DIFFERENTIATED INSTRUCTION

Differentiated Instruction: Accommodating the Needs of All Learners

By

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Abstract

The purpose of this qualitative research study is to understand how elementary school teachers differentiate their instruction to meet their students’ learning needs. This study also seeks to uncover teachers’ conceptualizations of differentiation, the challenges they experience with its implementation into their practice and their response to them. Literature on differentiation suggests that teachers are hesitant to implement differentiation into their practice and that few are able to accommodate their students’ learning needs due to their limited understanding of differentiation and lack of training. Consequently, the main research question guiding this study is: How do elementary school teachers differentiate their instruction to meet the learning needs of their students and what outcomes do they observe? Data collected through semi-structured interviews with two elementary school teachers working in the Greater Toronto Area, suggests that teachers in this study have a thorough understanding of differentiation. It also suggests that they are adept at accommodating their students’ learning needs through differentiation and that they recognize the importance of differentiation to student learning. These findings indicate that teachers’ experiences differentiating their instruction and their conceptualizations thereof, have not yet been adequately explored within the literature on differentiation, and that further research may help to gain insight into the complexity of teachers’ experiences with the latter.

Key Words: differentiation, differentiated instruction, instructional strategies
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Chapter 1: Introduction

1.0 Research Context

There is great diversity among students in classrooms today. This diversity is based on both demographic and individual learner differences (Alavinia & Farhady, 2012). Classrooms are full of students from different cultural and experiential backgrounds, and those with an array of exceptionalities (Alavinia & Farhady, 2012). These students often do not fit into traditional teacher directed, whole class instruction classrooms. For example, students from diverse linguistic or cultural backgrounds may not find a match for their culture or language in their classrooms (Tobin & McInnes, 2008), while students with learning disabilities may experience difficulties with reading and writing (Vaughn & Klinger, 2006). Some students have little encouragement at home, while others receive full support to acquire skills and knowledge that surpass their grade levels (Tomlinson, 1999). These students likely work at different readiness levels, have diverse interests and ways of learning (Tomlinson, 2000; Tobin & McInnes, 2008; Alavinia & Farhady, 2012). To create educational environments which will benefit all students, teachers need to adjust their instruction to meet the diverse learning needs of those students (Alavinia & Farhady, 2012).

Educators are often challenged with being able to assist students to achieve their full potential and with being able to meet their individual learning needs (Gouws, 2007). Attending to the learner differences and needs has been historically considered a good practice (Tomlinson & Allan, 2000). In the campaign toward the reassessment of teaching and learning practices, aimed at meeting learner differences, it was possibly Howard Gardner (1983), who originally brought forth the concept of instructional diversification (Alavinia & Farhady, 2012). Howard Gardner’s Multiple Intelligences (MI) Theory (1983) contests the idea that intelligence can be
objectively measured and recognizes the presence of multiple intelligences and abilities, beyond the ones traditionally assessed by intelligence tests (Stanford, 2003; Gouws, 2007). MI theory identifies eight basic intelligences, such as verbal/linguistic, logical/mathematical, visual/spatial, bodily/kinesthetic, as well as musical/rhythmic, interpersonal, intrapersonal and naturalistic (Gardner, 1983; Roper & Davis, 2000). Gardner (1983) believes intelligences to be dynamic and multiple, and argues that each individual has a capacity in all intelligences and strengths in particular ones. He contends that all intelligences offer different resources and competences for further human development.

Gardner’s MI Theory has gained prominence in the past few decades and has been utilized in classrooms with diverse student populations in grade levels beginning pre-kindergarten through college (Campbell, 1997; Silver, Strong, & Perini, 1997; Kornhaber, 2004). Research suggests that when students are offered multiple intelligences instruction that meets their learning needs, their ability to understand and retain learned material improves greatly, compared to students who are taught using a teacher directed traditional approach (Özdemiş, Güneysu, & Tekkaya, 2006). In addition, implementation of MI approach in classrooms is often associated with other positive educational outcomes, such as standardized test score improvements, increase in parent involvement in students’ education, improvements in student motivation levels and behaviour, as well as overall levels of achievement (Kornhaber, 2004; Adcock, 2014; Ahmad, Seman, Awang, & Sulaiman, 2015). MI approach is also found to meet the needs of diverse learners and to foster an environment where all learners are appreciated (Kornhaber, 2004).

