - Scaffolding lower level skills to require less executive processing
 - Scaffolding higher level skills and strategies to require development of and more effective use of executive skills



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Action/Expression – Executive Functions

- UDL Checkpoints
 - Guide appropriate goal-setting
 - Support planning and strategy development
 - Facilitate managing information and resources
 - Enhance capacity for monitoring progress



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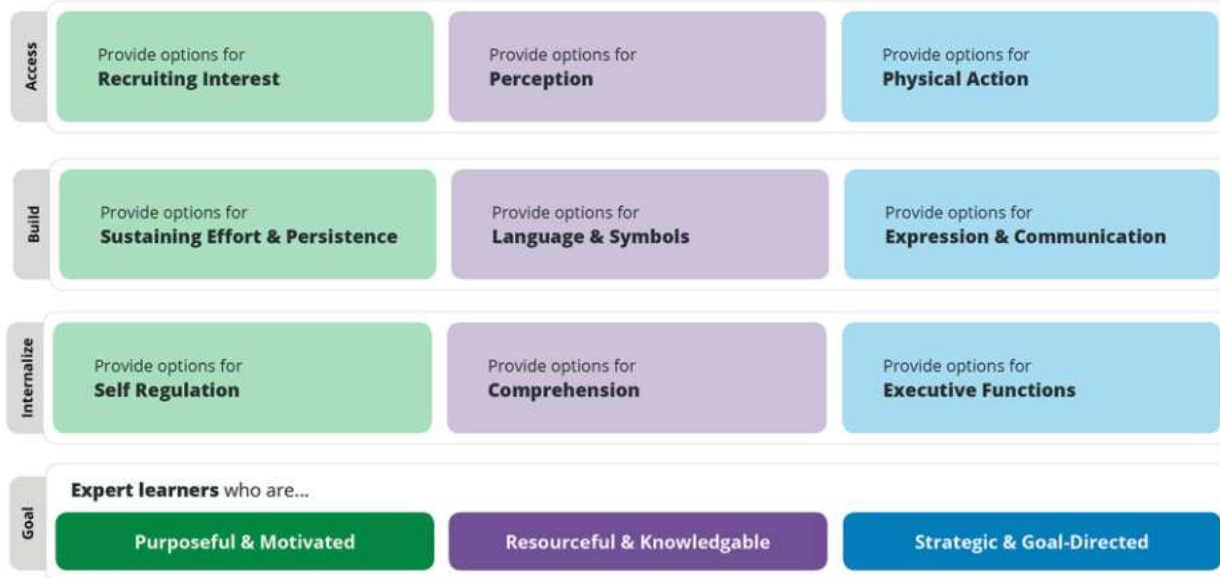
UDL Lessons

Lesson Examples



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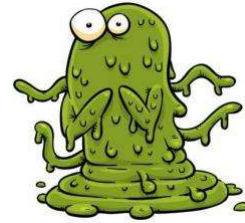
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UDL Lessons

Create a character or creature and write a story about it

- Manipulative Station

- Multicolored paper to create character
- Draw & color character on plain white paper
- Paint 'n Swirl or battery-operated scissors
- Take pictures of characters for a digital portfolio
- Graphic Organizer to describe characters



UDL Lessons

- Software/Computer Station

- Planning software
 - Word-prediction
 - Speech-to-text program
- Templates
 - Clicker 5
 - SMART Notebook
 - Picture supports



UDL Lessons

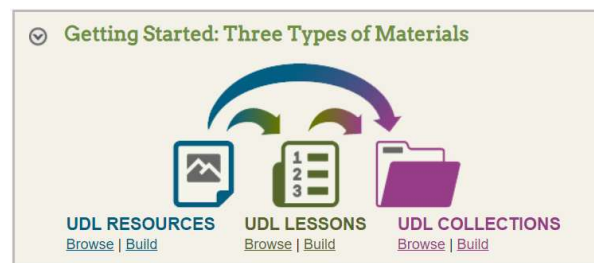
- SMART Board Station
 - Picture of creature and import into SMART Notebook
 - Create animated stories using SMART Recorder
 - Switch-users:
 - SMART Notebook's Transparent Background Tool
 - Layered over a switch-accessible program
 - Programmed voice output devices



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CAST UDL Exchange

- Explore and use various UDL resources and build lessons
- Free resource
- Browse or Build
 - Resources
 - Lessons
 - Collections

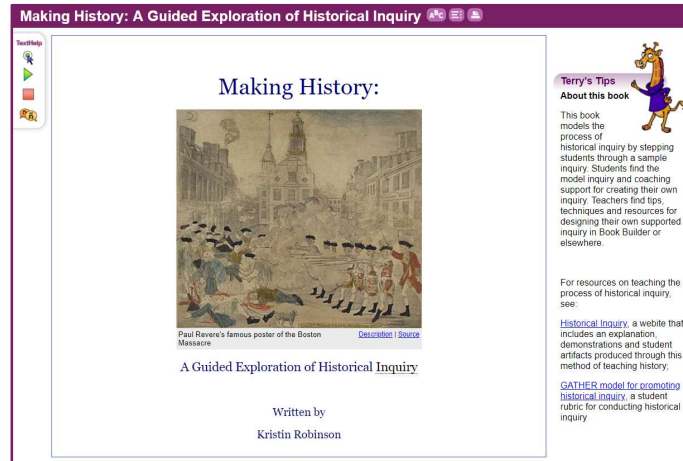


<http://udlexchange.cast.org/home>

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CAST Book Builder

- Read, create, and share digital books
- Free resource
- Books are designed to engage learners at various stages of needs, interests, and skills



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Assistive Technology

UDL – AT Options

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Universal Software Programs

- Voice Recognition
- Text-to-Speech
- Voice Recording
- Interactive Whiteboards
- Spell Checkers
- Electronic worksheets
- Built-in Accessibility features
- Literacy Tools
- Graphic Organizers
- Study Skills Tools
- Research Tools
- Audio Books
- Math Tools
- Multimedia Tools



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Universal Software Programs

- Dragon Naturally Speaking
- Google Voice Typing (Drive, Docs, Slides, Keep)
- TextHelp Read&Write
- Kurzweil 3000
- EquatIO



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UDL Framework

- **Multiple means of engagement**
 - Challenge, motivate, and allow student expression and participation in their individual interests
- **Multiple means of representation**
 - Provide students with various ways to acquire new information and knowledge
- **Multiple means of expression**
 - Allow students to demonstrate knowledge in alternative ways

Questions

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Any Questions after Webinar

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