

Handout 8A.4

EVOLVING CONCEPTS: UNIVERSAL ACCESS AND UNIVERSAL DESIGN

According to the National Collaborative on Workforce and Disability for Youth (NCWD/Youth), **universal access** is the design of environments, products and communication, as well as the delivery of programs, services and activities to be useable by all youth and adults, to the greatest extent possible, without adaptation or specialized design. Note that this definition offers a common term that contains two parts, the physical and the abstract, in addition to the visible and the invisible. It is about both design and service delivery.

Universal design is a way of thinking about design (of environments, products and communication, as well as the delivery of programs, services and activities) that is based on the following premises:

- Varying ability is not a special condition of the few but a common characteristic of being human, and everyone changes physically and intellectually throughout life.
- If a design works well for people with disabilities, it works better for everyone.
- At any point in life, personal self-esteem, identity and well-being are deeply affected by the ability to function in the physical surroundings with a sense of comfort, independence and control.
- Usability and aesthetics are mutually compatible.

Group A

Key Concepts of Universal Design

The following are seven generally agreed upon principles of universal design developed by the Center for Universal Design at North Carolina State University (Center for Universal Design, 1997). Each principle is followed by guidelines for implementation.

Equitable Use: Design is useful and marketable to people with diverse abilities.

Guidelines:

- Provides the same means of use for all users, identical whenever possible and equivalent when not;
- Avoids segregating or stigmatizing any users

- Makes provisions for privacy, security and safety equally available to all users; and,
- Makes design appealing to all users.

Flexibility in Use: Design accommodates a wide range of individual preferences and abilities.

Guidelines:

- Provides choices in methods of use;
- Accommodates right- and left-handed access and use;
- Facilitates the user's accuracy and precision; and,
- Provides adaptability to the user's pace

Simple and Intuitive Use: Use of design is easy to understand, regardless of the user's experience, knowledge, language skills or concentration level.

Guidelines:

- Eliminates unnecessary complexity;
- Is consistent with user expectations and intuition;
- Accommodates a wide range of literacy and language skills;
- Arranges information consistent with its importance; and,
- Provides effective prompting and feedback during and after task completion

Perceptible Information: Design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Guidelines:

- Uses different modes (pictorial, verbal, tactile) for redundant presentation of essential information;
- Maximizes "legibility" of essential information;
- Differentiates elements in ways that can be described (i.e., makes it easy to give instructions or directions); and,
- Provides compatibility with a variety of techniques or devices used by people with sensory limitations

Tolerance for Error: Design minimizes hazards and adverse consequences of accidental or unintended actions

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Guidelines:

- Arranges elements to minimize hazards and errors, with most-used elements most accessible and hazardous elements eliminated, isolated or shielded;
- Provides warnings of hazards and errors;
- Offers fail-safe features; and,
- Discourages unconscious action in tasks that require vigilance

Low Physical Effort: Design can be used efficiently, comfortably and with a minimum of fatigue.

Guidelines:

- Allows user to maintain a neutral body position;
- Uses reasonable operating forces;
- Minimizes repetitive actions; and,
- Minimizes sustained physical effort

Size and Space for Approach and Use: Appropriate size and space is provided for approach, reach, manipulation and use regardless of user's body size, posture or mobility.

Guidelines:

- Provides a clear line of sight to important elements for any seated or standing user;
- Makes reach to all components comfortable for any seated or standing user;
- Accommodates variations in hand and grip size; and,
- Provides adequate space for the use of assistive devices or personal assistance

Group B

A Note on Assistive Technology and Other “After-the-Fact” Accommodations: Whereas universal design alters the environment and information, **assistive technology** and other **specialized accommodations** allow individuals to adjust to an unaltered environment or information source and provide access to materials and services to people with disabilities that would not otherwise be accessible.

Examples of assistive technology include:

- Wheelchairs;
- Alternative automobile controls;
- Communication aids; and,
- Hearing aids.

A variety of technologies that increase, maintain or improve access to electronic and information

technology for individuals with disabilities.

For example, people with limited hand function may use a keyboard with large keys or a special mouse to operate a computer; people who are blind may use software that reads text on the screen in a computer-generated voice; people with low vision may use software that enlarges screen content; people who are deaf may use a Text Telephone (TTY); or people with speech impairments may use a device that speaks out loud as they enter text via a keyboard.

