Accessibility and Universal Design

FOR E-LEARNING

FLORIDA INTERNATIONAL UNIVERSITY
Division of Student Affairs
Disability Resource Center
Objectives

**PARTICIPANTS WILL**

- Understand the need to utilize universal design in instruction
- Learn the guiding principles of Universal Design for Instruction (UDI)
- Learn practical applications of Universal Design for Learning
Origins of Universal Design

- **Universal Design** refers to broad-spectrum ideas meant to produce buildings, products and environments that are inherently accessible to older people, people without disabilities and people with disabilities
  
  - Building designed for the ‘average’ person
  - Retrofitting is not the sustainable solution
    - Retrofit is resource intensive (money & time)
    - Calls attention to the user
    - Solves one problem as a time
The Americans with Disabilities Act vs. Universal Design
What is Universal Design for Learning

Universal Design for Learning (UDL) was defined in the Higher Education Opportunity Act of 2008 as:

A scientifically valid framework for guiding educational practice that:

• provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and

• reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient.
The Need to Universally Design Instruction

- Increasingly diverse FIU student body
  - 27% age 25 or older
  - 78% Hispanic or Black/African American
  - 36% attending college part-time
  - 55% Female
  - 44% or undergrads enrolled in some distance education
  - 4% registered with the Disability Resource Center
- Increased emphasis on student retention
- Shift in pedagogy from delivering instruction to promoting learning
- Retrofitting is not a sustainable solution
Learner Variability

THREE PRIMARY BRAIN NETWORKS COME INTO PLAY:

- **Recognition Networks**
  The "what" of learning

- **Strategic Networks**
  The "how" of learning

- **Affective Networks**
  The "why" of learning
Universal Design 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.

Proactive Instruction

Present information and content in different ways
Universal Design for Learning

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.

Proactive Instruction

Differentiate the ways that students can express what they know.
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.

Proactive Instruction

Stimulate interest and motivation for learning
Universal Design for Learning Principles

Three Primary Brain Networks

- Recognition Network
  - supported by
  - Multiple Means of Representation

- Strategic Network
  - supported by
  - Multiple Means of Expression

- Affective Network
  - supported by
  - Multiple Means of Engagement
Provide Multiple Means of Representation

**Guideline 1:** Provide options for perception

**Guideline 2:** Provide options for language, mathematical expressions and symbols

**Guideline 3:** Provide options for comprehension
Guideline One

PROVIDE MULTIPLE MEANS OF REPRESENTATION

• Provide options for perception
  – Offer ways of customizing the display of information
  – Offer alternatives for auditory information
  – Offer alternatives for visual information
clippity clop of horse hooves

City-Slicker>> Whoa! I wonder if this is the right road. Ahhh, someone playing a violin. I'll inquire from him. Get up here.

[violin playing happily]

City-Slicker>> Whoa. How do, boss? What might your name be?

Hillbilly>> Well, it might be Abe Lincoln, but it ain't. What made you think I was boss here?

City-Slicker>> Why, I guessed it.

Hillbilly>> Well, guess what my name is! Ha ha ha ha!

[violin playing]
Guideline Two

PROVIDE MULTIPLE MEANS OF REPRESENTATION

• Provide options for language and symbols
  – Clarify vocabulary and symbols
  – Support decoding of text, mathematical notation and symbols
  – Illustrate through multiple media
### Key terms

- **Anonymous identifier**
- **Cookie**
- **Google Account**
- **IP address**
- **Non-personally identifiable information**
- **Personal information**
- **Pixel tag**
- **Sensitive personal information**
- **Server logs**
- **Unique device identifier**

#### Anonymous identifier
An anonymous identifier is a random string of characters that is used for the same purposes as a cookie on platforms, including certain mobile devices, where cookie technology is not available.

#### Cookie
A cookie is a small file containing a string of characters that is sent to your computer when you visit a website. When you visit the website again, the cookie allows the site to recognize your browser. Cookies may store user preferences and other information. You can reject your browser to refuse all cookies or to indicate when a cookie is being sent. However, some website features or services may not function properly without cookies.

#### Google Account
You may access some of our services by signing up for a Google Account and providing us with some personal information (typically your name, email address and a password). This account information will be used to authenticate you when you access Google services and protect your account from unauthorized access by others. You can edit or terminate your account at any time through your Google Account settings.

#### IP address
Every computer connected to the Internet is assigned a unique number known as an Internet protocol (IP) address. Since these numbers are usually assigned in country-based blocks, an IP address can often be used to identify the country from which a computer is connecting to the Internet.

#### Non-personally identifiable information
This is information that is recorded about users so that it no longer reflects or references an individually identifiable user.

#### Personal information
This is information which you provide to us which personally identifies you, such as your name, email address or billing information, or other data which can be reasonably linked to such information by Google.

#### Pixel tag
A pixel tag is a type of technology placed on a website or within the body of an email for the purpose of tracking activity on websites, or when emails are opened or accessed, and is often used in combination with cookies.

#### Sensitive personal information
This is a particular category of personal information relating to confidential medical facts, racial or ethnic origins, political or religious beliefs or sexuality.
Guideline Three

PROVIDE MULTIPLE MEANS OF REPRESENTATION

• Provide options for comprehension
  – Activate or supply background knowledge
  – Highlight patterns, critical features, big ideas, and relationships
  – Guide information processing, visualization and manipulation
e-Learning Implementation

APPLYING UDI IN E-LEARNING

- **Guided Notes** are instructor prepared guides that outline or map out lectures and reading assignments, but leave ‘blank’ space for students to enter key concepts, fact, definitions, etc. as the lecture progresses or the reading assignment is completed
Tips for developing guided notes

- Identify the most important concepts, facts and relationships from your lectures or reading assignments
- Delete key facts, concepts and relationships
- Insert cues (*, #) to indicate where and how many facts or concepts
- Leave white space
- Include additional resources such as references and supplemental materials
How does universal design relate to accommodations?

<table>
<thead>
<tr>
<th>Accommodation Approach</th>
<th>Universal Design Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>The individual is the focus of the problem of access.</td>
<td>The learning environment is the locus of the problem of access.</td>
</tr>
<tr>
<td>Access is given retroactively.</td>
<td>Access is built into the course proactively.</td>
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<tr>
<td>Modification is only for the individual with a disability.</td>
<td>All students potentially benefit from inclusive design.</td>
</tr>
<tr>
<td>May require special treatment or separation from rest of students.</td>
<td>Less need for special treatment; greater integration</td>
</tr>
<tr>
<td>May require time to discuss and implement changes</td>
<td>Investment of time during design stage; plan may be tweaked after further experience.</td>
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Let’s Review

- Develop proactive strategies, tools and instructional materials that are universally designed

- Shift from delivering instruction, to promoting learning