

UNIVERSAL DESIGN FOR LEARNING: AN AUTOETHNOGRAPHY OF PUTTING  
THEORY INTO PRACTICE

by

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A CAPSTONE PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS IN EDUCATIONAL STUDIES - SPECIAL EDUCATION

in the

SCHOOL OF GRADUATE STUDIES

We accept this capstone project as conforming to the required standard

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TRINITY WESTERN UNIVERSITY

2019

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### **ABSTRACT**

This article presents the narrative of one primary teacher's conceptualization and implementation of Universal Design for Learning (UDL) as a means by which to design an authentic inclusive learning environment. While UDL is commonly acknowledged as being at the forefront of inclusive education practices there is a lack of understanding among educators about what exactly UDL is and how to implement it. This paper contextualizes and, following qualitative methodological guidelines for autoethnography, explores a teacher's application of the UDL principles, and experience operationalizing the construct of UDL.

Keywords: Autoethnography, Inclusion, Universal Design for Learning (UDL)

## ACKNOWLEDGEMENTS

I would like to thank all the people who have helped and inspired me in this research. It is with immense gratitude that I acknowledge the guidance and support of my Professor, Dr. Kenneth Pudlas. Thank you for being intentionally inviting and teaching us by example what it means to teach from the heart. I wish to thank Dr. Lara Ragpot as the second reader for her valuable comments. I am indebted to my many colleagues who supported me and shared in this journey. It was an honour to learn with you and from you. I owe my deepest gratitude to my family for encouraging me to pursue this dream. I am extremely grateful for the unyielding love and support of my husband. As with all our adventures together, you carried the extra load when the climb was steep and the pack was heavy.

I dedicate this project to my past and future students who inspire me to be the best teacher I can be.

## CHAPTER ONE: INTRODUCTION

Classrooms of today in North American schools are diverse and dynamic. These classrooms are comprised of students from diverse cultural and ethnic backgrounds, children with varied interests, skills, prior knowledge, and levels of motivation, and individuals whose self-concept, social-emotional intelligence, attitudes and beliefs are influenced by their broad range of experiences (Clark, 2008; Egbo, 2012; Evmenova; 2018, Kohen, Oliver, & Pierre, 2009; Rao & Meo, 2016; Shanker, 2013). Teachers, thus, face challenges of balancing the varied learning needs of their students, helping students meet personalized learning targets, and fostering an inclusive, responsive and engaging learning environment, while coping with administrative demands, parental concerns, time constraints, emotional stress, and the challenging behaviours exhibited by students (Landers, Alter, & Servilio, 2008).

In the face of these many demands, it can be difficult for teachers to provide effective instruction to students, particularly those who have emotional, behavioural and/or physical challenges or disabilities. There are many practical things teachers can do to meet the needs of their students: use clear explanations and routines, establish classroom management plans, change the physical environment to promote learning, restructure lessons to incorporate a variety of learning modalities, and provide quality instruction (Shanker, 2013; Sutherland, Lewis-Palmer, Stichter & Morgan, 2008). To create an effective culture of learning for all students it is important that teachers engage in earnest attempts to discover their students' strengths, interests, needs and goals, build supportive relationships with their students, interact with students in positive and encouraging ways, and respond proactively, appropriately and flexibly to students' needs (Greene, 2016; Jones, Bailey, Brion-Meisels, & Partee, 2016).

Ultimately, many factors influence the establishment of a positive niche or inclusive learning environment for all students (Armstrong, 2012).

An inclusive school community is one in which *all* students participate fully in all aspects of the educational programming, have a purpose, and learn together (Downing, 2006).

According to the British Columbia Ministry of Education (2016), “the purpose of Special Education is to enable the equitable participation of students with special needs in the educational system in British Columbia” (p. 6). While many schools have successfully integrated students with disabilities and exceptionalities, not all schools have an ethos that reflects the values of true inclusivity. Educating teachers and students so they have a quality understanding of student variability and inclusive practices is a key factor in affecting transformation of current teaching methodology and peer interactions (MacFarlane & Woolfson, 2013). Individuals’ beliefs inform their behaviors towards students with diverse needs and negative attitudes and critical perceptions often influence the self-efficacy of students with disabilities (Cole, 1999; Edmunds & Macmillan, 2010).

Thus, realistically, in order for meaningful change to come about school leaders must evaluate and reflect on current practices, implement goals and objectives that are in line with best practices in creating inclusive school communities, inform teachers of the school-wide objectives, and provide opportunities for professional development, and implement programs and/or interventions designed to support change at a grassroots level with the students (Edmunds & Macmillan, 2010). Authentic inclusion requires strong leadership and effective teachers that explicitly teach and model inclusive practices that are then, ideally, internalized (Stanley, Juhnke, & Purkey, 2004). According to Pudlas (2004) full inclusion includes the building of a

community in which all members are fully participating and accepted. Only then will attitudes, perspectives, and beliefs informing behaviors toward students with disabilities change.

In my role as a teacher I endeavour to design rich learning experiences for all my students and foster an inclusive community in which each student has the opportunity to develop their skills and abilities utilizing their own unique strengths. Inclusion is about more than just being present and participating in a school classroom or community. Genuine, authentic inclusion occurs when *all* individuals are viewed as valued or seen as ‘precious’ (Osburn, 2006; Orsazoxia, 2015). It is not enough to merely regard each student as precious and valuable; students need to internalize this belief and this can only be done when others (peers and teachers) perceive students as such and live this out in their daily interactions. I recently viewed an artist discussing his work and in his dialogue he related that in order for a wonder to truly be a wonder there needs to be equal emphasis on the beholder (Royal Canadian Mint, 2016). Ultimately, students with disabilities need to be valued in the eyes of the perceivers if they are going to ascribe ‘wonder’ to themselves (Osburn, 2006). Practically speaking, ‘inclusive’ practices in our current educational institutions do not uphold this philosophical perspective of inclusion (Moore, 2016; Winzer, 2001).

In the field of special education, inclusion remains a challenging practice in school communities. “At the root of the difficulty,” Winzer (2001) states, “is the fact that inclusion is both a philosophy and a practice. While the philosophy is fairly well accepted, the major difficulties come with attempting to translate the principles into efficient school-based service delivery models” (p. 41). Teacher attitudes and experience and a lack of supports (e.g., paraprofessionals, class size, resources) can serve as barriers to inclusion (Winzer, 2001).

Further research indicates that inclusion is not effective in many educational systems due to teacher competencies and pedagogy that fails to design to accommodate learner variability resulting in a lack of social and academic engagement (Katz, 2013; Winzer, 2001).

The following questions have thus driven this inquiry: How can the principles and philosophies of inclusion be translated into inclusive pedagogy that can be meaningfully employed in the classroom? How can teachers practically, intentionally and effectively design learning activities that are accessible to all students, particularly those who have disabilities and for whom general education has been inaccessible? (Al Hazmi & Ahmad, 2018; Willms, Friesen & Milton, 2009). While valuing each individual is paramount to effective teaching, the practical implications of inclusion require more pedagogical understanding than a desire and heart to break down barriers, as poorly designed curriculum and learning opportunities can exclude students from participating (Meyer, Rose & Gordon, 2014; Palmer, 2003).

Research suggests that Universal Design for Learning (UDL), a term which will be more fully described subsequently, provides the principles and methods of instruction to address learner variability and remove barriers (Rao & Meo, 2016). The purpose of this research is to explore, through one educator's experience, whether and how one can utilize UDL principles and methods of instruction to effectively design lessons that are accessible for all learners including those with disabilities.

## **Background**

Universal Design for Learning (UDL) is motivated by a desire to foster accessibility to education for all learners (Katz, 2013). The principles of UDL recognize that disability is contextual and that schools and classrooms, or more specifically the curriculum, are disabled not



the students (Meyer et al., 2014; Murawski & Scott, 2019). UDL asserts that for students to have equitable opportunities to participate and engage in learning teachers must provide multiple means of engagement, multiple means of representation, and multiple means of action and expression by adapting the curriculum to the student (Meyer et al., 2014). The shift in mindset to variability rather than disability encourages teachers to proactively and intentionally design flexible instructional environments that support the range of learners that predictably exist in any classroom (Rao & Meo, 2016). This may be considered analogous to a buffet where a variety of foods are available to accommodate different appetites or food sensitivities, but the singular goal is still to provide nourishment. The principles of UDL offer flexibility in the ways students access material, engage with it and show what they know, thereby making learning more accessible.

### **Research Questions**

Given the foregoing, the research described here seeks to address a number of questions.

Specifically:

How can one effectively design lessons that are accessible for all learners?

Can the UDL approach to instructional design effectively be used to design and deliver instruction for specific students (e.g., students with autism)?

Can UDL facilitate social and academic inclusion and engagement for all students?

### **Definitions**

It is important that the terminology used in the proposed research be clear. Therefore the following definitions will be applicable.

***Inclusion.*** Inclusion describes the principle that all students are entitled to equitable access to learning, achievement and the pursuit of excellence in all aspects of their education. The practice of inclusion is not necessarily synonymous with integration and goes beyond placement to include meaningful participation and the promotion of interaction with others (BC Ministry of Education, 2016). For Moore (2016), inclusive education means “providing opportunities *with* supports for *all* students to have access to, and contribute to, an education rich in content and experience with their peers” (p.17). This definition incorporates the perspective of UDL, in that inclusion is about creating the supports and access for all students to be successful by designing learning environments with “a deep understanding and appreciation for individual variability” in mind (Meyer et al, 2014, p. 82). Thus, throughout this paper, the term inclusion is used to refer to a learning community that is responsive to learner differences and promotes optimal learning for all students, regardless of ability; a community in which barriers to learning are not inherent in the capacities of learners, but instead arise in learners' interactions with inflexible educational goals, materials, methods, and assessments (Meyer et al., 2014).

