SCHOOL LEADERSHIP STRATEGIES FOR THE IMPLEMENTATION OF

UNIVERSAL DESIGN FOR LEARNING (UDL) IN INTERNATIONAL SCHOOLS

by

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Abstract

The purpose of this research is to examine the relationships among principals' support and leadership style, teacher self-efficacy, and teacher professional development with respect to the implementation of a universal design for learning (UDL)approach in an international school context (Qatar). Five teachers and five principals working in international schools in Qatar were interviewed for the study. The identification of participants took place with the support of several international schools based in Qatar. The research revealed that even after implementation a substantial number of educators in international schools in Qatar fail to use UDL. Several reasons were cited for teachers' resistance to adopting the UDL framework, including lack of knowledge about UDL principles and processes; insufficient training and professional development opportunities, and; perceptions of limited time and resources.

The study also examined leadership strategies for UDL implementation. It is apparent that the successful implementation of UDL starts at the top. Thus, school leaders are responsible for modeling UDL instruction, as indicated by the majority of participants in the study. Participants conceptualized the role of school leadership uncovering the most relevant strategies to facilitate the UDL implementation. Even though some participants demonstrated their openness and flexibility in utilizing the UDL framework, there was consensus that all teachers should be further supported in practice. Both teachers and school leaders in international schools in Qatar are expected to act in synchrony, under the paradigm of a common vision to improve the country's educational system.

The following implications for practice are identified: considering the fact that some teachers exhibit resistance to change, they need to be fully supported during the implementation of UDL practices; educators should be provided with sufficient practical examples of how to utilize the UDL framework in order to achieve optimal results in the long term, and; given that some teachers still lack basic knowledge about the components and

principles of UDL, opportunities should be provided to assist faculty members to build their knowledge and practice of UDL. This suggests a renewed focus on the available strategic capacities, teachers' competencies, and resources to build a solid educational system that could benefit all stakeholders in the region. Furthermore, there is a need to build a critical mass of school leaders and educators who can serve as advocates for the consistent use of UDL.

Keywords: *Universal Design for Learning; teaching and learning; teacher self-efficacy; teacher professional development; principals; evaluation; school leadership support; leadership styles; international schools; Qatar*

Dedication

I would like to dedicate this research to my mother Fatima, my wife Junelle, and my sons Fassi and Adam. Your support, love, and patience have been a candle that lightened my journey at all stages of this study.

I would also like to dedicate this work to my dad El Fassi who passed away in 2005. He was happy and proud the day he knew I decided to pursue education.

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Walking on the path of this experience has been challenging, exciting, and rewarding. Universal Design for Learning has always been an interesting topic for me, and I am glad I had the opportunity to explore its framework through this Master's thesis.

I would like to thank God for providing me with strength, patience, and ability to conduct this research on Leadership Strategies for UDL Implementation in an International School Setting in Qatar.

I am heartily grateful for the ultimate support and expert guidance of my supervisor Dr. Gerald Galway. I have learned a lot from your knowledge, experience, and wisdom. The constructive feedback I received from you during this educational journey helped me refocus on the areas that needed further development or clarification in order to present more relevant findings and insights.

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<center>**Introduction**</center>

1.1   Background of the Problem

For several decades, closing the educational achievement gap between low performing and high performing students has been targeted as an influential factor in efforts to reach greater equality in educational outcomes. In the international context, one of the barriers in closing the achievement gap relates to ethnic and language differences between instructors and students. Such differences have been discussed in various studies, but much of this work emphasizes approaches that instructors can adopt to cope with issues of racial diversity in classrooms and schools (Tobin, 2014). According to Durowoju and Onuka (2015), teachers enhance their preparation to address the constraints of learner diversity or program limitations. The aspect of anticipation is crucial in teachers' preparation. Their optimal performance can reflect positively in students' level of engagement with the curriculum. It is important to reinforce the school environment to fit in the needs of diverse groups of students (Durowoju & Onuka, 2015).

The need to implement a uniform framework for teaching and learning to respond to learner diversity is becoming essential. The Universal Design for Learning (UDL) framework is based on three principles: providing various means of representation; providing different strategies of action and expression; and, providing multiple means of engagement (National Center on Universal Design for Learning, 2014). In this way, teachers adopting the UDL framework aim to assist students to perceive and process information effectively.

Notwithstanding efforts to nullify or lessen the challenges of teaching in diverse educational contexts, there is a need to understand and approach classroom diversity from a different standpoint, beyond conventional teaching methodologies. It is essential for instructors to create and implement new approaches that address the educational needs of all

types of students: English language students, learners with disabilities, and all other students who present with a broad spectrum of skills, competencies and enthusiasm (Scott, Thoma, Puglia, Temple, & D'Aguilar, 2017). UDL shows promise as a means of effectively dealing with students' learning differences in the classroom (Scott et al., 2017).

According to Tobin (2014), UDL is an extensive framework entrenched in research, which provides adequate counseling to develop flexible learning environments that can accommodate individual educational differences. It allows teachers enough adaptability to prepare and execute lessons commensurate with their own proficiency level. The focus in this framework is on flexibility, which is perceived as a necessary goal throughout the course of studying different ideas and concepts. Primarily, the core objective is to provide all learners with the opportunity to attain the same objectives in any academic setting (Martin, 2009). For one student, this could be utilizing modern technology, and for another student it may be language clarification. Rather than segregate students from each other when they require diverse forms of assistance, UDL provides a means for teachers to prepare materials and frameworks for all learners. Students who do not require language clarification can still benefit from it; those who do not require technological assistance will establish competencies to communicate and acquire knowledge in multiple ways (Wolf, Foster, & Birkenholz, 2010).

In other words, UDL is intended to enable all learners to develop the competency to cooperate, communicate with, and learn from a syllabus rather than being given only modified instruction that further splits their knowledge from that of their peers (Scott et al., 2017). This aspect implies that through the implementation of the UDL framework in the classroom, no student can be left behind, since the approach required that educators anticipate any problems learners may experience and address them with immediate solutions. Traditionally, teacher education was based on the practice of assisting students to achieve high levels of academic success; new teachers were taught those competencies that would

have a supposed effect on student academic performance (Martin, 2009). Hence, teacher preparation programs were constructed using learning components that were thought to be useful for driving up student achievement and engagement. The most important assumption followed by educators is to recognize that learners differ in the level of their perception and engagement with the material introduced in the classroom (Martin, 2009). Therefore, it is crucial to uncover suitable strategies to address the educational needs of various student groups.

Even though the study of teacher pedagogical knowledge has been a widely investigated research on teacher contribution to accommodating the needs of diverse students is much less prevalent. Experimental studies examine both instruction and curricular materials and provide a foundation for the role of knowledge, awareness, and comprehension in teacher education (Scott et al., 2017). During the 1990s, knowledge-based teaching gained popularity. The approach followed by educators has been identified as learning-to-teach (Martin, 2009). It refers to the introduction of principles and beliefs associated with the specificity of learning. As a result, practice-based preparation plays an important role in teacher education by emphasizing practical experience in various learning settings.

The UDL framework is optimally developed to meet the needs of students, but the role of both principals and teachers remains crucial throughout this process. UDL is intended to enable educators to develop flexible instructional practices that provide greater autonomy and personalization to learners (Wolf, Foster, & Birkenholz, 2010). Following the implementation of the UDL framework in the classroom, positive outcomes can be expected, such as extensive student engagement in different learning tasks, autonomy and more facilitated interactions with peers and educators (Huber, Fruth, Avila-John, & Lopez-Ramirez, 2016). By actively engaging students in their learning, the level of their educational achievement can be adequately predicted. Even though learners differ in their aspirations and

abilities to learn new material, UDL principles stipulate that teachers should find proper

motivational strategies to engage students in the classroom. For example, some students

prefer spontaneity in the process of acquiring new knowledge while others wish to adhere to

strict routine (National Center on Universal Design for Learning, 2014). Thus, both principals

and teachers can utilize such information to plan certain interventions that can help students

develop their learning potential.

The most important aspect behind the implementation of UDL as a teaching

philosophy is as a support for teaching and learning. On one hand, teachers will have fewer

challenges to deal with, as they will be more focused on presenting strategies to facilitate

learning (Martin, 2009). This means that teachers can attain a higher level of self-efficacy

and job satisfaction, implying that such parameters are important motivating factors that can

yield quite positive results in the long term. On the other hand, UDL enables students to

significantly improve their level of engagement (Wolf, Foster, & Birkenholz, 2010).

The problem identified in this research is related to understanding how a UDL

framework can help address the learning needs of students in an international school context

and the learning goals of teachers and principals. As mentioned, the role of teachers is

expected to be enhanced through the UDL model, particularly in relation to the use of

technology to facilitate student learning (Pan & Franklin, 2011). The development of positive

attitudes to learning represents another important part of teachers' efforts to create and

maintain an effectively functioning curriculum that addresses the needs of all students.

1.2   Statement of the Problem

The spark that lit my interest in the topic of how UDL implementation is practiced by

school leadership and teachers in an international school setting was kindled during my

teaching experience at an international school in Qatar. Although the school was following a

Canadian curriculum and was funded by the Ministry of Education in Qatar, the instruction

was mostly based on traditional teaching methods. Furthermore, the majority of students came from different backgrounds and cultures, and it was challenging to meet their different ways of learning and to bridge the gap between their individual needs and the expectations of the 21st century learning. In addition, the school's leadership was aware that there was interest in the topic of UDL; however, no support or professional development was provided to teachers. Teachers need their principal's support to introduce innovations in teaching and learning. Frequent professional development is also essential to prepare students for the challenges of 21st century as lifelong learners.

In international school settings where there is a great deal of diversity among students, there are also significant teaching and learning challenges. UDL represents an innovative approach to teaching and learning, one that can possibly address some of the challenges associated with teaching in international contexts. Yet, there is little literature on UDL in international contexts. I could find only a few studies that investigate the use of UDL in international schools and none that address the role of the school administrator as instructional leader in UDL. Moreover, any widespread school-level innovation requires the support of school administrators in terms of professional development and advocacy for innovative practice. In this study, I examine the important role of school administrators in supporting the implementation of UDL across different international schools in Qatar.

1.3   Purpose of the Research

The purpose of this research is to explore the role of school administrators in facilitating the implementation of UDL across different international schools in Qatar. Teacher professional growth and self-efficacy will be directly addressed in this research in the sense of emphasizing educators' skills and competencies to introduce an adequately synchronized curriculum (Wolf, Foster, & Birkenholz, 2010). Teachers need to demonstrate sufficient knowledge of how to plan and instruct diverse groups of learners irrespective of

their learning differences. School administrators are important enablers of the kinds of professional learning required for teachers to effectively migrate to UDL. According to the Center for Applied Special Technology, the Universal Design for Learning framework (UDL) is not a one-size-fits-all solution, but rather a set of principles for curriculum development that enable all students to learn through equal opportunities for all (CAST, 2011). Rose and Meyer (2002) stated that CAST's alignment of UDL's principles with research has identified three interconnected brain networks, mainly the *recognition network*, the *strategic network*, and the *affective network*. Firstly, learners make sense of the given information through the recognition network. Secondly, learners process the information and act upon it through the strategic network. And thirdly, learners' emotional connections with the given information are interwoven through the affective network. This is why, according to CAST (2011), learning can be maximized, and barriers can be minimized for all learners through providing the three principles of *multiple means of representation* of the content, *action and expression*, and *engagement*. UDL aims to support the social and academic inclusion of all students as part of the concept of active student engagement in the classroom (Pan & Franklin, 2011). However, educators need to demonstrate efficiency in relation to their time and efforts to work with diverse learners. This requires training in understanding UDL so they can effectively find relevant solutions to emerging learning challenges in the classroom (Martin, 2009).

Effective school principals demonstrate instructional leadership by providing sufficient opportunities for teacher training and professional development. Hence, educators can be equipped with the competencies and skills necessary for the effective implementation of the UDL framework in the classroom (Wolf, Foster, & Birkenholz, 2010). It has been demonstrated that the process of strategic planning is applicable in this case, in the sense of

improving the instructional environment in which the principles of UDL can be appropriately understood and applied by all stakeholders (Powers, Kaniuka, Phillips, & Cain, 2016).

The input of school principals and teachers provides multiple opportunities to improve the quality of education in international schools. Coordination, teamwork, flexibility, and transparency have been considered important principles to facilitate the role of these stakeholders in education. The efforts to enhance teacher self-efficacy and professional development can be translated positively in teacher performance (Wolf, Foster, & Birkenholz, 2010). In this context, the implementation of the UDL framework can bring the positive changes in international school settings in Qatar.

1.4   Research Questions

The research questions specified in this study are the following:

1. What are the challenges facing teachers and school principals in planning for the adoption of a UDL framework in school settings in Qatar?

2. What are the optimal ways in which school principals can demonstrate their support in facilitating the implementation of the UDL framework in school environments in Qatar?

Thus, a second purpose of this research is to determine the precise way in which principals, school administrators, and teachers can facilitate learning through the use of UDL in a strategic manner.

1.5   Research Objectives

The research objectives set for this study are presented below:

- To explore the role of school principals in contributing to the effective transition to the UDL framework;

- To explore how administrators and teachers represent the challenges in planning and adopting a UDL model for instructional planning, and;

- To assess how teacher professional development can be effectively used to help

  implement UDL in an international school environment.

1.6   Significance of the Research

In assessing the significance of this research, it should be clarified that students can

benefit from innovative changes to otherwise rigid instructional environments (Martin, 2009).

For example, students who are provided an opportunity to expand their learning through

interaction with each other, engage in collaboration and teamwork, which are essential in

achieving optimal outcomes (Martin, 2009). Similarly, teachers should be attentive to the

risks of segregating students, because such practices may lead to their potential stigmatization

over time (Wolf, Foster, & Birkenholz, 2010). The instructional practices associated with

UDL include an interaction with peers and teachers, but educators must receive appropriate

training to avoid common mistakes in implementing UDL in the classroom. Principals play

an important role in ensuring a highly supportive process for the implementation of the UDL

framework in the classroom.

The model of UDL that will be emphasized in this study is based on three significant

dimensions: systems and structures, instructional practice, and parameters of social and

emotional learning. At the level of systems and structures, it can be expected that school

principals will assume their appropriate leadership role as facilitators of the implementation

process (Pan & Franklin, 2011). For instance, distributed leadership appears relevant in this

context, with an emphasis on highly collaborative practice that is related to addressing the

needs of all stakeholders. In addition, the provision of certain technologies, such as assistive

technology and multi-leveled resources, is an important administrator responsibility in

creating the capacity required for change in instructional design and teaching practices

(Schleicher, 2015). School principals are the people responsible for supporting teacher

professional development and self-efficacy in adopting UDL.

In relation to instructional practice, the emphasis is on developing a highly integrated curriculum that allows numerous choices to students. Learning can be enhanced through differentiated instruction and assessment, which means that teachers pay sufficient attention to the learning needs of each student (Wolf, Foster, & Birkenholz, 2010). Moreover, teaching using UDL principles and practices should be strategic in its essence in order to deliver the expected outcomes when it comes to flexibility, quality, and equality in education. Also, technology is properly utilized to maximize the benefits to both teachers and learners. In line with the requirements for social and emotional learning, the development of a compassionate, properly functioning classroom is the priority of educators (Schleicher, 2015). From this perspective, it should be emphasized that student diversity is properly recognized. These elements can help teachers focus on the development of a strong sense of belonging, which is crucial in building a highly collaborative community within the school (Pan & Franklin, 2011). The collective responsibility for the well-being of students should be underlined in the beginning of the teaching and learning process for achieving relevant, strategic goals (Pan & Franklin, 2011). Hence, the existing study focuses on investigating how the concepts of the leadership approaches adopted by principals, teacher professional growth, and teacher self-efficacy can influence the execution of the UDL structure in an international school environment, mainly in Qatar.

Chapter Two

Literature Review

2.1   Introduction

This chapter provides a literature review on Universal Design for Learning (UDL). For this review, I examined 40 studies related to the research topic of UDL implemented in various school settings. In searching the sources, I used specific keywords, such as UDL, instruction, teacher preparedness, teaching and learning process, technology and teaching, and digital learning. The sources for this literature review were peer-reviewed journals, and scholarly books on the topics covered in the UDL literature. Some of the journals used for this search were the *Journal of Educational Administration*, *The Quarterly Review of Distance Education, Education Journal, New Horizons in Education*, and *Educational Researcher*.

The review is organized as follows. First, I explored the specificity of UDL as an innovative concept utilized in the teaching and learning process. Second, I identified and explored values in UDL implementation. Third, I investigated the importance of the planning process for more effective utilization of the UDL framework. Other important sections of the literature review included the following: designing instructions for diverse learners; barriers to the UDL implementation; optimization of learners' experiences; integration of technology into teaching; assistive technology and UDL; UDL in digital learning; and the importance of school leadership support.

The UDL framework is considered to be flexible and innovative in facilitating students' learning opportunities. The principles included in this framework provide multiple opportunities to engage students and expand their knowledge based on their specific learning needs. It provides learners numerous means of action and expression in different school settings.

2.2   Universal Design for Learning

Universal Design for Learning commonly referred to as UDL, is an instructive planning and educational framework intended to maximize learning opportunities and minimize obstacles to learning for students with different educational needs, comprising, but not restricted to, English language students, students with disabilities, and those from different socioeconomic and ethnic backgrounds. Academic researchers, decision-makers, and experts have adopted this educational framework as a means of responding to the expectations of a progressively diverse student population (Scott et al., 2017). Most of the extended literature in this field discusses various approaches to UDL, provide the UDL framework in general, and reports on teacher initiatives relating to the adoption of UDL (Suprayogi, Valcke, & Godwin, 2017; Tobin, 2014; Turk, 2014).

