Introduction

Upon completion of this course, you will be able to:
• _______ the term universal design
• _______ universal design to instruction
• _______ the seven principles of UDL and identify examples of each in a universally designed curriculum
• _______ examples of multiple means of representations, multiple means of expression and multiple means of engagement
• _______ the distinction between UDL and Assistive Technology

Definition/Background

Universal design is an ___________ to the design of products, services and environments to be usable by as many people as possible regardless of age, ability or circumstance.

When universal design is applied to the development of ____________________, it is referred to as Universal Design for Learning (UDL).

The forerunner of research on UDL is the__________________________________________.

The concept of universal design (UD) originated from the field of ___________ and product design development.

The Center for Universal Design, out of North Carolina State University, offers a great deal of information regarding the benefits of UD as it applies to ___________ and product design (http://www.design.ncsu.edu/cud/).

• For example, architects design structures so that they are accessible for the wide variety of people who enter, including those with ___________. By planning to meet the needs of a wide range of people from the, it can eliminate the need for retro fitting or adapting existing structure, which can be quite costly and not always aesthetically pleasing.

• The principles of universal design are also applied to the design of __________________________ (e.g. lever door handles, keyless entry systems, motion detector lights). The design of these products not only increase accessibility for individuals with disabilities, but also provides convenience for the vast majority of users.
Seven Principles of Universal Design

The following is a list of principles that serve as guidelines for designing structures, products, and communication devices.

1. _____________: This principle implies that the design needs to be useful and marketable for people with diverse abilities. It also implies that the design will be appealing to all users while avoiding stigmatization and segregation to any users.

2. _____________: This principle implies that the design needs to accommodate a wide range of preferences and abilities while providing choice in the method of use and facilitating the users’ accuracy and precision.

3. _____________: This principle implies that the design is easy to understand regardless of the users’ knowledge, experience, and/or language skills.

4. _____________: This principle implies that the design communicates information effectively to the user regardless of ambient conditions or users’ sensory abilities.

5. _____________: This design principle minimizes adverse consequences of accidental or unintended actions.

6. _____________: This principle suggests that products need to be designed for efficiency and comfort while also minimizing fatigue.

7. _____________: This principle implies that the size and space that is provided is adequate for approach, reach, manipulation, and use regardless of the users’ body size, posture, or mobility.

Universal Design for Learning and Brain Networks

When the concept of universal design is applied to ________________, it is known as Universal Design for Learning (UDL). To accommodate a broad variety of learners, UDL involves the use of flexible options for accessing, using, and engaging with instructional materials.

The purpose of UDL is “to select goals, methods, assessment and materials in a way that will minimize barriers and maximize __________ so that curricula fully support every student’s access, participation, and progress in essential facets of learning” (Zabala & Edyburn, 2006, p. 4).

The principles of UDL were developed based on knowledge of neural networks and the role they play in learning. The three primary brain networks include:
1. **Recognition Networks**: This network refers to how the brain is used to gather facts (how learners identify and categorize what they see, hear, and read; the “what” of learning).

2. **Strategic Networks**: This network is associated with planning and performing tasks (how learners organize and express their ideas; the “how” of learning).

3. **Affective Networks**: This network is associated with the motivational aspects of learning (how learners become excited or motivated by learning; the “why” of learning).

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**Principles of UDL**

- Using the principles of UDL makes it possible for educators to tailor their instruction to accommodate individual differences across the three brain networks. In order to provide a universally-designed curriculum, it should have the following features:

  1. Multiple means of **representation** involves providing learners with a variety of ways to acquire information and knowledge.

  2. Multiple means of **expression** involves providing learners with a variety of ways to demonstrate what they know by allowing them to use multiple representations of the same information using different sensory modalities.

  3. Multiple means of **engagement** involves providing learners with materials or activities that match their interests and preferences while offering enough of a challenge to increase motivation. Providing novelty in activities can also make lessons more interesting and increase student motivation.

- For curriculum to be universally designed to meet the needs of most learners, it must be _______. By increasing the ________ of the design, educators can greatly increase the number of students who can be reached within a single curriculum, while reducing the need for accommodations later.

  ________, often makes it possible to offer a flexible curriculum because educators have the capability to provide:

  - *Multiple representations of the material*
  - *Multiple means of expression*
  - *Multiple means of engagement*

- When technology is unavailable, ________ or ________ alternatives can also be considered when planning universally-designed curriculum.
In summary, UDL is a concept that involves the selection of methods, assessment, and materials that will minimize barriers by offering enough flexibility so that the universe of learners can participate in learning.

Difference Between AT and UDL

Because of the fact that UDL often utilizes technology, many people assume that it is synonymous with assistive technology. Although there may be some overlap, there are differences.

The Individuals with Disabilities Education Act of 1997 (IDEA) defines assistive technology as “any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of a child with a disability” (IDEA, 1997, 20, USC, Ch. 33, Sec. 1401 (25) US).

The purpose of assistive technology is to increase, maintain, or improve functional capabilities of individuals with disabilities, whereas the purpose of UDL is to increase access to the general curriculum for students with and without disabilities. Both AT and UDL share the educational outcomes of increasing student participation and achievement, but AT will more than likely be used with specific individuals.

Resources/References


