Abstract:
Universal Design for Learning (UDL) is a new paradigm for teaching, learning, and assessment, drawing on new brain research and new media technologies to respond to individual learner differences. Educators, institutional designers and administrators who are committed to improving educational outcomes for all learners will need to be able to design and implement models for teaching and learning that will meet the needs of all learners regardless of their abilities or disabilities, time or distance, through the use of best practices, adaptive technologies, and instructional techniques that accommodate all teaching and learning styles.

Bridging the Gap: Reaching Beyond the Barriers to Teaching and Learning
The idea of Universal Design began as an architectural concept that sought ways to make buildings, streets, parks, and other facilities accessible for all people to the fullest extent possible, without the need for adaptation. The concept of Universal Design for Learning (UDL) is a new paradigm for teaching, learning, and assessment that draws upon new brain research and media technologies to respond to individual learner differences. UDL is really about doing the right thing to insure that all students have accessibility to information technology regardless of their abilities or disabilities.

With the inception of federal laws and regulations such as No Child Left Behind (NCLB), the American Disabilities Act (ADA), Section 508, and the Individuals with Disabilities Education Act (IDEA), the challenges of meeting individual needs and learning styles face all educators, administrators, instructional designers, and curriculum developers. Gone are the days in which one curriculum design fits the masses. Students come to us now with a wider range of abilities and disabilities, and as educators, we must develop sound pedagogy and curriculum that is universally designed and not retrofitted after the fact.

The central practical premise of UDL is that curriculum should include alternatives to make it accessible and appropriate for individuals with different backgrounds, learning styles, abilities, and disabilities in widely varied learning contexts. The “universal” in universal design does not imply one optimal solution for everyone. Rather, it reflects upon an awareness of the unique nature of each learner and the need to accommodate those differences, thereby creating learning experiences that suit the learner and maximize his or her ability to progress.

Drawing upon new brain research, behavioral scientists have determined that learning is distributed across three interconnected networks. (Universal) These networks are called recognition, strategic, and affective. Recognition networks are specialized to our senses, and help to assign meaning to patterns we see; they enable us to identify and understand information, ideas, and concepts. Strategic networks are specialized to generate and oversee our mental and motor patterns; thus enabling us to plan, carry out, and monitor actions and skills. The affective
networks are specialized to evaluate patterns and assign them emotional significance; they allow us to become engaged with tasks and learning and with the world around us.

All three networks are involved in the learning process. Given that the three brain networks are involved in learning, each individual is unique, learning is multifaceted, and barriers may interfere with one’s learning, the following three UDL principles are formed to minimize barriers and maximize learning through flexibility:

- Provide multiple, flexible methods of presentation to support recognition learning
- Provide multiple, flexible methods of expression and apprenticeship to support strategic learning
- Provide multiple, flexible options for engagement to support affective learning

Common to the three principles are flexibility, choice, and alternative options.

The benefits of designing curricula and teaching strategies with UDL principles in mind is that as educators, we can serve a broader audience with learning materials that have flexible options already built in without retrofitting our programs, which can be costly.

In alignment with the ADA, IDEA, and NCLB, the implementation of UDL takes on a legal role as well. Curriculum design and pedagogy that meets the needs of the most challenging consumer has the tendency to meet the needs of ALL consumers, thus ensuring compliance with the laws.

Guided by the architectural principles of Universal Design, in the early 1990s, administrators and faculty of K-12 institutions recognized the efficacy, cost-effectiveness, and desirability of designing programs and lessons flexible enough to meet the individual needs of their learners. (Research). They created innovative training programs for instructors and provided the necessary resources to make the changes to curricula successful.

Unfortunately, post-secondary institutions lagged behind, most likely because of higher education’s reliance on the traditional lecture method for delivering course material. College faculty, few trained in educational pedagogy, simply taught the way they had been taught years earlier—by lecture and notes. But in 1999, faculty at the University of Connecticut decided that UDL principles could be adapted to meet the needs of learners in higher education (UDI, 2002).

They approached the task of applying Universal Design to college instruction through the framework of the seven principles developed in 1997 by the North Carolina State University Center for Universal Design and delineated considerations for the "usability of an environment" based on a broad spectrum of human abilities, including vision, hearing, speech, body function, mobility, and cognition. Their intent was to examine college instruction in light of these principles, and to take a more in-depth look at what might constitute UD in an instructional environment. Thus, the concept of Universal Design for Instruction (UDI) was born, and with it, these guiding principles (Scott, 2001):

- **Equitable use** —Instruction is designed to be useful to and accessible by people with diverse abilities. Provide the same means of use for all students; identical whenever possible, equivalent when not.
- **Flexibility in use** —Instruction is designed to accommodate a wide range of individual abilities. Provide choice in methods of use.
• **Simple and intuitive** — Instruction is designed in a straightforward and predictable manner, regardless of the student's experience, knowledge, language skills, or current concentration level. Eliminate unnecessary complexity.

• **Perceptible information** — Instruction is designed so that necessary information is communicated effectively to the student, regardless of ambient conditions or the student's sensory abilities.

• **Tolerance for error** — Instruction anticipates variation in individual student learning pace and prerequisite skills.

• **Low physical effort** — Instruction is designed to minimize nonessential physical effort in order to allow maximum attention to learning. *(Note: This principle does not apply when physical effort is integral to essential requirements of a course.)*

• **Size and space for approach and use** — Instruction is designed with consideration for appropriate size and space for approach, reach, manipulations, and use regardless of a student's body size, posture, mobility, and communication needs.

• **A community of learners** — The instructional environment promotes interaction and communication among students and between students and faculty.

• **Instructional climate** — Instruction is designed to be welcoming and inclusive. High expectations are espoused for all students.

In 2002, the university launched its FacultyWare website, [http://wwwfacultyware.uconn.edu](http://www.facultyware.uconn.edu), which features a large repertoire of instructional tools and approaches that reflect the principles of UDI developed by faculty across the country: information and training modules on UDI; literature reviews, references, and web links; and project activities and newsletters (FacultyWare, 2002).

Louisiana’s interest in UDL and UDI began in 2001, again, with teachers and administrators in K-12 taking the initiative when the Louisiana Department of Education created an online training course for K-12 teachers and administrators. They also offered several statewide two- or three-day, face-to-face professional development opportunities.

A year later, in April of 2002, the Louisiana Board of Regents took note and offered its first UDL workshop. The workshop is now in its third year. Last year, the Board sought a deeper involvement for its institutions of higher learning and created a UDL Action Team to establish a protocol of policies, procedures, and guidelines for implementing UDL/UDI, a Louisiana UDL/UDI website, a UDL/UDI professional development training course for post-secondary faculty and administrators, and a yearly hands-on, two-day training for webmasters.

The Board has as its goals that all post-secondary faculty in the state, from both public and private institutions, will undergo free UDL/UDI professional development training, that all websites under the aegis of the Louisiana Board of Regents or Louisiana Board of Education will meet the standards of compliance with universal accessibility guidelines, and that Louisiana’s UDL/UDI website will be a comprehensive national clearinghouse for information and resources.

They are well on their way to these goals as evidenced by the creation of the online training courses and the imminent launch of the website.
References

FacultyWare homepage. (2002). http://www.facultyware.uconn.edu/home.cfm
What is Universal Design for Learning? http://www.cast.org/research/udl/