

## **Tech Solutions for *All* Students: Universal Design for Learning, Part 1**

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Chatting, my husband and I walked into our local grocery store. The door opened automatically and we continued our conversation as we walked up and down the aisles. When we left with our cart full of bagged groceries, the door again opened as we rolled the buggy toward our car. Next we headed to the local public library. We climbed the steps to reach the building; a young mother clutching the hand of a curious toddler and pushing a stroller used the ramp to access the second-floor entrance. As she approached the building, the toddler reached out and pushed a large button with a wheelchair symbol and voilà! the door swung open and she pushed the stroller into the library with ease. Without any forethought, each of us that day experienced the advantages of “universal design,” a concept championed by architect Ron Mace (“The Center for Universal Design,” n.d.). Daily, we use “universally designed” buildings and consumer products such as flat-panel light switches or our computer’s “undo” command that not only make our everyday lives easier, but provide crucial access for people with accessibility challenges to navigate their world.

However, schools that are *physically* barrier-free are often *educationally* full of obstacles for our exceptional students. During a course I took in 2007 with my colleague, Lorena Pardy, my interest in technological solutions to these challenges awoke when I read an article written by David T. Gordon at Harvard University. I discovered that the concept of “Universal Design for Learning” (UDL) is one way technology can help break down educational accessibility barriers for our students. Yet UDL is not really just about technology. UDL is a philosophy of excellent educational practice that mirrors Bloom and Vygotsky in pinpointing essential domains in learning tasks (Rose, 2008). The following guidelines outline this philosophy (CAST, 2008).

# Universal Design for Learning Guidelines

## I. Representation

Use multiple means of representation

### 1. Provide options for perception

- Options that customize the display of information
- Options that provide alternatives for auditory information
- Options that provide alternatives for visual information

### 2. Provide options for language and symbols

- Options that define vocabulary and symbols
- Options that clarify syntax and structure
- Options for decoding text or mathematical notation
- Options that promote cross-linguistic understanding
- Options that illustrate key concepts non-linguistically

### 3. Provide options for comprehension

- Options that provide or activate background knowledge
- Options that highlight critical features, big ideas, and relationships
- Options that guide information processing
- Options that support memory and transfer

## II. Expression

Use multiple means of expression

### 4. Provide options for physical action

- Options in the mode of physical response
- Options in the means of navigation
- Options for accessing tools and assistive technologies

### 5. Provide options for expressive skills and fluency

- Options in the media for communication
- Options in the tools for composition and problem solving
- Options in the scaffolds for practice and performance

### 6. Provide options for executive functions

- Options that guide effective goal-setting
- Options that support planning and strategy development
- Options that facilitate managing information and resources
- Options that enhance capacity for monitoring progress

## III. Engagement

Use multiple means of engagement

### 7. Provide options for recruiting interest

- Options that increase individual choice and autonomy
- Options that enhance relevance, value, and authenticity
- Options that reduce threats and distractions

### 8. Provide options for sustaining effort and persistence

- Options that heighten salience of goals and objectives
- Options that vary levels of challenge and support
- Options that foster collaboration and communication
- Options that increase mastery-oriented feedback

### 9. Provide options for self-regulation

- Options that guide personal goal-setting and expectations
- Options that scaffold coping skills and strategies
- Options that develop self-assessment and reflection



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These guidelines<sup>1</sup> frame the underlying principles behind all the technological educational innovation that has been developed over the last twenty-five years at the Center for Applied Special Technology or CAST (Rose, 2008). CAST is a world educational leader partnering with educational suppliers such as Scholastic and corporations such as Google to provide barrier-free curriculum access. Teachers *want* to design curriculum that meets the needs of all their students, providing options so that *all* students can use their best learning modalities, learn and practice strategies, and remain motivated. But teachers are often thwarted by available instructional techniques, resources and time to provide optimal learning opportunities for all students. CAST provides the theoretical underpinning, professional development, and resources to help teachers truly design universally accessible curriculum.