***Least restrictive environment.*** Conceptions of disability and special education have been transformed from the nascent stages in the mid eighteenth century when individuals with disabilities were first provided instruction to the segregated classes of the early nineteenth century and to the integrated classrooms of the 1960's (Winzer, 2007). The development of inclusion was further revolutionized with the passing of the Education for All Handicap Children Act in 1975 in which the concept of Least Restrictive Environment (LRE) or ‘mainstreaming’ was established (Winzer, 2007). Least Restrictive Environment (LRE) is the requirement in United States federal law that students with disabilities receive their education, to the maximum

extent appropriate, with nondisabled peers and that special education students are not removed from regular classes unless, even with supplemental aids and services, education in regular classes cannot be achieved satisfactorily. [20 United States Code (U.S.C.) Sec. 1412(a)(5)(A); 34 Code of Federal Regulations (C.F.R.) Sec. 300.114.] Canada has no such federal law, however the philosophy of LRE is still inherent in current provincial and territorial educational policies (Towle, 2015).

***Neurodiversity.*** “An idea which asserts that atypical (neurodivergent) neurological development is a normal human difference that is to be recognized and respected as any other human variation” (Armstrong, 2012, p.10). Traditionally curricula have been designed with the premise that most students learn in a similar manner and thus the methodology that teachers utilize requires little variation. The concept of neurodiversity is seemingly incompatible with traditional educational discourses in which the curriculum defined the learner and “anyone who could not learn from the given curriculum was labeled ‘disabled’ or ‘underachieving’ or ‘failing’.” (Meyer et al, 2014, p. 128). UDL puts forth the idea that disability in education is context dependent and that it is the barriers created by inflexible curriculum and learning environments that disable students. The notion of Neurodiversity and principles of UDL synonymously promote inclusive education by fostering an appreciation for individual diversity and variability.

***Positive niche construction.*** The practice of differentiating instruction and establishing a favourable environment within which students with neurodiverse brains can flourish in a school (Armstrong, 2012). In contrast from the deficit-based conception of disability, this individualized approach to teaching emphasises: the assessment of students’ strengths, the use of

assistive technology and UDL, enhanced human resources, the implementation of strengths-based teaching and learning strategies, establishing positive role models, activation of affirmative career aspirations, and the design and implementation of appropriate environmental modifications to support the development of neurodiverse students (Armstrong, 2012). Positive niche construction provides a framework for teachers to differentiate instruction for students with disabilities thus fostering an inclusive learning environment (Armstrong, 2012).

***Universal Design for Learning (UDL).*** According to a definition provided by the Higher Education Opportunity Act of 2008, UDL is “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.” In essence UDL is an approach to education that is responsive to learner variability; UDL is the proactive, intentional planning for diverse student strengths and needs (Meyer et al., 2014). UDL is based on three principles grounded in neuroscience research: 1) Provide multiple means of engagement; 2) Provide multiple means of representation; and 3) Provide multiple means of action and expression (Meyer et al., 2014). The purpose of UDL is to help students become expert learners, that is, learners that are purposeful, motivated, resourceful, knowledgeable, and goal directed (CAST, 2011). The principles of UDL hold that most curricula are unable to adapt to learner variability and as such, it is the inflexible curricula that is disabled not the learners (CAST,

2011). This leads back to the purpose of this research, which is to explore how one could effectively design lessons that are accessible for all learners.

## CHAPTER TWO: LITERATURE REVIEW

### **From Disability to Variability**

The implementation of Universal Design for Learning (UDL) is part of the current paradigm of service delivery for students with learning challenges. This paradigm may be better understood in the context of the historical development of special education.

There has been a “gradual humanizing attitude toward persons with disabilities” evidenced in the history of special education (Winzer, 2007, p. 31). Historically, attitudes, beliefs, and systems within society have influenced the perspective ‘neurotypical’ individuals have taken of those with special needs or disabilities. The history of special education reveals the influence this perspective has had on the treatment and perception of individuals with disabilities.

Winzer (2007) describes the pioneering efforts of individuals in the field of special education and the institutional settings founded in the early nineteenth century. One can see the lay discourse, medical discourse, and charity discourse embedded in the attitudes and beliefs of individuals during this period of history. Individuals with disabilities were perceived as a threat and therefore, for the greater good of ‘normal’ society, were institutionalized (Winzer, 2007). Interventions were undertaken to treat individuals with disabilities in order to cure them or normalize them (Winzer, 2007). Society in general made assumptions regarding individuals with disabilities which inferred that they were weak and in need of support (Winzer, 2007). These discourses focus on the problems, deficits, and treatments of individuals with special needs which serve to only reinforce their difference (Fraser, & Shields, 2010).

The neurodiversity movement has challenged the historical paradigms and shaken even the more recent foundations of the right's discourse which began in the 1960's (Armstrong, 2012). The neurodiversity movement compels us to question whether or not disabilities are in fact 'disabilities' or natural variations in the human structure (Jaarsma & Welin, 2012). Whether one supports this claim or not, the neurodiversity movement does bring forth a shift in thinking towards persons with disabilities that is more positive and less victimizing than previous discourses. This paradigm shift reflects an important change in our education system.

Neuroscience is an increasingly relevant domain of education (Meyer et al., 2014). Brain research is at the heart of the physiological understanding of learner variability and how learning transforms the interconnections between neurons in the brain (Meyer et al. 2014). Commenting on the structure and principles of UDL Meyer et al. (2014) highlight the neuroscience of learning upon which UDL is founded. As Meyer et al. (2014) state, "we now understand from scientific research that brains and even genes are highly responsive to their environments. Individual differences in our brains are not innate or fixed, but developed and malleable, and context has a huge impact" (p. 51).

In order to accommodate the natural human variation and diversity in our classrooms, one needs to apply UDL principles to educational practices; it is as described by Wilson (2017) "the best example of the application of the social model of disability to educational approaches" ("Reconceptualizing Disability," para. 7). Implementing the principles of UDL and components of positive niche construction in our classrooms will set the stage for changes in the way we interact with, engage with, and support individuals with diverse needs (Armstrong, 2012; Moore, 2016; Wilson, 2017). Human variability and diversity are limitless, and therefore our teaching

practices require a flexibility that supports the strengths and needs of all learners (Hall, Meyer & Rose, 2012).

### **From Theory to Praxis**

Students represent a diverse and variable group of individuals with distinct knowledge and experiences, learning styles, and attributes (Rao & Meo, 2016). There is no longer a one size fits all mode of instruction that concedes distribution of knowledge to teachers and relegates students to passive repositories of information (Freire, 2018; Towle, 2015). Research indicates that our current educational systems, classrooms, and instructional methodologies are not effective in fostering engagement and inclusion for diverse learners because our learning environments are not designed with a deep understanding of individual variability (Katz, 2013; Meyer et al., 2014; Wilson, 2017). There is a “strong disconnect between the philosophy behind inclusion policies and their everyday classroom implementation” (Towle, 2015, p. 24).

Educators need to be better equipped and trained to provide for more diverse classrooms (Towle, 2015). Willms, Friesen, and Milton (2009) note:

Across Canada, many students have told CEA (Canadian Education Association) that classrooms and learning as they are currently organized are not working. They are not working for students who can keep up the pace set by the lectures, textbooks and tests, and they are not working for those who cannot. (p. 5)

In a recent Canadian study on perceptions of the concept of inclusion, respondents identified the need for more expertise, understanding, and training to better equip them for the practical aspects of teaching students with diverse needs in real-life classrooms (Thompson, Lysons & Timmons, 2015). A desire for more training in using differentiated instruction and



UDL was one example given (Thompson et al., 2015). UDL provides a framework for the relevant and practical application of inclusive pedagogy, thus facilitating the academic and social inclusion and engagement for all students (Katz, 2013).

### Principles of UDL

The underlying guidelines of UDL are constructed on three foundational principles: Provide multiple means of engagement; Provide multiple means of representation; and Provide multiple means of action and expression (Meyer et al., 2014). These principles are further described in Figure 1.