It is essential to consider that when scholars define UDL, they are not referencing a definite population of students. The idea of UDL is to design curricula and learning experiences that are relevant to a wide range of students while recognizing that there will constantly be learners who need individualized related education in areas such as strategic instruction, assistive technology (AT), and alterations to the syllabus (Scott et al., 2017). When instructors utilize the UDL framework to accommodate student diversity, the requirement for individualized instruction reduces (Dinmore & Stokes, 2015). For example, the use of UDL in special education stresses UDL execution and practical suggestions rather than evidence-based programs (EBPs), because UDL should be conceptualized as a structure in which EBPs are entrenched (Dinmore & Stokes, 2015). When educators prepare their instructions by using the UDL model, they make choices on how to initiate EBPs within their teaching in a mode, corresponding to the principles of UDL (Edyburn, 2005). Therefore, as Scott et al. (2017) state, UDL looks different in different settings and may require diverse implementation approaches.

2.3   Values in Universal Design for Learning

The foundation of UDL exists in the principle that educators and curriculum designers should recognize and eliminate students' learning obstacles through effective educational planning that is focused on participation, collaboration, adoptable utilization of materials, and critical and reachable instruction (Rose & Meyer, 2002). Furthermore, UDL is founded on research within the fields of cognitive neuroscience and psychology (Dinmore & Stokes, 2015). An extended volume of literature has demonstrated that to achieve effective educational planning, instructors should take into account how to incorporate core values or philosophies into their teaching and evaluation practices that are created on three interconnected types of brain systems (i.e., acknowledgment, strategic, and psychological networks) (Linnenbrink & Pintrich, 2003; Marks, 2000; Reeve, Jang, Carrell, Jeon, & Barch, 2004; Serdyukov, 2017). The brain system of acknowledgement implies the acceptance of certain realities, such as recognizing the importance of avoiding plagiarism in student papers (East, 2005). The system of strategic teaching and evaluation can be defined as making relevant decisions about a course, providing a thorough analysis of essential variables used in the teaching situation (Serdyukov, 2017). From the perspective of psychological networks, it is important to note that teachers and students enter into a distinct form of psychological contract, which is represented by invisible mutual beliefs, principles, and perceptions used in the teaching and learning process (Liao, 2013).

Organizing teaching and learning through these systems provides a structure for planning instruction for diverse and international learners (Sokal & Katz, 2015). The UDL structure is, therefore, founded on the following three philosophies: (1) using several means of representation to stimulate the ways in which students assign connotation to what they see and identified (i.e., what they learn); (2) providing materials through several channels such as communication, readings, virtual texts, and (3) utilizing interactive program presentations.

The multiple resources of action and demonstration refer to the importance of assisting strategic modes of learning (i.e., how students learn). Providing alternative learning opportunities for students has been an important goal of educators to help students exhibit their learning in diverse ways, including conventional classroom tests or assignments as well as through hypermedia presentations, art, and virtual recordings (Dinmore & Stokes, 2015). In addition, multiple resources of participation are used to facilitate affective knowledge (i.e., why students learn). Considering ways to stimulate students in education through initiatives such as collaborative education, instructional games and replications, and real and digital trips has emerged as a significant priority for educators working in international school settings (Al-Azawei, Serenelli, & Lundqvist, 2016). Teachers are looking for comprehensiveness in the design of strategies to address the different learning needs of students; therefore, the adoption of a holistic approach to education helps them find the best tools to accommodate learners in the classroom (Edyburn, 2005).

The UDL framework was initially framed as an approach more conducive to special education, since the emphasis is on its utilization in inclusive educational classrooms. This initial thinking has evolved and UDL advocates now believe it is important for both regular teachers and special education instructors to have strong basics in UDL (Dinmore & Stokes, 2015). Consequently, scholars have offered a path map for incorporating the three philosophies, strategies, and accompanying phases into teacher education programs and PD to prepare all teachers to collaborate with diverse learners (Johnson-Harris & Mundschenk, 2014).

2.4   Adoption of UDL Frameworks for Students with Diverse Needs

The United States Federal Government has already adapted its philosophies for teaching to encourage accessibility for all students (Dinmore & Stokes, 2015). UDL is considered to be a scientifically effective framework for assisting instructional practices that:

(a) offers adaptability in the ways instruction is presented, in the ways students react or exhibit knowledge and competencies, and in the ways students are involved; and (b) minimizes obstacles in teaching, provides adequate opportunities, facilitates, challenges, and preserves high attainment goals for all students, including learners with disabilities and students who have limited second language proficiency (Dinmore & Stokes, 2015). Consequently, students with disabilities are progressively educated in wide-ranging environments.

Based on this varying instructional landscape, it is desirable for both regular and special education teachers to adopt instructional approaches linked to UDL. The Higher Education Opportunity Act (HEOA) (2008), along with other legislated regulations simplified the description of UDL to guide academic institutions and mandated that states describe how teachers incorporate modern technology into their instruction in a mode corresponding to the UDL framework (Swanson, Edmonds, Hairrell, Vaughn, & Simmons, 2011). The National Education Technology Plan confirmed this significance by affirming that the execution of the three UDL philosophies or values can lead to enhanced results for diverse students. The plan also indicated that teachers, as well as curriculum developers, should take an active role in helping future teachers to execute the UDL framework in an efficient manner (Al-Azawei, Serenelli, & Lundqvist, 2016).

2.5   Using the UDL Framework for Designing Instruction for Diverse Learners

2.5.1   The Importance of Using a Holistic Approach

Research shows that contemporary learners have different needs and learning styles that should be adequately accommodated by educators in school settings (Dinmore & Stokes, 2015). Therefore, adopting a holistic approach to understanding the strategies utilized by learners is essential in presenting sufficient opportunities for development and growth of diverse learners. This approach is based on a more flexible and integrated view of the

teaching and learning process, implying the active participation of students in their academic development. It has become important to recognize how the UDL framework can decrease obstacles to learning and facilitate high outlooks for knowledge (Al-Azawei, Serenelli, & Lundqvist, 2016).

2.5.2   Understanding the Specific UDL Structure

Professionals in the field suggest that a common understanding of the UDL structure is a prerequisite for effective UDL adoption. This insight is particularly vital as learners with disabilities and other general learners are spending more time within inclusive classrooms due to policies and guidelines pertaining to inclusive education (Edyburn, 2005). The emphasis in inclusive education is on the equal participation of all students, which is vital to advancing their learning. Inclusion in education also suggests the use of various ways of teaching, with a focus on the active involvement of all students (Buli-Holmberg & Jeyaprathaban, 2016). This educational philosophy contributes to the formation of positive teacher-student relationships.

In the international schooling environment, UDL permits teachers to take into consideration cultural differences, student diversity, learning preferences, and other requirements at the planning stage, rather than after instruction has been designed and then altered to meet special students' needs (Smith & Harvey, 2014). Conventional curriculum planning and development anticipates that students normally access learning through a single set of actions (e.g., reading, writing, speaking and listening to a teacher); flexibility is not necessarily preplanned and established in traditional instruction approaches, and lessons must be modified whenever students struggle. However, if educators utilize the UDL system in how they achieve educational goals, including planning, resource selection, and assessment of progress, they will meet the needs of a broader range of students (Sokal & Katz, 2015).

2.5.3   Accessibility to Teaching Tools and Teacher Preparation

It has been further emphasized that educators need to be thoughtful and practical in implementing optimal instructional strategies under the UDL framework. Research shows that teachers who utilize UDL have access to specific tools that can ensure their instructional methods are flexible and accessible by learners (Sokal & Katz, 2015). The multiple means of representation of content, relevant action and expression, as well as consistent engagement are important instructional attributes utilized in diverse educational settings (Al-Azawei, Serenelli, & Lundqvist, 2016). Therefore, teacher preparation is essential in improving their knowledge of the respective framework. The major principles of UDL should be incorporated into pre-service education and professional learning opportunities (Al-Azawei, Serenelli, & Lundqvist, 2016). Teacher preparation is vital to develop the foundation for implementing UDL. There should be a greater emphasis on the quality of the teaching process, which usually occurs at the pre-service preparation stage (Podell & Soodak, 1993). Teachers obviously teach in the specific way they are taught to do so, which emphasizes the relevance of faculty modeling of best teaching practices. Pre-service teachers are provided with an opportunity to apply their theoretical knowledge in practice, as they are most likely to utilize the skills and practices pertaining to quality instruction (Pisha & Coyne, 2001).

2.6   Barriers to the Implementation of UDL

The identification of potential barriers is an essential part of instructional planning for UDL. Common barriers include training, insufficient time for instruction, and lack of engagement and motivation (Smith & Harvey, 2014). The difficulty in accessing different teaching tools and assistive technologies also creates significant problems for teachers. They may not be adequately prepared to address the diverse learning needs of students. Therefore, providing sufficient training opportunities is necessary in the dynamic educational environment (Al-Azawei, Serenelli, & Lundqvist, 2016).

In the beginning of their practical utilization of UDL, teachers might experience the challenge of changing their old teaching strategies with new approaches to instruction. Even though teachers recognize the importance of the mentioned change, they might be reluctant to adopt UDL methodology (Smith & Harvey, 2014). An effective way for teachers to overcome the barrier of insufficient training is to provide them with a substantial number of training opportunities to develop their awareness of the benefits and implementation stages of UDL (Smith, 2012).

Moreover, the time for instruction is often considered insufficient to provide the necessary level of assistance and individualization needed to apply UDL principles in diverse learning communities (Novak, 2014). School leaders should thoroughly consider the implications of this barrier, and they need to allocate sufficient time for UDL-based instruction. At the strategic planning stage, there should be additional attention paid to accommodating the academic needs of students with learning difficulties (Smith & Harvey, 2014).

In addition, the barrier of lack of engagement and motivation implies that teachers may not know their students well enough to engage them fully in the classroom (Lieberman, Lytle, & Clarq, 2008). Therefore, the learning environment may not be flexible and responsive to the needs of the individual learner. Teachers know their students, including their strengths and weaknesses, which means that instructors can use such information constructively to help learners make a relevant connection to the material being presented in the classroom (Smith, 2012). In fact, teachers need to be proactive to enable the consistent motivation of students to learn, implying teachers' readiness to experiment with diverse approaches corresponding to students' specific learning styles.

2.7   Using UDL

2.7.1   Planning for All Learners (PAL) Framework

One common framework used by teachers in international school settings is identified

as Planning for All Learners (PAL), which emphasizes the importance of proactively

planning instruction in line with the specific UDL guidelines for optimal flexibility in

teaching and learning (Smith & Harvey, 2014). The initial step in this planning framework is

related to setting realistic objectives, as this can enable educators to reflect and, if necessary,

to rethink the basic scope and mission of their instruction. In the establishment of clear and

achievable goals, UDL creates space for teachers to anticipate learner variability in terms of

using specific techniques and methods of comprehending specific information (Al-Azawei,

Serenelli, & Lundqvist, 2016). Other important steps of the framework refer to analyzing

current issues pertaining to classroom instruction, implementing the UDL principles for

lesson development, and teaching UDL-aligned lessons based on the precise learning needs

of each student (Edyburn, 2005). Such a process is highly collaborative in nature, implying

that members of the educational team rely on each other for the effective implementation of

the desired mode of instruction (Sokal & Katz, 2015).

2.7.2   Physical Space

Within international contexts, instruction takes place across different learning

environments, which means that educators need to be adequately prepared to teach learners

with different expectations and learning styles that may be context-dependent. For instance,

the context-dependent nature of instruction can be illustrated in selecting appropriate,

culturally relevant examples from the history of Lebanon, if the instruction is developed for

the learning needs of Lebanese students. Such learning environments contain a wide range of

technologies and resources used by educators to enhance student learning (Al-Azawei,

Serenelli, & Lundqvist, 2016). Therefore, an assessment of physical instructional spaces is an

integral part of UDL planning. For example, some students may benefit from extensive hands-on practice in exploring science-related concepts while other learners prefer a more structured approach to studying that involves a great deal of writing (Sokal & Katz, 2015).

The organization of the physical space is an important environmental factor contributing to students' learning in a spontaneous and effective manner. It has been discussed in research that a properly organized physical space has a positive impact on student engagement and learning (Hill & Epps, 2010). For example, international schools tend to focus on making substantial facility upgrades, such as renovation and the construction of new facilities (Hill & Epps, 2010). Such investments in improving classrooms' physical space imply specific additions, particularly upgraded desks and individual student computers. Having a well-arranged physical space in the classroom is a strong indicator of adequately engaged students (Siegel, 2003).

2.7.3   Monitoring Learners' Progress

Another strategy for optimizing learner outcomes using UDL is progress monitoring and data-based decision-making, which provide information to drive instruction and student learning. This includes the provision of sufficient and open feedback on learner progress (Al-Azawei, Serenelli, & Lundqvist, 2016). In this way, it is possible to determine the level of learner engagement and understanding of specific issues within the curriculum and provide this feedback in order to motivate students to learn more flexibly and effectively. However, summary data are less effective than individual data; student-level data should be gathered to determine the specificity of teachers' instructional strategies on individual learners (Dinmore & Stokes, 2015). The level of data specificity contributes to the way a teacher can make judgments about how well-suited specific evaluation practices are in relation to the individual goals of learners and their motivation to achieve.

2.7.4 Guided Practice

Guided practice is usually perceived as an interactive form of instruction between teachers and students. Once the teacher introduces new learning concepts, the student's practice process is initiated to retain the new material and strengthen students' knowledge. Independence in the learning process is consistently emphasized (Beltramo, 2017). Educators believe that by providing different models in instruction, they can improve the quality of teaching significantly. Guiding student practice usually reflects in providing instruction to the whole class, small groups, and individually. In this way, teachers tend to address the learning needs and styles of students. Under the guidelines of the UDL framework teachers should provide sufficient examples of how learners should be taught (Al-Azawei, Serenelli, & Lundqvist, 2016). Educators also should promote the use of guided practice and independent practice in learning, so that students can adequately integrate different strategies and methods of demonstrating their understanding of specific material introduced in the classroom (Sokal & Katz, 2015).

2.7.5 The Role of Communication

Educators tend to be open and flexible in embracing different solutions to expand their instructional strategies. In this process, the role of two-way communication is important. Both teachers and learners need to communicate effectively, as they can positively impact the entire teaching and learning process (Hilton, Hilton, Dole, & Goos, 2015). In order to meet the needs of all students, which is the purpose for implementing UDL in the classroom, using appropriate communication strategies is important for teachers (Hendel, 2017). The role of communication in UDL is fundamental, considering the facilitated assessment of diverse learner needs and adequate recognition of different curriculum barriers.

The assessment of diverse learner needs is possible through ongoing, two-way communication between teachers and students. By facilitating communication during the

UDL implementation process, teachers can identify students' strengths and weaknesses in the

context of the learning environment (Gorton & Alston, 2011). From the perspective of

evaluating specific curriculum barriers, communication helps teachers understand more

thoroughly barriers to learning. As a result, teachers utilize communication to understand

information and content better, which can further motivate educators to address the needs of

students with diverse learning styles (East, 2005).

2.8   Integration of Technology into Teaching

The integration of technology into the teaching and learning process is believed to

contribute to optimal outcomes. In UDL, planning the role of technology should be explored,

especially in assessing the needs of diverse learners and integrating different technological

strategies into instruction (Dinmore & Stokes, 2015). Apart from enhancing learning,

technologies can be mobilized to foster meaningful engagement of students at all learning

levels and groups (Miller, 2011). One example of integrating technology into teaching is to

use gamification strategies, implying that students can learn in a rather engaging way if

teachers gamify the content students need to learn.

The UDL framework enables educators to expand their technology utilization beyond

access to content. This means that teachers provide numerous opportunities for students to

engage with the material, such as hands-on experiences conducted in real-life settings and

applying problem-solving skills (Al-Azawei, Serenelli, & Lundqvist, 2016). The integration

of technology into teaching implies that students are provided with an opportunity to create

meaningful digital content (Lin & Yang, 2011). For example, students can be taught the

specific rules of creating effective PowerPoint presentation consisting of detailed bullet

points on the major issues covering a particular topic. It is also believed that the extensive use

of technology in the classroom enables student collaboration on various projects. Students

can be empowered to share their writing, which can further help teachers provide regular and constructive feedback (Keser, Uzunboylu, & Ozdamli, 2012).

2.9   Assistive Technology and UDL

When most educators consider the role of modern technology for students with disabilities they think of Assistive Technology (AT). Comparatively low-tech AT tools, such as canes, wheelchairs, and eyeglasses, have been used for over a century, though high-tech AT tools have appeared over the last 20 years, and have had a substantial effect on education, which has captured the interest of the public (Rose & Gravel, 2010). These comprise different tools such as electronic mobility adjustments and alternative keyboards for students with physical disabilities, computer-screen magnifiers and text to speech readers for students with visual disabilities, digital signage-language dictionaries and signing avatar technology for students with hearing disabilities, and electronic calculators and grammar checker for students with learning disorders (Alnahdi, 2014). The significant role of computer-based technologies to help students with disabilities in overcoming obstacles to academic access, contribution, and progression is apparent in the literature base (Bray & Tangney, 2017; Leo et al., 2017).