An employer may be required to provide some other types of reasonable accommodations under laws such as the Rehabilitation Act or the Americans with Disabilities Act. Accommodations are to be considered on a case-by-case basis and are a means of overcoming unnecessary barriers that prevent or restrict employment opportunities for otherwise qualified individuals with disabilities. Also, a reasonable accommodation need not be the best or most expensive accommodation available, as long as it is effective for the situation.

Other types of reasonable accommodations include:

- Making facilities readily accessible to and usable by an individual with a disability;
- Restructuring a job by reallocating or redistributing marginal job functions;
- Altering when or how an essential job function is performed;
- Modifying work schedules (e.g., part-time);
- Obtaining or modifying equipment or devices;
- Modifying examinations, training materials, or policies;
- Providing qualified readers and interpreters;
- Reassigning to a vacant position;
- Permitting use of accrued paid leave or unpaid leave for necessary treatment;
- Providing reserved parking for a person with mobility impairment; and,
- Allowing an employee to provide equipment or devices that an employer is not required to provide.

It is important to note that assistive technology and other accommodations are used on an after-the-fact basis when someone with a disability cannot use a given product or service. **The need for after-the-fact,**

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specialized accommodations can be reduced or eliminated entirely depending on the disability, if universal design principles are employed to ensure that programs, services and activities are, in fact, accessible to and useable by the widest range of citizens.

Group C

Universal Design in Access to Electronic and Information Technologies

By law, technologies used for communication, duplication, computing, storage, presentation, control, transport and production should be equally accessible to all. Electronic and information technology is defined, in part, as “any equipment or interconnected system or subsystem of equipment that is used in the creation, conversion, or duplication of data or information.” This broad definition covers all telecommunications devices, including telephones, voice-mail systems, pagers, facsimile machines and related technology, as well as any technology used to convey, transmit or receive any kind of information (Access Board, 2004). It also includes computers, software and software applications, operating systems, web-based information or applications, video and multimedia products; networks, peripherals, and self-contained, closed products such as information kiosks, calculators, fax machines, and desktop and portable computers.

Universal Design and Program Access

Program accessibility is another key concept for agencies and programs, one that has important implications for serving people with disabilities. Under several laws, publicly funded entities are prohibited from denying people with disabilities equal access to participate in programs and activities because facilities are not accessible. Programs in the workforce development system, including youth-serving programs, need to operate their programs, services and activities so they are accessible to and usable by people with disabilities.

When attempting to achieve program access, innovation and creativity are essential and can include any or all of the following: redesign of equipment; reassignment to accessible locations; use of aides;

delivery of services at alternative accessible sites; use of accessible vehicles and technologies; alternatives to existing facilities; and construction of new facilities. Effective access must be provided to ensure integration of people with disabilities into the same programs, services and activities as non-disabled persons (U.S. Department of Labor, 2003).

When considering accessibility for people with disabilities, it is important to review the entire program, service and activity as well as the specific policies, procedures, facility, materials, equipment and technology. The concept of universal design can be employed to ensure that their programs, services and activities are, in fact, accessible to and useable by the widest range of citizens.

Group D

Universal Design for Learning

Universal design for learning (UDL), a relatively new theory already embedded in the federal law governing special education programs and services, extends key concepts of universal design into the education environment. “The key to helping all students achieve is identifying and removing barriers from our teaching methods and curriculum materials,” explain key staff members at the Center for Accessing Special Technologies, the leading research and technical assistance center on universal design for learning.

The Individuals with Disabilities Education Act of 1997 required that all students, regardless of their abilities, be given the opportunity to become involved with and progress in the general curriculum. All students should have access to what is being taught; however, providing access involves more than giving every student a book or a computer. Teachers have to ensure that students are challenged by the subject matter, regardless of their developmental level. The recently enacted Individuals with Disabilities Education Improvement Act of 2004 addresses universal design for learning in five key areas: standards, student assessment, technology, curricula and instructional materials (Individuals with Disabilities Education Improvement Act of 2004).