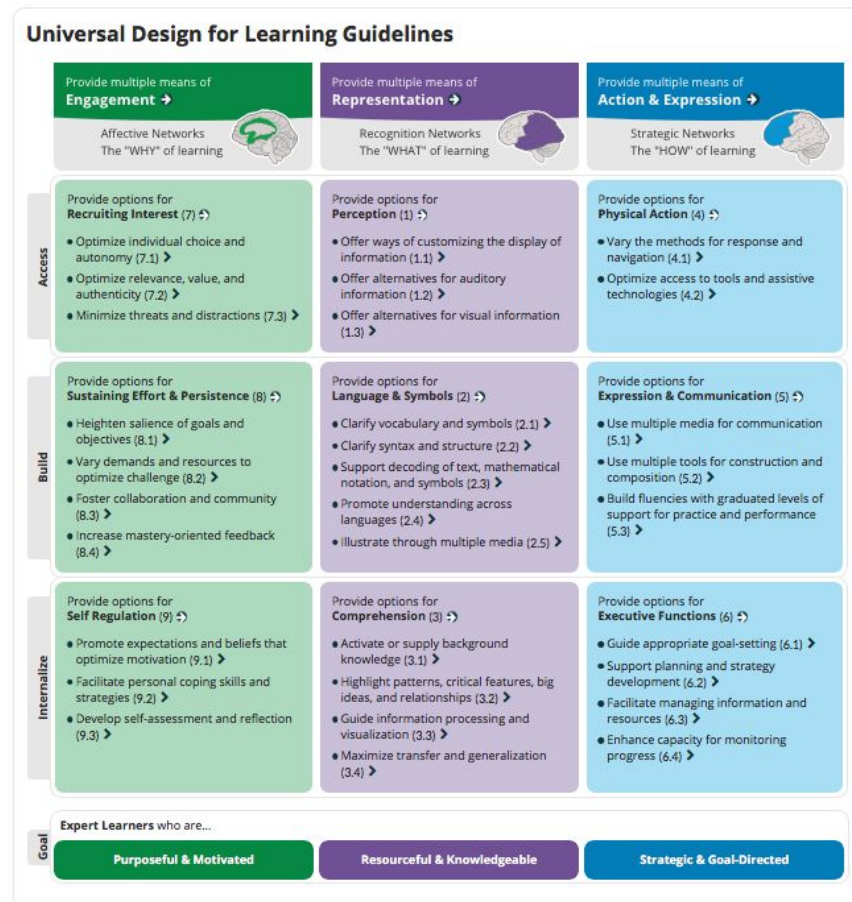


Figure 1. Universal Design for Learning Guidelines. Reprinted from CAST (2018). Universal Design for Learning Guidelines version 2.2. Retrieved from <http://udlguidelines.cast.org>

The guidelines “provide a framework for thinking systematically about individual variability as it relates to learning..., provide scaffolds for remembering who and what to consider in the design of high-performance learning environments..., and provide concrete suggestions for how to address systematic variability among students” (Meyer et al., 2014, p. 110). When educators apply principles of UDL proactively they design and prepare lessons that reduce barriers to learning and increase accessibility for learners to meaningfully engage in the work and express what they know (Narkon & Wells, 2013). Often educators ask the wrong question, ‘Can the student do the same work as their non-disabled peers?’ which results in integration or the student being pulled out of the regular classroom (Giangreco, 2017). Educators should ask, ‘What changes could we make to how the content and skills are represented, how the student engages with the curriculum, and how the student can express their understanding?’ Pedagogy guided by UDL recognizes that the curriculum, that is the learning goals, methods and materials, are disabled; not the students (Meyer et al., 2014).

### **Benefits of UDL**

Several studies have been conducted which underscore the benefits of UDL for students with and without disabilities. Many studies support the view that implementation of inclusive pedagogy utilizing the UDL framework addresses learner variability and improves student academic and social engagement (Al Hazmi, & Ahmad, 2018, Emenova, 2018; Katz, 2013; Lowrey et al., 2017; Metcalf, Evans, Flynn, & Williams, 2009; Wilson, 2017). Lowrey et al. (2017) offer a narrative inquiry which provides experiential learning stories of teachers expounding the benefits of UDL, namely the UDL framework allowed teachers to address learner variability to reduce barriers in instruction. Rao and Meo (2016) present a lesson

planning process that incorporates principles of UDL and learning standards that results in inclusive lesson plans that address the needs of all learners. Both studies confirm that by using UDL guidelines teachers can proactively differentiate lessons, thus reducing barriers and increasing accessibility to learning by including flexible options in their methods, materials and/or assessments (Lowrey et al., 2017; Rao and Meo, 2016). Metcalf et al. (2009) examined the application of UDL principles and multi-sensory learning centers to the framework of a traditional teacher-directed lesson. The authors suggest that proactively applying UDL principles to conventional teaching strategies provides the teachers with a framework for planning that takes into account learner variability and ensures students are purposefully working toward a learning goal not merely engaged in parallel learning (Metcalf et al., 2009). The importance of proactive planning is reiterated in other studies. They substantiate the view that proactive planning minimizes the need for individual accommodations or reactively modifying lessons to address student needs (Evmenova, 2018; Lieberman, Lytle, & Clarcq, 2008; Lowrey et al., 2017). Moreover, when UDL is implemented in classrooms, teachers no longer have occasion to provide parallel learning activities which integrate students with disabilities in the classroom but do not authentically provide opportunity for inclusion (Katz, 2013).

Research by Narkon and Wells (2013) examined how UDL principles could be applied to lesson design to increase accessibility and remove barriers to inclusion. They looked at improving reading comprehension for elementary students with reading and writing challenges resulting from learning disabilities. They note that many students, not only students with learning disabilities, face barriers to accessing academic studies because of reading comprehension difficulties (Narkon & Wells, 2013). Their illustrative study emphasized the

need for teachers to know and understand the characteristics and learning needs of their students as each “classroom is unique and may potentially have a unique set of barriers to accessing curricula” (Narkon & Wells, 2013, p. 238). This formative assessment of students’ needs guides the implementation of specific UDL strategies. The UDL guidelines are not intended to be prescriptive but rather serve as standards by which teachers can design lessons that are accessible for all learners (Rao & Meo, 2016). This flexibility allows teachers to design instruction that is suited to the specific needs of their students and the curricular content being addressed (Rao & Meo, 2016). A number of studies have found that students with disabilities demonstrate increased engagement in their learning, more frequent peer interactions and are more competent in their social exchanges and communication with others (Al-Azawei, Serenelli & Lundqvist, 2016; Al Hazmi & Ahmad, 2018; Hartmann, 2015; Katz, 2013; Katz & Sokal, 2016).

As the review of the genesis of UDL has described, there are many potentially positive benefits. The study described below provides a narrative of one individual teacher’s attempt to implement teaching practices based on those UDL principles.

### **Practical Application of UDL**

Based on the study of Rao and Meo (2016) it can be concluded that teachers can apply UDL to develop inclusive lesson plans. This is consistent with other studies that support the implementation of Universal Design for Learning ( Al Hazmi, & Ahmad, 2018; Bernacchio & Mullen, 2007; Dalton & Brand, 2012; Katz, 2013; Katz & Sokal, 2016; Evmenova, 2018; Lieberman, 2017; Lowrey, Hollingshead, Howery, & Bishop, 2017; Narkon & Wells, 2013; Wilson, 2017). The benefits of UDL have been described but as Lowrey et al. (2017) put forth the voices of practitioners are often missing in research studies and there exists an absence of

research that documents personal stories of general education teachers speaking about UDL, inclusive classrooms, and students. Moreover, a number of questions regarding the practical implementation of UDL remain: How do teachers support the need for individualization within the UDL framework?; What does effective implementation of a UDL lesson look like?; and what are the experiences of general educators with regards to UDL lesson planning and the execution of those lessons? (Evmenova, 2018; Katz, 2013; Lowrey et al., 2017).

The research described here addresses the need for qualitative research focusing on general educators' experiences planning for inclusion using the UDL framework. Questions regarding the effectiveness and practicality of UDL with regards to students with disabilities remain to be addressed. Further research needs to be undertaken which documents experiences with students with disabilities (Lowrey et al., 2017). Therefore, the purpose of this study is to describe one teacher's investigation of how one can effectively design and deliver lessons that are accessible for all learners including those with disabilities and to describe how the mindful implementation of UDL contributed to facilitating social and academic inclusion and engagement for all students.

## CHAPTER THREE: RESEARCH METHODOLOGY

### Project Method

The purpose of this study is to convey a story and make meaning of my lived experience of Universal Design for Learning with regards to inclusion. The Constructivist theory of knowledge will be guiding the study; that is, that knowledge is socially constructed and mind dependent (Mertens, 2014). The constructivist paradigm, according to Mertens (2014) emphasizes “that research is a product of the values of the researchers and cannot be independent of them” (p. 17). My goal is to provide first hand insight into the process of implementing UDL. As such, as the researcher-participant I will be examining the perceptions and experiences of teachers as they relate to inclusion and the implementation of UDL. The researcher will be embedded in the research process. Autoethnography promotes self-reflection and can be used as a tool to read between the lines in our own lived experience and promote understanding to benefit oneself and society (Camangian, 2010). As a participant observer I will reflect on and analyze the experience of implementing UDL and represent my understanding through story while comparing and contrasting my personal experience with existing research. It is my hope that in reflecting on the process and recounting my experiences I will be able to gain a deeper understanding of who I am as a teacher and how to improve my pedagogy as it relates to inclusion. As emphasised by Barkhuizen and Wette (2008), “In telling their stories of experience teachers necessarily reflect on those experiences and thus make meaning of them; that is, they gain an understanding of their teaching knowledge and practice” (p. 374). According to Denzin and Lincoln (2000) "...qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meaning people bring to them" (p. 3).

In my effort to make sense of this phenomena of UDL I rely on memories of my lived experience, document notes, photos, and my reflective notes.

The overall purpose of this study was to broaden my understanding of UDL and apprehend to what degree its implementation can practically foster inclusion in the general classroom environment. The ultimate goal is to add to the current research documenting teachers' experiences implementing UDL in general classrooms and through the author's experiences make connections with other educators that prompt them to reflect on their own (Mendez, 2013).

## CHAPTER FOUR: FROM THEORY TO PRACTICE

This project was conceived during my time at Trinity Western University while enrolled in the Masters of Arts in Special Education Program. I became interested in UDL as it was discussed among my cohort and often lauded as a means to address the varied abilities and educational needs of all students. My experience of working with students with diverse needs has driven this research. Information on my background and professional experience is presented to assist readers in understanding the factors that contribute to my understanding of inclusion and UDL and its implementation (Rao, Ok & Bryant, 2014).

