Universal Design in Education: Principles and Applications

An approach to ensure that educational programs serve all students.

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While courses, technology, and student services are typically designed for the narrow range of characteristics of the average student, the practice of universal design in education (UDE) considers people with a broad range of characteristics in the design of all educational products and environments. UDE goes beyond accessible design for people with disabilities to make all aspects of the educational experience more inclusive for students, parents, staff, instructors, administrators, and visitors with a great variety of characteristics. These characteristics include those related to gender, race and ethnicity, age, stature, disability, and learning style.

Originally applied in the field of architecture and later to commercial products and information technology, UDE applications are relatively new. UDE provides a philosophical framework for the design of a broad range of educational products and environments.

Definition and Principles of UD

The term universal design (UD) was coined by the architect Ronald Mace, who challenged the conventional approach of designing for the average user and provided a design foundation for more accessible and usable products and environments. Mace and other visionaries developed the definition of UD used by the Center for Universal Design (CUD) at North Carolina State University: "the design of products and environments to be usable to the greatest extent possible by people of all ages and abilities" (Story, Mueller, & Mace, 1998). Universal design puts high value on both diversity and inclusiveness.
UD of Instruction

The Center for Applied Special Technology (CAST) has focused its efforts on universal design for learning (UDL), especially as it applies to technology-based curriculum and assessment. It defines UDL as "a research-based set of principles that together form a practical framework for using technology to maximize learning opportunities for every student" (Rose & Meyer, 2002, Preface). When UDL is applied, curriculum designers create products to meet the needs of students with a wide range of abilities, learning styles, and preferences. UDL draws on "brain research and media technologies to respond to individual learner differences. It reflects an awareness of the unique nature of each learner and the need to address differences." UDL curricula offer

- **Multiple means of representation**, to give learners various ways of acquiring information and knowledge;

- **Multiple means of action and expression**, to provide learners alternatives for demonstrating what they know; and

- **Multiple means of action and engagement**, to tap into learners' interests, offer appropriate challenges, and increase motivation.

(CAST)
Universal design can be applied to all aspects of instruction—teaching techniques, curricula, assessment—as indicated in the following guidelines.

- **Class Climate.** Adopt practices that reflect high values with respect to both diversity and inclusiveness.

- **Interaction.** Encourage regular and effective interactions between students and the instructor and ensure that communication methods are accessible to all participants.

- **Physical Environments and Products.** Ensure that facilities, activities, materials, and equipment are physically accessible to and usable by all students and that all potential student characteristics are addressed in safety considerations.

- **Delivery Methods.** Use multiple, accessible instructional methods that are accessible to all learners.

- **Information Resources and Technology.** Ensure that course materials, notes, and other information resources are engaging, flexible, and accessible for all students.

- **Feedback.** Provide specific feedback on a regular basis.

- **Assessment.** Regularly assess student progress using multiple, accessible methods and tools and adjust instruction accordingly.

- **Accommodation.** Plan for accommodations for students whose needs are not met by the instructional design. (Burgstahler, 2007a)
Resources

http://www.usdoj.gov/crt/ada/checkweb.htm


http://www.uw.edu/doit/Brochures/Academics/equal_access_udi.html

http://www.uw.edu/doit/Brochures/Programs/equal_access_spaces.html

http://www.uw.edu/doit/Brochures/Academics/equal_access_ss.html


The Center for Universal Design in Education. 
http://www.uw.edu/doit/CUDE/

http://www.design.ncsu.edu/cud/about_ud/udprincipleshtmlformat.html

Electronic and Information Technology Accessibility Standards (Section 508). http://www.access-board.gov/sec508/standards.htm

http://www.design.ncsu.edu/cud/pubs_p/pud.htm


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