The Council for Exceptional Children has put

forth the following definition for universal design of instruction:

In terms of learning, universal design means the design of instructional materials and activities that make the learning goals achievable by individuals with wide differences in their abilities to see, hear, speak, move, read, write, understand English, attend, organize, engage, and remember. Universal design for learning is achieved by means of flexible curricular materials and activities that provide alternatives for students with differing abilities. These alternatives are built into the instructional design and operating systems of educational materials—they are not added on after-the fact (Orkwis, 1999).

According to the Center for Applied Special Technology (CAST), universal design for learning shifts long-held assumptions about teaching and learning in four fundamental ways:

- Students with disabilities are on a continuum of learner differences rather than constituting a separate category.
- Teachers should adjust for learner differences in all students, not just those with disabilities.
- Curriculum materials should not be dependent on a single textbook; rather they should be varied and diverse, including digital and online resources.
- Curricula should be made flexible instead of remediating students to learn from an inflexible curriculum (Center for Applied Special Technology, n.d.).

Clearly, no two students learn exactly the same way. Rather, the range of performance and ability of students varies greatly in terms of their ability to see, hear, move, read, write, attend, organize, focus, engage and remember. For example, text in standard print format presents a barrier for students who are dyslexic and for students with English as a second language, and is inaccessible for blind students. The same text when delivered in a digital format offers many options. It can be read aloud by a computer or screen reader, printed on a Braille printer, and presented in spoken or written translation or with highlighted main points and organizational principles.

Educators have traditionally adapted books and tests to accommodate students' diverse learning needs to give them an opportunity to progress in

content areas. The usual accommodations are Braille and recorded texts for the visually impaired student, captioned materials for the hearing-impaired, and customized supplementary materials to address cognitive disabilities. These accommodations are usually added to the standard curriculum much like adding a wheelchair ramp to a building to provide access. Architectural accommodations added later are sometimes awkward and expensive; likewise, curriculum adaptations can be time consuming to design and difficult to implement in a classroom of diverse learners. It is much more efficient to incorporate student access by considering the range of user abilities in the beginning stage of curriculum design. Designing with accessibility of all possible users in mind is the underlying principle of universal design.

CAST has developed three principles of universal design for learning formed to minimize barriers and maximize learning through flexibility. The overarching principles are to support:

- Recognition learning, by providing multiple, flexible methods of presentation;
- Strategic learning, by offering multiple, flexible methods of expression and apprenticeship; and,
- Affective learning, by employing multiple, flexible options for engagement (Rose & Meyer, 2002).

Universal design principles for learning can be applied to lectures, classroom discussions, group work, handouts, web-based instruction, labs, field work, other academic activities and materials and to job-related training activities. As CAST explains, these principles give “each student meaningful access to the curriculum by assuring access to the environment as well as multiple means of representation, expression, and engagement” (Center for Applied Special Technology, n.d.). Youth-serving organizations in the workforce development system can learn from, and help expand, the practices of universal design for learning.

Group E

Universal Design for the Workforce Development System

As public and private workforce development systems strive to meet the diverse needs of their

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business and career seeking customers, including individuals experiencing barriers to employment, personnel working within these systems need a clear understanding of how to design programs, services and activities that provide genuine, effective and meaningful opportunities for all. Universal design is a proactive approach to establishing simple, flexible and efficient programs and services. With universal design, providers can anticipate diverse career seeker and business needs from the outset of planning, rather than later incurring retrofitting costs. *Universal design for the workforce development system* is defined as the design of environments, products and communication practices, as well as the delivery of programs, services and activities, to meet the needs of all customers of the workforce development system.

Universal design for the workforce development systems is rooted in the following concepts:

1. The best practices invariably serve the most customers.
2. Every agency and organization can benefit from collaboration.
3. Businesses and career seekers are equal customers

of the workforce development system.

4. Highly coordinated services are essential for all customers.
5. Greater alignment between workforce development and economic development will benefit both systems.

Originally developed in response to the needs of an increasing elderly population and people with disabilities, the concept of universal design benefits all people. Closed captioning, for instance, was designed for individuals with hearing impairments. Now people in gyms and at sports bars rely on it. The universal design concept has since expanded far beyond physical and technological features to include design of local policies, administrative practices and service programming, resulting in exemplary systems that meet the needs of the widest possible range of customers. When public and private workforce development systems adopt this approach, they structure policies, operational practices, services and physical environments that result in improved outcomes for both business and career seeker customers.

Source:

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