I began my career as a Certified Education Assistant (CEA) working with students with autism, physical disabilities and intellectual disabilities. In this role I found I often directed and facilitated ‘my’ student’s programming and instruction supported by input from professionals (e.g. Speech and Language Pathologist, Occupational Therapist, Physiotherapist). Generally the model of instruction involved pull-out to the resource room and, while there was some effort made to integrate the students’ with special needs, there was a definite lack of inclusion as defined in this paper. Later I transitioned to supporting the Learning Assistance Teacher (LAT) with reading and math intervention. Similarly, the model of instruction for reading and math intervention often involved pull-out of students or groups of students. In few instances I would push-in to classes to support the teachers’ direct instruction. In these cases I was often responsible for assisting students in completing activities or worksheets that were outside their zone of proximal development and therefore needed on-the-fly adaptations. My experiences suggested that the burden of adaptation be placed on the learner and that all students were somehow required to meet normative expectations. ‘Inclusion’ often meant that students with



disabilities were working alongside their peers in a shared physical space but were not academically included. I worked as a CEA for five years before going back to university to obtain my Bachelor of Education. After becoming a teacher I had a strong impetus to enhance my students' learning experiences, intentionally support students with diverse needs, provide my CEA's with guidance and provide an environment in which all students participate and have meaningful interactions. Now, having been a teacher for the last decade I am more adept at developing curriculum materials that are engaging, relevant, and that reflect the diverse needs of the students.

I have a strong knowledge of the subject material I teach and the social, emotional, and physical needs of the students I teach. To meet the diverse needs and learning styles within the classroom I frequently differentiate instruction and activities for students and I use a variety of teaching strategies which incorporate elements from a range of learning modalities (e.g., kinaesthetic, visual, auditory). These strategies to create an active learning environment include making thinking visible routines, collaborative learning groups, integrating technology, critical thinking projects, games, and drama. In order to foster learning and improve retention, I have always believed students need to be actively engaged and exposed to many curriculum experiences. To this end I endeavour to provide fun, relevant hands-on activities in a variety of settings that promote active engagement in cooperative learning tasks. I set high standards for myself and pride myself on my preparedness, my attention to detail, and my organizational abilities. I continually research best practices and reflect on what works in the classroom. I implement suggestions and ideas from a variety of sources (e.g., professional journals, internet,

and colleagues) and continually self-evaluate the efficacy of the practices in my classroom with regards to the students I am teaching.

Despite all of these efforts and attempts to improve my pedagogy, I was left feeling that my methods of instruction required improvement and that there existed a greater capacity for inclusive practices than I was implementing in my classroom. In particular, I wanted to provide a classroom environment in which all students regardless of ability had equitable opportunity to access the curriculum and to regularly participate in the classroom, both academically and socially.

Discussions on and initial research of UDL indicated that application of UDL guidelines would produce accessible, meaningful, challenging learning opportunities for all learners. UDL was seemingly the Holy Grail of inclusive education! As I narrate my experiences I attempt to tie in the literature which informed and continues to influence my emerging understanding of UDL and the journey that unfolded. This personalized account is influenced by my perspective which has been influenced by my past experiences, faith, education, assumptions and values. Here is my ‘Story’ (Connelly & Clandinin, 1995).

### **Universal Design for Learning: What Is It And How Do I ‘Do’ It?**

In the nascent stage of this project I set out to learn as much about UDL as possible with the intent of applying UDL with fidelity in my classroom. My perspectives on what UDL is and what it means to ‘do’ UDL have been reshaped as I have looked at and attempted to comprehend UDL and endeavoured to design a learning environment utilizing the UDL approach.

While UDL is commonly acknowledged as being at the forefront of inclusive education practices there is lack of understanding among teachers about what exactly UDL is and how to

implement it (Evmenova, 2018; Kennedy, Thomas, Meyer, Alves & Lloyd, 2014; Israel, Ribuffo & Smith, 2014; Lowrey et al., 2017). Upon my initial search for information on UDL I struggled to comprehend what it looked like in a classroom environment. I ordered the *Universal Design for Learning: Theory & Practice* (Meyer et. al., 2014) and read it cover to cover and watched many of the suggested videos. My initial response to the text was that it provided more theory than practice.

Subsequent searches led me to various articles that recapitulated the UDL principles, guidelines, and checkpoints while providing little description on how to carry out and apply said principles, guidelines and checkpoints. These findings are supported by Lowrey et al. (2017) who note that while the UDL framework offers specific guidelines for implementation, there is a notable lack of exemplars in the literature.

I would concur that there are few examples of UDL lesson and/or unit design which contextualize the application of UDL principles or effectively model how to implement UDL in a classroom setting. Moreover, where examples of the application of the principles of UDL are provided they seem rather ordinary and conventional (e.g., word walls, setting own goals, multi-sensory spelling, accessibility of physical environment), seemingly bereft of the promise of providing accessible, meaningful, challenging learning opportunities for all learners (Burgstahler, 2009; Dalton & Brand, 2012; Metcalf et al., 2009).

At the beginning of my search for understanding I was therefore left somewhat confused and keenly desired to discover an exemplar of what ‘good’ UDL pedagogy looked like so I could make sense of what it truly means to do UDL. In his aptly titled commentary *Would You Recognize Universal Design for Learning if You Saw It?* Edyburn (2010) discusses the

challenges of implementing UDL stating concern for “the ability of the profession to implement a construct that it cannot define” (p.33). According to Edyburn (2010) educators are “left to their own devices” to try to apply the UDL principles to foster accessibility to the curriculum and “find themselves struggling to achieve the potential of UDL” (p.36). He states, “just as cooperative learning is not defined as whenever two students talk with each other, and co-teaching is not defined as whenever two teachers share the same classroom, we must be able to operationalize the construct of UDL” (Edyburn, 2010, p.36). Narkon & Wells (2013) substantiate this view stating, “making UDL a mandate does not provide teachers with the skills and knowledge required to actualize the concepts” (p.235).

The Center for Applied Special Technology (CAST) website provides a platform for preK-12 educators to share UDL resources and lessons in the CAST UDL Exchange. However, even these lessons seemed routine and unsubstantial. The lesson descriptions I perused were not novel and provided no new methods of teaching or approaches to assessment that I had not already implemented in my classroom. I joined a UDL Global Partners Network group online in the hopes of finding some exemplars or instructional planning advice to follow but was again left without the explanations or examples I was searching for. Members of the group also seemed to be searching for practical examples as inspiration. Interestingly, a post requesting ideas for how to clear up misconceptions surrounding UDL has had no response for five weeks. One member did provide a link to an online resource (Goalbookapp.com) that appeared valuable. I signed up for the trial membership which allowed me to browse through a limited number of instructional resources. Goalbookapp.com provides support for discovering effective UDL strategies based on specific curricular barriers and area of need and provides a library of instruction content. I

was hopeful and encouraged until I noted the cost of the subscription started at \$5000US per year.

I traveled to the University of British Columbia Okanagan Campus and searched its library databases for resources on UDL. I found many books on inclusion and differentiated instruction but limited resources on UDL. One text provided a couple of pages on UDL in a chapter entitled “Establishing Successful Inclusive Classrooms” (Karten, 2010, p. 106). Once again, however, the information provided was not beneficial or useful as it listed examples of classroom applications of UDL that are common sense or examples of strategies that have been in practice in our school for years already (e.g. “Cut-up tennis balls on the bottoms of chairs” to reduce noise, “Treating all students with dignity” to foster self-esteem) (Karten, 2010, p. 107).

One book in the University of British Columbia Okanagan Education Department’s curriculum collection did provide samples of UDL lesson plans designed for students with exceptionalities (e.g. autism, hearing impairments, speech and language disorders) that incorporate a tiered lesson design or pyramid planning that outlines what all, most, and some students will do in conjunction with the lesson objectives (Metcalf, 2010). While helpful the sample lessons are meant to be a springboard for designing one’s own lessons. Moreover, as the author notes the focus of the lesson plans is on the UDL components to reduce specific learner barriers for one disability area and as such the lessons do not consider all learner barriers (Metcalf, 2010). The sample lessons proved to be an interesting tool, but more so to affirm that what I am currently doing in class is in line with published suggested practices (e.g., “Student can work with a partner or coach depending upon need.” “Implement student’s individual behavior plan.”) (Metcalf, 2010, p.27).

Discovering the *CAST Universal Design for Learning Guidelines version 2.0* (2011) was particularly influential in my learning because it outlined implementation examples for each checkpoint and clearly explained the fundamental concepts of UDL in simple, easy to read prose. As I delved into this document I couldn't help but feel reassured and encouraged noting that many of the implementation examples provided were comparable to strategies I implement in my class. Upon my initial reading, I wondered if in fact I was 'doing UDL' without knowing it. Recent examples reported by Lowrey et al. (2017) also suggest that some teachers have the impression that UDL is just good pedagogy with a different name: "UDL is just good teaching. We've been doing it for years but now it has a name and a guideline to follow, but it is what really good teachers have always been doing" ( p. 235).

To some degree this confusion can be attributed to the fact that the UDL framework includes many research-based practices that many good teachers do employ in their classrooms (Dalton & Brand, 2012; Lowrey et al., 2017; Meyer et al., 2014). UDL is based on intentional proactive planning, however, and therefore UDL is not employed coincidentally or unintentionally (Edyburn, 2010; Meyer et al., 2014). What exactly then does it mean to implement UDL? How can one effectively design lessons that are accessible for all learners? Can the UDL approach to instructional design actually be used to design and deliver instruction for specific students (e.g., Students with autism)?

Ultimately as I endeavored to answer these questions I became increasingly cognizant of the fact that UDL is not straightforward nor is it a magic bullet that can be implemented in an easy manner as one would a canned curriculum. I came to the rather slow realization that the UDL guidelines are not meant to be a 'prescription' and I had been looking for something

prescriptive to employ. I realized that in order to do UDL I would have to *do* UDL using the guidelines to plan and evaluate my instruction.

