

Universal Design for Learning: Addressing the Implementation Gap

Cathy Buymn, Sarah Hylton, and Jennifer McSweeney

The lack of success for students with disabilities and other subgroups of students at risk (e.g., low socioeconomic status, minority, English Language Learners) against a backdrop of heightened accountability and the rapid rate of change in society makes it imperative that leaders systematically redesign approaches to teaching and learning. The Universal Design for Learning (UDL) Framework provides a structure and process for meeting the needs of all learners based on neuroscience, learner variability, and learning contexts (National Center on UDL, 2014). The UDL Framework has been evolving since 1984 when The Center for Applied Special Technology (CAST) formed in an effort to explore the potential of emerging technologies to support students with learning disabilities. The first iteration of the UDL Framework was presented to The Council for Exceptional Children (CEC) in 1998, and over the last eighteen years the researchers at CAST have been collaborating with field-based practitioners to further develop and clarify the framework and practical application in K-12 and postsecondary institutions.

This article seeks to address the gap between the legal mandates for UDL in K-12 public schools and effective implementation. Specific strategies are offered for addressing the systemic implementation gap by including UDL in the training of administrators and preservice teachers (i.e., teachers who have not yet formally entered the field including those who might be in student teaching placements as part of their training) in leadership and teacher preparation programs.

UDL in Public Policy

The development of the UDL Framework and advocacy efforts by researchers and policy makers have been focused on improving outcomes for students with disabilities and other marginalized subgroups of students. While prior legislation (e.g., Education for All Handicapped Children Act,

Individuals with Disabilities Act, No Child Left Behind) mandated that educational institutions improve outcomes for marginalized students as early as 1975, public policy did not endorse any specific method or framework for accomplishing this task until The Higher Education Opportunity Act (HEOA) of 2008 where UDL was first defined as:

a scientifically valid framework for guiding educational practice that —

- (A) provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and
- (B) reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient.

[HEOA, P.L. 110-315, §103(a)(24)]

The HEOA (2008) went beyond defining UDL by promoting preservice teacher training in the principles, guidelines, and checkpoints in order to better prepare teachers to meet the needs of diverse learners in the K-12 environment.

In 2010 the United States Department of Education published the National Educational Technology Plan (NETP) where efforts to effectively employ educational technology were aligned with the UDL principles. Specific models of technology that leveraged the UDL principles were provided and the current 2016 NETP has embedded the principles throughout the most recent version of the plan.

The long awaited reauthorization of the Elementary and Secondary Education Act (ESEA) as amended by the No Child Left Behind Act (NCLB) of 2001 was finally passed in December of 2015 and rebranded The Every Student Succeeds Act (ESSA). ESSA embraces the definition of UDL first provided by the HEOA and promotes the implementation of UDL in “state plans, innovative

assessment and accountability, comprehensive literacy instruction, and state use of funds for student support and academic enrichments” (ESSA, 2015).

The promotion of UDL in state plans, assessments, accountability measures, literacy instruction, and spending is a bold move that creates a greater demand for more effective preparation of preservice teachers and administrators by schools of education at institutions of higher learning. In the eight years since the first appearance of UDL in public policy, this scientifically validated framework for teaching and learning has gone from a suggestion or option to an expectation.

UDL Implementation

The UDL Framework was designed around three types of brain networks. The affective networks involve the ‘why’ of learning, the recognition networks involve the ‘what’ of learning, and the strategic networks represent the ‘how’ of learning. CAST has developed and organized three principles that build on these three types of brain networks calling for the provision of multiple means of engagement, representation, and action and expression (Meyer, Rose, & Gordon, 2014). Each principle is further defined by specific guidelines and checkpoints to guide instructional design. While UDL is not a stand-alone validated strategy, the expanded framework offers a comprehensive menu of specific validated strategies, methods, and tools for optimizing teaching and learning.

