Universal Design for Learning

Susan Barteaux

Abstract

The Universal Design for Learning (UDL) is a framework for instruction that values the social, emotional, and academic diversity in the classroom while using this diversity to create a classroom environment of respect and appreciation for others. Through multiple means of representation, expression, and engagement, the UDL framework demands that curriculum is accessible to all learners, including gifted students, special needs learners, English language learners, and students with behavioural challenges.

The Universal Design for Learning (UDL) is an educational model that creates access to the general classroom, curriculum, and learning experiences for all students, including those with special needs and behaviour challenges, average learners, and gifted students. The UDL framework assists educators in meeting those diverse needs while transforming instructional methods and the classroom environment. Inspired by architects' use of Universal Design for products and environments, UDL has been turned into an educational framework.

What Is UDL?

UDL is loosely based on the universal design for products and environments, whereby architects make physical environments accessible to everyone, regardless of potential barriers such as physical, cognitive or developmental barriers (Courey, Tappe, Siker, & LePage, 2013; Katz, 2012). To make physical environments accessible and beneficial to all, the principles for universal design were considered by architects while designing buildings ("What is Universal Design?" 2014). These principles require that physical products and environments are equitable, flexible, require minimal physical effort, and minimize hazards by effectively communicating information in a variety of forms, while leaving adequate size and space for diverse people to use them ("Everyone Can Learn," 2005-2014). By witnessing how architects planned physical environments to create accessibility, educators began to apply the principles of Universal Design to education, later forming the basis of the factors of accessibility in education within the UDL framework (Katz, 2012).

By using these factors of accessibility in education, teachers began to make the general classroom accessible to all learners (Courey et al., 2013), by means of instructional practices and curricula that consider students' needs and capitalize on their skills from the planning stages, creating more control and personalization of each student's education (Abbel, Jung, & Taylor, 2011). When implementing UDL, educators must consider the following factors: teaching practices that contribute to a positive class climate of diversity and inclusivity, delivery methods that are accessible to all learners, and encouragement of genuine interactions between students while providing ongoing, specific feedback from the teacher ("Everyone Can Learn," 2005-2012; Katz, 2012). Educators must instruct in a way that is educationally demanding for all students and can be achieved through varied and ongoing assessment, while using engaging resources and technology in spaces that are physically accommodating to everyone (Courey et al., 2013).

The factors of accessibility in UDL reduce barriers by creating flexibility of curricula through varied goals, methods, materials, and assessments, in order to create classrooms that are physically and academically accessible to all students (National Centre for Learning Disabilities, 2012). Through examining the four areas of existing curricula, and using various forms of goal setting, instructional methods, resources and materials, in addition to frequent formal and informal assessments of learners, teachers can identify existing barriers while optimizing the levels of challenges and supports in the classroom (Courey et al., 2013; "UDL Guidelines –

Version 2.0," 2013; Katz, 2012). That is not to say that UDL is diluting content, but rather it is the intentional planning of curricula to capitalize on, and appreciate diversity in the classroom by requiring a high-level of engagement, participation, and ultimately achievement by all students (Gargiulo & Metcalf, 2013). When all learners are achieving academic and social goals within the general classroom's walls, then true inclusion has been achieved (Katz, 2012).

The UDL Framework

The UDL framework requires that educators, administrators, and learners begin to consider the complexity of learning in terms how small pieces, such as the factors of accessibility, the principles of UDL, and neuroscience come together to create a larger puzzle, rather than just understanding the smaller pieces themselves (Perkins, 2009). Brain networks and the following three core principles of UDL work together in planning learning experiences that address diversity among classroom groups:
1. multiple means of representation
2. multiple means of expression
3. multiple means of engagement

In understanding how multiples means of representation, expression, and engagement relate to brain networks – the "how," "what," and "why" of learning – the three core principles of UDL guide educators in creating meaningful learning experiences for all students.