It should be noted that AT is firmly established in other fields, but it is comparatively new to education. One indicator of this newness is the absence of precision about the significance of universal design in education, and a poor understanding of how it differs from other methodologies designed to address individual needs and disabilities (Alnahdi, 2014). For instance, there is a frequent misperception about the connection between UDL and AT, in part because both methodologies depend on technology. UDL has core objectives similar to those of AT, such as improving the access, contribution, and progression of learners with disabilities. Nevertheless, these methods are different in many ways (Rose & Gravel, 2010). Both AT and UDL approaches depend on contemporary technology to enhance the learning

process for learners with disabilities, as the utilization of technological tools has a diverse site and process of action.

The UDL approach, however, establishes products and/or settings that are intended, from the beginning, to accommodate students with an extended range of capabilities and disabilities than can be adopted by traditional tools. UDL technology is imposed on the curriculum itself; namely, it involves technology that is employed to formulate curriculum and instructional settings that, by their structure, remove traditional hurdles to learning. By contrast, AT uses modern tools to help the individual learner overcome obstacles inherent in the existing curriculum and in existing classroom settings (Alnahdi, 2014). UDL and AT can be understood as two related but different methodologies with many points of interaction and cohesion, exploited for similar purposes (Rose & Gravel, 2010).

There are also some critical differences between AT and UDL. AT is a tool that strengthens, enhances, or preserves the functional competencies of learners with disabilities. Typically, they are specifically intended to assist students with disabilities in removing barriers in their school setting and in advancing their prospects for individuality (Rose & Gravel, 2010). AT can be cautiously designed, tailored, and implemented to the specific needs and expectations of each learner. In that aspect, AT is exceptional, personalized, modified, and dedicated. On the other hand, a uniquely UDL solution has the drawback that some well-established adjustments, mainly for students with low-incidence disorders, are inconvenient, inefficient, or excessively costly when used as a component of the curriculum (Alnahdi, 2014). For example, it is neither essential nor beneficial to offer a screen reader or alternate keyboard with every syllabus or curriculum. Learners may be better aided through individual AT that has been implemented and tailored accurately to their own competencies (Alnahdi, 2014).

It is important for educators and curriculum designers to take into account the significance of AT and integrate it into the planning process. For instance, the use of alternative keyboard may be necessary in certain cases, which implies that teachers should be adequately prepared to meet any emerging challenges in the teaching and learning process (Strobel, Arthanat, Bauer, & Flagg, 2007). A text-to-speech reader that does not identify common classification features, such as links or extensive descriptions, cannot offer satisfactory access to learning materials (Rose & Gravel, 2010). Therefore, educators need to assess the validity and appropriateness of all the components of AT used in instruction.

2.10   UDL in Digital Learning

UDL is not restricted to applications involving AT. It improves teaching and instructional activities for learners with and without physical disabilities (Strobel, Arthanat, Bauer, & Flagg, 2007). UDL features are applicable to syllabus construction and content selection, instructional design and the development of teaching materials for regular learners as well as for students with disabilities or for those who comprise non-conventional groups such as English as an additional language (EAL) learners (Edyburn, 2005). It has been specified that digital teachers should be student-centered when structuring or planning a class (Dinmore & Stokes, 2015). It is important to provide each student with individualized attention, which is helpful in the creation of a personalized learning environment. Such adjustments are made with the purpose to enhance student collaboration in the digital learning process (Rose & Gravel, 2010).

The use of appropriate technological applications can facilitate the knowledge processing and retention of digital learners. For example, the use of tablet computing as an effective technology in the classroom can lead to greater student participation in the completion of various learning tasks (Dinmore & Stokes, 2015). Another example of how to utilize tablet computing in the classroom is in planning a science lesson. Teachers might

encourage students to collect and share information on scientific phenomena, such as types of rocks. Students' access to technology facilitates their research skills, as they are able to explore the respective scientific topic in depth (Edyburn, 2005).

2.11   The Importance of School Leadership Support

2.11.1 Establishing Leadership Teams in Schools

As schools have become autonomous in certain jurisdictions, the importance of reconsidering the role of school leaders and their impact on school development has become an educational policy priority (Drago-Severson & Pinto, 2009). The development of appropriate school leadership frameworks has been noted as a means of improving policy and practice in modern educational settings, including the implementation of instructional approaches, particularly UDL principles in the classroom (Yager, Pedersen, Yager, & Noppe, 2012). Considering the new tasks and challenges encountered by school leaders, the need for distributed leadership has been observed in school settings (Barrett & Breyer, 2014). By encouraging distributed leadership, the processes of management and succession planning can be significantly improved (Leithwood, Louis, Anderson, & Wahlstrom, 2004).

The establishment of leadership teams in schools has been as shown to be an effective means of fostering teacher commitment to change (Barrett & Breyer, 2014). Incentive mechanisms and strategies to reward participation in the respective teams has been suggested as a means of encouraging participation in distributed leadership (Barrett & Breyer, 2014). In the case of UDL adoption, leadership training and professional development opportunities have emerged as proven strategies to achieve success with the shift to the use of UDL principles in the classroom (Barrett & Breyer, 2014).

The support of school leadership has been recognized in the literature as an important aspect of assisting teachers to improve their knowledge on different methods and strategies that can help them enhance the learning opportunities provided to students (Gurfidan & Koc,

2016). In this context, school leaders may organize various professional development

sessions aiming at expanding teachers' knowledge of the UDL framework and how UDL

strategies can be implemented as efficiently as possible in the classroom (Yager, Pedersen,

Yager, & Noppe, 2012).

2.11.2 The Role of School Principals

School principals, as instructional leaders, have the responsibility and the formal

authority to create the conditions for curriculum and instruction that models current thinking

in teaching and learning for 21st century learners. Educators, in turn, would be expected to

demonstrate their enthusiasm and strong willingness to commit to the principles of UDL as

part of the broader and longer-term curriculum delivery orientation for the school (Yager,

Pedersen, Yager, & Noppe, 2012). One of the major roles of school leaders is to build school-

wide support for UDL, which, if adopted, would be an integral part of the school vision and

the overall school culture (Hilton, Hilton, Dole, & Goos, 2015).

Some researchers have advocated for the formation of instructional leadership teams,

whose members are responsible for building and enhancing support and capacity for UDL

implementation in different school settings (Gurfidan & Koc, 2016). Instructional leadership

teams are an important means of demonstrating to teachers that the long-term use of UDL

principles can lead to a substantial improvement of children's education. In turn, trained

teachers are equipped to present relevant arguments to parents and caregivers on the benefits

of UDL in education.

The importance of school leadership support is also reflected in building the proper

infrastructure pertaining to the design and implementation of the UDL framework (Yager,

Pedersen, Yager, & Noppe, 2012). Drago-Severson and Pinto (2009) have argued that an

appropriate strategy used in this context is to provide professional development opportunities

to educators, administrators, and other staff members within schools. However, teacher

familiarity with current technologies is a prerequisite to the adoption of the UDL framework to instruction (Gurfidan & Koc, 2016).

Researchers have indicated that the core responsibilities of school leaders include supporting, assessing, and developing substantial teacher quality (Hilton, Hilton, Dole, & Goos, 2015). These responsibilities relate to the goals for innovativeness in education pursued by teachers. The highly innovative UDL framework is recognized as a promising solution for teachers who aim to instill a spirit of learning, so that learners can attain significant progress with their learning activities (Gurfidan & Koc, 2016). It has been pointed out that school leaders play an important role in managing curriculum and pedagogy. Since UDL principles tend to become an integral part of how teachers develop programs, they need to be supported in their instruction (Yager, Pedersen, Yager, & Noppe, 2012). School leaders have a certain level of discretion in the design and selection of curriculum content and specific teaching approaches (Hilton, Hilton, Dole, & Goos, 2015). Therefore, they are well positioned to promote and support UDL.

Other important ways to promoting greater teacher knowledge on UDL principles, refer to setting of realistic and achievable goals, ongoing assessment procedures and accountability (Gurfidan & Koc, 2016). This means that school leaders must be focused on reasonable goals that can help convince educators that UDL principles can be a feasible addition to their teaching methods. Evaluation information attained by school leaders can be properly used to facilitate performance-based objectives (Yager, Pedersen, Yager, & Noppe, 2012). From the perspective of distributed school leadership, it has been shown that leadership teams can be developed with the purpose of supporting teachers in their applying of UDL principles in the classroom.

Furthermore, a school culture of constructive assessment has been considered an important practice of school leaders (Hilton, Hilton, Dole, & Goos, 2015). This implies that

the school classroom can be rather open and flexible, as teachers are prepared for evaluation at any time. One of the important preconditions for the utilization of the UDL framework is that educators are appropriately oriented in their teaching environment. School leaders play an essential role in availing of various opportunities to provide support from external and internal sources (Hilton, Hilton, Dole, & Goos, 2015).

2.11.3 Strategies to Facilitate School Leadership for UDL

The implementation of appropriate leadership strategies is considered fundamental to help teachers implement UDL (Gurfidan & Koc, 2016). One such strategy is identified as creating urgency, which is an integral part of the successful implementation of UDL principles in the classroom. School leaders, who are focused on the promotion of flexibility and accountability in teaching practices, can add a solid sense of urgency for teachers to utilize UDL principles (Hilton, Hilton, Dole, & Goos, 2015; Yager, Pedersen, Yager, & Noppe, 2012). It will be easier for teachers to follow the provided strategic direction, which will help them prioritize their objectives for ensuring well-balanced UDL curriculum (Drago-Severson & Pinto, 2009).

School leaders play an important role in providing clear and realistic goals for improvement. School leadership implies a focus on change and coherence in the implementation of UDL principles (Hopkins, 2013). It is vital to promote district-wide leadership capacity building in order to achieve the outcomes of UDL implementation. Leaders should help teachers align their teaching practices for more optimal implementation that could address the needs of all students (Heifetz, Grashow, & Linsky, 2009). The distinct role of school leaders is to refine teaching practices, emphasizing the role of shared outcomes and agreements among teachers of how to structure their instruction. The emotional intelligence of school leaders is crucial to determine their attitude toward UDL

implementation, as the emphasis is on developing a shared vision and attaining high

achievement for all students (Jappinen, 2014).

2.11.4 Linking Schools to Their Environments

Even though school leaders work outside the classroom, they have an important role

in promoting the importance of the UDL framework and in providing learning opportunities

for teachers (Edyburn, 2010). School leadership is fundamental in bridging educational

policy and practice in relation to the use of UDL principles (Basham & Gardner, 2010;

Mizell, 2010). The motivations and actions of school leaders can set a relevant personal

example to educators to utilize UDL principles in the classroom (Hilton, Hilton, Dole, &

Goos, 2015).

In the process of linking schools to their environments, school leaders work on

providing an optimal learning experience to all students (Gurfidan & Koc, 2016). This is

possible through considering the implications of the physical environment, nurturing an

enabling learning environment, ensuring sufficient space for parents and the community,

providing adequate learning resources, and emphasizing teacher autonomy and professional

independence. It is important to note that students constantly interact with their physical

environment, which means that school leaders need to pay more attention to providing an

optimal physical environment for learning (Aydin, Sarier, & Uysal, 2013). Appropriate

school design impacts teacher productivity and motivation to experiment with innovative

instructional approaches.

In nurturing an enabling learning environment, the focus is on transparency, equality,

social justice, and diversity in education. Properly linked schools to their environments

provide a high level of security for all children (Lawrence & Vimala, 2012). Students are

provided with opportunities to thrive in such an environment, as they can ask questions freely

and engage in a productive dialogue with teachers and their peers. It is the responsibility of

school leaders to provide equal and meaningful opportunities for learning (Cheryan, Ziegler, Plaut, & Meltzoff, 2014)

By ensuring sufficient space for parents and the community, leaders illustrate that the school setting is a properly structured space for guided learning. They also promote the idea that learning occurs outside of the classroom as well, implying that the role of parents and the broader community is fundamental to achieving optimal learning outcomes (Lawrence & Vimala, 2012). Students should be provided with opportunities to explore the world outside of the school, which will help them make rational decisions about their education and life (Tanner, 2008).

School leaders' responsibility to provide adequate learning resources imply sufficient opportunities for linking schools to their environments. Such links are represented by the intention of leaders to provide a substantial amount of texts and books to support teacher work in addressing the diverse needs of students (Tanner, 2008). Manuals for teachers can provide additional guidance on utilizing the best teaching strategies.

The emphasis on teacher autonomy and professional independence is crucial to linking schools to their environments, as teachers are more adapted to address the learning needs of students (Lawrence & Vimala, 2012). There should be a sufficient amount of time for teacher planning and reflection, which will help them prepare for the UDL implementation process more effectively. School leaders also could organize monthly meetings for teachers to update them on the most effective teaching strategies (Cheryan, Ziegler, Plaut, & Meltzoff, 2014).

2.11.5 The Importance of Inclusion

It appears that school leaders not only recognize the expectations and concerns of educators but also identify and cater to the needs of diverse groups of learners. As a result, the promotion of various inclusive programs has emerged as a common strategy utilized by

school leaders in their attempt to support innovativeness and creativity in education (Hilton, Hilton, Dole, & Goos, 2015). In this way, teachers rely on the ongoing support implied with school leadership for understanding and implementing new approaches to instruction as in the case of the UDL framework. Research indicates that school leaders are expected to expand their own knowledge on pedagogy, which implies a high level of preparedness to evaluate teachers' performance on the implementation of new teaching methods in the classroom (Horng & Loeb, 2010; Yager, Pedersen, Yager, & Noppe, 2012). Becoming leaders of learning has emerged as the new, refined objective of school leaders in the modern educational environment. Thus, the methods used for teacher monitoring and assessment, including those intended for measuring teacher professional development, have become rather sophisticated in terms of application (Hilton, Hilton, Dole, & Goos, 2015). Yet school leaders express their hope to provide new, more exciting avenues for learning through their extensive support of educators (Hilton, Hilton, Dole, & Goos, 2015).

2.11.6 Challenges of UDL Implementation for School Leaders

School leaders tend to work in various contexts and settings, which means that they frequently encounter challenges that are both administrative and instructional in nature (Horng & Loeb, 2010). The reality for the majority of school leaders is the presence of a small workforce with an extensive number of responsibilities (Martin, 2009). This makes it complicated for school leaders to ensure consistency and integrity in their work, especially in relation to supporting teachers on the implementation of new teaching standards such as those pertaining to the UDL framework (Hilton, Hilton, Dole, & Goos, 2015).

One of the challenges school leaders face is that they have no relevant knowledge of UDL principles. They might have failed to attend professional development sessions to provide them with the knowledge needed to facilitate the implementation process (Barrett & Breyer, 2014). The lack of knowledge and awareness of the benefits of UDL prevents school

leaders from being consistent in their goal to prepare teachers strategically for this transition (Marzano & Simms, 2013).

School leaders might also experience the challenge of having inadequate infrastructure that support UDL. This challenge is represented by leaders' inability to provide additional training to teachers and school administrators (Marzano & Simms, 2013). Moreover, leaders might not have the funds needed to purchase the technology for effective UDL implementation. They should recognize the importance of the link between technology and UDL utilization in the classroom since technology is an integral part of the UDL approach (DuFour & Mattos, 2013).

School leaders seem to ignore the significance of providing substantial time to teachers so that they can explore the principles of UDL (Barrett & Breyer, 2014). Teacher schedules are rather intense, which prevents them from paying adequate attention on the integration of UDL principles into their instruction. Leaders need to address this challenge by rethinking their approach to education and refining their vision (DuFour & Mattos, 2013).

2.12   Leadership Styles of Principals

The school principal's role as senior manager has constantly transformed within the past 30 years. Early research on the principalship suggests that principals followed an autocratic model of leadership where the focus is on most of the power and decision authority located in a single individual (Kimathi, 2013). However, this leadership style does not lead to mutual trust between school leaders and staff (Gorton & Alston, 2011). Autocratic leadership might not result in the development of an open and flexible culture that favors the principles of diversity. This leadership style will not produce the outcomes expected from the UDL implementation process, as the effective utilization of the UDL framework depends on extensive collaboration of all stakeholders in the education field, rather than being dependent solely on the leader (Katz, 2013).

Martin (2009) points out that during the 1980s, school principals transformed their role from being administrators or executives to instructional leaders. This adaptation was crucial because the key focus of the academic institution shifted to student educational success. Hence, principals were not only expected to manage the activities of the school, but also to strictly assess students' knowledge and educational performance in the classroom (Aydin, Sarier, & Uysal, 2013). As the role transformed from school director to instructional leader, a framework that defines three types of leadership implemented by principals has been established: transactional, transformational, and delegative (*laissez-faire*) (Burns, 2010). Discussing the features of these leadership styles is important so that there could be a more adequately articulated view on the role of school leaders in UDL implementation.

Transactional leadership approach is more focused with preserving the flow of organizational processes and operations. Transactional leadership is a form of leadership that can be labeled as keeping the organization in control (Bass & Bass, 2008). In addition, transactional leaders utilize disciplinary authority and a range of incentives to encourage employees to attain business objectives and perform their duties efficiently and professionally. Moreover, transactional leadership helps school principals become dominant leaders, and the respective teachers become the followers (Leithwood & Seashore-Louis, 2011). For this type of leadership to be effective, managers and employees must be in accord with the processes that are intended to be followed. However, transactional leadership, as a model, is unable to encourage others to assume leadership roles in the organization. This implies that in their role of transactional leaders, school principals might be unable to guide teachers effectively in the implementation of UDL principles in the classroom.