The principles, guidelines, and checkpoints have been refined and clarified through collaboration between researchers and practitioners since the 1990s. Current research and case studies indicate the UDL Framework is effective and yields positive results. The experiences of four school districts implementing UDL over the course of one year are evidence of success (Ganley & Ralabate, 2013). During the school year, districts worked with CAST to implement UDL plans, proceeding with a process and goals for each district. The four districts were varied and complex, and it is worth noting that the UDL process in each district was fluid and implemented in a unique manner

according to the district’s needs and goals making it difficult to measure consistent implementation. Each district included components such as: a teacher-driven approach for management and decision-making, a UDL facilitator, a collaborative team approach to UDL, and tools and resources to support learning of UDL practices. Although this endeavor was not a research study, there are important implications, which promote the need for future research.

A summary of the successful strategies utilized among the four districts also provides valuable information that can be used to inform future implementation efforts (Ganley & Ralabate, 2013). UDL was implemented as a district-wide framework, embraced by all stakeholders, and considered to help inform decisions. Professional learning communities provided time and resources to teachers and school leaders in the form of shared expertise, lesson planning, and time to reflect and discuss the process of UDL. The UDL facilitator supported each district, and UDL was modeled at all levels, including professional development. Teachers had a solid foundation for implementation, and UDL instruction focused on the success of all students and the development of collaborative relationships. Since UDL is flexible and varied according to districts, these strategies and the similar components implemented in the four districts should be considered when designing future research studies and implementation efforts. Moving forward researchers and implementers can benefit from the models provided while customizing implementation efforts to match unique district variables.

Current UDL research studies provide valuable knowledge for future research and practical application (Al-Azawei, Serenelli, & Lundquist, 2016). An analysis of twelve studies included the criteria of peer-reviewed articles, studies with empirical results, use of UDL as a framework, and publication between 2012-2015. The analysis strived to validate UDL implications in the four categories of learner perceptions, academic performance, development of lessons, and alignment of curriculum to UDL principles. Data collection and analysis were themes in the analysis. Six studies were purely quantitative, five utilized a

mixed approach, and one was purely qualitative. In summary, UDL was found to positively affect student perceptions, improve academic performance, encourage learner engagement, and teacher candidates recognized the efficient lesson plan design (Al-Azawei et al., 2016).

Results from this literature review revealed that learner perceptions within the UDL Framework were positive. Students in K-12 and graduate level studies reported positive changes and improved self-efficacy. Performance evaluation indicated improved reading achievement. Development of lesson plans and lesson plan design was analyzed with preservice teachers. One group of teachers reported an improvement in their lesson plans while the other group recognized changes, which were not significant; even so, this group found knowledge of the framework useful. Finally, the analysis sought to determine if curriculum is aligned to UDL principles. Study results indicated that this is not the case, and curriculum is widely not aligned to UDL, which makes it difficult to implement effectively. The inconsistent application of UDL principles in lesson design by teachers and a lack of curriculum alignment are evidence that a gap between the mandates for UDL and effective field-based implementation exists.

The UDL developers have responded to the challenges of UDL implementation and continue to seek valuable input from researchers and practitioners. One such challenge has been the mistaken belief that the UDL principles and guidelines were sequenced by level of importance. The elements of UDL were not meant for implementation in a specific linear sequence. When the developers realized that practitioners were assigning importance to the principles based on sequence, they were reorganized to adjust for the practitioners' experience. Despite the reorganization of the framework, the developers still assert that the principles and guidelines are all of equal importance (Meyer et al., 2014). The most recent adjustment to the presentation of the UDL principles and guidelines demonstrated the responsiveness of the developers to the challenges of field-based systemic change efforts. UDL developers and advocates will need to continue to respond to challenges and barriers in order to

address the mandate to practice gap in K-12 public schools.