As I began to plan lessons and eventually an entire mathematics unit using the UDL guidelines a number of common threads emerged from my experience and my interpretation of the literature on UDL around which I organized my ideas: intentionality, identifying goals and removing barriers, moving beyond parallel-learning, classroom culture and engagement, and time and support.

### **Intentionality**

A considerable amount of literature has been published on UDL. These studies affirm that planning proactively with intentionality is paramount in the UDL process (Evmenova, 2018; Fenrich, Carson & Overgaard, 2018; Hartmann, 2015; Israel et al., 2014; Lowrey et al., 2017; Novak & Rose, 2016; Rao & Meo, 2016; Rao et al., 2014). As Meyer et al. (2014) state the *design* in Universal Design for Learning means “that UDL is intentional, purposeful, and planned” (p. 89). Facilitating learning for all students requires a thorough knowledge of students’ needs and skill levels combined with a comprehensive understanding of the curricular goals (CAST, 2011; Narkon & Wells, 2013). Commenting on the sagaciousness required when teaching Johnson (2004) states, “We ask kindergartners, “What is the sound of the letter at the end of the word?,” forgetting that many of them are unclear about the concepts letter, word, sound (as it applies to speech), and end (which requires know that letters are ordered left to right), and do not know that letters bear a complex relationship to speech sounds” (p. 7). Learning involves integrating knowledge, coordinating skills and applying understanding. Therefore, to effectively construct learning opportunities teachers need to anticipate the

knowledge and skills required to build student's understanding, provide support, and remove barriers. This can prove challenging for general educators such as myself especially when planning for students with disabilities.

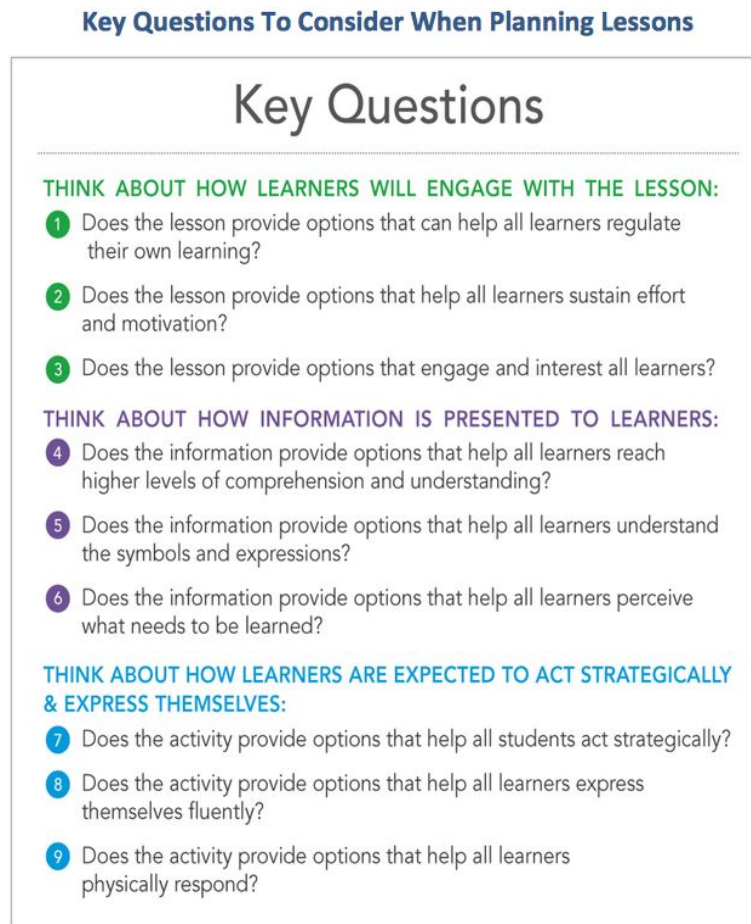
The UDL guidelines support the proactive, intentional design of lessons by providing a framework for thinking systematically about individual variability as it relates to learning and by providing scaffolds for remembering who and what to consider in the construct of the lesson (Meyer et al., 2014). The UDL guidelines also provide research based suggestions or 'checkpoints' for building a flexible and inclusive learning environment (Meyer, 2014). Essentially, UDL makes explicit what good teaching practices look like and what is required to support inclusive learning opportunities for all students (Jimenez, Graf & Rose, 2007).

My initial hope was that I would be able to use the guidelines and checkpoints to plan my instruction similar to how one would employ a recipe or checklist. Other educators had similar thoughts spending months searching for the perfect template to use only to discover similar to I that UDL is a process, not a checklist (Nicol, 2017). The checkpoints were helpful in that they prompted me to consider potential barriers to student learning and thus anticipate and plan for instructional adaptations and interventions that would remove the barriers to students' progress.

My math unit, for example, was organized using the three principles of UDL and incorporated various checkpoints such as checkpoint 2.1 - Clarify vocabulary and symbols, checkpoint 3.1 - Activate or supply background knowledge and checkpoint 4.1 - vary the methods for response and navigation. The temptation with the checkpoints and suggestions, however, was to use them to affirm UDL principles were embedded in previously designed lessons rather than using them to proactively optimize learning for all students.



Further exploration of UDL led me to try planning for inclusion with key questions (Figure 2) that prompt one to consider how learners will engage with the lesson, how information will be presented to students, and how students will navigate the learning environment and express what they know (Meyer et al., 2014).



*Figure 2.* Key Questions To Consider When Planning Lessons. Reprinted from CAST (2014).

These questions provided guidance as I thought about planning lessons with all students in mind and prompted me to evaluate my instruction more critically.

The diverse composition of my primary class this year included a student diagnosed with Autism Spectrum Disorder (ASD) as per the Diagnostic and Statistical Manual of Mental

Disorders criteria, whom I will refer to as Student R. Student R is an enthusiastic, engaging boy that is well liked by his peers. He had adapted grade level work in all subject areas with the full time support of an Educational Assistant (EA). His individual learning goals focused on both his expressive and receptive language as the areas of social communication and social interaction presented barriers for Student R. When planning for a flexible and inclusive learning environment, Student R was often at the forefront of my mind.

The key questions helped me to focus on Student R's varied needs and provide accessible methods, materials, and assessments. In anticipation of our data management unit, for example, our learning goal was to recognize and compose numbers using tally marks. When learning to count and make tally marks, Student R was provided with popsicle sticks with which to 'write' the tally marks as encoding them in print on a whiteboard would have proven challenging for the initial introduction of the skill. By anticipating students' barriers within a lesson teachers can proactively plan for supports and scaffolds that address their specific needs (Rao & Meo, 2016)

The guidelines are to be used to create a fully accessible and inclusive learning environment for all students and their range of variability (CAST, 2011; Meyer et al., 2014). Yet, the UDL approach to instructional design can effectively be used to design and deliver instruction for specific students, as is demonstrated in the previous example of Student R (Cook & Rao, 2018). Rather than asking myself, "Can Student R do this activity?" I would consider how I could adapt the materials and tools used in the activity and how I could change the methods of instruction so Student R could engage in the lesson and demonstrate his understanding.

Teachers can identify, according to Cook and Rao (2018), how a “student’s disability impacts them in [a] particular content area, identify potential barriers, and use UDL to proactively design their curriculum and instruction to meet the individual student’s needs” (p. 183). Professional judgement can be applied when making materials and tools available to students so that their individualized needs are met (Cook & Rao, 2018; Rao & Meo, 2016). Reflecting on the principles of UDL and the key questions as I designed my lessons helped me to anticipate Student R’s needs and proactively plan instructional supports that would ensure the lesson was inclusive.

### **Identifying Goals and Removing Barriers**

A number of studies have found that UDL reduces barriers to students’ learning (Al-Azawei et al., 2016; Lieberman, 2017; Rao & Meo, 2016). However, as Narkon & Wells (2013) note “each classroom of learners is unique and may potentially have a unique set of barriers to accessing curricula” (p.238). In order to effectively reduce barriers to students’ learning, one must have clear goals and an understanding of their students’ interests, strengths, and abilities. Then one can apply this knowledge when designing lessons to reduce barriers students may have in attaining the learning goal (Rao & Meo, 2016).

There were times when I encountered challenges in my attempts to proactively design learning opportunities and reduce barriers to students’ learning. In my non-standard linear measurement introductory lesson, for example, I typically read *How Big Is a Foot?* and provide opportunities for discussion to encourage the students to develop their own understanding of what a foot is and why having a standard unit of measurement is necessary. To provide multiple means of representation for students and reduce barriers to acquiring the content of the text I had

searched for and acquired a video of the story. However, when it came time to teach the lesson I was unsure of when to present it as an alternative to the written text. If I played the video before reading the text aloud then I would give away the ending and lose the opportunity to co-create understanding. If I were to show the video concurrently for select students during my oral reading of the text I felt I would be segregating some students and again I would lose the opportunity for collaborative discussion.

UDL theory puts forth that “the selection of instructional materials is not about picking ‘the right one’ but rather having options available to meet the needs of diverse learners (Meyer et al., 2014, p. 151). It is optimal in a UDL lesson to make available a variety of materials, tools and supports for all students not just those who have an Individualized Education Plan (IEP) (Lieberman, 2017; Rao & Meo, 2016). Lieberman (2017), for example, describes a UDL physical education volleyball unit in which the nets are set up at varying heights, a variety of balls are made available to all students, and modified rules are employed and all students have the choice to utilize these options. The previous description of the use of video, however, shows the tension between optimization of UDL principles and reality. Unsure as to the ‘best’ course of action in my introductory non-standard measurement lesson, I reverted to reading the story aloud to the class and I provided a duplicate copy of the text to Student R to hold and view as an option for perception. While this lesson incorporated other UDL checkpoints I was left feeling ineffective in my application of UDL and continued to seek further information on lesson design.