The role of the school principal altered once more in the 1990s towards the transformational style to leadership, which is another kind of model defined in Bass's leadership theory (Bass & Bass, 2008). This model positions the school principal as a

developer of leadership capacity within the organization; all workers are considered as having leadership competencies, which are encouraged and developed by the formal leader. In order to enable the effective implementation of UDL principles, school leaders need to adopt a transformational style to leadership, especially considering the importance of creating a solid vision for change and maintaining inspiration (Dionne, Yammarino, Atwater, & Spangler, 2004).

Since transformational leadership represents a model of integrity and fairness, it can be expected that the school leaders who adopt this style can make a significant difference to the way teachers utilize UDL in the classroom (Krishnan, 2005). Transformational leaders have high expectations, which can be reflected during the UDL implementation process. They are also perceived as facilitators, considering their important role to encourage teachers to enhance their knowledge on UDL principles and utilize them as effectively as possible (Dionne, Yammarino, Atwater, & Spangler, 2004).

The third major leadership style, laissez-faire, is focused on instilling collaboration with shareholders, teachers and other staff. In this way, a mutual policy is formed for the school setting. On one hand, laissez-faire, also identified as delegative leadership, is an eventual type of leadership approach in which leaders become disconnected and permit managers and supervisors to make the ultimate decisions (Phillips, 2016). This means that school leaders might delegate specific roles and responsibilities to teachers, particularly improving their professional independence. This is important in enabling teachers to implement UDL principles more effectively (DuFour & Mattos, 2013). Yet laissez-faire leaders provide resources and tools to help school staff resolve issues. School principals who adopt this style avoid making academic or organizational decisions and resolving problems.

Research exhibits that laissez-faire leadership has been considered to be the least useful (Green, 2009). It has frequently become complex for the principals to examine if their

activities and behavior are positively influencing the school setting because they are occupied with enormous day-to-day activities linked with their professions. It has been contended that school principals are typically encountered with anxiety, frustration, or even impaired as a result of the continual modification in their roles (Bass & Bass, 2008). As a result, they have limited time to examine their current activities. In this case, acquiring feedback from the organization, particularly teachers, managers and faculty members, is crucial. This means that laissez-faire school leaders might need to be more flexible and adaptable to the persistently changing educational environment. This aspect also applies to the transition to more effective UDL instruction, implying that leaders need to recognize the importance of being responsive and inclusive to meet the diverse learning needs of students (Drago-Severson & Pinto, 2009).

Research further shows that the school principal is the key component in influencing a school setting (Leithwood & Seashore-Louis, 2011). However, a school setting or organizational culture is an area that is ignored by leaders, as they may not identify the influence that they can have on the education and schooling process (Leithwood & Seashore-Louis, 2011). Despite the fact that the principal has a crucial role in refining a constructive academic culture, little is examined about how the leadership approach of the principal links to the school in international school settings (Green, 2009). Since the extended literature has demonstrated that school culture plays a key role in the success of the academic institution, it is important to comprehend how the activities of the principal are linked to forming and preserving a constructive school culture (Martin, 2009). Such an exploration should consider how principals' leadership styles determine the strategic direction provided to teachers, particularly their orientation to implement UDL in their instruction.

2.13 Summary

The literature review provided extensive information on various topics pertaining to the implementation of UDL principles in the classroom. The specificity of the UDL

framework was adequately clarified to ensure a relevant research scope of the review. In this context, it was important to clarify the values used in the transition toward UDL, such as participation, collaboration, open communication and sufficient leadership support. Moreover, the literature review included a section on the adoption of UDL for students with diverse needs, emphasizing the importance of diversity to advancing the goals of education.

The literature review also discussed barriers to the implementation of UDL in order to help teachers identify the complex areas and issues of their work. Different aspects were introduced as part of the ongoing process of using UDL in the classroom, particularly planning for all learners, physical space, monitoring student progress, guided practice and the role of communication. In this context, the role of technology as integrated to the UDL implementation process was adequately clarified. It has been argued that technology is an essential component of the flexible approach to UDL. Another major issue introduced in the literature review section referred to the important role of school leaders in facilitating the utilization of the UDL framework, emphasizing leaders' capacity to link schools to their environments as well as their prevailing leadership styles that help them overcome specific challenges related to UDL implementation.

Chapter three presents the Research Methodology, which provides information on the theoretical framework guiding the study, participant sampling strategies, and data collection and data analysis methods. The emphasis is on understanding the strategic direction followed by the researcher in obtaining substantial information on the adoption of the UDL framework in education. Ethical considerations are also included in Chapter 3, indicating the relevance of ethics in conducting a professional research process.

Chapter Three

Research Methodology

The theoretical perspective used in the study refers to the specific epistemological

orientation used to obtain a relevant knowledge on the implementation of UDL in an

international school setting. For this study, I used a qualitative research design and an

interpretative paradigm of inquiry. As such, some consideration of positivist/post-positivist

and constructivist paradigms is important. Positivists demonstrate the belief that there is a

single reality, which can be measured and known. On the other hand, constructivists

emphasize that there is no single reality or truth, and that knowledge or truth is constructed in

consideration of the lived experiences of each individual (Healy & Perry, 2000). Therefore,

the constructivist orientation employs methods that recognize knowledge to be multiple and

interpretive in nature which requires an in-depth interpretation of participant representations

(Terrell, 2012).

3.1   Research Design

To answer the research questions in this study, I followed a qualitative research

design using in-depth, semi-structured interviews (Terrell, 2012). This type of design allows

the exploration of the research problem from multiple perspectives (Creswell & Clark, 2010).

A reason for using a qualitative method in this study was to overcome the limitations

associated with a quantitative research methodology in terms of depth in interpretation.

Interviews enable the researcher to explain and interpret the topic more thoroughly and

integrate different representations, in order to achieve a more coherent response to the

research questions. As a result, deeper insights into the problem can be generated. (Creswell,

2014).

Qualitative investigations are exploratory in nature (Caruth, 2013), which means that I

focused on making relevant observations that were helpful in gaining a better understanding

of the application of UDL in international school settings in Qatar. In this way, it was possible to uncover certain trends pertaining to the research phenomenon based on the insights and lived experiences of participants. The advantages of using semi-structured interviews comes in the depth and detail of the phenomenon under study (Bentahar & Cameron, 2015). This is because the method is amenable to exploring the feelings, attitudes, and behaviors of the participants (Caruth, 2013).

Subjectivity is a defining characteristic of qualitative research since the focus is upon exploring the subjective opinions and perspectives of participants as represented by the researcher (Crotty, 1998). Qualitative research implies a significant amount of inductive reasoning to answer research questions. Inductive reasoning is defined as a logical process in which multiple insights and conclusions are combined to present specific results (Denzin & Lincoln, 2000). Interpreting participants' lived experiences is at the core of this research, which helped me determine the most effective strategies pertaining to the implementation of UDL in an international context (Bentahar & Cameron, 2015). Moreover, a qualitative research design open space for participants to expand and elaborate on their responses and allows some flexibility for the researcher in probing areas of interest (Creswell, 2014). In fact, the participants can demonstrate their openness toward new areas or dimensions of the research topic, even though these aspects might not have been considered early in the research process.

Research indicates that a qualitative research design simulates individuals' experiences to a substantial extent (Bentahar & Cameron, 2015). This helps the researcher build a comprehensive, broad picture of the reasons why individuals act in specific ways. The focus in this exploratory process is on individuals' feelings about their actions. From this perspective, qualitative research provides opportunities to obtain multifaceted information about a research phenomenon (Creswell, 2014).

3.2   Research Context

The research context of the present study was identified as international schools based in Qatar. I needed to make sure that I had access to sufficient information pertaining to the performance of teachers in international school settings in Qatar. At the beginning of the research process, I determined that the research would follow the paradigm of combining primary and secondary research in order to present in-depth findings on the UDL implementation in Qatari international schools.

3.3   Participants

Five teachers and five principals working in international schools in Qatar were interviewed for the study. The identification of participants took place with the support of several international schools based in Qatar. One of the criteria used during the selection of the participants was identified as experience in an international school environment. Participants were expected to demonstrate extensive knowledge related to the topics under study, so they could share their suggestions on improving the application of UDL principles. (Bentahar & Cameron, 2015).

The method through which the participants were selected was purposive sampling (Bentahar & Cameron, 2015). This sampling technique is described as a non-probability sampling in which the participants are selected based on the characteristics of a specific population (Creswell, 2014). Purposive sampling was used in this study because the number of participants was small and selected based on their having similar characteristics that are of particular interest to the researcher. However, this is not considered a disadvantage, since by virtue of the fact that the selected participants have certain characteristics, they are able to provide comprehensive answers to the interview questions.

3.4   The Role of the Researcher

In qualitative research, the role of the researcher should be adequately considered, because the possibility of having a researcher's bias is higher compared to quantitative research (Creswell, 2014). In qualitative research design, the focus is on the research as an instrument of data collection (Caruth, 2013). This implies that the researcher ensures her/his role as a mediator during the data collection and data analysis processes. In the context of this study, I assumed my responsibility as a researcher in describing potential biases and valid assumptions emerging in the research process.

Since the framework of data collection is rather open and flexible in qualitative research, I tried to be as objective and neutral as possible while interacting with the participants and interpreting their answers to the provided questions. Therefore, I considered the importance of asking a wide range of probing questions related to the topic of the research (Creswell, 2014). At the same time, I improved my listening skills, as they are part of a properly conducted data collection process. The emphasis on the listening aspect helped me go deeper to the conversation with the participants. 3

3.5   Data Collection Methods

3.5.1 Literature Review

The research was conducted in several phases. The initial phase involved reviewing the literature on UDL frameworks generally, as well as the contribution of principals and teachers in enhancing learning through the effective implementation of UDL principles in the classroom (Bentahar & Cameron, 2015). The initial literature review helped to focus the themes and ideas that were further investigated through secondary research. The other phases of the literature review were represented by analyzing the findings obtained through a secondary research in order to introduce more coherent and meaningful findings that can be connected to the topic of this study. The final phase was described as summarizing the major

findings, which provided me with a better view of the further direction to be considered in the study in the sense of using the respective findings for comparison with the results obtained through a primary research**.**

3.5.2   Interviews

The major data collection tools used in this research were semi-structured interviews (Bentahar & Cameron, 2015). The interviews involved open-ended questions to prompt participants to think and present relevant answers (Appendix D). The framework for semi-structured interviews is quite open, and this allows the researcher to focus on the flexible dimensions of the data collection process (Johnson & Onwuegbuzie, 2004). In this study, I followed an interview guide in presenting the questions to the participants. At the same time, I provided the interview respondents with an opportunity to frame their own questions, as this emerged as a strategy to determine the level of their comprehension of the research focus and topic.

The interviews with the participants were conducted in person, which means that I was enabled to observe physically their attitudes and perceptions of the research process. The time frame for conducting the interviews was two months. The allocated time was considered sufficient to visit the participants and help them establish a strong sense of trust in order to elicit appropriate information pertaining to the research topic. In turn, the participants were open and comfortable to share their insights about the UDL implementation process in detail.

3.6   Data Analysis

In terms of analysis, coding the answers provided by the participants in the interviews emerges as a common approach to qualitative data analysis. It should be noted that coding is a process of identifying specific items from the data set (Creswell, 2014). The purpose is to search for important concepts and themes by finding the relations between them. In this way, the codes applied to data is helpful, as it enables the researcher with an opportunity to explore

and analyze the respective research information in a rather structured and organized manner. For the purposes of the current study, implementing concept-driven coding appeared reasonable (Creswell, 2014). This means that data were approached with a specific system of codes, as I looked for particular ideas or themes expressed by the participants.

The analysis of the qualitative findings was done utilizing content analysis. This method refers to the generation of specific themes and categories derived from participants' answers. They were coded into different groups in order to uncover important interrelations and trends pertaining to the major research questions (Creswell, 2014). Content analysis requires that the researcher should be initially concerned with organizing and managing participants' responses (Bentahar & Cameron, 2015). As part of the data analysis approach, it is essential to develop specific codes to categorize the answers provided by participants on different aspects pertaining to the major research problem. Once the categories emerging from participants' answers were developed, I considered their importance to identify and interpret recurrent themes. This requires critical and analytical processing to differentiate between essential and less important information pertinent to the scope and objectives of the study.

Data collection templates were then developed with the purpose to enter responses and code the data elicited from the participants. I then looked for patterns among the emerging themes. For example, categories were identified such as readiness to implement UDL, advantages and barriers associated with the use of the UDL framework, and school administrators' readiness to facilitate the process. In this way, the evaluation of the research findings was both descriptive and analytical to ensure optimal depth and relevance of the data (Johnson & Onwuegbuzie, 2004). Building upon the responses provided by the participants helped me support the analysis with sufficient quotes from the interview respondents.

3.7   Trustworthiness

Establishing trustworthiness in this study was considered a top priority. A significant ethical consideration pertaining to the study was associated with guaranteeing the confidentiality of participants' personal information. This means that the participants were reassured that such information would not be revealed to third parties (Caruth, 2013). It was important to ensure those individuals that their identity and privacy would be adequately protected during all stages of the research process. This aspect was helpful for the participants to make an adequately informed decision to participate in the study. At the same time, the aspect of confidentiality is associated with attaining greater credibility of the research findings. I am highly confident that the findings are true and accurate, as they were obtained through the valid processes listed above.

Another ethical consideration referred to limiting researcher bias in the study, considering the use of qualitative data collection and analysis methods. It was important for me to maintain an opinion as objective as possible on the information retrieved in the study (Johnson & Onwuegbuzie, 2004). This helped the participants enhance their trust while taking part in the research. Hence, complying with relevant ethical principles was essential during the study.

Another important consideration is that of confirmability. A common assumption in qualitative research is that researchers demonstrate their distinct perspective in the study (Creswell, 2014). This implies that confirmability can be defined as the degree to which the research findings can be confirmed by other researchers (Caruth, 2013). In line with this consideration, I carefully documented the procedures for checking and rechecking the information provided by the participants. This helped me identify some inconsistencies which I was able to address immediately in order to avoid further complications that could have impacted the data analysis process.

In ensuring trustworthiness in this study, I also focused on the dimension of dependability. This aspect referred to establishing the precise extent to which the study could be replicated by other researchers. In the process of replicating the study, other scholars should obtain sufficient information from the research as well as present similar findings. The emphasis was upon establishing a high level of consistency of the research findings (Creswell, 2014).

3.8   Ethical Approval

Since the proposed study involved human participants, obtaining ethical approval was necessary prior to conducting the study. Following ethics approval, the study participants were provided an informed consent form that specified the scope and objectives of the research and outlines the risks and benefits of participating (Johnson & Onwuegbuzie, 2004). Participants in the qualitative aspect of the study were provided with the option to withdraw at any time prior to the data analysis, after which time, I was unable to extract their data. The data were anonymous with no identifying information.

3.9   Summary

This chapter outlined the research methodology utilized in the study. It has been clarified that the implementation of a qualitative research design was useful in retrieving detailed information on the participants' views and insights into the implementation of the UDL framework in international schools in Qatar. After describing the specificity of the research design, specific details were provided about the research context of the study. As mentioned, Qatar's international schools were selected as an appropriate research context, considering the selected research topic. The information provided about the participants in the study revealed details about their expertise, knowledge, as well as sampling technique utilized for selection. In this context, it was important to discuss the role of the researcher, as the respective issue is more prominently reflected in qualitative research than quantitative

research. It has been argued that the researcher in qualitative research should remain as neutral and objective as possible in order to produce credible and valid research findings.

In terms of data collection methods, the use of interviews and observations was emphasized in the chapter. These two methods were considered optimal to gather a substantial amount of information that was used to outline relevant inferences about the implementation of UDL principles in international schools in Qatar. With regards to data analysis approaches, the advantages of content analysis were emphasized in the respective sub-section of the chapter. The process of establishing trustworthiness of the data was considered fundamental. Therefore, the dimensions pertaining to trustworthiness were clearly described in the chapter. At the same time, the conditions for obtaining an ethical approval were specified.

Chapter Four

Findings and Analysis

4.1   Restatement of Research Questions

Two research questions guided this study. The first question focuses on the challenges experienced by teachers and school principals in planning for the implementation of a UDL framework in school settings in Qatar. The second research question is associated with the use of appropriate strategies to facilitate the implementation of the respective framework. In this chapter, I identify specific themes and then progress to uncovering optimal ways in which educators and school leaders can benefit from the utilization of UDL principles in international schools based in Qatar.

4.2   Overview of Research Findings

The aim of this qualitative research was to elicit important information pertaining to leadership strategies for UDL implementation in school settings in Qatar and any challenges experienced. The findings from this study illustrate that a substantial number of educators in international schools in Qatar failed to implement UDL. The reasons behind this gap are consistent with Crevecoeur, Sorenson, Mayorga, and Gonzalez (2014) and mostly refer to a lack of appropriate training and professional development that focus on the relevance of UDL to contemporary education.

Another reason that prevents some educators from implementing the UDL framework effectively in the classroom is associated with the level of investment associated with implementation. It is apparent that the use of UDL principles in school settings requires substantial resources, such as technology-driven solutions and diverse materials to address students' different needs (Dell, Dell, & Blackwell, 2015). In addition, some teachers who participated in the study stated that the reason for their failure to implement UDL was the lack of effective leadership support.