An exploration of field-based implementation informed efforts to merge the UDL Framework with validated systems change research (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). These efforts resulted in a five phase flexible process for systemic UDL implementation. The UDL implementation process should not be initiated without a comprehensive exploration of needs and goals. Once those needs and goals have been identified, the five phase flexible process can be employed to match needs with the principles of UDL. The five phases or stages are: (a) Explore, (b) Prepare, (c) Integrate, (d) Scale, and (e) Optimize (National Center on UDL, 2012). While these phases can be implemented in sequence, they are also meant to be flexible and iterative. During each phase of implementation, the principles defined by the UDL Framework are embedded and clarified to meet needs and offer specific application examples. The convergence of the UDL Framework and systems change research has resulted in a collaboration between developers and public policy makers advocating for the inclusion of UDL in public education legislation, offering a scientifically-based framework for teaching and learning as well as a process for systemic change.

The Implementation Gap

The robust endorsement of UDL in the HEOA, ESSA, and NETP has created a clear mandate for implementation, but a gap between mandate and practice exists. In many districts where UDL has been implemented successfully, the process began with a single district leader attending professional development focused on UDL. Those leaders returned to their districts and made the case for using the UDL Framework to explore district needs, organize resources and initiatives, and improve student outcomes (Ganley & Ralabate, 2013). In systems where UDL has permeated every layer of decision-making and application, impressive gains in student performance have been noted and educator enthusiasm has resulted in implementation “momentum” (Ganley & Ralabate, 2013, p. 20). While these individual district stories

are encouraging and established the basis for the current mandates, a more aggressive approach to taking UDL to scale will be required moving forward (Fixsen et al., 2005).

Case studies in districts where UDL has been implemented successfully offer encouraging evidence in support of UDL implementation. Unfortunately, there are too few districts with operational models to effectively study the impact of broad and consistent implementation across student populations, districts, and states. For the potential of UDL to be fully realized, leaders cannot rely on the isolated initiative of a few field-based proponents. If the mandates for UDL are to be satisfied in a transformational way, the UDL principles will have to be embedded into every layer of preservice preparation for teachers and leaders in addition to current field-based professional development efforts.

Addressing the Implementation Gap at the Leadership Level

Given the implementation mandate, increased accountability in K-12 public education, and the multidimensional nature of successful UDL application, educational leaders need to be versed in UDL. The principles of UDL will only be realized in a system where leaders provide the structures and resources required to implement and sustain UDL as a practical framework for improving teaching and learning. When leaders are knowledgeable and prepared to make contextual adjustments to the implementation of any change effort, they become powerful facilitators (Fixsen et al., 2005), prepared to guide the institution and practitioners through the systemic change process despite any barriers encountered.

In order for educational leaders to effectively implement and sustain UDL, they must participate in a process of deep professional learning. Leaders who are already practicing in the field will need to take advantage of supplemental opportunities to build a solid knowledge base. These efforts should go far beyond isolated trainings and conference presentations. Schools of education at colleges and universities will need to provide a specific course on the UDL Framework

and embed the UDL principles into existing leadership courses. Prior partnerships between universities and practicing K-12 schools (Ganley & Ralabate, 2013) have provided the impetus (Fixsen et al., 2015) for creating a graduate level curriculum for school leaders that maximizes the UDL Framework at all levels. These models are only useful if they are used to inform the development of educational leadership curriculum in an effort to build a comprehensive system of support and delivery that leverages the science behind the UDL principles.

While all school leaders need to become fluent with the UDL Framework, the role of the principal is critical as the “learning leader” (Fullan, 2014, p. 9) who engages in deep personal learning and creates an environment that supports the process of deep learning for teachers. The building level principal is the fulcrum on which any change effort pivots (Fullan, 2014). A comprehensive leadership program must answer the mandate by preparing all school leaders to embed the UDL principles into their repertoire of knowledge and skills. In order to stay current and relevant, leadership program curriculum must evolve and embed practical strategies for leading and supporting UDL implementation. In order to accomplish this, schools of education may need to first address a knowledge gap for college and university faculty members so that they can build UDL into the curriculum and support future leaders (Vitelli, 2015).