The theory of differentiated instruction (DI) emerged out of the necessity to further understand and accommodate individual learner differences (Tomlinson, 1999).
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Tomlinson (2000), a leading expert in the field of DI, argues that differentiation is not a mere instructional strategy, but a new way of thinking about teaching and learning. It is based on the idea that there are differences among students in all classroom environments and that those differences need to be accommodated (Valiandes, 2015). DI is suggested to promote an inclusive classroom environment, by better addressing the needs of each student and by taking care of the social-emotional component of learning (Bondy, Ross, Gallingane, & Hambacher, 2007; Simpkins, Mastropieri, & Scruggs, 2009). It is argued that DI is essential to student learning and that its implementation requires educators to (1) have knowledge of the subject being taught, and (2) know individual student needs and characteristics (George, 2005; Valiandes, 2015).

1.1 Research Problem

Research has found that educators are reluctant to practice DI and few are able to differentiate their instruction to fully address the needs of all students, mainly due to their lack of training (Tomlinson & Allan, 2000; Subban 2006; Cha & Ahn, 2014). Teachers report that one of their biggest challenges in implementing DI is their limited ability to manage student information due to large class sizes and insufficient knowledge of DI (Subban 2006; Cha & Ahn, 2014). Another challenge that teachers experience, is the inconsistency of communications between teachers and parents, specifically teachers’ inability to provide student information to parents, due to lack of time and incomplete information pertaining to student characteristics from parents to teachers (Cha & Ahn, 2014). There are many other challenges concerning implementation of DI in classrooms, and these are further addressed in Chapter Two. In summary, educators recognize the need to accommodate the needs of diverse students in their classrooms, but few are able to accomplish that aim (Tomlinson et al., 2003). Those who attempt to differentiate their instruction are faced with complex difficulties which hinder their ability to
engage in the practice of DI on a regular basis (e.g., Baumann, Hoffman, Duffy-Hester, & Ro, 2000; Jordan & Stanovich, 2004; Tomlinson, 2004; Smit & Humpert, 2012). In addition, because educators are unfamiliar with the components of DI, many have misconceptions with regard to the implementation of DI in their practice (Alavinia & Farhady, 2012). Consequently, while there are many studies that document the effectiveness of DI (Chall, 2000), more research is needed in the area of its implementation and teacher perceptions. Studies that examine challenges associated with the implementation of DI in the classrooms would enable for a greater understanding of this issue (Subban, 2006; Tomlinson et al., 2003; Valiandes, 2015).

1.2 Purpose of the Study

The purpose of this study is to understand how elementary school teachers differentiate their instruction to meet the learning needs of their students. Research suggests that while the idea of differentiating instruction according to student needs has gained momentum, the actual implementation of DI practices has been a complicated endeavour, fraught with misperception and challenges. Thus, this study also seeks to understand teachers’ conceptualizations of DI, as well as the challenges they experience with its implementation. As discussed in Chapter Two, scholars and educators often contest the idea of differentiation as outlined by Tomlinson (1999) and some question those outcomes of DI, which suggest a positive relationship between student gains and differentiation based on learning styles preferences (e.g., Cook, Gelula, Dupras, & Schwartz, 2007). Consequently, this study also seeks to discover the outcomes that teachers observe from their efforts to differentiate their instruction to align with students’ learning needs, and add to the body of existing literature regarding the implementation of DI and its place in student learning. The findings of this research project will be shared with the educational
research community, to further advance the knowledge on practical implementation of DI to meet the learning needs of students.

1.3 Research Questions

The main question guiding this research study is: How do elementary school teachers differentiate their instruction to meet the learning needs of their students and what outcomes do they observe? Subsidiary questions that will guide this project are as follows:

- How do these teachers conceptualize DI?
- What experiences informed their understanding of DI and prepared them to develop competence in differentiating instruction to meet the diverse learning needs of their students?
- How do they identify the learning needs of their students?
- What range of instructional strategies and approaches do these teachers enact to meet particular learning needs?
- What difficulties do they experience in implementing DI and how do they respond to the challenges they face?

1.4 Background of the Researcher

As someone who has had experience struggling to fit into the traditional learning environment, which emphasized teacher directed, whole class instruction, I understand the importance of differentiating instruction to accommodate all learners. My interest in gaining greater insight into differentiation within the classroom is grounded in the aspiration to create an inclusive learning environment for students in my own practice as a teacher. Differentiation and addressing learner needs were not the philosophies that were a part of pedagogical practice during my time in elementary and secondary schools. Students were treated as a homogenous
group of people, who learn in the same way. Accordingly, their individual learning needs were not recognized or accommodated. Because I was not able to connect with the curriculum content or with my teachers’ pedagogical approaches, I did not enjoy my time at school.

