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Universal Design for Learning: Assuring Access & Success for All

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The design of curricula and learning environments that can meet the needs of all learners is a challenge. Attempts are often made to retrofit a situation or environment. These efforts to restructure or adapt often fall short of offering a more holistic solution – one that does not single out a particular student as being different or needing extra teacher effort. Over the past decade, a number of discussions have opened the door for a new look at how educators can reach diverse learners. Researchers have demonstrated the effectiveness of utilizing technologies and instructional approaches that can enrich the educational experience for a myriad of learner approaches.

Universal Design for Learning (UDL) is an emerging approach for teaching diverse learners through focusing on more flexible applications of technologies, instructional networks and manipulation of digital content (CAST, 2003). Rose and Meyer (2000) note that through electronic PET scan studies of the brain, researchers have proven that each of us receives information and learns very differently – depending upon the activity in which we are engaged. This "modularized" learning approach of our brains further supports the importance for educators to reevaluate traditional instructional and classroom approaches. According to Rose and Meyer (2002), teaching that is designed to reach all learners should be planned around three guiding principles: (a) providing multiple representations of information, (b) providing multiple pathways for expression and, (c) providing multiple opportunities for engagement. When recognizing these principles, instruction is provided in a manner that complements the multiple and unique ways in which we all learn.

The communications technology revolution, digital systems, brain research, multiple intelligence theories (Gardner, 1983; Sternberg, 1996), *and* the civil rights movement of persons with disabilities (e.g., non-discrimination statutes such as the Rehabilitation Act of 1973 as amended , the Americans with Disabilities Act of 1990, and the series of special education laws, now known as the Individuals

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with Disabilities Education Act of 1997, have merged to create a new era in the UDL educational approach that meets the needs of all learners without pointing out their differences. It is what Rose and Meyer (2002) call the "intersection of initiatives" (p. 7). They say that our educational initiatives of integrated units, multiple intelligences, multi-sensory teaching, differentiated instruction, performance-based assessments, and computers in schools, digital media, web-based media, and others combine to support and form a rich UDL approach.

The Challenge of Meeting Multiple Needs and Styles

Buckminster Fuller, a multi-talented innovator of the 20th Century, contributed to society as a scientist, engineer, inventor (left hemisphere/brain dominance) and as a philosopher, psychologist, and essayist (right hemisphere/brain dominance). As with many inventors and leaders, the multi-faceted dimensions that defined these individuals contributed to their successes. Yet, in traditional academic environments, indeed in current ones (which are defined by rigorous standards, high-stakes assessments, and accountability for all), these preeminent leaders of innovation may have failed to become recognized for their talents or contributions. Einstein, who was labeled a failure by his grade school math teachers, proceeded to change how we view and operate in our world despite his limitations. The educational system did not know how to accommodate his way of learning, yet he excelled in spite of the failures of public education. In today's educational climate, many potential Fullers and Einsteins may be experiencing the same failures of our system. This is often true of students who learn differently than how they are taught, including students with disabilities.

Universal Design for Learning requires that instruction and assessment approaches are flexible enough to automatically include alternatives, making them accessible and appropriate for individuals with diverse backgrounds, varied learning approaches, abilities, and disabilities. Maximizing the use of digital media is a central premise of the UDL philosophy. UDL "draws upon a student's strengths and interests which may be blocked by the exclusive use of printed text" and offers a myriad of instructional options that capitalize upon digital formats (Rose & Meyer, 2002, p. 7). Applying a UDL approach offers multiple options and approaches that support the understanding that intelligence is not just defined by a single test score but rather "defined as the ability to solve problems or to create products that are valued" (Gardner, 1983, p.).

What Millennium Teachers Should Know

The No Child Left Behind Act (NCLB) (2001) and Individuals with Disabilities Act (IDEA) (1997) require special education and general education teachers to collaborate to enhance student success. The intent of this collaboration is to ensure that

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students with disabilities receive instruction in the most appropriate educational setting. One significant result of incorporating Universal Design for Learning strategies in education is that *all* students, with or without disabilities, can benefit from the variety of teaching methods employed. Through a UDL framework, educators can

1. learn to identify student strengths, needs, and preferences through brain networks (soon teachers will be able to read and interpret PET scans to understand brain functions of certain learners),

2. adjust for curriculum/classroom barriers by maximizing multiple options for expression and engagement (using assistive technologies such as speech recognition software, talking word processors, screen readers, and tactile graphic pads), and

3. recognize benefits from the use of technologies that can provide multiple representation of format.

For example, one student may excel when he reads material that is simultaneously spoken aloud and visually highlighted by word and sentence while another may "come alive" through small group discussions and opportunities to demonstrate learned material. Educators need not be experts in using the vast array of assistive technology devices and services, but they should be aware of how they and their students can access them—as well as where to receive targeted training.

Basic UDL Skills for Today's Educators

Universal Design for Learning supports a philosophy of incorporating a wide variety of technology and instructional approaches to reach all students. Through the core concept of universal design for learning ("anything that is accessible to some needs to be accessible to all"), millennium teachers must have opportunities to learn and apply computer technology, web access, and digitized curricula to their classrooms. Curriculum can include digital and online resources rather than print-based textbooks (Rose & Meyer, 2000), requiring that educators know how to locate digital content as well as create it. Also, teachers and/or support personnel should have access to and know how to operate digital video cameras, scanners, and have the ability to manipulate digital text, images, audio, video, and networks (Rose & Meyer, 2000). By acquiring these skills (which teacher preparation programs should provide), educators can transform media from one form to others and thus can foster student learning by using text-to-speech, speech-to-text, image-to-touch (e.g., tactile graphics), text-on-video, graphics-on-video (e.g., signed captioning for students who are deaf or have a certain learning disability), sound maps, etc. (Rose & Meyer, 2000). With these and other options for learning, teachers can be creative and students can access and demonstrate their learning.

Instructional settings that are enriched through principles and practices of uni-

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versal design for learning show great promise - especially for students with special needs and teachers with diverse approaches. In addition, the multitude of "assistive" technologies that are incorporated into mainstream hardware and software also offer equally effective resources for all users. It is vital that more widespread efforts be made to ensure that teachers in both special and regular education have access to this important information on how to incorporate learning methods, technologies, and strategies to reach *all* learners.

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