Universal Instructional Design

CCDI Conference
May 13th, 2009
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Overview

• Brain Research and Learning
• History of Universal Design
• What is UID?
• Principles of UID
• Why Implement UID?
• Roadblocks - Supports
• Questions?
1. Recognition Networks
Gathering facts.
- How we identify, categorize, what we see, hear and read
- Identifying letters, words
- an author’s style
- recognition tasks.

- The “what” of learning
Brain Research and Learning

2. Strategic networks

• Planning and performing tasks.
• Organize and express our ideas.
• Writing an essay or

The “how” of learning
Brain Research and Learning

3. Affective Networks
• How students are engaged, motivated, challenged, excited or interested.

The “why” of learning

Source: Centre for Applied Special Technology, 2007
History of Universal Design

Origins in architecture
- Curb cut
- Automatic doors
- Ramps
- Elevators with Braille signage
- Wider door frames
- Water Fountains
Definition of Universal Design

• ..... is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design (Ron Mace)
Universal Design History

- Centre for Universal Design at North Carolina State University

- Group of architects, product designers, engineers, and environment design researchers

- Developed 7 principles for universal design
Product Design

Equitable Use

Low Physical Effort

Flexibility in Use

Simple and Intuitive

Size and space for approach and use

Perceptible Information

Tolerance of Error
<table>
<thead>
<tr>
<th><strong>Product Design</strong></th>
<th><strong>Instruction Design Example</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Equitable Use</td>
<td>Website</td>
</tr>
<tr>
<td>Flexibility in Use</td>
<td>• Read or listen to a description</td>
</tr>
<tr>
<td></td>
<td>• Right/left handed scissors</td>
</tr>
<tr>
<td>Simple and Intuitive</td>
<td>Equipment with red/green buttons</td>
</tr>
<tr>
<td>Perceptible Information</td>
<td>. Multimedia with captions</td>
</tr>
<tr>
<td>Tolerance of Error</td>
<td>• Talking Thermometer</td>
</tr>
<tr>
<td></td>
<td>“undo” button computer</td>
</tr>
<tr>
<td>Low Physical Effort</td>
<td>• Door opens automatically</td>
</tr>
<tr>
<td></td>
<td>• Lever door handles</td>
</tr>
</tbody>
</table>
| Size and space for approach| • Wheelchair accessible turnstiles         | and use
Cell phone
Georgian College

Jim Bryson

• Universal Instructional Design In Postsecondary Settings, An Implementation Guide.

• Learning Opportunities Task Force, Ministry of Training, Colleges and Universities
University of Guelph

- Project to make “universal design” principles applicable to third level education


- 7 Principles of Universal Instructional Design
Universal Design

• Is Not One Size Fits All

• The term "universal" means universal access to your courses, not a universal curriculum.
Acronyms

- **UID** - **UDL** - **UDI**
- Universal Instructional Design (UID)
- Universal Design for Learning (UDL)
- Universal Design for Instruction (UDI)
7 Principles of UID
Instruction Materials and Activities should......

1. Be accessible and fair.
2. Provide flexibility in use, participation and presentation
3. Be straightforward and consistent
4. Be Explicitly presented and readily perceived
5. Provide a supportive learning environment
6. minimize unnecessary physical effort or requirements.
7. ensure learning spaces that accommodate both students and instructional materials
Principle 1

Instructional materials and activities should be accessible and fair.
Principle 1

Definition

• Instruction is designed to be useful and accessible by students with diverse abilities, respectful of diversity and with high expectations for all students.
Principle 1

Examples

- organizers
- lecture outlines
- key points
- announcements

- Invite students with disabilities to meet with professors individually to review their specific needs
Principle 2

Instructional materials and activities should provide flexibility in use, participation and presentation.
Principle 2

Definition

- Learning is most useful when it is multimodal. Materials are presented in multiple forms. Students have multiple ways of demonstrating their knowledge.
Principle 2 - Examples

• Presentations in verbal, text, images, audio

• Variety of teaching strategies – discussion/problem solving exercises

• Exercises and quizzes posted on-line
Principle 2 - Examples

• Choice of assignments – report, project, portfolio, take-home test.

• Choice of topics and sometimes due dates

• On-line discussion groups

• Group work to foster peer-to-peer learning
Principle 3

- Instructional materials and activities should be straightforward and consistent.
Principle 3

Definition
There needs to be consistency between course objectives and how the course is presented
Principle 3

Examples

- Lectures - consistent with course objectives
- Headings in a consistent manner
- Concept maps for complex topics
- Simple language
- Grading Rubrics
Example

- Use Simple Language
- Headings in a consistent manner
- Mind Maps
- Lectures consistent with course objectives
Principle 4

Instructional materials and activities should be explicitly presented and readily perceived.
Principle 4

- **Definition**

Maximize the clarity of each medium of communication and present information through multiple channels
Principle 4 - Examples

• Face the class when speaking – use a well modulated voice

• Summary of key points a few days before class – notes after class

• Website - choice of file formats

• Professors - assistance with new teaching strategies
Principle 4 - Examples

- PowerPoint (20pts) instead of handwritten notes
- Clearly identify major topics
- Avoid lingo, culture specific language, or too many acronyms
Principle 5