Incorporating the principles of UDL in lesson design to remove barriers is an area that I am continuing to explore. Providing options for action and expression in mathematics requires less planning and design than in guided reading or narrative writing. For example, in

mathematics students are given instruction on a variety of strategies to solve addition and subtraction equations and are then encouraged to utilize whichever strategy or tool they choose when solving equations. Providing number lines, rekenreks, 10 frames, manipulatives, abacuses and other supports requires little pre-planning or management as these tools are readily available and accessible for the students when they require them.

However, providing options for action and expression in language arts is seemingly more challenging. While I provide opportunities for students to select *what* they write about when composing a narrative I have yet to provide options for *how* they compose their stories. There are options available such as using the Book Creator app on iPad or using LEGO bricks to build a scene and having the student orally tell their story but facilitating this process in a grade 1 classroom seems rather daunting without support. Other educators share similar experiences:

Just recently, as we reflected on various ways to incorporate the principles of UDL, we realized that we tended to provide students with the opportunity for multiple means of expression in only a few subject areas. That reflection prompted us to make a concerted effort to provide opportunities of expression in other subject areas as well. (Meyer et al., 2014, p. 168)

My experience suggests there would be great benefits to providing more choice and options for means of action and expression in the classroom.

For the non-standard measurement unit summative assessment performance task I endeavoured to provide the students with greater autonomy in this area by presenting options for expression. We initially discussed what we had learned about measurement. I had prepared a set of cards with the words length, mass (weight), volume (capacity), and area. I divided the class

into groups and had each group draw a word card. Each group was then responsible for setting up a measurement centre based on the word they picked. I encouraged the students to record the questions and task directions for their centre. Once they created their measurement center the groups then rotated through one another's centres completing the activities and recording their findings. We culminated with a class meeting to have each group present the findings from their explorations and answer any related questions.

This proved to be an elucidating activity for me. Initially the students were somewhat perplexed and needed some support to initiate and design their measurement tasks. Upon reflection I realized that the students were not accustomed to having this level of choice. I had essentially given them unrestricted freedom to use whatever objects and tools they desired within the classroom to design their station. Moreover, having learned about various types of measurement consecutively over a couple of months some students were struggling to recall how to demonstrate understanding of their assigned measurement type. Once the students got started, however, the level of engagement and the excitement with which they pursued the work was affirming. Meyer et al. (2014) suggest that UDL guidelines “provide a new lens for viewing the classroom and the curriculum: one that enables teachers to reframe how they see their practice and to make constructive changes” (p. 113). I realized the benefit in designing the learning opportunities for the students using the guidelines and revised my UDL measurement unit as a result.

In the future I will incorporate this type of culminating task at the end of each of the measurement sub-units (e.g., length, weight, capacity, area) so the students have more opportunities to represent their thinking and apply what they have learned. Upon reflection,

prior to doing the summative assessment task I would build students' prior knowledge (Checkpoint 3.1 - Activate or supply background knowledge) by showing photos of the students engaged in the various measurement activities they had done over the duration of the unit and prompt students to consider what was being measured, what units of measurement were being utilized and what tools were being used (Checkpoint 3.2 - Highlight patterns, critical features, big ideas, and relationships). The task required the students to apply what they had learned and this was challenging for many because, in my estimation, the activities and learning opportunities I had designed for them previously had not adequately equipped them with the prior knowledge and skills required to perform at the level I was demanding of them.

In retrospect I believe this to be the result of having students passively labour to complete tasks that focused on the content rather than engaging them in active opportunities to become expert learners. According to CAST (2011) "the purpose of education is not to make information accessible, but rather to teach learners how to transform accessible information into usable knowledge" (p. 18). Two different measurement lessons that I prepared illustrate this point.

In one particular measurement lesson I required the students to measure their shoe with a variety of designated nonstandard units and record their findings in a graphic organizer. While meeting the content competencies of the *BC Mathematics 1* curriculum, the activity was more of a make-work project for the students and they completed it as though they were performing an unpleasant but necessary chore. Less proactive and intentional planning had gone into this lesson as I was overwhelmed with other things at work and did not have the personnel support

required to do the lesson I wanted to do. The *Measure My Shoe* activity was found with a quick search of Teachers Pay Teachers (TPT) and I proceeded with it the next day.

A much more successful and engaging lesson applying the same concepts and skills was undertaken following this TPT lesson. However intentional, proactive planning incorporating UDL guidelines went into the design of this lesson. Students were given the opportunity to select a toy car and prompted with the problem: How can you find out which of these cars travels the farthest past the ramp? Cubes, rulers, and other manipulatives were provided to allow choice for the students to use as units with which to measure the distance their car travelled. They wrote their names on the chalkboard and recorded their findings. To culminate the lesson students discussed how a conversion from rulers to cubes and other units could be made to compare the measurements and discover which car travelled the furthest. This activity was much more motivating, engaging and provided opportunities for students to extend their thinking. It did require, however, the support of another individual in the classroom to facilitate this.

The UDL lesson fostered collaboration and community (Checkpoint 8.3). The students were provided with materials with which they could all interact as per Guideline 4: Provide options for physical action and the task allowed for active participation and exploration (Checkpoint 7.1) and incorporated a level of novelty (Checkpoint 9.1). The volunteer leading the small group of four students supported them in planning and strategy development by modeling think-alouds of the process (Checkpoint 6.2) and provided substantive feedback (Checkpoint 8.4).

Affect is a powerful and key to learning (Meyer et al., 2014). In the UDL lesson I perceived the students to be engaged and motivated, which is important because to learn we need



to “care about what we are learning and want to learn it” (Meyer et al., 2014). Furthermore, with the support provided the students were able to successfully plan and execute the learning activity and process the information.

In the TPT *Measure My Shoe* activity the curriculum was at the center not the student. The lesson did not support diverse affective networks, diverse strategic networks or diverse recognition networks because I did not intentionally make adjustments for learner variability or proactively design the lesson with my students’ strengths in mind. Moreover, the TPT lesson was not engaging or motivating and given that affect is at the core of learning the lesson was effectively ‘disabled’ (Meyer et al., 2014). Using the UDL framework, from my experience, to guide lesson design fosters an engaging, flexible learning environment.

As I continued my research of UDL one key point resonated with me, namely, that “effective goals separate learning expectations from the means of achieving them” (Meyer et al., 2014, p.133). I was profoundly challenged by this statement and as I learned more regarding the effective design of UDL goals I began to reflect on how I could express learning goals in a flexible way, thereby offering “optional paths for achieving the goals” (Meyer et al., 2014, p.133). For example, it is more than mere semantics to establish a goal compelling students to ‘compose’ a story rather than ‘write’ a story. As Meyer et al. (2014) describe, ‘compose’ allows for multiple means of expression (e.g., video, dramatic performance, artwork) rather than limiting the demonstration of understanding to a written format. This was a seemingly simple but yet profound shift in the development of the learning goals in my classroom. By stating goals in such a way that they are attainable for all students it propelled me to consider the multiple

pathways by which students could attain the goals and freed me from the limitations set by narrowly focused means.

As previously noted, inclusion is not effective in many educational systems due to ineffective pedagogy that fails to effectively design learner variability resulting in a lack of social and academic engagement (Katz, 2013). Goals that acknowledge learner variability provide accessibility and actively involve all learners (Meyer et al., 2014). A student's inability to write, for example, was no longer a barrier and I became excited by the process of designing learning opportunities for students in my classroom.

In the ensuing weeks and months, I found I was providing minimal or no alternate activities during the day for Student R. The EA assigned to work alongside this designated student commented positively that she had no preparation of materials to work on outside of class in comparison to previous years in other classrooms. I would like to think that the proactive planning undertaken to design the inclusive classroom environment meant that relatively little had to be done to prepare alternative activities or to modify or adapt lessons on the fly.

From my perspective Student R had access to, and contributed to, an education rich in content and experience with his peers (Moore, 2016). The very definition of inclusive education as noted above. It should be noted too that Student R fully met or exceeded all of the goals set out in his Individualized Education Plan (IEP) while remaining in the classroom and participating with his peers for the entire year. All members of his team and his parents were thrilled with the progress he made throughout the school year. As educators we were responsive to learner differences and endeavoured to promote optimal learning for all students.

Composing learning goals in a manner that acknowledges learner variability and removes barriers to learning puts students at the center of the learning environment and puts the onus of support and accommodation on the curriculum (Murawski & Scott, 2019; Meyer et al., 2014). This was the goal that, in the example of Student R, was accomplished through conscious effort and attention to basic principles of UDL.

### **Moving Beyond ‘Parallel Learning’**

As discussed earlier, the shift towards inclusion has resulted in a more diverse population of students in classrooms and thus prompted the need to differentiate instruction. Providing social and academic engagement and inclusion for this diverse population of learners remains a challenge (Katz, 2013). Commenting on this phenomenon Katz (2013) writes:

For some time, educators in an inclusive model have used parallel tasks for students with disabilities or learning English. Developmentally, parallel play is immature in contrast to interactive play. Similarly, parallel learning (Johnny does math when we do math, but a different math, with “his” EA), is not a mature form of inclusion, as it does not provide exposure to the general curriculum or differing points of view that may develop critical thought. (p. 166 )

Parallel learning does not provide the opportunity for students to engage with their peers and experience a sense of belonging to the broader community of learners. Rather it subtly endorses the sense of included but separate. Providing opportunities for students with diverse needs to be academically engaged does not equate to academic inclusion (Katz, 2013).