UDL relies on 30 years' worth of brain research on how a child's brain gathers information, learning styles, and learning differences (Hall, Meyer, & Rose, 2012). Using information on brain networks – recognition networks, strategic networks, and affective networks – UDL creates a neuroscience-based approach to diverse learners with regards to all three networks (Courey et al., 2013; Katz, 2012; "What is UDL?" 2013). Recognition networks, or the "what" of learning, are essential to understanding how students gather and process data, because students primarily collect data through their five physical senses (Katz, 2012). While recognition networks are physically based brain networks, strategic networks tell learners "how" to do something, such as learning multiple ways to understand or represent a concept, and are a much more abstract brain process (Courey et al., 2013). Finally, affective networks are the most abstract of all brain networks. They determine the "why" of learning, regulating what is deemed most important and providing motivation for students' learning ("What is UDL?" 2013, "Universal Design for Learning" figure). UDL offers variety and choice to learners, based on each type of brain network, to form the three core principles of UDL.

The three core principles of UDL require teachers and curricula to offer multiple means of representation, expression, and engagement to form the second piece of UDL (Lapinski et al., 2012; Ralabate, 2011). UDL requires the use of different means of representation by giving learners a variety of opportunities to physically acquire information through the affective networks (Abbel et al., 2011). By providing multiple means of expression, teachers create multiple opportunities for students to showcase their understanding through the use of various tools, increased access to these tools, and strategies to overcome barriers to learning (Katz, 2012). When educators provide multiple means of engagement through flexible options for control and choice, they capitalize on the affective networks of students' brains (Samuels, 2007). In planning for multiple means of representation, expression and engagement, teachers create various means for students to access and showcase their knowledge of a topic. This flexibility in how knowledge is acquired and represented gives opportunity to create unique learning experiences for a diverse group of learners within one classroom.

UDL proactively combines the understanding of brain networks with the three core principles to enable teachers in creating an inclusive curriculum, which addresses the diversity of students by improving the learning goals, methods, and achievements for all learners (Ralabate, 2011). The framework for UDL requires that educators design learning that is intentional, and leads to a deep understanding of topics through genuine inquiry by students, in

order to build an authentic understanding of the content covered and to reach academic goals (Willms, Friesen, & Milton, 2009). When designing UDL for the classroom, teachers must advocate for methods that create these authentic learning experiences for students with different abilities, disabilities, ethnicities, language skills ("Everyone Can Learn," 2005-2014), and learning styles (Samuels, 2007), by using materials and learning experiences based on skills needed, strengths possessed, and the multiple intelligences (Katz & Sugden, 2013). By doing so, educators create true experiences of inclusion for children whereby they can showcase their knowledge in a way that is as unique as they are, and to celebrate their achievements with classmates, because their learning is based on where they are developmentally regardless of age or grade level (Dalton & Brand, 2012).

When students can celebrate their learning with peers who respect where they are developmentally, celebrate the ways in which they learn, and help to build an authentic understanding of curricula, then the purpose of the UDL framework has come to fruition. This respect and celebration of diversity comes from thoughtful planning by educators, who have an understanding of the brain's networks, and who intentionally create various means of representation, expression, and engagement within the UDL framework. This respect for diversity in students, their learning, and how they connect to curriculum content is so integral to the framework of UDL that Dr. Jennifer Katz created the Respecting Diversity program to augment the experience for students and their teachers (Katz, 2012).

Who Benefits from UDL?

UDL benefits students and teachers alike by creating a community of learners who appreciate each other's similarities and differences. Students benefit from a learning approach that strays from a one-size-fits-all curriculum and offers equal access to all learners, increasing engagement and the flexibility of their learning (Gargiulo & Metcalf, 2013). Similarly, teachers benefit professionally by using an improved teaching methodology that creates a truly inclusive classroom, while collaborating with students and teachers. The UDL framework benefits all stakeholders involved by giving opportunities to understand and best serve learners from the very beginning of their education ("UDL Guidelines – Version 2.0," 2013).