The UDL framework has emerged as a relevant approach to addressing the diverse needs of learners in the contemporary educational environment (Crevecoeur, Sorenson, Mayorga, & Gonzalez, 2014). Therefore, the interview questions were developed with a view to enabling participants to synthesize their knowledge and generate relevant representations of the work in implementing UDL principles. The findings generated from the representations of the ten participants are framed by the research questions and are expressed as specific themes. Each of the participants demonstrated their willingness to discuss their thoughts and suggestions of how UDL principles can be implemented effectively in the educational environment of Qatar. Participants' insights are crucial to framing a future discussion on the relevance of UDL in the international educational context.

4.3   Thematic Analysis

Once I coded the information obtained from the participants' answers, the focus was to arrange the respective data in sub-categories. The data are grouped into seven headings, each representing an important theme emerging in the study. The identified themes are the following:

- Familiarity with UDL Principles;

- Uses of UDL in Classroom Instruction;

- Strategies Supporting the Implementation of UDL;

- Principals' Support;

- Experience with UDL;

- Optimizing Student Learning;

- Planning Lessons for Diverse Students.

4.3.1   Familiarity with UDL Principles

One major theme emerging from the interviewees' answers is identified as familiarity with UDL principles. Some of the participants in the interview demonstrated a high level of familiarity with UDL principles. For example, one school leader indicated, "I am totally familiar with the three principles of UDL." The participants with sufficient knowledge of UDL were open in discussing important themes related to UDL implementation, while those who were less familiar with the UDL approach, were less forthcoming, suggesting the important role of competence in making appropriate decisions associated with the use of UDL principles. At the same time, the school leaders whom I interviewed illustrated a high level of readiness to utilize their familiarity with UDL principles in the most beneficial way to address the needs of all stakeholders in their particular educational community. It is apparent that a higher level of competence with UDL is a precondition for optimal outcomes in the long term. It is essential that the school leader be familiar with UDL principles, in order to set the direction for an educational institution in order to benefit students and teachers.

Being familiar with the UDL principles was emphasized by some participants as a powerful way to encourage student learning in a more meaningful manner; participants represented UDL as a means through which teachers can elicit multiple means of expression as well as providing students different alternatives for manifesting their knowledge. In this way, teachers' familiarity with essential UDL principles implies that they could achieve positive outcomes in the classroom.

In this context, one participant in the interview stated, "UDL principles implemented in the classroom can increase motivation for learning to a substantial degree." Given that the goal of educators is to engage and motivate learners UDL principals are a means by which students can express themselves through numerous means of presentation, particularly

through increasing students' engagement with technology for learning purposes. UDL seems to enable more students to take responsibility for their learning, and gives them the tools to develop into more independent, resourceful, and critically thinking learners.

Another respondent in the interview pointed out, "[t]he three principles of the UDL framework are described as the provision of multiple means of representation, multiple ways of action and expression, and different ways of engagement." This statement confirms that some of the teachers are knowledgeable about the advantages of UDL in international schools in Qatar. As a result, it can be expected that those teachers who are knowledgeable about these principles might support the implementation of the UDL framework.

 Some participants in the study who were not familiar with UDL. This suggests that there is a knowledge gap that should be properly addressed as a long-term strategic objective among the international schools in Qatar. The lack of familiarity with UDL principles by some school leaders suggests either an unwillingness to embrace UDL or insufficient resources to prepare for the facilitated implementation of UDL in classroom instruction. Principals also seem to be aware of this gap and the need for it to be addressed. There was a general sense that it is time for international schools in Qatar to refine their mission and vision statements to becomes more student-centered and open to the UDL framework. Enabling a better understanding of UDL principles is vital to the goal of achieving higher educational outcomes in the region.

4.3.2   Uses of UDL in Classroom Instruction

The participants in the interviews presented specific examples of how UDL is used in classroom instruction. One of the school leaders provided the following observation,

> UDL has three principles that take us away from the "One Size Fits All" solution, and instead, they teach us to allow multiple means of instruction, action and expression, and engagement. An example would be using text, audio, video when delivering a

lesson. This way it allows students, who learn differently, to get the information in

more than one way, and therefore help them understand and master learning.

This comprehensive answer illustrates the participant's knowledge of the three major

principles of UDL. As a result, this school leader would know how to implement the

described principles in an effective and reliable manner. Other participants expressed the

value of UDL in gaining the trust of learners who need to be provided with a wide range of

options to diversify and improve the learning process. Such examples illustrated a relevant

focus on finding solutions that could address personal differences and different learning

styles of students. The suggestion of audio and video formats is considered useful to

enhancing students' interest in the topic under discussion. As a result, students who learn in

UDL inspired classrooms can concentrate on the ideas presented in classroom instruction,

and they can even provide further suggestions for improving the teaching and learning

process. Some of the participants in this study indicated that the UDL framework is

structured in such a way to enable differentiation in classroom pedagogy to accommodate

students' needs. Educators and school leaders who recognize the main features of UDL tend

to prepare students in a more efficient manner.

Some participants focused on the dimensions of flexibility in learning. As such, I

heard that the use of UDL principles provides both teachers and students with an opportunity

to select the method of instruction that best suits their needs and interests. UDL's main

features can be used in classroom instruction by "trying to vary a lesson" as stated by one

teacher. Varying the approach to lessons tends to empower both educators and students, as

they are equally focused on achieving substantial success as a result of their refined approach

to the teaching and learning process. Another teacher pointed out,

UDL focuses on three principles, which deal with showing the concept in multiple

ways, allowing students to show their learning in multiple ways and engaging

students in the content. One way it can be used in the classroom is showing the students visually, auditorily and allowing the students to kinesthetically experience it as well. Then, they can show their understanding by writing the information down, or presenting it to the class, or recording a video explaining the concept, or making a song.

It appears, therefore, that through the use of UDL, students are provided with the freedom to select their distinct medium of communication when it comes to knowledge and acquisition of important ideas. The interview findings stressed that it is important that educators be aware of different learning styles of students, as this aspect suggests a greater likelihood of accommodation teaching approaches to students' learning needs.

Another participant in the interview indicated, "Some main features from what I understand is delivering content in multiple ways, for example, if I deliver a second language lesson, I would include many pictures that go along with the words." This suggests that teachers are willing to illustrate their lessons with appropriate visual techniques. This is in line with the main principles of the UDL framework, those being the importance of creativity and innovation in finding optimal ways to help students learn effectively.

One of the interviewees stated that "UDL is a philosophy encompassing the design of courses along with the instruction and evaluation so that a diversified class of learners will be successful taking your course." This means that the philosophical implications of UDL can be used to build a comprehensive model to help students improve their learning. Furthermore, participants pointed out that the design of the course can be done correctly from the start rather than trying to add modifications and accommodations later. In other words, the focus should be on developing optimal content and presenting specific approaches in the beginning of teachers' interaction with students.

One of the main features of UDL has been identified as the improved access to knowledge and information. A participant in the interview pointed out, "It is apparent that through enhancing the access to knowledge, principals uncover limitless opportunities for students' progress and teachers' professional development." In this context, both students and teachers tend to collaborate in the teaching and learning process in order to uncover the utmost benefits of the UDL framework.

Another significant feature of UDL has been recognized as the ongoing process of mastery of learning. One school leader emphasized the following, "Teachers should not be concerned only with improving the access to knowledge. They should be also focused on making the mastery of learning accessible to diverse groups of students." In this context, it is essential to note that the UDL teaching practice is closely linked with the idea of providing reliable strategies and learning models. Offering sufficient time for active reflection on learning is critical to making further progress. By sharing examples of how things should be done in the classroom, school leaders can serve as role models to educators in terms of encouraging them to initiate diverse learning activities. At the same time, it is reasonable to speculate that principals play an important role in instilling a solid sense of UDL effectiveness once educators acquire a basic knowledge of the main features of the UDL framework.

Some of the participants indicated that they have never heard of UDL, and therefore did not apply its principles in classroom instruction, indicating that there is a need for additional training of UDL pedagogy in international schools in Qatar. In Chapter 5, I discuss ways principals can use such feedback to initiate training opportunities for teachers.

4.3.3 Strategies Supporting the Implementation of UDL

The implementation of UDL principles in international school settings in Qatar was considered an appropriate initiative by the majority of the participants in the study. One

school leader stated, "One of the strategies is to deliver the lesson in different ways. Another one is offer students flexible ways to show what they learned." Both strategies are closely related in that they are student-centered and intended to improve student performance over time. Several differentiation and flexibility strategies emerged from the responses of some participants, implying that educators should be innovative and willing to experiment with a wide range of options to engage students. This suggests openness to trying new ideas as part of classroom instruction, even though some of these ideas might prove unsuccessful. An important finding related to school leadership is that school leaders should remain active and committed to the goals pertaining to the implementation of UDL principles in international school settings in Qatar.

With regards to using strategies that support the implementation of UDL in international school settings, some participants recognized the importance of providing "relevant sessions to teachers during orientation." This means that an initial orientation course for uninitiated teachers would help them to upgrade their teaching styles and strategies. In other words, it is necessary to provide initial (and ongoing) training in the development of strategies for implementing UDL. Even though such orientation might be considered an integral part of professional development opportunities provided to teachers, it is an example of how the entire teaching and learning process can be transformed for the betterment of learners. The emphasis on teacher orientation in learning about UDL suggests the need for strategic preparation beyond students' immediate academic needs and extending to educational challenges in the longer term.

Interview participants perceive the importance of the UDL framework as a new and promising tool. Such an acknowledgement is useful in identifying the strengths and areas for improvements of both teachers and students. Once they achieve a better understanding of the application of UDL in practice, the teachers I interviewed say they would be in a better

position to work with students and other experts in the field to deliver high-quality classroom instruction. One of the participants talked about the significance of "engaging students to be enthusiastic in the content by experiencing it." This suggests a substantial element of practice, rather than a sole focus on theoretical assumptions. There was a sense that through the use of UDL principles, teachers can enhance students' enthusiasm for learning by understanding and recognizing their learning needs as well as supporting them throughout their academic journey with appropriate materials and advice. However, one of the key challenges emerging from the data is that the implementation of UDL requires a substantial emphasis on appropriate training for educators.

Some participants discussed the importance of having "more professional development opportunities available to teachers to learn how to deliver a lesson." Such training should represent all basic aspects of the teaching and learning process. At the same time, it was felt that the focus should be upon more complex dimensions of the process in the sense of considering internal and external factors that might impact student learning. For example, one teacher recommended the following, "Make teachers more aware of what it actually is and how we can use it." Another participant noted that, teachers should be prepared to be competitive in the current educational environment, indicating that they require professional development and training opportunities to do so. These and other similar statements represent a direct call for intervention in the provision basic orientation and training programs on the specificity and utilization of the UDL framework.

It was also pointed out that there is a perception that staff in Qatar's international schools are mostly overworked and underpaid. One complication emerging in this context relates to the apparent high turnover rate of key staff members. This means that, even though education staff may be provided with an in-service on the UDL framework, teachers might be resistant to implementing the framework in the classroom and even if they do implement

UDL principles, are at risk of leaving for better employment arrangements.   From a strategic perspective, for UDL to be implemented in Qatar, the head of the school must fully support it and must acquire the necessary funding to regularly train the teaching force. Because most schools in Qatar are for-profit, private schools, their owners may not recognize UDL as a long-term benefit for their institution. Therefore, creating awareness of the multiple advantages of the UDL framework is important to engaging stakeholders, including senior management, in Qatar's educational institutions.

Another strategy discussed by some school leaders refers to the focus on the whole environment. Instead of focusing more exclusively on the curriculum, UDL educators are expected to understand the overall complexity of their environment. This can help them function better and engage a sufficient number of students. One participant mentioned, "I believe in the cultivation of a holistic learning environment that can benefit both teachers and students. They will have a chance to understand the implications of learning as a whole, rather than consider the respective process in a fragmented manner." Providing accessibility to students in all areas of the teaching and learning process is crucial to their academic progress. This means that both principals and teachers must work together to uncover those strategies that address the specific learning expectations and goals of each student. One of the school leaders participating in the interview pointed out that, "Ensuring a high level of flexibility is crucial during the implementation of the UDL framework. I work extensively with teachers to help them make the transition to UDL a smoother and stress-free process."

4.3.4   Principals' Support

Another major theme that emerged from the participants' interviews is the importance of ongoing principals' support when it comes to the utilization of UDL principles. One of the interview participants considered school leadership to be a significant factor contributing to the successful implementation of UDL in classroom instruction. This school leader said,

School leadership should facilitate this through frequent professional development sessions where teachers work together to learn how to implement such framework in the classroom. Also, the school should be equipped well with technology and other resources that teachers need to implement UDL in the classroom. Limitation of resources can become an issue for sure.

Other participants recognized the importance of imaginative leadership which is focused on establishing and sustaining a solid vision for UDL. There was a sense that the emphasis must be on the creativity of school leaders who can instill an awareness for the advantages of UDL in classroom instruction. It is also important to mention that these participants appreciated the high level of cooperation among teachers to implement UDL principles as effectively as possible.

It has been illustrated by some participants that principals' support could be further strengthened by the provision of certain applied teaching technologies, thereby enhancing the process of lesson delivery. As a result, there is an expectation that UDL principles, coupled with appropriate learning tools would increase student engagement with their respective lessons. However, participants in the interviews pointed out the challenge of antiquated resources and recognize that unless this situation changes, it could impede any progress made with regards to the UDL implementation in international school settings in Qatar. One participant in the study reiterated the importance of principals being able to deliver on "resources and professional development that entail varied ways and possibilities to deliver a differentiated lesson." Although teachers might demonstrate their strong willingness to utilize UDL in practice, they rely on principals' support to achieving their long-term goals for teaching and learning. Another participant argued that principals should "provide teachers with materials and tools to help reach more students (math blocks or coins or laptops so students can type instead of write)." It is important to consider individual interests and

preferences in the selection of teaching materials, and this is the primary responsibility of principals. This means that the importance of having substantial principals' support in enabling a school's transition to UDL was persistently emphasized in the interview. However, such support is directly linked with financial support. In other words, an adequate budget should be allocated to the implementation of the UDL framework, and principals are responsible to fulfilling a similar objective.

As mentioned, differentiation in instruction is closely linked with the use of a substantial number of resources. But even without such resources, the teachers who were interviewed generally felt that principals need to encourage teachers to reconsider their approach to instruction in the sense of being confident to experiment with different forms of teaching.

Another point related to resources was the perception, expressed by most participants in the study, that a school's transition to a properly constructed UDL framework could be enhanced with the help of external specialists. Participants felt that teachers' knowledge of basic UDL concepts and principles could be sustained by regular professional development lead by UDL experts. One respondent mentioned the option of "investing in [human] resources if necessary". Another participant said, "Any new initiative needs thoughtful planning and roll out, plenty of training, and time to learn, implement, and refine whatever the new initiative is." In other words, both teachers and students need to cooperate on finding the most appropriate methods and mechanisms of improving the learning environment. As mentioned, time is a significant factor to enhancing student learning, but principals are the ones who can allocate sufficient time to particular educational initiatives.

A participant indicated the following, "The school must first decide that they want to implement UDL and then draw up a framework with mini milestones. Those milestones need to be reached before moving on to the next milestone." This approach was represented as a

systematic way of implementing an initiative efficiently. At the same time some participants felt that the implementation of UDL needs to be incremental with each stage having a time for reflection (all school staff involved) on what went right and wrong. Such a strategy would help all stakeholders involved in the process to improve their knowledge of positive and negative aspects pertaining to the utilization of UDL in the classroom. The aspect of critical reflection was seen as important to understanding the basis for change in more complete terms.

In summary, participants believe flexible instruction and learner-centered curriculum, must be augmented by leadership support. Such ongoing support is key to achieving optimal outcomes in the long term, according to most participants in the study. An interviewee stated, "I am focused on building extensive leadership support for UDL since I believe that such a framework can enable all students to improve their academic performance." Changing the school's curriculum as well as introducing new means of instruction are recognized as tasks that require extensive collaboration among school leaders, educators, and students. Such support enables teachers with an opportunity to manifest their pedagogical and social potential, since education is not only about instruction but also about social relationships with students.

4.3.5   Experience with UDL

The theme of experience with UDL implies preparedness to utilize one's knowledge of the respective framework in teaching practice. Having experience in working with UDL is considered a significant advantage to principals who demonstrate their leadership role in organizing the curriculum based on students' academic needs and expectations. The data suggest that some participants understand the need for more vibrant and student-paced instruction. One of the participants indicated the following, "As a principal, I teach a Leadership class to high school students, and although time can be an issue sometimes, I try

to differentiate my lessons and provide the information to students in a multiple way." The decision of school leaders to promote UDL in classroom instruction suggests that some school leaders in the region possess the confidence, knowledge, and competence to implement UDL principles in their schools.

Although I specifically targeted school administrators with experience in UDL implementation, during the interviews U found that some principals had limited experience with the approach. When asked about their background in understanding and using UDL, one pointed out, "maybe several years ago when I was teaching in the classroom a bit more." This suggests that for planning specific UDL initiatives, there are gaps pertaining to the direct implementation of the UDL framework, and introducing appropriate activities to increase awareness of UDL for school leaders is fundamental. Even though some teachers mentioned having no experience with UDL, the insights they provided in their responses suggest they are poised to adopt UDL to inform their teaching practice. The interview data suggest that with the necessary interventions from principals, those teachers who lack knowledge and experience with UDL can be adequately supported and trained to update and improve their teaching strategies over time.