In an effort to apply the UDL framework and principles and eliminate parallel learning I intentionally planned lessons, learning stations and activities that reduced barriers and provided

access to the learning environment for all learners including those with autism. Essentially, ensuring that the goal of the instruction was attainable for all students so that while variation in the means or methods to achieve the goal may be present the expectation for all students would be the same. In some cases the learning stations could be easily adapted to allow for learner variability (e.g. Word for Word Phonics Word Building Game, See Spot Spell A Word Building Game). Variations in content and skills are embedded in these games. By providing options for all learners to participate in the academic tasks and by varying the activities for ability one can thus provide multiple means of engagement (CAST, 2011).

Technology can play an important role in UDL by providing options for multiple means of engagement, expression, and representation. Technology provides relevant, accessible learning opportunities for students (CAST, 2011). Apps such as Word Study, RazKids, and Teach Your Monster to Read provide options for personalized learning activities. While there was the need to put time into the early planning and preparation of these apps to create student login information and personalize their accounts, the benefits to student engagement and learning were worthwhile. Videos such as Mystery Science and narrated presentations and songs such as I can count to 100 and These are the 3D Shapes That I Know, promote accessible learning opportunities for all students by providing multiple means of representation through multimedia (Checkpoint 2.5). Providing whole class choral reading opportunities with audio CD narration (Checkpoint 2.3) is another example of actively involving all learners when the ability to decode is not the focus of the lesson.

It should be noted that the utilization of technology does not equate to UDL (CAST, 2011; Rose, Gravel & Domings, 2010)). Some technology does support and augment learning

but the use of technology is insufficient in and of itself to provide the support needed for effective instruction. An analogy presented by Israel et al. (2014) illuminates this concept: “Keep in mind the traditional classroom accessibility efforts via automatic doors, automatic classroom lights, and wider entryways to accommodate wheelchairs; these solutions offer entry into the classroom but do not alter the content or instruction once students are there” (p. 25).

UDL is essentially about good pedagogy (Israel et al., 2014; King-Sears, 2009; Narkon & Wells, 2103).

I felt that if I was successfully removing barriers and applying UDL guidelines I should be able to provide inclusive learning opportunities for all students and especially Student R. I desired that all students have the opportunity for meaningful participation in the activities that were taking place. This was attainable in most instances but I encountered difficulty when it came to proactively planning for Student R to be taught goal setting strategies as defined in the content outcomes of British Columbia Career Education 1 curriculum. Typically I meet with each student individually throughout the year to discuss their personal learning goals for reading and writing. With support, the students establish one or two goals to work towards (e.g., I can use punctuation at the end of my sentences, I can use reading strategies when I am stuck on a word). When we meet, students are encouraged to reflect on their goals and show evidence of having met their goals. They can then colour in a portion of their ‘learning target’ and when they have demonstrated meeting their goal five times they can establish a new goal. I was at a loss as to how to include Student R in this learning process given his expressive language ability. I met with his behaviour consultant to discuss my perceived problem. This conversation was very helpful and revealed once again my propensity for focusing on the means

(content/methods/materials) rather than the end (goal). I was reminded that learners are unique and demonstrate great variability in their capacity to learn and to express their understanding (Meyer et al., 2014).

Student R does require additional support and his goal setting strategies do not look like his neurotypical peers but he is working on identifying steps required to achieve short-term goals with support (BC Ministry of Education, 2018). After doing a preference assessment it was determined that tangible (e.g., gum or candy) reinforcers and verbal praise could be used in conjunction with a fading schedule of reinforcements to foster Student R's self-regulation and motivate him to work towards his IEP goals. This behavioural strategy was invaluable in promoting Student R's on task behaviour, fostering his prosocial skills, and creating a safe space for learners. By providing options for recruiting interest (Guideline 7) and by providing options for sustaining effort and persistence (Guideline 8), we were able to engage Student R in the information and activities and regulate his attention and affect in order to sustain the effort and concentration that the learning required (CAST, 2011). By adjusting the methods to meet the needs of Student R his level of sustained engagement improved and as a result his progress academically and socially improved too.

When undertaking a unit on procedural writing Student R demonstrated his understanding of 'First..., Next..., Then...Last...' by role-playing or dramatizing various activities such as making a pizza, brushing teeth, and making a sandwich. Photos were taken of Student R reenacting these activities and printed off. Student R then retold the 'How to' story orally with the visual photo prompts and his EA scribed his responses. He then read his 'How to Story'. The *British Columbia Grade 1 Language Arts* curriculum explicitly states that stories

can be oral, written or visual so not only was Student R able to demonstrate the performance of this curricular competency but the entire learning activity supported and intentionally fostered the development of his oral language as outlined in the goals of his IEP (BC Ministry of Education, 2018). In this example, the goal of composing a ‘How to’ story was disaggregated from the means to achieve the goal and the methods and materials addressed the difficulties print presented to the learner (Meyer et al., 2014).

One could argue that these previous examples illustrate parallel learning in that not all students were provided with similar choices of methods and materials. As mentioned previously, this is an area of instruction in which I would like to improve. Of importance, from my perspective is the recognition that Student R was able to work alongside his peers with the support of his EA and achieve the same goal as his peers. With regards to his procedural writing, he was able to present his work by reading it aloud during carpet time. According to Katz (2013), “in order to be socially included and engaged, students need to feel accepted by teachers and peers and have opportunities to interact with both” (p.179). Ultimately, designing with UDL principles provided opportunities for Student R to be included and engaged in the classroom. Moreover, there is a recognition that students with more significant needs may need additional supports (Evmenova, 2018). I rest in the knowledge that expertise in UDL implementation, according to Meyer et al. (2014), “is not a state of arrival - it’s a state of becoming” (p. 155). I intend to continue to reflect on and refine my practice of UDL to include options for means of expression for all students.

It became evident as I learned about designing accessible lessons that UDL is not intended to be reactive. Pull-out, remediation, and parallel learning activities are often the result

of a lack of UDL (CAST, 2011). I recall that at the beginning of the school year there were days when I would just provide something else for Student R to do such as a worksheet or a manipulative phonics activity. However as I became more adept at designing and implementing UDL lessons, the more inclusive the learning opportunities became, especially for Student R. A few times a month Student R was pulled out to work one on one with his Speech and Language Pathologist and there were occasions when a movement break outside the classroom was required in order to set up Student R for success in the classroom. However, overall the learning environment and the activities were designed to foster inclusion. Thus, Student R participated in the classroom learning alongside his neurotypical peers.

Hartman (2015) put forth that “it is unclear if access to grade-appropriate academic content is to be favoured over goals that may be outlined in students’ IEPs, which often are focused on skills needed to access the general education curriculum or other skills needed to develop self-determination and independence in their lives” (p. 60). In my experience with Student R, we were able to concurrently focus on grade appropriate goals and his IEP goals by integrating them into the lessons. Interestingly, Meyer et al. (2014) state, “there will be outliers who may require on-the-fly individualization or innovative single solutions” (p.10). It is somewhat reassuring to note that the UDL theorists acknowledge that education can be a messy process (Meyer et al., 2014).

Of importance is that students in UDL classrooms are significantly more engaged than students in typical inclusive classrooms (Katz, 2013). Previous studies have reported positive effects of UDL implementation for students with significant disabilities, namely an increase in the frequency of peer interactions (Katz & Sokal, 2016). Anecdotally I found this to be the case



in my classroom and my observations were affirmed in conversations with other professionals, such as Speech and Language Pathologist, Student Support Services Director, Behaviour Consultant, Education Assistant) and his parents.

### **Classroom Culture and Engagement**

Ritchart (2015) states that “culture is foundational [as it will] determine how any curriculum comes to life” (p.6). According to Ritchart (2015) there are a number of forces that shape an effective classroom culture: expectations, language, time, modeling, opportunities, routines, interactions, and environment. Teaching about and fostering a growth mindset is an important element in this process of implementing UDL and meeting this ultimate goal.

Teaching grade 1 students to approach activities and learning tasks with a growth mindset is not an easy task in my estimation but knowing that a positive, engaging learning environment is key to successful learning, I persevered in working towards creating a culture within my classroom that fostered and encouraged students to develop and awareness of their strengths and to become problem solvers (Meyer et al., 2014).

“The ultimate goal of our efforts as educators is to engage, challenge, and support each learner to become the best s/he can be.” (Meyer et al., 2014, p. 25). As I researched UDL and explored resources I came to realize the importance of language in teaching and how language affects classroom culture and student’s learning. Johnston (2012) discusses how language can profoundly impact children’s development, particularly the development of a fixed versus a growth mindset which is foundational in fostering the expert learners elucidated in Universal Design for Learning; Theory and Learning (Meyer et al., 2014).

As an example, one of the barriers to learning that I realized I had unwittingly established was to ask, following my scaffolded instruction, “Does anyone have any questions?” When one has a growth mindset, as Johnson (2012) explains, problems are to be expected, collaboration is important and understanding how something is to be accomplished is more important than merely completing a task. Thus I altered my question to be, “What questions do you have for me?” as Johnson (2004) suggests this nuanced difference in language implies that clarifying questions are valued and asking questions does not imply that one is ‘not smart’. I was amazed at how this simple change in semantics and a greater emphasis on how I used language to foster a dialogic classroom changed the dynamic of our learning environment.

