Incorporating universal design principles into your courses

SFU Symposium on Teaching and Learning: Universal Design for all learners, May 18, 2016

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OBJECTIVES

• Define and discuss the principles of Universal Design for Learning (UDL)
• Provides examples, resources and take-away strategies on UDL that can be used to:
  o meet the needs of diverse learners.
  o improve student outcomes and accessibility.
  o increase teaching effectiveness.
• Examine how UDL can be successfully implemented in your own context
WHAT IS UNIVERSAL DESIGN?

The design of products and environments to be useable by all people to the greatest extent possible, without the need for adaption or specialized design (Mace, 1985)

Myth – universal design is the new buzzword for accessible design or assistive technology. There is more to universal design than compliance with accessibility laws (Steinfeld, Maisel, & Levine, 2012)
WHAT IS UNIVERSAL DESIGN FOR LEARNING?

Is a set of principles for curriculum development that give all individuals equal opportunities to learn. It is the proactive design of our courses to ensure they are educationally accessible regardless of learning style, physical or sensory abilities.
## Universal Design for Learning Analogy

<table>
<thead>
<tr>
<th>Universal Design (UD)</th>
<th>Universal Design for Learning (UDL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Environment</td>
<td>Instructional Environment</td>
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<tr>
<td>Physical barriers may exist in our</td>
<td>Learning barriers may exist in our curricular environment</td>
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<tr>
<td>architectural environment</td>
<td></td>
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<tr>
<td>Proactive design of physical space</td>
<td>Proactive design of curriculum and instruction</td>
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<tr>
<td>Physical retrofitting can be costly and</td>
<td>Instructional accommodations can be time consuming and difficult to</td>
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<tr>
<td>is often inelegant</td>
<td>implement</td>
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**UNIVERSAL DESIGN FOR LEARNING ANALOGY**
UDL FOUNDATIONS: BRAIN-BASED LEARNING NETWORKS

Brain-based research indicates three distinct yet inter-related learning networks (Rose, Meyer, Hitchcock, 2005):

1. Recognition Learning Network (what)

2. Affective Learning Network (why)

3. Strategic Learning Network (how)
RECOGNITION NETWORK (WHAT)

SUPPORTED BY
MULTIPLE MEANS OF
REPRESENTATION
Objective: Center the red circle on the grey line.
Description of activity

Activity 1
Objective: Center the red circle on the gray line. An arrow shaped horizontal line is to be divided into two equal halves. The left side of the arrow is the "head" in which the lines converge on the point. The right side of the arrow is the "tail" in which the lines diverge away from the point. The red circle can be moved to different positions. Pressing the reveal button shows the actual center point. People typically place the red circle too close to the right side of the arrow in this version of the Muller-Lyer illusion.

Activity 2
Objective: Make the green circles the same size. There are two flower shaped displays. In one, the "petals" of the flower are large circles, in the other the "petals" of the flower are small circles. At the center of each flower is a green circle. The size of the second green circle can be changed. Pressing the reveal button shows the size of the comparison circle. People typically leave the second circle as too small in this version of the Ebbinghaus illusion.

Activity 3
Objective: Make the red circles the same size. There are two sets of two concentric circles. On the left, the outer circle is red and the inner circle is grey. On the right, the outer circle is grey and the inner circle is red. The circles on the right can be adjusted in size. Pressing the reveal button shows the size of the comparison circle. People tend to make the adjustable red circle too large in this version of the Delboeuf illusion.

Activity 4
Objective: Line up the two red lines. A large grey rectangle has two angled red lines emerging from it. One line is at the top and the other is at the bottom. It is possible to align the lines so that they appear to be a single object piercing the rectangle. The bottom red line can be moved to different positions. Pressing the reveal button shows a straight line piercing the rectangle. People tend to have left the bottom line too close to the right edge of the rectangle in this version of the Poggendorf illusion.

Activity 5
Objective: Make the two red lines parallel. Equal line segments meet at right angles along the diagonal of the figure. Two red lines cut across the figure on either side of the diagonal. The lines are pinned at the top end but can be adjusted to flare out or pull closer together. Pressing the reveal button shows parallel lines. People tend to allow the lines to diverge in this version of the Wundt illusion.
YOUR CONTEXT

How do you represent your course materials in different ways?
STRATEGIC LEARNING NETWORK
(HOW)
SUPPORTED BY MULTIPLE MEANS
OF ACTION & EXPRESSION
EXAMPLES FROM UBC COURSES

Food, Nutrition, & Health 473, Candace Rideout - group project
CBL, PBL Case, or Create a Video Documentary
http://wiki.ubc.ca/Course:FNH473
http://fnh473.landfood.ubc.ca/examples/

Political Science 464B, Paul Evans – individual or group project
Paper or video with text

Kinesiology 469, Sarah Koch – group project (class moderation as “expert” of a chosen topic)
Journal club, debate, case study
How many of you give your students options for assignment types?
AFFECTIVE NETWORK (WHY)

SUPPORTED BY

MULTIPLE MEANS OF ENGAGEMENT
You have earned this achievement!

Earn a 565M Onboarding ("Peer") Badge by completing the following required steps:

- Publish a post introducing yourself in the Authors category
- Rate 16 Frontiers Poll posts
- Review 3 Frontiers Poll posts
- Participate in W01 discussions

Holograms

by [Author] on January 17, 2016

The introduction of holograms through our mobile devices would be a game-changer. This tech or video calls. The applications could be endless…online classes could be taught by an instructor see patients through holograms instead of in person (just imagine…no more waiting rooms) or!

👍 3 Votings for post

What I want to see: solar-powered smartphones

by [Author] on January 17, 2016

It would be so nice not having to rely on constantly plugging in my smartphone to charge up! An remote locations. No more plugs, no more travel converters and adapters. Maybe one day? In the chargers. That's a start.

👍 4

High-Rated Posts

1. Koole (2009) – A Model for Framing Mobile Learning by [Author]
2. YouTube by [Author]
3. Google by [Author]
4. A3: Forecasting Project – Text leveller by [Author]
5. Concluding Thoughts... by [Author]
YOUR CONTEXT

How do you engage your students in the learning process?
WHAT? SO WHAT? NOW WHAT?

What did you learn? What facts or observation stood out?
Why is that important?
What patterns or conclusions are emerging?
What actions make sense?