Some participants recognized that a teacher's experience in working with UDL principles enables them to bring new approaches to the teaching and learning process. One participant pointed out, "Every student learns differently, and you are reaching a majority of your students by differentiating your teaching. By allowing students to express their understanding in multiple ways, you are allowing them to show what they know." Another teacher suggested that experience with UDL principles provides a significant advantage to teachers since these educators can find the right way to help students express their knowledge in a meaningful manner. Another teacher indicated the following, "I use [UDL] in my second language instruction, but not so much for other subjects." Even though UDL is

applicable to all subjects, it appears that most teachers use the respective framework in second language learning. In this context, recognizing the universal characteristics of UDL is essential.

Another teacher stated, "My experience working with UDL is only in its infancy." It is important to note that some participants recognize that there are gaps in their ability to apply UDL principles as a result of insufficient experience. This demonstrates that greater integration of UDL pedagogy would be beneficial to teachers and students alike. While learners may improve their performance in relation to the mastery of particular concepts, they are likely to gain a greater sense of independence and confidence in using UDL principles in the classroom.

The teachers I interviewed say that based on the courses they previously completed they consider the use of a wide range of materials to be very important. One participant noted that creating the basic infrastructure to support the utilization of UDL has become an essential goal of the principal in their school. As noted elsewhere, some participants discussed the relevance of providing appropriate professional development opportunities to educators, administrators, and other staff members. However, gaining extensive experience with UDL implies a need for adequate preparation. Some interviewees said they expanded their experience with UDL by attending comprehensive training seminars. This training encouraged teachers and school leaders to implement some of the major ideas of UDL in practice. Thus, it is evident that training plays a crucial role in improving the knowledge of UDL of stakeholders in the education field.

4.3.6   Optimizing Student Learning

Optimizing student learning is another identified theme in the data. Interviewees stated that most students come from different parts of the world, which means that English is used as a second language in the teaching and learning process. Therefore, some participants

have considered the application of UDL as an appropriate means of optimizing student learning. One participant pointed out that, "providing resources, such as technology, allowing students to use their devices to interact with the information, providing them with options to demonstrate their learning, can be good example to facilitate student learning." It was recognized that those teachers who utilize interactivity in their instruction tend to generate substantial success over time in terms of student engagement and interest in the subjects being taught.

Another leader stated the following, "I try to provide students with the support needed. I also try to provide teachers with the support they need to deliver a differentiated lesson." In analyzing this answer, it appears that the participant has given equal attention to the needs of students and teachers. This illustrates an example of leadership that considers a range of factors that might shape the teaching and learning process. This leads to the notion that the process of optimizing student learning is multifaceted, and this was echoed by several participants. Yet achieving positive results is linked with teachers' preparedness for each lesson. One teacher pointed out the ways in which student learning can be facilitated in an international school environment,

> There are many things a teacher can do, such as using different manipulatives, especially in math. Also, an experimental way of learning can be implemented in certain classes like in science and social studies. And when we consider implementing technology in the classroom, using tools such as Google Classroom can facilitate both teaching and learning. Using the internet can certainly facilitate learning. Also, an important factor that should not be forgotten is using the local culture and language of the international school to make it relevant and authentic to students.

As emphasized in the observations of this teacher, students need to find the materials relevant to their lives. This can motivate them to pursue higher goals in education. It appears that

student learning can be optimized through technology since a substantial amount of the

materials used by teachers are technology-based. In the process of improving student

learning, teachers also need external help. In this context, one participant pointed out at the

importance of "having more teaching assistants available to guide in the instruction." UDL

required significant planning – more than traditional teaching strategies. The addition of

teaching assistants was perceived as enabling more students to be engaged in the content and

appropriately guided how to resolve complex learning problems. UDL anticipates a

combination of different teaching strategies in addressing the learning needs of different

students.

Some participants claimed that an optimal way to facilitate student learning would be

to utilize an efficient learning platform. For example, one teacher said, "Google Classroom is

a good platform to start with but a more versatile platform to support a UDL driven school

would be Moodle." In addition, this participant pointed out that teachers should consider the

use of assistants in case more complex concepts need to be clarified to students.

One school leader pointed out that the opportunities to optimize student learning

through the UDL framework are limitless. This school leader indicated that,

> Today's students learn new information in diverse ways depending on the type of
>
> learning preferences and styles being adopted. It is our responsibility as leaders and
>
> educators to foster a solid sense of learning so that students can demonstrate sufficient
>
> engagement in the classroom.

A similar point was related student motivation, which plays an important role to

helping individuals learn new information and in applying it to their lives. In other words, the

route to optimizing student learning was identified as diversifying learning opportunities and

making them more relevant to students' lives. Some participants mentioned that some

learners are motivated by highly challenging tasks. Thus, one school leader pointed out, "I

always support teachers and guide them to introduce a wide range of tasks for students. I am

focused on optimizing resources and demands in order to achieve the initially stated

curriculum objectives." In addition, he noted that it is important to provide students with

opportunities to optimize their choice and autonomy during the learning process.

Some participants were confident that the use of the UDL framework in the classroom

can optimize student learning significantly. One school leader pointed out, "I am supportive

of teachers who are enthusiastic to implement the UDL framework. Therefore, I constantly

communicate with them, helping them understand the importance of minimizing distractions

as an integral part of the process of optimizing student learning." In this context, it should be

noted that most school leaders have discussed the relevance of providing regular, formative

feedback to students. Such progress-oriented feedback enables students to further develop

their strengths and work on improving their weaknesses during the learning process.

4.3.7 Planning Lessons for Diverse Students

Some participants in the interview recognized the importance of considering students'

needs first while planning lessons. One school leader stated, "Having ESL students as an

example require teachers to print text, use the smart board, captions, and technology in

general when planning a lesson." In other words, teachers try their best to innovate and

experiment with the available resources. Yet the most important aspect remains the delivery

of student-centered instruction.

One participant in the interview shared, "More English Second Language Support is

needed. We struggle a lot with ESL learners and keeping them up to our curriculum

standards." This shows that in the international school context, where English is the language

of instruction, ESL learners need additional, multidimensional support that could help them

learn in a more effective manner. Interviewees noted that such students should be constantly

supported through direct instruction, customized approaches to learning, and constructive

feedback. Because educators are expected to focus on the strengths of ESL students and help

them overcome any challenges throughout their academic journey, the use of UDL standards

was considered important to addressing similar concerns pertaining to ESL learners.

A participant pointed out that teachers "can plan lessons by using various resources".

Another teacher indicated that it was important to "make sure there are a number of activities

of all types during a lesson, check in with students, give the students things to do that aren't

just listening so students are engaged, plan review and extension activities." Other similar

suggestions and recommendations from the interview data correspond well to the scope of the

UDL framework. Some participants suggested that teachers can plan their lessons for diverse

students by "differentiating the content [to allow] students to understand the information in

multiple ways." Some teachers repeatedly mentioned the significance of being open and

flexible, since students have different learning styles, interests, and preferences. Similar to

the answers provided by other participants in the interviews, one teacher stated the following,

"I think [teachers] should try to make sure their lessons are differentiated and make sure they

are using multiple ways of delivering a lesson." This teacher confirmed that differentiation is

frequently used as an effective method in classroom instruction. This aspect suggests that

each student's strengths and areas for improvement are considered differently, which means

that teachers tend to customize their approach based on students' differences.

Not all participants felt they had the authority to be flexible and creative in lesson

planning. One interviewee shared the following, "I follow lesson plan given to me by the

school. I am not able to change it in any way to diversify it. I think the school head should

incorporate it in our lesson plans." This opinion shows that in some contexts teachers are

restricted in terms of their professional autonomy, which is inconsistent with the kind of

flexibility teachers need in applying UDL to lesson planning. Yet most classrooms in Qatar

are represented by students coming from different cultures. As such, restrictions on lesson

planning, such as the example cited limits the benefits students might derive from diverse teaching methods and techniques.

One of the school leaders indicated that determining the level of perceived challenge is crucial to understanding the needs of diverse students and that teachers should plan lessons accordingly. For instance, it is important to comprehend the specific context or content utilized for the practice and assessment of multiple skills manifested by diverse students. As a result, there will be greater clarity regarding the assumed roles of all stakeholders in the education field. This is helpful in allocating tasks and understanding major implications of diversity in contemporary education. Therefore, educators should be prepared to address any emerging challenges in a constructive manner. Yet the ability of teachers to plan lessons for diverse students depends on the recurring themes of training and professional development opportunities as well as flexibility in lesson planning. If principals provide such opportunities to educators, teachers say they will improve the quality of their work significantly and will be able to reach out to diverse students.

In summary, student learning is a process that requires the cooperation of administrators, teachers, and students alike. In planning lessons for diverse students, educators need to have access to the tools necessary for information gathering, processing, and co-construction of knowledge and they need to be afforded openness and flexibility in education delivery. These themes were emphasized by the participants in this study as being consistent with the UDL framework. As one participant aptly pointed out, the best way to optimize student learning is to hire "exceptional educators and administrators who will support teachers in their growth and teaching."

Chapter Five

Discussion

5.1   Introduction

This chapter provides discussion on the major findings in the study. The questions included in the research are described and answered in order to emphasize the relevant research insights. In addition, the chapter presents a discussion of the contributions of the study to the scholarly literature. The researcher is focused on discussing the implications of the research, as individuals and practitioners in the education field can gain a better understanding of the leadership strategies necessary for UDL implementation in international schools in Qatar.

5.2   Major Findings

The first area probed in the study was related to the specificity of UDL as an important approach in designing curriculum and programming for a diverse range of learners (James, 2018). Some of the school leaders and teachers who participated in the semi-structured interviews demonstrated their familiarity and willingness to implement the three principles of UDL. However, a concerning issue emerging in this study is that there are school leaders and educators who lack sufficient knowledge of the UDL approach, which prevents them from adequately supporting a curriculum to address the diverse needs of learners (Vie, 2018).

As evidenced by partnerships with foreign universities and colleges, (e.g., College of the North Atlantic) Qatar has rapidly developed its educational system over the past two decades, which means that such insufficient knowledge of the UDL principles in the schools in this study does not correspond to the educational advancements made in schools across Qatar (Dell, Dell, & Blackwell, 2015). Since the UDL framework fits the requirements of flexible, student-centered education, school leaders and other stakeholders in the field would

benefit from a more robust effort to train teachers on the effective implementation of UDL (Crevecoeur, Sorenson, Mayorga, & Gonzalez, 2014).

The second area of study focused on the ways in which school principals can demonstrate their support in facilitating the implementation of the UDL framework in classroom instruction. These include the role of school leaders in assessing participants' knowledge of the practical dimensions of UDL, understanding how they use different materials and mediums of communication to facilitate the delivery of a lesson, and ensuring that teachers understand the ways multiple strategies of instruction can benefit learners with different learning styles (Al-Azawei, Serenelli, & Lundqvist, 2016). Once educators recognize the importance of using multiple means of expression, the number of engaged students will automatically increase (Dell, Dell, & Blackwell, 2015). The second question probed this area of school leadership.

It has been illustrated, the participants in this study believe that UDL provides a flexible learning environment that helps students thrive regardless of their different learning capabilities. By engaging students in content, educators provide learners an opportunity to progress academically and achieve adequate results (Pearson, 2015). This requires that teachers show their trust in students' capacity to learn effectively. Providing regular, constructive feedback to students is a good way to support the ongoing engagement of learners. In other words, the emphasis is upon well-structured preparation to include appropriate learning activities in the curriculum (Schelly, Davies, & Spooner, 2011). In this context, educators also rely on multiple ways of evaluation, which suggests greater objectivity in assessing students' knowledge (Basham, Meyer, & Perry, 2010; Rao, 2015).

The third area of study related to the strategies that could be used to support the implementation of UDL in school settings in Qatar. An important strategy discussed by some of the participants was described as the delivery of lessons in diverse ways. This means that

teachers are flexible in their pedagogy such that students show they can improve and expand their learning (Crevecoeur, Sorenson, Mayorga, & Gonzalez, 2014). However, a key finding is that that teachers need further orientation and ongoing professional development on the implementation of UDL. A secondary finding is that curriculum delivery is standardized in some schools and the lesson structure does not afford the opportunity for teachers to be flexible and creative.

Participants also talked about the importance of creating sufficient awareness of UDL practice. Discussing the multiple benefits of UDL should be done in an open and flexible manner, engaging different stakeholders in the field of education. Ensuring solid and supportive leadership is crucial to the implementation of UDL principles in the classroom. This is an inseparable part of creating a sufficient awareness of the UDL framework (Rao, 2015).

Fourthly, I examined the role of principals in supporting a school's transition to a properly constructed UDL framework. It is apparent that most participants recognized the importance of school leadership in implementing the respective framework effectively and this is consistent with Dalton (2017). For instance, the inclusion of regular professional development sessions was cited as an option that school leaders could use to promote the benefits of UDL in international school settings in Qatar. It is also apparent that some schools need to be equipped with technology and other resources needed for the successful implementation of UDL in the classroom.

The wide scale introduction of UDL was indicated by some participants as a useful means to enhance educators' knowledge of UDL. As noted by Schelly, Davies, and Spooner (2011), this implies that school leaders would be expected to demonstrate a high level of commitment to the change. In adopting UDL principles, school leaders should be willing to experiment with different models of learning and innovate accordingly (Crevecoeur,

Sorenson, Mayorga, & Gonzalez, 2014). Allocating a substantial amount of time for learning

is critical to the successful adoption of the respective initiative. At the same time, the

proposed changes should be refined to correspond to the level of knowledge and skills

manifested by educators in international school settings in Qatar. Fulfilling the requirements

of each step is important in the process of professional growth (Dallas, Long, & McCarthy,

2016).

      I also asked school leaders and teachers to provide their opinions on how their

experience, or lack of experience in working with UDL principles, shaped their progress in

the classroom. It was pointed out that most educators try to use differentiation to provide

information to students in multiple ways, as discussed by Rao (2015) and Wiazowski (2012).

It has been recognized that every student learns differently, which means that teachers are

responsible for creating a learning atmosphere of trust, acceptance, and recognition of

learners' differences. This responsibility is the key to effective, long-lasting learning (Rao,

2015). However, the findings from this study show that some school leaders and teachers

lack experience working with UDL principles. This finding reinforces the requirement for

school leadership support and resource investment so that more educators will be prepared to

implement the UDL framework effectively.

      With respect to the question of optimal ways in which student learning can be

facilitated in an international school environment, the majority of participants recognize that

the UDL framework corresponds well to the needs of second language learners, many of

whom attend international schools in Qatar. This is due to the flexibility and adaptability of

UDL principles (Kumar & Wideman, 2014). With the implementation of UDL principles,

students have more learning options available to them, for example, using their devices to

interact with content and learning through practical application of concepts, such as using

different manipulatives while teaching math. Regardless of the materials and resources

selected by teachers to convey specific information, consistent with McGhie-Richmond and Sung (2013), making the lesson relevant and authentic to students was cited as an effective way to facilitate student learning.

The application of UDL in school settings was also considered to be beneficial to special needs students, as pointed out by one participant in the study. Addressing the needs of all students is the primary responsibility of educators. Therefore, the implementation of the UDL framework is beneficial considering the holistic approach to teaching and learning. Teachers also can cooperate with assistants in order to make the lesson more interesting and relevant to students (Crevecoeur, Sorenson, Mayorga, & Gonzalez, 2014).

Finally, I investigated teachers' planning skills in addressing the diversity of students in their classrooms. Keeping in mind students' needs while planning lessons is among the primary responsibilities of educators. Planning should take place in such a way to correspond to students' multiple learning styles (Davies, Schelly, & Spooner, 2013). One participant in the interviews indicated that the use of a sufficient number and range of activities for all types of learners is important to maintaining the lesson flow. Even though most participants in the study seem to feel that have the latitude to be creative in preparing their lessons, one teacher was not convinced of his ability to change the lesson plan provided by the school. This means that school leaders must reconsider the kind of overall direction they provide to teachers, which implies increased autonomy to adjust or modify the instruction based on students' needs.

In the next two sections I discuss in greater detail the findings associated with two of the research questions, specifically, those pertaining to challenges to UDL implementation and strategies for effective UDL implementation.

5.3   Challenges Related to the Implementation of UDL

Since the first research question is focused on discussing the challenges that educators and school leaders encounter upon the implementation of UDL, exploring the perceptions of teachers and leaders of existing barriers was considered important. Consistent with Schelly, Davies, and Spooner (2011), it appears that some teachers interviewed in this study resisted the systemic implementation of UDL principles in the classroom. This can be explained with by the presence of operational barriers. Lack of planning time and insufficient training, along with the lack of modeled instruction, emerged as the reasons behind the failure of some educators to implement UDL effectively. Teachers' concerns mostly related to the additional burden of daily operational tasks associated with the implementation of UDL principles.

The fear of change was interpreted as another impediment to the utilization of the UDL framework. Although this was not specifically identified, one teacher implied that instruction was set by standardized lesson plans that teachers were not expected to veer away from. In addition, as noted by Seok, DaCosta, and Hodges (2018) some teachers and school leaders might be reluctant to embrace UDL due to lack of knowledge and experience working with the respective instructional principles for learning. Therefore, it is not surprising that some participants in the interviews demonstrated their preference for more training that could help them improve their knowledge of the UDL framework. At the same time, it has been recognized elsewhere, that more time should be allocated to collaborate with other teachers and experts in the implementation of UDL in school settings (Hall, Meyer, & Rose, 2012). In this way, the identified gap can be properly addressed, which means that both teachers and students can benefit from the implementation of UDL in the long term.