Addressing the Implementation Gap at the Preservice Teacher Level

Working in tandem with programs to prepare school leaders to advance the implementation of the UDL Framework is an obligation to educate new teachers to be advocates and practitioners of the framework. One strategy for encouraging full implementation of the UDL Framework involves including instruction in UDL in preservice teacher preparation programs, a proposition clearly advocated by the HEOA (2008) and others (Courey, Tappe, Siker, & LePage, 2012; Frey, Andres, McKeeman, & Lane, 2012; Jiminez,

Graf, & Rose, 2007; Lopes-Murphy, 2012; McGuire-Schwartz & Arndt, 2007).

Even though the integration of instruction in UDL shows promise as a component of preservice teacher preparation programs (Al-Azawei et al., 2016; Courey et al., 2012; Frey et al., 2012; Lopes-Murphy, 2012; McGuire-Schwartz & Arndt, 2007), research has focused primarily on the inclusion of UDL principles in preservice programs focusing on special education and English language learners (Al-Azawei et al., 2016; Courey et al., 2012; Lopes-Murphy, 2012). In fact, there is “a dearth of literature documenting the incorporation of UDL into preservice general education teacher programs” (Vitelli, 2015, p. 168) as well as a lack of research on how to train preservice teachers in UDL practices (McGuire-Schwartz & Arndt, 2007). The research, then, suggests that UDL is not yet widely included in general education preservice teacher preparation programs, further evidence of the implementation gap.

The literature that does exist regarding UDL instruction in preservice programs emphasizes the many positive effects such instruction will have on future students (Courey et al., 2012; Lopes-Murphy, 2012; McGuire-Schwartz & Arndt, 2007). Even though there are no formal studies about instruction in UDL in preservice programs leading to increased implementation in K-12 education, the existing research does reveal significant support for this logic. If teachers are to “be the agents of change for their classrooms and, eventually, entire schools, it is better to begin those thought processes at the preservice level so that they can be taught appropriate techniques to make a commitment to this type of thinking” (McGuire-Schwartz & Arndt, 2007, p. 132). Indeed, early exposure to UDL and opportunities to practice its principles should foster the likelihood that these preservice teachers will work to implement UDL in their future school settings. This is particularly true given that preservice teachers exposed to instruction in UDL experience an increased sense of efficacy in being aware of and in meeting the needs of all students (Courey, et al., 2012; Frey, et al., 2012; McGuire-Schwartz & Arndt, 2007). Not only do preservice teachers experience a heightened sense of expertise, but they also make use of a broader array of

instructional strategies that align with UDL practices (Al-Azawei et al., 2016; Courey et al., 2012; McGuire-Schwartz & Arndt, 2007). Such positive experiences with UDL instruction should increase the probability of a teacher-driven change in implementing UDL. Furthermore, learning about UDL in preservice programs empowers novice teachers to collaborate more effectively with their special education colleagues (Courey et al, 2013; Frey et al, 2015). This kind of collaboration at the K-12 level might also create an environment where UDL would have a greater likelihood to flourish. Through preservice exposure, beginning teachers would have the opportunity to learn about UDL principles and to practice incorporating those principles into teaching practice. Furthermore, such exposure would provide opportunities to debunk any misconceptions about the framework. Presumably, as those novice teachers move into the educational system as full time teachers, they could promote inclusion of UDL into their schools’ programs through increased awareness and intentional collaboration. Including instruction in the UDL framework is one strategy that could help to promote the systemic change needed to fully implement UDL in K-12 public schools.