In October 2008, I had the opportunity to attend a conference sponsored by the Learning Assistance Teachers Association of BC<sup>2</sup> and Special Education Technology-BC (SET-BC)<sup>3</sup>. The keynote speaker was Dr. David Rose, one of the co-founders of CAST. Rather than sharing the highlights of the conference, I want to use the paradigm of UDL to let YOU experience the conference for yourself! There is far too much information for me to do it justice in a short article. Using the UDL motif of “Multiple Means of Representation”, if you are interested in how UDL philosophy and technology can revolutionize your teaching, you have choices in how

to find out more about it. If your learning preference is to sit down and *enjoy a video* or listen to a conversation, then grab a snack and a hot drink and plan to spend a couple of hours exploring UDL philosophy and practice through a video of Dr. Rose’s keynote speech! Listed below are links to an easy-to-watch webcast of his speech. I’d advise you to break it up into the edited sections listed below. The Q & A section is also well worth watching.

**“Reaching Every Student in the Digital Age: A Showcase of Universal Design for Learning.”<sup>1</sup>**

Dr. David Rose, Ed.D.

Founder and Chief Education Officer  
Chief Scientist, Cognition and Learning  
Center for Applied Special Technology (CAST)

<http://bctf.ca/lata/conference/oct08conf.htm><sup>4</sup>

Introduction of Dr. Rose	<a href="http://events.insinc.com/setbc/20081024/presentation-index2.html">http://events.insinc.com/setbc/20081024/presentation-index2.html</a> . (7:37)
What is “Universal”?	<a href="http://events.insinc.com/setbc/20081024/presentation-index3.html">http://events.insinc.com/setbc/20081024/presentation-index3.html</a> . (25:15)
What is “Learning”?	<a href="http://events.insinc.com/setbc/20081024/presentation-index4.html">http://events.insinc.com/setbc/20081024/presentation-index4.html</a> . (31:40)
What is “Design”?	<a href="http://events.insinc.com/setbc/20081024/presentation-index5.html">http://events.insinc.com/setbc/20081024/presentation-index5.html</a> . (33:50)
“Disabled” Curriculum	<a href="http://events.insinc.com/setbc/20081024/presentation-index6.html">http://events.insinc.com/setbc/20081024/presentation-index6.html</a> . (2:36)
Questions and Answers	<a href="http://events.insinc.com/setbc/20081024/presentation-index7.html">http://events.insinc.com/setbc/20081024/presentation-index7.html</a> . (38:47)

If your learning preference is to *read a summary* of the philosophy of Universal Design for Learning, follow this link:

[http://www.cast.org/publications/UDLguidelines/UDL\\_Guidelines\\_v1.0.doc](http://www.cast.org/publications/UDLguidelines/UDL_Guidelines_v1.0.doc).

In an upcoming Technology CAT~net article, I will share some resources that I have found that support UDL practice in our classrooms. As a summary of Universal Design for Learning, you might be interested in reading the article by David T. Gordon that originally piqued my interest in UDL (<http://edletter.org/past/issues/2002-jf/digitalage.shtml>). His thoughtful discussion of the

integration of UDL-driven technology in a classroom prompted me to take a closer look at Universal Design for Learning; it might for you as well.

### **Resources:**

CAST (2008). *Universal design for learning guidelines version 1.0*. Wakefield, MA: Author.

Rose, D. H. (2008). *Reaching every student in the digital age: A showcase of Universal Design for Learning* [PowerPoint slides]. Retrieved from <http://events.insinc.com/setbc/20081024/presentation-index4.html>.

SET-BC (Producer). (2008, October 24). *Reaching every student in the digital age: A showcase of Universal Design for Learning*. Webcast retrieved from <http://bctf.ca/lata/conference/oct08conf.htm>.

The Center for Universal Design (2008). Ronald L. Mace. Retrieved June 30, 2009, from [http://www.design.ncsu.edu/cud/about\\_us/usronmace.htm](http://www.design.ncsu.edu/cud/about_us/usronmace.htm).

### Notes

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<sup>1</sup> A full-page graphic organizer PDF version of these guidelines is available from the website <http://www.cast.org/publications/UDLguidelines/version1.html>.

<sup>1</sup> Further information about the Learning Assistance Teachers' Association of BC (LATA) can be found at this website: <http://bctf.ca/lata/>; information about the conference itself is available at this website: <http://bctf.ca/lata/conference/oct08conf.htm>.

<sup>1</sup> SET-BC provides a wide variety of services, training, and technology not only to schools within BC but is also a worldwide resource for educational technology innovation. Their website is: <http://www.setbc.org/>.

<sup>1</sup> *Note*. "Reaching every student in the digital age: A showcase of universal design for learning," was co-sponsored by LATA and SET-BC. Copyright 2008 by LATA and SET-BC. Links embedded with permission.