Expert learners, according to Meyer et al. (2014), are eager for new learning, monitor their progress and recognize their own strengths and weaknesses as learners. Students who typically struggle with activities would ask questions following a lesson to clarify their understanding or would outright state, “I don’t get this”. I was so heartened to hear students advocate for themselves and feel secure enough to voice that they had concerns about proceeding with the activity. The assumption is that everyone is presented with problems in their learning and the focus is on ‘learning’ not ‘work’ (Ritchart, 2015). This shift in the conception of school from labouring to learning positively affected, from my observations, students’ academic self-concept prompting them to become more strategic about their learning (Johnson, 2004; Meyer et al., 2014).

The benefits of teaching to diversity and implementing inclusive instructional practices that establish students as agents of their own learning are supported by Katz and Sokal (2016). Differentiated instruction necessitates that the teacher make the choice as to what learning task is

the best option for a student whereas UDL calls for teachers to present all options to students and allows them to make the choice (Murawski & Scott, 2019). In my research I came across an instructive video by Novak (2017) that explains the difference between UDL and differentiated instruction. She provides a metaphor which illustrates the difference:

UDL is kind of like when you're having a dinner party when you put out a buffet. So when you're teaching and you want to give students choices for how they're going to learn you would put out a buffet of options. For example, you would say, "After you are solving all these math problems, you're going to explain or justify how you solve them. And you can do that in a poem or you can do that in a narrative or you can create a little skit or you can do a poster. And you're going to justify your answer." And so, what you're doing is you're putting out a buffet of all options. And by nature of having those options, students have to become very creative and self-directed and choose what's best for them. Differentiated instruction, on the other hand, is a similar framework in that it's still providing options for students, but those options are often managed by the teacher. For example, I might say to a certain student, "You know, I know you have a hard time writing and so why don't you draw me a picture about how you solve that." Or, I might take a whole group of students who I think need a little bit more challenge and I take them aside and I say, "Okay, because you're finished, I want you to work on this." And so those options are kind of like making meals for every single kid in your class.

The UDL guidelines emphasize that students take responsibility for their own learning and monitor their own progress (Meyer et al., 2014). This is unattainable if the curriculum is

fixed. A flexible approach to curriculum, such as that promoted by UDL, addresses the needs of diverse learners and fosters student success.

### **Time and Support**

Sapon-Shevin note (as cited in Wilson, 2017) that “inclusion without resources, without support, without teacher preparation time, without commitment, without a vision statement, without restructuring, without staff development, won’t work” (“Unpacking Inclusive Education”, para. 5). I had the advantage of working alongside an extremely competent EA this year. Having a capable EA who has the skills to provide behavioural and academic support to students with disabilities was a tremendous blessing to both me and the students in our care. It is not an exaggeration to say that this particular EA was the linchpin in our classroom. I also benefited from the support of other educators and professionals. I believe having effective personnel support is paramount in successful implementation of UDL.

Having taught in the same grade for ten years I have accumulated a lot of resources that were at my disposal as I planned using the UDL principles and guidelines. This was a benefit to me as it reduced, to some extent, the amount of time I had to devote to looking for educational resources or creating instructional materials. For the most part, curriculum in our school is no longer purchased for teachers. Rather, teachers construct curriculum based on BC Ministry of Education’s concept-based, competency-driven standards and adapt it to meet the needs of their students. Planning therefore takes time. I had four forty-minute blocks weekly in which to do preparation work for my class. However, half of that time was devoted to weekly collaboration meetings with my grade cohort so much of my UDL planning and preparation was done after school, in the evenings and on weekends. Proactive planning takes time and unfortunately it

does not seem as though educators are provided with enough time to adequately plan for all students' learning.

Familiarity with the curriculum and faith in my teaching ability imbued me with the confidence to attempt innovations based on UDL principles and guidelines. I shared my UDL mathematics unit with a colleague who is a relatively new teacher and who is teaching grade 1 for the first time. She commented on the measurement unit saying:

“This is a great unit. I can follow it and it makes sense. I'm excited to keep teaching my students about measurement! The only thing that I'm a bit hesitant to do are the assessment tasks, but I think that it is a result of my inexperience, I've never done something like that with students before! I do think though that it would provide me with some valuable insights into what they have learned, so maybe I should give it a try :)”

(personal communication, May 25, 2019).

Teachers' prior knowledge and experience influences the implementation of new curriculum and educational practices as often new teachers are hesitant to be unsuccessful in implementing lessons (Voogt, Pieters, & Handelzalts, 2016).

Despite the practical implications of implementing UDL, I was committed to learning about teaching to diversity and translating what I learned into effective inclusive practices in my classroom.

## CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

In this investigation of Universal Design for Learning, the purpose was to broaden my understanding of Universal Design for Learning, learn experientially what impact UDL could have on the general classroom environment, and understand how to design lessons that are accessible for all learners. Despite its exploratory nature, this study offers some insight into a teacher's experiences implementing UDL in a primary classroom and other educators may benefit from reading this account.

Expertise, according to Meyer et al. (2014), "is not a state of arrival-it's a state of becoming. Educators are learners, too, who reflect on, refine, and improve their practice." (p.155). These were encouraging words as I struggled through the process of learning about and implementing UDL. I believe that my thinking with regards to inclusive teaching practices has been transformed and I am continuing to learn how to apply this new found understanding and knowledge to my instructional approaches. In moving from theory to practice I learned much about not only UDL but my pedagogy in general. I became cognizant that I often lose focus of expectations *for* students' learning and fall back on having expectations *of* student's learning. This had resulted in the purposeless effort of attempting to manipulate students into conforming to normative expectations. I came to realize there is a marked difference in pedagogical practices that cultivate learning and those that promote the consumption of content (CAST, 2011). I believe that knowledge of the UDL theory and utilization of the UDL guidelines in planning and practice equips teachers to create an engaging learning environment in which all children will be motivated to learn and be supported in that endeavour.

While it is not the purpose of autoethnography as a form of qualitative research to make broad generalizations, it may be instructive to summarize several of the key lessons learned in this process as they relate to and are illustrative of the principles of UDL. First, upon initial exposure to UDL, teachers are often left uncertain as to how to proceed with implementation given the extensiveness of the guidelines and the fact that the implementation of the principles is left to the discretion of the teacher (Israel et al., 2014). Hall, Strangman and Meyer (2003) recommend teachers educate themselves on UDL by visiting the National Center on Universal Design for Learning, reading CAST publications such as *Universal Design for Learning: Theory and Practice*, taking online courses, integrating technology into their classroom and talking to and collaborating with other educators who are teaching with UDL.

The UDL guidelines provide a framework for instructional design but planning and revising need to be ongoing (Evmenova, 2018; Meyer et al., 2014). “UDL must be recognized as a learned skill, one that is refined over time” (Edyburn, 2010, p.38). Teachers can learn how to ‘do’ UDL by using the guidelines to address learner variability in their classes and continually reflecting on their teaching practices over time.

A second derived lesson was that there is no one-size-fits-all application of UDL (Rao et al., 2014). Quite the contrary, as Meyer et al. (2014) express, UDL “is to be interwoven with effective practices already in use and with the people who use them. And because what is meaningful is determined by context, no two implementations of UDL will look the same” (p. 174). There are multiple ways that UDL guidelines can be implemented given the diversity of learners, the range of learning objectives and goals, and the various resources, strategies, activities, and assessments that are inherent in education (Meyer et al., 2014; Rao et al., 2014).

UDL principles merely serve as a guide and educators can use these guidelines to shape their practice taking into consideration the characteristics of their classroom learning environment such as the student's needs, the curriculum and the availability of resources (e.g., support staff, materials) (Meyer et al., 2014).

Thirdly, while UDL has become a buzzword for inclusive practices it is not a magic bullet that can immediately solve the challenges facing educators. UDL is ultimately about effective pedagogy, intentional planning and design, and sound, scientific practice (Meyer et al., 2014). We bear the primary responsibility for employing inclusive practices that account for learner variability and for designing environments that maximize learning opportunities for all students.

Finally, our true vocation is not to teach curriculum but the children in our care (Palmer, 2003). UDL is a learner-centered approach that goes beyond our current educational practices (Al-Azawei, 2016; Moore, 2016). UDL compels us to recalibrate our current educational practices and teach to the diversity of all (Moore, 2016).

### **Future Research**

This exploration of UDL and reflection on the implementation of UDL has prompted many questions in need of further investigation. Firstly, more authentic studies on how to translate UDL principles, guidelines and checkpoints into practice are needed. It is recommended that more qualitative research be undertaken by educators that expound on their experiences in implementing UDL. Narratives that conceptualize UDL implementation and discuss the obstacles and experiences that teachers undergo in executing UDL guidelines would prove beneficial for others hoping to operationalize UDL in their classrooms. Furthermore, it



would be interesting to compare experiences of educators in various grades to illuminate how UDL could be implemented to reduce barriers for all learners. Secondly, it is recommended that studies be undertaken to determine the effect of the application of UDL on students' academic and social self-concept. Finally, more research needs to be undertaken to determine the efficacy of UDL. This is an important issue for future research. Future studies on the current topic are therefore recommended.

### **Conclusion**

As educators, we have tended to consider inclusive education as the education of students with disabilities in general classrooms (Moore, 2016). In writing about her own daughter's experience Wilson (2017) writes:

The statement that “inclusive education is not always the best answer for children with disabilities” suggests that inclusive education is only about the education of students with disabilities and that the ‘failure’ of inclusion is the responsibility of the child, not the inadequacies of the education provided” (Introduction section, para. 7).

UDL provides the framework for effectively translating the philosophy of inclusion into practice. Authentic inclusion, I would put forth, is the philosophy and practice of “teaching to the diversity of all” (Moore, 2016, p. 5).

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