The purpose of the UDL is to benefit diverse learners, and while it was originally intended as a means to include special-needs learners in the classroom, it has become a generalized educational approach that provides flexibility for all students (Ralabate, 2011). UDL provides flexibility in product, process, demonstration of learning, and the means by which students engage with content (Katz, 2012). This means that if a student has strength in musical or kinesthetic learning styles, he/she has the opportunity to use that skillset to showcase his/her learning. Through this process alone, the final products of students become diverse, creating a variety of ways for students to reach learning goals. In this same process, and through connection with others, students are exposed to other ways in which students have demonstrated learning, opening them to possibilities in their own academic potential. UDL is applicable to all learners, as it can be applied to any subject and developmental age by making content available through a student's choice of learning process or product (Perkins, 2009).

When students are given choice, control, and flexibility, they perceive their learning environment to be enjoyable, challenging, and engaging (Abbel et al., 2011). For students who have unique learning needs, including those students who are English language learners, gifted students, and students who simply learn differently, traditional education has failed to engage them, and UDL offers the promise of an engaging learning experience (Samuels, 2007). Prior to UDL, gifted students were often given more of the same work, students with learning challenges were given remedial work, and students with behaviour challenges were put in specialized classrooms (Willms et al., 2009). Success and engagement for all of these learners, who were previously marginalized, is possible in UDL. The learning makes sense, and when their learning makes sense, students are increasingly engaged (Katz, 2012).

For teachers who use traditional instructional approaches to curriculum, the work planned often does not achieve the desired result: engagement and achievement within their classrooms (Willm et al., 2009). Nationally and locally, educational stakeholders are seeking instructional methods that are effective for learners with varied learning styles and needs, in order to educate them in the general classroom (Dalton & Brand, 2012). Teachers who are usually flexible in their instruction have developed many ways within traditional instructional models to create student engagement and meet the needs of learners, usually creating significantly more work for themselves because they have retrofitted their instruction to inflexible curriculum (National Center for Learning Disabilities, 2012). The pressure to instruct a wide variety of learners, while using inflexible curriculum and traditional teaching methods, causes a great deal of stress for teachers (Katz, 2012). However, when educators approach curriculum through the lens of UDL, they can proactively address barriers while creating flexibility in order to serve all learners in a way that does not create extra work or stress (Ayala, Brace, & Stahl, 2012). The UDL framework builds upon a teacher's natural desire, skill set, and willingness to create appropriate learning experiences, by providing a framework to create flexible curriculum and use effective instructional methods (National Centre for Learning Disabilities, 2012).

A teacher at any level can use UDL to meet the demands of the classroom and manage the pressure of delivering an equitable education (Dalton & Brand, 2012), by creating flexible curricula and improved instructional methods, through collaboration with other educators. The framework for UDL encourages teachers to collaborate, relying on each other for constant professional discussions and co-planning of curricula (Lapinski et al., 2012). While there is a demand for collaboration between educators, UDL also requires that teachers have continued discussions with students about how they learn, their strengths, and what skills they need to acquire in order to experience further success. Through these discussions, students feel that their teacher understands how they learn, that their opinions have merit, and that they have a positive relationship with their teacher, therefore increasing their engagement and motivation for learning (Abbel et al., 2011). When teachers collaborate with students and other educators, they gain insight in instructional methods that will best meet the needs of their students.

Conclusion

At its core, UDL places value on the diversity of all learners by creating classroom environments that are academically, socially, and emotionally inclusive of all children. Educators create compassionate, safe learning environments for children when they create flexibility in how learners access curriculum through the use of UDL. Evolving from architectural accessibility designs and applying these concepts to knowledge of neuroscience, the UDL framework was created to benefit all educational stakeholders. Educators who use UDL can transform their classrooms, teaching practices, and the lives of their students.

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About the Author

Susan M. Barteaux is a grade three teacher at R. J. Waugh Elementary School in Carberry, Manitoba. She graduated from Brandon University's Bachelor of Education program in 2009 and is now enrolled in the Master of Education program, focusing on curriculum and instruction.