As a child I was eager to learn, but while at school, my desire to learn was suppressed by the inevitable requisite to comply and conform to a pre-determined content, process and product of the curriculum. It is important to note that at the time, I did not realize that anything was amiss with my schooling. I came to discover my learning needs during my time in university. I had the freedom to choose the content which I was studying, and having aligned it with my interests, found my learning experience to be rewarding. While my choice over the process and products of learning was still limited, I found that both were in line with my learning needs, which included the necessity to work independently, as well as engage in whole class discussions. Through my schooling experiences, I discovered the importance of meeting students’ learning needs and the outcome thereof on their motivation to learn. In my own teaching practice, I hope to create learning environments that accommodate the needs of all learners, encourage individual expression and promote inquiry, creativity and student engagement.

1.5 Overview

To respond to the research questions, I conducted a qualitative research study, using purposeful, convenience and snowball sampling, and interviewed two teachers about their conceptualization of DI, subsequent selection of instructional strategies, and meeting the learning needs of their students. In Chapter Two, I review the literature on the topic of DI, its implementation in classrooms and challenges associated with thereof. Next, in Chapter Three, I elaborate on the research design. In Chapter Four, I report my research findings and discuss their significance in light of the existing research literature. Finally, in Chapter Five, I identify the
implications of the research findings for my own teacher identity and practice, and for the educational research community more broadly. I also articulate a series of questions that are raised by the research findings, and point to areas for future research.
Chapter 2: Literature Review

2.0 Introduction

This chapter explores key ideas regarding the implementation of DI in the classroom. Subsequent an overview of differentiation, its components and objectives, this chapter investigates philosophical beliefs pertaining to student readiness, interest and learning profile, and discusses content, process, product and environment, as the means by which differentiation can occur. As noted, because Tomlinson (1999) is the main voice in the field of differentiation, this study utilizes her conceptualization of DI in order to establish the framework thereof. Since one of the study’s aims is to uncover how educators understand the meaning of DI, establishing theoretical framing of DI is of importance. Following that, the discussion of DI continues with a summary of research, in support of differentiation and a critical analysis of the latter, where a number of divergent perspectives on DI, its conceptualization and implementation in the classroom, are examined. Accordingly, the implications of tensions in the field of DI are addressed. The chapter concludes with the discussion of DI enactment in the classroom, the outcomes, challenges and misconceptions thereof, as experienced by teachers.

2.1 Differentiated Instruction

DI assumes that students are diverse, and thus, have different readiness levels, interests and learning profiles (Tomlinson & Allan, 2000; Tobin & McInnes, 2008). Because there is variability among students, teachers should anticipate student diversity and modify their instruction according to student needs (Tomlinson, 1999). Differentiation is teachers’ responsive reaction to the individual needs of their students and a teaching philosophy based on the idea that instruction, curriculum, resources and activities should be modified to accommodate for student differences (Tomlinson, 1999, 2000; Tomlinson & Allan, 2000; Willis & Mann, 2000). It is a
student centered approach that recognizes these differences and creates opportunities for all students to engage with the same ideas and to develop important skills, while enabling for multiple pathways to understanding (Tomlinson, 2000; Tobin & McInnes, 2008; Tomlinson & Jarvis, 2009; Dixon, Yssel, McConnell, & Hardin, 2014).

Student characteristics, which teachers consider in differentiating their instruction, are readiness level, interest, and learning profile, which may be shaped by a learning style, intelligence preference or gender (Tomlinson & Allan, 2000). Within the framework of DI, teachers can effectively respond to student differences in both current and emerging levels of readiness, interests and learning profiles and enable all students to have optimal learning opportunities (Tomlinson, 1999, 2000; Tomlinson, 2003; Brimijoin, 2005; Tomlinson & McTighe, 2006; Tomlinson & Jarvis, 2009). Students’ readiness levels, interests and learning profiles, can be accommodated through the modifications to the content, process and products (Tomlinson & Allan, 2000; Tomlinson, 2003; Tomlinson & Jarvis, 2009). These adaptations meet individual learner needs and make the most of the time they spent in school (Dixon et al., 2014). Instructional strategies that enable differentiation based on student characteristics, may include learning centers, compacting, group investigation, tiered products and activities, interest groups, complex instruction, rubrics created by teacher and students, learning contracts and alternative assessment methods (Tomlinson & Allan, 2000).