• Provide a Supportive Learning Environment
Principle 5

Definition

• Provide an inclusive environment, that is welcoming and encouraging to students and allows for learning from mistakes.
http://search.live.com/video/results.aspx?q=+professor+and+student+in+exam+video&docid=639137415884&mid=8B177DD8EB3DE759DD6D8B177DD8EB3DE759DD6D&FORM=VIVR3
Principle 5

• Posted regular office hours
• E-mail capability
• Channels for help - a help room
• Include marginalized students
• Share teaching philosophy
Principle 5

- Examples
  • drafts of assignments

  • Think, pair, share activities ***

  • Collaborative Learning***
Think, Pair, Share

• Memorize the following list of letters

R T R N R H A V S N A I Y E S I Y W E S I G
A O T O R U T L A C H N T N L P R J I A R G
T O F C E S C T S R W Y R S B W Y G M S T
Clue

• Clue # 1
Clue

• # 2 Clue
Audio Clue

- http://www.youtube.com/watch?v=9XbN-fSLu-k
Collaborative Learning

- Case Study Review
- Group work
Principle 6

Instructional materials and activities should minimize unnecessary physical effort or requirements.
Principle 6

Definition
Eliminating any unnecessary or not relevant physical effort
Principle 6 – Examples

Course websites:
- minimize clicking, scrolling or hunting for information – include “return to top of page”
- Inform guest speakers of needs of students
- Lighting, physical space, entrances and exits
Principle 6 – Examples

- Labs - work in pairs
- On-line library reserve or Web CT for reading material - students access from home
Principle 7

• Instructional materials and activities ensure learning spaces that accommodate both students and instructional materials.
Principle 7

Definition

• Learning happens in virtual and physical space. The space must be designed to accommodate diverse learners.
Principle 7 - Examples

• Space that fits the professor’s teaching techniques and subject area
• Technology match between course and exercises
• Large and small group activities possible
• Videotape class - review
Universal Instructional Design

• Challenges faculty to incorporate flexibility in instructional methods and materials to serve diverse learners
How do you teach?

• Adults remember
• 90% of what they say as they do a task
• 70% of what they say and write
• 50% of what they hear and see
• 30% of what they see
• 20% of what they hear
• 10% of what they read
Adults Remember

- 90% Say and Do
- 70% say and write
- 50% Hear and See
- 30% See
- 20% Hear
- 10% Read
90% Say and Do

70% Say and write

Adults Remember

50% Hear and See

20% Hear

10% Read

30% See
Technology in our lives

• List all the new technology you have used in the last 10 years.
Technology in our lives

• Bank machines
• Cell phones
• Blackberry

Speech recognition technology

• banks
• airline reservation systems
• phone systems
Technology in the Classroom

• Digital media offers feasible foundation for UID

• Versatile

• Transformability

• Networked
Why Change?
Why Change?

- Change is central to college cultures
- New laws (AODA 2005)
- New demographics – Millennial student
- New Educational Theories
Why Change?

- Fewer shared icons
- Entire population of diverse learners
Who benefits from Universal Instructional Design?

- EAL
- Millennials
- Mature Learners
- Cultural Difference - Values
- Students with disabilities
- International Students
- Learning Styles
Why incorporate U.I.D?

- **Multiple means of representation**
  Offers students various ways of acquiring information

- **Multiple means of expression**
  Provides alternatives to students for demonstrating what they know

- **Multiple means of engagement**
  Taps into student’s interests, challenges and motivates them
Change
3 perspectives

Reason for change
. Inclusive Learning Environment

Process of Change
. Enthusiastic Faculty willing to Change
  • Act as guides

Content of Change
7 Principles of UID
Universal Design for Student Services

- [http://www.washington.edu/doit/Video/eastudent.html](http://www.washington.edu/doit/Video/eastudent.html)

- Video

  - 15 minutes – if time
Roadblocks
Supports Needed
"The greatest good you can do for another is not just to share your riches but to reveal to him his own." (Benjamin Disraeli)
Contact Person

• Contact - Eleanor Condra
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  613 544 5532 extension 1524
Resource List

CAST – Universal Design for Learning, University of North Carolina
http://www.cast.org
Facultyware – University of Connecticut
http://facultyware.uconn.edu
Student Case Studies on Universal Design
http://www.washington.edu/doit/Faculty/Strategies/Academic/International/intl_case_studies
Universal Design: Applications in Postsecondary Education, University Of Arkansas in Little Rock.
http://www.ualr.edu.pace/ud/index.htm
Universal Design, University of Washington
http://www.washington.edu/doit/Resources/udesign.html
Resource List

Universal Instruction Design in Postsecondary Settings, An Implementation Guide, Jim Bryson

Universal Design for Instruction, Sheryl Burgstahler, Ph.D., University of Washington
http://www.washington.edu/doit/Brochures/Acadmeics/Instruction.html

Universal Design Faculty Room
http://www.washington.edu/doit/Faculty

University of Guelph, Lecture Guide
Universal Design for Instruction, Sheryl Burgstahler, Ph.D., University of Washington
http://www.washington.edu/doit/Brochures/Acadmeics/Instruction.html

Universal Design Faculty Room
http://www.washington.edu/doit/Faculty

University of Guelph, Lecture Guide
http://www.tss.uoguelph.ca/projects/uid/guides/Lectures_UIDprinc.html

University of Guelph, UID Resources
http://www.tss.uoguelph.ca/uid/uidresources.html.