In discussing the challenges that teachers and principals encounter during the implementation of the UDL framework, a potential impediment that was briefly discussed by some of the participants but should be thoroughly considered in future research is UDL's

impact on students with learning disabilities. Basham, Smith, and Satter (2016) state that the UDL framework emphasizes the importance of providing equal access to information to all students in the classroom. However, educators might not attain the same level of success with students with disabilities (Cook & Rao, 2018). Therefore, teachers might need to refine their approach while addressing the specific learning needs of this group of students.

It should also be noted that the effective implementation of the UDL framework depends on the capacity of school leaders and teachers to apply the major UDL principles to address the needs and academic progress of different learners including those students with learning difficulties (Dallas, Upton, & Sprong, 2014; Kennedy et al., 2014). In the present context, there seems to be room for a greater emphasis on supporting an all-inclusive learning environment. As Marino et al. (2014) note, this means that principals should demonstrate their leadership role to instill a better awareness of the challenges pertaining to the UDL implementation and how they can be avoided or anticipated.

It appears that more school leaders and educators in Qatar would benefit from a more open attitude toward the implementation of the UDL framework in diverse school settings. This might well include addressing the challenge of insufficient access to technology-based tools used to enable teachers to use multiple pedagogies. These are usually identified as assistive technologies that help teachers diversify their instruction and present more appealing learning opportunities to students (Benton-Borghi, 2013). Before students learn how to use these tools effectively, teachers would first need to familiarize themselves with the main concepts and principles of the respective technology solutions, potentially through formal professional development.

Another challenge to the effective implementation of UDL, identified in the current study as well as in previous studies on the topic, is the difficulty in keeping students engaged and motivated in the learning environment (Al-Assaf, 2017). Even though some teachers in

international schools in Qatar demonstrate such a knowledge, they might still lack the capacity to accommodate a particular learning environment based on the academic background of each student.

In the process of implementing the UDL framework in the classroom, some educators might fail to recognize that students need more time to comprehend the transition toward UDL. When students do not understand concepts that are being taught in the classroom, the utilization of diverse strategies on the behalf of educators is considered an irrelevant decision (Takemae, Dobbins, & Kurtts, 2018). This is because the respective teachers fail to understand that students need time to assimilate particular knowledge and apply it to their daily lives. As shown in research, students are most likely to express themselves optimally in the learning environment if there is a solid connection among the material, the learning environment, and learners (Zascavage & Winterman, 2009). However, achieving a similar objective appears challenging to most educators in international schools in Qatar.

Furthermore, there are barriers to implementing another crucial principle of UDL, particularly multiple means of engagement. This principle is closely linked to the idea of keeping learners engaged and motivated in the learning environment (Bongey, Cizadlo, & Kalnbach, 2010). The utmost goal of the UDL implementation is that all students are expected to reach their full academic potential. Nevertheless, it might frequently occur that some learners may not understand the overall purpose of the lesson (Deshmukh, 2017). A proven way to encourage students' engagement, is to optimize individual choice and autonomy in the selection of learning materials and tasks to be completed. In this way, students can be more confident in demonstrating their knowledge (Lieberman, Lytle, & Clarcq, 2008). This underscores the need for appropriate teaching technologies and other learning resources, something identified as a barrier in some of the accounts of the participants in this study.

5.4   Use of Effective Strategies to Facilitate the Implementation of UDL

The second research question focused on effective strategies to facilitate the

implementation of the UDL framework in an international school environment in Qatar. Both

teachers and school leaders demonstrated their willingness to discuss most optimal ways to

utilize UDL in a manner that would benefit all stakeholders in the education field in Qatar.

Those teachers who felt some hesitation to utilize the UDL framework in the classroom

believed that school leaders need to model UDL instruction. This implies that such educators

need additional support which would help them improve their knowledge and overall

perceptions about the effectiveness of UDL (Dell, Dell, & Blackwell, 2015). It also has been

recognized that knowing students' strengths and areas for improvement is important to

modifying the respective UDL instruction (Schelly, Davies, & Spooner, 2011). In this way,

educators must adapt their pedagogy to pay attention to every student, based on their unique

learning needs and capacities.

Furthermore, the use of UDL enables teachers to share content in multiple ways.

Instead of relying on a single strategy of instruction, educators can select the options that best

fit students' different learning styles and needs (Hall, Meyer, & Rose, 2012). In this context,

it should be noted that instruction incorporating UDL principles offers a significant amount

of choice in how students can demonstrate their knowledge of particular subjects and of what

they learned, and this was generally recognized by participants. Thus, it can be concluded

that effective strategies for UDL implementation mostly depend on collaboration between

and among school leaders, teachers, and students. These stakeholders are responsible for

establishing an encouraging and reliable learning environment in which the needs of all

students are adequately addressed (Crevecoeur, Sorenson, Mayorga, & Gonzalez, 2014).

These findings from the study support research by Capp (2016) that underscores the need for

open and flexible communication regarding all phases of implementation of UDL principles

as well as student assessment procedures. It can be argued that instructional leadership that promotes the multiple benefits of UDL instruction can help effect meaningful change in teaching and learning.

Exploring a wide range of practical examples is essential to addressing the identified gaps in the implementation of UDL. Considering the lack of engagement and motivation of some teachers and students to adopt the flexibility suggested in the UDL framework, the use of different media is beneficial to introduce the same content to all students (Cha & Ahn, 2014). It is essential to ensure a high level of customization to students' interests and preferences. Teachers should be ready to provide a wide range of resources to students such as books, visuals, podcasts, and newspapers (Bongey, Cizadlo, & Kalnbach, 2010). In other words, the focus should be upon the diverse representation of the same material. As emphasized in the study and in other studies on the topic, such multiple representation of the same information contributes to higher engagement and motivation of learners (Dean, Lee-Post, & Hapke, 2017).

The use of UDL illustrates a well-developed, systematic approach to supporting the learning needs of diverse learners. Educators might attempt to use all three UDL principles in practice (Courey, Tappe, Siker, & LePage, 2012). However, this might be challenging because it requires a substantial amount of time and resources dedicated to all three dimensions, particularly multiple means of presenting information, multiple means of expression and multiple means of engagement in the learning process (Dean, Lee-Post, & Hapke, 2017). The objective to utilize these three principles of UDL might be unsustainable in the short term. Therefore, it is more appropriate for educators in international schools in Qatar to take a longer and broader view into perspective. For instance, it would be more reasonable to utilize diverse strategies to represent the content of a particular course throughout the semester (Bongey, Cizadlo, & Kalnbach, 2010). In presenting a specific topic,

educators might consider the utilization of an alternative learning activity, such as a case study, as observed by some of the participants in this study. Regardless of the mode or strategy selected by educators to address the learning needs of all students, teachers should remain committed to the goal of providing appealing and diverse activities and materials.

The representations of participants in this study, and supported by the extant literature, reveal that a thorough consideration of the foundational components of UDL is useful to initiating a more effective implementation in the classroom (Hendel, 2017). In this context, it is recognized that the UDL framework can decrease certain general barriers to learning. At the same time, the respective framework is found supportive of high and realistic expectations of the learning process. Thus, school leaders and educators need to ensure not only a general understanding of UDL principles but also illustrate how these dimensions can be incorporated into students' daily lives (Meo, 2008; Ralabate, 2011).

This means that traditional planning and curriculum development approaches need to evolve beyond established curriculum or assessment standards, if such standards are too prescriptive to accommodate UDL approaches, at least until such standards catch up. For example, teachers might consider how standards-based inquiry learning might be planned and implemented in a flexible and innovative manner. There are also opportunities, through various networks to share different examples of learning activities that are consistent with UDL principles, which would increase teacher and public awareness of the advantages of this teaching methodology (Kurtts, Matthews, & Smallwood, 2009). In order to identify the right content that corresponds to the needs and interests of all students, extensive collaboration between school leaders and teachers is necessary to develop optimal strategies for implementing the UDL framework in the classroom (Gradel & Edson, 2010).

In addressing the second research question, it appears that the majority of participants in this study emphasized the relevance of proactive planning to ensure more flexible

implementation options pertaining to the UDL framework. One such framework on the implementation of optimal strategies for the transition to UDL is identified as Planning for All Learners (PAL). The PAL process is recognized as effective because it supports educators' focus on developing an inclusive and flexible learning environment for all students in the classroom (Spooner et al., 2007). Such a process is intended to be highly collaborative in order to achieve maximum success in the long term.

Since technology is closely linked to the use of different strategies to facilitate the UDL implementation, considering the advantages of different technology-based solutions is would be beneficial to school leaders and educators in Qatar (Nepo, 2017; Rappolt-Schlichtmann et al., 2013). As it has been illustrated in the research, instruction is considered effective when technology use is properly aligned with the main UDL principles (van Garderen & Whittaker, 2006). Thus, research-informed decision making in relation to technology use in the classroom is important in clarifying how technology can be used in the classroom to facilitate UDL practice (Walker, McMahon, Rosenblatt, & Arner, 2017).

In addition, providing timely and constructive feedback has been emphasized in the literature as a way to connect to students. Such feedback should be connected to multiple learning modes and strategies to help unlock the creative potential of students and prompt them to learn with greater engagement and enthusiasm.

5.5   Implications of the Research

It is important to note that the effective implementation of UDL in the classroom often depends on the use of technology. Yet the relationship between the UDL framework and technology is sometimes a source of misunderstanding among educators and school leaders (Crevecoeur, Sorenson, Mayorga, & Gonzalez, 2014). One misconception that emerged in this study is that the use of UDL in school settings is closely linked with the need to make substantial investments in or equipment and materials. However, it should be noted

that the effective implementation of UDL in the classroom is associated with a different

perception of technology which should be seen as an enabler of student learning, rather than

an objective in itself. From this perspective, the role of technology should be analyzed as that

of a catalyst to student learning (James, 2018).

Furthermore, it has been revealed in this study that UDL as a framework emphasizes

the importance to address the entire components of the curriculum such as objectives,

methods, materials, and evaluations of students' knowledge. Based on the answers provided

by participants in this research, rethinking the specificity of UDL is essential (Grande &

Pontrello, 2016). For instance, one of the implications of this work is that it highlights the

importance of conceptualizing UDL as a holistic process in which learning tasks and

assessments are prepared to account for all students. The basis of the UDL approach is to

create an empowering learning environment that can accommodate the different learning

needs and capacities of students (Smith & Harvey, 2014). This will enable educators to

improve the learning environment, which is key to the delivery of successful outcomes.

Another implication from the research is that there is a clear need for further research

on UDL implementation in international contexts, such as Qatar. Even though some research

is available, there is significant room for comparative research into UDL implementation in

neighboring countries. Such a comparative analysis will help researchers identify insights on

the complexity and dynamics of UDL implementation in diverse international school settings.

5.6   Evidence of Quality

In order to demonstrate appropriate evidence of quality in this study, referring to the

concepts of validity and reliability of research findings is crucial. Qualitative research is

based on interpretive data, which indicates a strong sense of subjectivity in the interpretation

of information provided by participants (Dell, Dell, & Blackwell, 2015). Thus, the findings

generated in qualitative research might be questioned to a certain extent. For that reason, the

researcher is expected to ensure a sufficient level of validity and reliability of the research findings (Vitelli, 2015). Results should be credible and realistic (Vesel & Robillard, 2013). Since semi-structured interviews were utilized to explore the challenges and leadership strategies for UDL implementation in international schools in Qatar, some discussion of the validity and reliability of this data collection method is important.

Validity is another word for "truth;" it speaks to the accuracy of research findings (Merriam, 1998). The focus is on determining whether the research adequately measures what it is intended to measure. In other words, the researcher is expected to determine the truthfulness of the research findings (Tracy, 2010). In this context, the idea of trustworthiness of data emerges. It is important for the researcher to establish a high level of confidence in the research findings. As a result, individuals who explore the research will be confident that the information presented corresponds to professional standards of ethics, integrity, and objectivity. In this study, participants were provided with copies of their interview transcripts for approval and acceptance, thereby contributing to the validity of the study.

Reliability is associated with the precise level of consistency, emphasizing that the research needs to produce the same results in case the study is repeated (Creswell, 1998). Some methodologists (e.g., Marshall & Rossman, 1989) argue that social reality is constantly in a state of flux; therefore, the need for a criterion of replicability, in qualitative paradigms is questionable. I adopted a more stringent interpretation; in this study, the interview recordings were carefully reviewed verbatim, and transcribed by the researcher without attention to grammatical or other "tidying up." The transcripts were then inspected, read, and re-read prior to coding. Finally, the talk was carefully coded and rechecked by the researcher. This approach contributed to the reliability of the study. (Merriam, 1998). Additional discussion of research integrity appears in Chapter Three.

5.7   Limitations

This work is primarily dependent on naturalistic and interpretive methodologies (Cohen, Manion, & Morrison, 2011) that acknowledge personal involvement of the researcher and anticipates subjectivity. Data from interviews are actively constituted by the intervention of the researcher with research participants. From a theoretical perspective, the responses of research participants in this study are seen more as representations of perspectives than reports on reality (Silverman, 2001). Given the limited scope of this study, the interpretations should be limited to the schools and participants interviewed, and not representative of the wider context of international schools in Qatar or elsewhere. Even though qualitative research suggests a focus on the lived experiences of participants, any form of generalization must be approached with caution.

Another limitation of this research suggests more optimal representation of participants in terms of including a large sample size which could be representative of the wider population. As a result, research findings can be easily generalized, as this is a significant requirement for validity and reliability of the results. Finding more optimal ways to explore the relevance of the research topic is useful in building a solid awareness of the importance of UDL implementation in international schools in Qatar.

5.8   Conclusions

The objective of this chapter was to present the research findings and analyze them critically to provide relevant answers to the two research questions.

The first research question referred to specifying the challenges encountered by teachers and school leaders in implementing a UDL framework in international school settings in Qatar. One of the prevailing conclusions in this study is that a substantial number of educators in international schools in Qatar failed to use UDL. It was evident that a similar gap impeded institutional efforts to increase awareness of the advantages of utilizing an open

UDL framework across international school settings in Qatar. As illustrated in the research, the gap to use UDL principles was explained by citing multiple reasons (Vie, 2018). One such reason was indicated as the lack of knowledge of the respective UDL framework. Despite the work experience and competence of some teachers and school leaders, they might still lack basic knowledge about the components and principles of UDL (Schelly, Davies, & Spooner, 2011). Therefore, it has been illustrated in this study that those teachers should be assisted to build their knowledge of UDL since this framework is perceived as an effective holistic process that could provide optimal results to all stakeholders in the educational field.

Another reason for the mentioned gap was cited as insufficient training and professional development opportunities provided to educators in international schools in Qatar. It is apparent that educators in the country need to be exposed to the multiple benefits of the UDL framework (James, 2018). Once they recognize the importance of UDL to contemporary education, teachers will demonstrate their strong willingness to incorporate UDL principles into their instruction. The level of student engagement with the content will increase, which will positively impact their academic performance. Therefore, it has been recognized in the study that instilling such an extensive awareness of UDL is helpful in developing confident, life-long learners. The focus with the implementation of this framework is not only on achieving optimal results in terms of improved grades but also on changing students' own perceptions on learning. This should be considered an ongoing process based on individuals' strengths, interests, and preferences in attaining specific information.

Some participants in the semi-structured interviews pointed out that the factors of limited time and limited resources were significant impediments to the successful implementation of UDL principles in the classroom. This means that the proper utilization of the UDL framework should be underlined as a comprehensive, multi-step process requiring

the efforts of all stakeholders in the field. School leaders need to address thoroughly these factors to enable teachers with more sufficient opportunities to practice their knowledge of UDL. Strategic planning activities should be incorporated into professional development sessions as part of the overall initiative to build a growing awareness of the importance of UDL principles.

The second research question identified in this study related to understanding the optimal ways in which teachers and school leaders can cooperate in the development of appropriate leadership strategies for UDL implementation. The role of school leadership should be emphasized in the process of uncovering the most relevant strategies to facilitate the UDL implementation in international schools in Qatar. Even though some participants demonstrated their openness and flexibility in utilizing the UDL framework, teachers should be further supported in practice   Both teachers and school leaders in international schools in Qatar are expected to act in synchrony, under the paradigm of visionary leadership. In this way, they unite their efforts considering the implications of a common vision to improve the country's educational system.

It is apparent that the successful implementation of UDL starts at the top. Thus, school leaders are responsible for modeling UDL instruction, as indicated by the majority of participants in the study. As a result, more educators will be provided sufficient practical examples of how to utilize the UDL framework in order to achieve optimal results in the long term. Teachers need to be fully supported during the implementation of UDL principles in the classroom considering that some educators tend to exhibit resistance to such a change. This can be explained with their ongoing fear of new initiatives since they are not convinced about the outcomes and validity of the respective change.

School leaders play an important role in developing and maintaining the conditions for the transition to UDL instruction in international school settings in Qatar. In fact, it

appears that teachers' growing awareness of the multiple benefits of UDL is a relevant sign of the persistent shift in the country's educational system. It is apparent that education delivery in Qatar country has progressed; however, there is a need for renewed focus on the available strategic capacities, teacher competencies, and resources to build a solid educational system that could benefit all stakeholders.