The goal of DI is to facilitate conditions, whereby students can achieve maximum growth and success (Tomlinson & Allan, 2000). In the context of DI success and personal growth are positively correlated, in that in addition to grade level expectations, teachers consider students’ individual growth, enabling all students to move toward achieving their maximum potential (Tomlinson & Allan, 2000). DI principles include flexible classroom environment, ongoing
assessment of student needs, flexible grouping, “respectful” tasks and collaboration between teachers and students (Tomlinson, 1999; Tomlinson & Allan, 2000; Brimijoin, 2005). In differentiating the curriculum, teachers take on roles of organizers of learning opportunities (Tomlinson, 1995). Within the DI framework, there are several philosophical beliefs, such as students of the same age may differ by their levels of readiness, interests, life and circumstances and their learning profiles, and these differences can have an impact on students’ ability to learn (Tomlinson, 1999; Tomlinson & Imbeau, 2010). Students are argued to learn best when they are able to make meaningful connections between their life experiences, interests and the curriculum (Tomlinson, 1999; Tomlinson & Imbeau, 2010). Finally, the role of school is to help each student perform at their optimal capacity (Tomlinson, 1999; Tomlinson & Imbeau, 2010).

2.1.1 Student readiness

The notion of “student readiness” is students’ starting points and includes their knowledge, skills and understanding relative to the teacher’s instruction (Tomlinson, 1999). For example, students may have existing knowledge of the content being taught, and thus, their readiness levels may be less than, more than, or on par with the class material. Students’ cognitive proficiency, their “prior learning and life experiences, attitudes about school, and habits of mind” have shown to have an effect on their readiness levels (Tomlinson, 2003, p. 3). The aim of readiness differentiation is to provide all students with appropriately challenging content material (Santangelo & Tomlinson, 2009). Student readiness differs from “ability” in that it implies a temporary state, predisposed to change as a result of good instruction (Tomlinson & Imbeau, 2010). Ability, in turn, signifies a fixed condition (Tomlinson & Imbeau, 2010). Because the goal of DI is to encourage continual growth among students, it is important to recognize this distinction.
2.1.2 Interest

Addressing students’ interests is argued to be of significance in their academic development (Tomlinson & Imbeau, 2010). Student interest is that which intrigues students, sustains their attention and peaks their curiosity (Tomlinson & Allan, 2000; Tomlinson & Imbeau, 2010). It is that which invites students to invest their efforts and time in pursuit of knowledge and skills (Tomlinson, 2003). Students bring their existing interests to school, where they have the opportunity to develop new interests (Tomlinson, 2003). For example, students may have interests in the areas of sports and online gaming, but while in school, they can develop further interests in other areas, such as nature or space. Differentiating instruction based on student interests increases their motivation levels and the likelihood of them being engaged in a subject matter (Joseph, Thomas, Simonette, & Ramsook, 2013). Likewise, interest based DI encourages students to learn new things and uncover new interests (Santangelo & Tomlinson, 2009).

2.1.3 Learning profile

Research suggests that students often have diverse learning preferences (Joseph et al., 2013). For example, some students have a preference for working with groups, while others favour working alone (Joseph et al., 2013). While some students are visual or auditory learners, many others are kinesthetic learners (Joseph et al., 2013). Learning profile pertains to ways in which students learn, process information and ways in which their learning style, intelligence preference, gender and culture, influence them (Tomlinson, 1999; Tomlinson & Allan, 2000; Tomlinson, 2003). When instruction is differentiated according to students’ learning profiles, students are offered an opportunity to learn in ways that feel natural to them (Joseph et al., 2013). It is important to note the significance of considering both students’ learning profiles and their
readiness needs, as accommodating the former but not the latter may have little impact on students’ ability to perform (Tomlinson, 2009). Studies show that students achieve more, when the instruction is differentiated according to their learning preferences (Sternberg, 1997; Sternberg, Torff, & Grigorenko, 1998).

2.2 Content, Process, Products

As noted, differentiation can occur by focusing on the process by the means of which students learn, the products of students’ learning, and the content which they learn (Tomlinson, 1999; Tomlinson & Allan, 2000). Content refers to what students learn in the classroom and ways they gain access to that knowledge (Tomlinson, 1999). Content can include facts, generalizations, attitudes or concepts related to the subject being taught, as well as materials that embody these components (Tomlinson & Allan, 2000). Content is not only what students are learning, but also how they access the knowledge (Tomlinson & Allan, 2000; Tomlinson, 2003).