Implications for Future Research

The UDL Framework is not a stand-alone strategy for teaching and learning. It is instead a framework for organizing more discrete and specific validated practices into an instructional design source for teaching and learning that increases access to the curriculum for all students. A comprehensive framework of multiple strategies and practices presents challenges for researchers and practitioners. Research provides valuable knowledge and suggestions, which must be incorporated into future UDL research studies to ensure implementation as a teaching design. These research implications are valuable in addressing the implementation gap of UDL in schools, and preparing leaders and preservice teachers to effectively promote UDL in classrooms. First, the amount of empirical research is limited due to difficulties replicating and utilizing UDL in context, but studies which have been conducted prove that

this is an area worth further exploration. School leaders, policy-makers and researchers, consider UDL a method of teaching because it advocates for the development, design, and implementation of lessons, which students of all abilities can access. UDL also reduces learning barriers, increases student engagement, and improves the performance of students with disabilities, as described by the framework. Preparing preservice teachers in the pedagogy of UDL improves their awareness and ability to plan content, engage students, and assess learning. Finally, UDL principles can be applied to different content and discipline areas, so research regarding the effectiveness of UDL is important and critical (Al-Azawei, et al., 2016; Ganley & Rabalate, 2013).

There are evident gaps in current UDL research. Validity is a concern to researchers because there are few similar samples to compare, and these are limited to a few countries using UDL in education. Also, it is important to note to what extent instruction is truly embracing UDL concepts. Research needs to determine if checkpoints of UDL are being applied to ensure that UDL instruction is what is actually being implemented and therefore, studied. Schools often say they are “implementing UDL,” but how do we know and what does that look like? These issues also weaken the reliability of the research because results cannot be duplicated and it is difficult to make predictions and interpretations about the potential success of UDL in various school settings.

Further research on the use of UDL is also advocated to promote self-regulation in learning and purposeful learning in practice (Basham, Hall, Carter, and Stahl, 2016). There is not consistent understanding of what it means to implement UDL, and there is little knowledge on how to design and implement it. Without guidance or research-based understanding, the UDL concept will be referenced incorrectly, partially implemented, and viewed as an unrealistic fad in education. K-12 education is making progress in the adoption of UDL, but very little research has been conducted in real-life situations. Few studies have investigated design features, human interactions, and performance outcomes for K-12 students, especially those with disabilities.

On a positive note, research is finding that specific design elements of UDL research can be replicated and researched in various settings, and that learners with and without disabilities can benefit from this concept, so it is certainly worth the effort of further research and study. Use of UDL pedagogy to do well on an academic measure is very different from transforming an entire educational environment, but this is the step, which UDL must take for it to be transformative. Investing in long-term research is necessary and will ultimately support the understanding and development of UDL in classrooms and all school settings.

Conclusion

As society changes and expectations of students in preschool to higher education center on critical thinking and collaboration, instruction must meet these demands and adopt new ways of teaching and learning. Additionally, access to the curriculum for students with disabilities, English language learners, students of low socioeconomic status, and minorities is necessary to ensure that all students succeed. UDL offers a framework, which meets these instructional and societal, needs and is endorsed in policies, plans, and laws such as HEOA, ESSA, and NETP.

Although the UDL Framework is highly regarded and research has yielded positive results when UDL is implemented, there is a gap that exists between policies and actual implementation in classrooms. School administrators, leaders, and teachers must help lead this effort and can do so when they are prepared and trained in the use of UDL in their preparatory programs or through professional development. Principals must consider a driver for change and address the use of UDL by building the capacity of teachers, embracing collaborative efforts within their schools, creating new mindsets about pedagogy, and promoting UDL systems within whole schools and districts (Fullan, 2014). Teachers and leaders can assist in this effort when they have received UDL training in their preservice programs.

Current research indicates that implementation of UDL yields positive results when implemented effectively, yet research studies are

limited. Since the framework of UDL is already research-based through the development of principles, guidelines, and checkpoints, the implementation of UDL in practice needs to be examined and replicated. When leaders decide to embrace UDL principles, preservice teachers are trained, and positive research is conducted, the implementation gap between recent educational policies and UDL within schools can be addressed, resulting in increased access to curriculum for all students. Ultimately students achieve and learn, improving their collaboration and critical thinking skills so they may become successful citizens.

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