Mastery of learning is the ultimate goal of UDL implementation and as Nepo (2017) argues, this requires highly committed individuals who recognize the benefits of learning in all aspects of their lives. Therefore, the use of the UDL framework in the classroom has been closely linked with the idea of developing a life-long love for learning among students. This is a prerequisite for substantial success in terms of the limitless professional development opportunities they would have later in their lives. Unlike traditional planning and curriculum development methods, which are focused solely on the conventional idea to cover particular content with no significant engagement of students, the UDL framework has proven effective in instilling a high level of participation of learners. The multiple means of expression that is part of the UDL approach allows students to demonstrate their knowledge of different concepts in more efficient, diverse and comprehensive ways. As a result, learners feel more confident in their capacity to direct their learning processes more independently. As shown in research, the UDL framework implemented in the classroom is useful for unlocking students' autonomy in making relevant decisions pertaining to their learning goals and expectations.

This study also demonstrates that school leaders and educators in Qatar need to be adequately supported to recognize the importance of the strategic integration of practices, objectives, and assessment procedures. It is clear that educators in international schools in Qatar need more guidance in order to apply the UDL framework in addressing the diverse academic needs of learners. Teachers need more training and practical experience in utilizing UDL principles in the classroom. These actions will help develop capacity so that more

school leaders and educators are better situated to advocate for the consistent use of UDL and

other successful Western models of education.

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Appendices

Appendix A

Faculty of Education/Graduate Programs
Memorial University of Newfoundland
St. John's, NL, Canada A1B 3X8
Tel: (709) 864 8553 Fax: (709) 864 4379 www.mun.ca

August 12th, 2018

Participation Request Letter

Email Subject: Research project participation request

Dear School Head (by name)

My name is Mr. Hassan Bouakir and I am a graduate student studying towards my Master's degree in Educational Leadership Studies in the Faculty of Education at Memorial University of Newfoundland in Canada. As part of my degree program I am conducting research under the supervision of Dr. Gerald Galway. The research project is entitled "School Leadership Strategies for the Implementation of Universal Design for Learning (UDL) in an International School Setting." The purpose of the study is to investigate the implementation of UDL principles and practices in international schools in Qatar. The research will explore the issues, strategies, enabling factors and barriers around the implementation of UDL. By doing so, this study seeks to contribute to educational practitioners' knowledge about the effective implementation of UDL.

This research involves conducting a short interview with a principal and a teacher from a number of international schools in Qatar. The research will be confidential, and no individual schools or participants will be identified in the study. I am contacting the school heads of the international schools in Qatar from which I hope to attract research participants.

I am contacting you to respectfully request permission to contact potential participants from your school to see if they are willing to be involved in the study.

I have attached an invitation letter and informed consent form, which provides additional details regarding the research. Please feel free to contact me at (hbouakir@mun.ca) with any questions.

Thank you for your assistance and I look forward to hearing from you.

Yours truly,

Mr. Hassan Bouakir
M.Ed. Candidate
Faculty of Education, Memorial University

Appendix B

Faculty of Education/Graduate Programs
Memorial University of Newfoundland
St. John's, NL, Canada A1B 3X8
Tel: (709) 864 8553 Fax: (709) 864 4379 www.mun.ca

August 12th, 2018

Invitation to Participate in A Research Study

Study Title: School Leadership Strategies for the Implementation of Universal Design for Learning (UDL) in an International School Setting

Research Investigator: Mr. Hassan Bouakir. Email: hbouakir@mun.ca

Supervisor: Dr. Gerald Galway, Faculty of Education, Memorial University

Email: ggalway@mun.ca

Dear _____ ,

You are invited to take part in a research project entitled *School Leadership Strategies for the Implementation of Universal Design for Learning (UDL) in an International School Setting.*

I am a graduate student completing a Master's degree in Educational Leadership Studies in the Faculty of Education at Memorial University in Newfoundland and Labrador, Canada.

The purpose of this research is to explore the issues related to the implementation of UDL in international schools in Qatar. I am inviting one principal and one teacher from five international schools in Qatar to participate in an interview about their perceptions related to the implementation of UDL principles and practices, particularly as it relates to school leadership strategies. I am seeking teachers and school administrators with experience in the implementation of a UDL instructional approach to be included in the study.

Your participation in this study is entirely voluntary. Participation in this research is not a school or an employment requirement and your participation will not be reported to superiors or colleagues. An interview will require approximately 1 hour of your time and you have the option to be interviewed by a method that is suitable for you, such as telephone, or by other social media services like SKYPE, Facetime or WhatsApp.

With your consent, the interview will be audio-recorded and the data from the interview transcribed by the researcher for use in data analysis. You will receive a copy of the transcript from your

interview for review and verification. You will be able to withdraw for the research process at any time up to three weeks following your review of the transcript.

The data from the interview will be anonymized – your name will not be attached to the transcript, except using a pseudonym and only the researcher and supervisor will have access to the collected data. The recorded interviews and digital transcriptions will be stored digitally on the researcher's password protected computer. Any printouts will be stored in the researcher's secure office. The data will be kept for a minimum of five years, as required by Memorial University policy on Integrity in Scholarly Research after which time they will be deleted, and any hard copies will be securely shredded. Any articles or research products (articles or presentations) may utilize aggregated summaries of the interview data or direct quotations, but your identity will remain anonymous and any such quotations will be associated with pseudonyms only.

The benefits of this study is that it may help advance educational practitioners' knowledge about the importance of UDL. I anticipate that your participation in this research will contribute to your general awareness of the school leadership strategies for the   implementation of UDL in an international school setting, as well as the resources and decision-making processes that you or other teachers/administrators employ to implement UDL principles and practices.

If you are interested in participating in this research, please contact me at hbouakir@mun.ca to arrange a convenient time and method for conducting the interview. In your response I ask that you confirm that you are presently working or have worked in an international school during implementation of UDL. When the interview is arranged, I will send you an Informed Consent Form, which will provide additional information about the research and explain your rights as a research participant. You will be asked to read the information carefully, and to provide informed consent as a participant by attaching your signature and returning a copy of the signed form to me.

As a participant you will be able to contact the researcher or supervisor directly (contact information s provided above) to ask questions or seek additional information about the research. You are welcome to ask questions before, during, or after your participation in this research. If you would like more information   about this study, please contact me at: hbouakir@mun.ca.

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to be in   compliance with Memorial University's ethics policy. If you have ethical concerns about the research, such as the way you have been treated   or your rights as a participant, you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 709-864-2861.

Sincerely,

Mr. Hassan Bouakir
M.Ed. Candidate
Faculty of Education, Memorial University

Appendix C

Faculty of Education/Graduate Programs
Memorial University of Newfoundland
St. John's, NL, Canada A1B 3X8
Tel: (709) 864 8553 Fax: (709) 864 4379
www.mun.ca

August 12th, 2018

Informed Consent Form

Title: School Leadership Strategies for the Implementation of
                                    Universal Design for Learning (UDL) in an International
                                    School Setting

Researcher: Mr. Hassan Bouakir. Email: hbouakir@mun.ca

Supervisor: Dr. Gerald Galway, Faculty of Education, Memorial
                                    University. Email: ggalway@mun.ca

Dear Potential Study Participant,

Thank you for your interest the research project titled, *School Leadership
Strategies for the Implementation of Universal Design for Learning (UDL) in an
International School Setting.* UDL is an instructional planning and educational
framework intended to maximize learning opportunities and minimize obstacles to
learning for students with different educational needs. These might include
English language students, students with disabilities, or those from different
socioeconomic and ethnic settings. UDL conceptualizes the teaching and learning
from a holistic perspective. The principles included in this framework provide
multiple opportunities to engage students and expand their knowledge based on
their specific learning needs. For several decades, closing the educational
achievement gap between low performing and high performing students has been
targeted as an influential factor in efforts to reach greater equality in educational
outcomes. In the international context, one of the barriers in closing the
achievement gap relates to ethnic and language differences between instructors
and students. The UDL framework is optimally developed to meet the needs of
students, but the role of both principals and teachers in international schools
remains crucial throughout this process.

I am inviting one principal and one teacher from five international schools in Qatar
to participate in an interview about their perceptions related to the implementation
of UDL principles and practices, particularly as it relates to school leadership
strategies.

This form is part of the process of informed consent. It should give you the basic
idea of what the research is about and what your participation will involve. It also
describes your right to withdraw from the study. In order to decide whether you

wish to participate in this research study, you should understand enough about its risks and benefits to be able to make an informed decision. This is the informed consent process. Take time to read this carefully and to understand the information given to you. Please contact the researcher, Mr. Hassan Bouakir at hbouakir@mun.ca if you have any questions about the study or would like more information before you consent.

It is entirely up to you to decide whether to take part in this research. If you choose not to take part in this research or if you decide to withdraw from the research once it has started, there will be no negative consequences for you, now or in the future.

Introduction:

I am a graduate student seeking my Master's degree in Educational Leadership Studies in the Department of Education at Memorial University of Newfoundland in Canada. As part of my Masters, I am conducting research under the supervision of Dr. Gerald Galway.

Purpose of Study:

The purpose of this study is to explore the implementation of UDL in international schools in Qatar. The research will explore the issues, strategies, enabling factors and barriers around the implementation of UDL. By doing so, this study seeks to contribute to educational practitioners' knowledge about the effective implementation of UDL.

What You Will Do in this Study:

With your consent, you will participate in a semi-structured interview. You will be asked about your experiences and perceptions on a range of topics related to UDL including implementation issues and strategies, overcoming potential barriers to implementation, resources and other related matters.

Length of Time:

Participation in the interview will require approximately 1 hour of your time.

Withdrawal from the Study:

Your participation in this study is completely voluntary. You have the right to withdraw from the study. Once the study has begun, the data collected up to the point of your withdrawal will not be used in the study. If you withdraw during or after the interviews, the interview data will be withdrawn and destroyed. However, data cannot be withdrawn after data analysis has begun; this will occur two weeks after the date that you are provided with a transcript of the interview for review and verification. There are no consequences for withdrawing from the study. If you would like to be withdrawn from the study within the timeframe stipulated, contact the researcher, Mr. Hassan Bouakir at hbouakir@mun.ca and the data from your interview will be removed and destroyed.

Possible Benefits:

I anticipate that your participation in this research will contribute to your general awareness of the school leadership strategies for the implementation of UDL in an international school setting, as well as the resources and decision-making

processes that you or other teachers and administrators employ to implement such framework.

Possible Risks:

There are no anticipated risks associated with your participation in this study.

Confidentiality and Anonymity:

The ethical duty of confidentiality includes safeguarding participants' identities, personal information, and data from unauthorized access, use, or disclosure. Anonymity refers to protecting participants' identifying characteristics, such as name or description of physical appearance.

Every reasonable effort will be made to ensure your anonymity. The interviews will be conducted by telephone or using a mobile app. The researcher will conduct all interviews at a time and using a communication method that will be the most secure and convenient for the participant. The identities of participants will be accessible only to the researcher and transcriber authorized to have access to the data. If and when data (including any direct quotes from your interviews) from this research is published, your identity will be kept confidential by using a pseudonym. Similarly, any information in the interview transcripts that could be connected to you will be made anonymous (e.g., place names, school names, etc.).

Recording of Data:

With your consent, the interview will be audio-recorded and the data from the interview transcribed by the researcher for use in data analysis. You will receive a copy of the transcript from your interview for review and verification.

Use, Access, Ownership, and Storage of Data:

Only the researcher and supervisor will have access to the collected data. The recorded interviews and digital transcriptions will be stored digitally on the researcher's password protected computer. Any printouts will be locked in a secured cabinet in the researcher's secure office to further safeguard confidentiality. The data will be kept for a minimum of five years, as required by Memorial University policy on Integrity in Scholarly Research after which time they will be deleted, and any hard copies will be securely shredded.

Reporting of Results:

Any articles or research products (articles or presentations) may utilize aggregated summaries of the interview data or direct quotations, but your identity will remain anonymous and any such quotations will be associated with pseudonyms only. Upon completion, my thesis will be available at Memorial University's Queen Elizabeth II library, and can be accessed at: http://collections.mun.ca/search/collection/theses.

Sharing of Results with Participants:

As a participant you will be able to contact the researcher or supervisor directly to seek additional information about the research.

Questions:

You are welcome to ask questions before, during, or after your participation in this research. If you would like more information about this study, please contact: Mr. Bouakir at hbouakir@mun.ca, or Dr. Galway at ggalway@mun.ca.

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and was found to be in compliance with Memorial University's ethics policy. If you have ethical concerns about the research, such as the way you have been treated or your rights as a participant, you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 709-864-2861.

Consent:

Your signature on this form confirms that:

- ❖ You have read the information about the research.
- ❖ You have been able to ask questions about this study.
- ❖ You are satisfied with the answers to all your questions.
- ❖ You understand what the study is about and what you will be doing.
- ❖ You understand that you are free to withdraw participation in the study without having to give a reason, and that doing so will not affect you now or in the future.
- ❖ You understand that any data collected from you up to the point of your withdrawal will be destroyed unless you withdraw after data analysis has started (two weeks following receipt of your interview transcript for review and verification), in which case the data will be retained by the researcher for use in the research study.
- ❖ A copy of this Informed Consent Form has been given to me for my records.
- ❖ I agree to be audio-recorded   ☐ Yes   ☐ No
- ❖ I agree to the use of direct quotations   ☐ Yes   ☐ No

By signing this form, you do not give up your legal rights and do not release the researchers from their professional responsibilities.

Your Signature Confirms:

☐ I have read what this study is about and understood the risks and benefits. I have had adequate time to think about this and had the opportunity to ask questions and my questions have been answered.

☐ I agree to participate in the research project understanding the risks and contributions of my   participation, that my participation is voluntary, and that I may end my participation.

☐ A copy of this Informed Consent Form has been given to me for my records.

_____   _____
Signature of Participant   Date

Researcher's Signature:

I have explained this study to the best of my ability. I invited questions and gave answers. I believe that the participant fully understands what is involved in being in the study, any potential risks of the study and that he or she has freely chosen to be in the study.

_____   _____

Signature of Principal Investigator   Date

Appendix D

Interview Questions for Participants

1. Universal Design for Learning has been suggested as an important approach in designing curriculum and programming for a diverse range of learners. How familiar would you say you are with the principles of Universal Design for Learning?

2. Talk about some of the main features of Universal Design for Learning, as you understand them. Can you give me one or two examples of how it has been used or how it might be used in classroom instruction?

3. What are the strategies that can be used to support the implementation of Universal Design for Learning in school settings in Qatar?

4. How can principals support a school's transition to a properly constructed Universal Design for Learning framework?

5. What is your experience of working with Universal Design for Learning principles?

6. What are the optimal ways in which student learning can be facilitated in an international school environment?

7. How can teachers plan their lessons for the diversity of students in their classroom?

Appendix E

MEMORIAL
UNIVERSITY

Interdisciplinary Committee on
Ethics in Human Research (ICEHR)

St. John's, NL Canada A1C 5S7
Tel: 709 864-2561 icehr@mun.ca
www.mun.ca/research/ethics/humans/icehr

ICEHR Number:	**20181656-ED**
Approval Period:	August 15, 2018 – August 31, 2019
Funding Source:	Not funded
Responsible Faculty:	Dr. Gerald Galway Faculty of Education
Title of Project:	*School Leadership Strategies for the Implementation of Universal Design for Learning (UDL) in an International School Setting*

August 15, 2018

Mr. Hassan Bouakir
Faculty of Education
Memorial University of Newfoundland

Dear Mr. Bouakir:

Thank you for your correspondence of August 13, 2018 addressing the issues raised by the Interdisciplinary Committee on Ethics in Human Research (ICEHR) concerning the above-named research project. ICEHR has re-examined the proposal with the clarification and revisions submitted, and is satisfied that the concerns raised by the Committee have been adequately addressed. In accordance with the *Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans (TCPS2)*, the project has been granted *full ethics clearance* to August 31, 2019. ICEHR approval applies to the ethical acceptability of the research, as per Article 6.3 of the *TCPS2*. Researchers are responsible for adherence to any other relevant University policies and/or funded or non-funded agreements that may be associated with the project.

The *TCPS2* **requires** that you submit an Annual Update to ICEHR before August 31, 2019. If you plan to continue the project, you need to request renewal of your ethics clearance and include a brief summary on the progress of your research. When the project no longer involves contact with human participants, is completed and/or terminated, you are required to provide an annual update with a brief final summary and your file will be closed. If you need to make changes during the project which may raise ethical concerns, you must submit an Amendment Request with a description of these changes for the Committee's consideration prior to implementation. If funding is obtained subsequent to approval, you must submit a Funding and/or Partner Change Request to ICEHR before this clearance can be linked to your award.

All post-approval event forms noted above can be submitted from your Researcher Portal account by clicking the *Applications: Post-Review* link on your Portal homepage. We wish you success with your research.

Yours sincerely,

Kelly Blidook, Ph.D.
Vice-Chair, Interdisciplinary Committee on
Ethics in Human Research

KB/lw

cc: Supervisor – Dr. Gerald Galway, Faculty of Education
        Associate Dean, Graduate Programs, Faculty of Education

Appendix F

PANEL ON RESEARCH ETHICS
Navigating the ethics of human research

TCPS 2: CORE

Certificate of Completion

This document certifies that

Hassan Bouakir

has completed the Tri-Council Policy Statement:
Ethical Conduct for Research Involving Humans
Course on Research Ethics (TCPS 2: CORE)

Date of Issue: **10 November, 2017**