For example, students can get access to material taught through textbooks, field trips, guest speakers, videos, lectures or demonstrations (Tomlinson, 1999). Some of the ways teachers can differentiate content, is by providing students with texts of varying reading levels, using computer programs and videos to convey concepts, or by offering examples that are based on students’ interests (Tomlinson & Allan, 2000; McDuffie & Landrum, 2010).

Similarly to content, process can also be differentiated based on students’ readiness levels, their interests and learning profiles (Tomlinson, 1999). Process is how the learners come to understand information, such as particular concepts or key facts and make sense of it (Tomlinson, 1999; Tomlinson & Allan, 2000). Effective process is one where students “grapple with, apply, or otherwise make meaning of the information, ideas, and skills essential to a lesson” (Tomlinson, 2003, p. 5). In the classroom setting, process generally occurs as an activity
or a set of activities (Tomlinson, 1999). Effective activity is likely to have a “clearly defined instructional purpose”, “focuses students squarely on one key understanding”, “causes students to use a key skill to work with key ideas”, “ensures that students will have to understand (not just repeat) the idea”, “helps students relate new understandings and skills to previous ones” and “matches the student’s level of readiness” (Tomlinson, 1999, p. 43). The process can be differentiated by providing tiered options at different levels of complexity, or by students’ interests (Tomlinson, 1999; Tomlinson & Allan, 2000). It can also be differentiated by using supportive grouping activities and assignment of roles to students, depending on their learning needs (McDuffie & Landrum, 2010).

A product refers to an assessment of students’ knowledge as a result of an extended period of learning (Tomlinson, 1999, 2003). It is students’ opportunity to demonstrate what they have learned and what they have come to understand (Tomlinson & Allan, 2000; Tomlinson, 2003). While the process often involves students producing a tangible outcome, the product denotes a major culminating assessment (Tomlinson, 2003). A good product enables students to “rethink what they have learned, apply what they can do, extend their understanding and skill, and become involved in both critical and creative thinking” (Tomlinson & Allan, 2000, p. 9). Product differentiation should allow students multiple paths to express mastery of learning goals (Joseph et al., 2013). Some of the ways teachers can differentiate products, is by allowing students to assist in the designing of products that reflect the learning goals, encouraging varying expressions of learning, and by allowing diverse working arrangements to be present (Tomlinson & Allan, 2000). Other ways include providing or encouraging the use of different types of resources while creating products, ensuring that products match student readiness levels, as well as by using a variety of different kind of assignments, and by developing quality rubrics that
enable for demonstration of individual and whole class objectives together with students (Tomlinson & Allan, 2000). A superior product differentiation will promote critical thinking, have clear and applicable success criteria, real-world significance and application, and allow for multiple modes of expression (Joseph et al., 2013).

2.2.1 Environment

In her later work, Tomlinson (2003) introduced a fourth dimension of differentiation, the environment in which students learn. The environment, in which students learn, has an effect on everything that takes place in the classroom (Tomlinson, 2003). Tomlinson (2003) outlines two elements of a learning environment: the tone and the operation of the classroom. The operation of the classroom depends on many factors, such as furniture arrangement, procedures for dispersing and collecting materials, as well as those for getting assistance with work (Tomlinson, 2003). The tone of the classroom is paramount in the learning environment (Tomlinson, 2003). Effective learning environment is one where there is a balance between a serious approach to work and celebration of student success, where there is regular evidence of respect for students and teacher, and one where everyone is responsible for the operation of classroom (Tomlinson, 2003).

2.3 Research in Support of Differentiation in the Classroom

Over the last two decades, a large number of researchers and practitioners advocated for the implementation of DI in the classrooms (e.g., Hebert, 1993; Dunn & Griggs, 1995; Lou et al., 1996; Grigorenko & Sternberg, 1997; Sternberg, 1997; Sternberg et al., 1998; Campbell & Campbell, 1999; Beecher & Sweeney, 2008; Tomlinson, Brimijoin, & Narvaez, 2008; Geisler, Hessler, Gardner, & Temple, 2009). The rationale for this support of differentiation in the classroom included assertions that DI promotes an inclusive classroom environment, as it
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addresses the needs of all students and considers social-emotional components of learning (Bondy et al., 2007; Simpkins et al., 2009). In classrooms where teachers implemented DI practices, there was observed improvement in the learning outcomes among students (Lou et al., 1996; Beecher & Sweeny, 2008; Geisler et al., 2009) and these gains continued over time (Tomlinson et al., 2008). Moreover, students whose learning needs were accommodated by the means of differentiation outperformed those who received a more traditional instruction (Dunn & Griggs, 1995; Lou et al., 1996; Sternberg, 1997; Grigorenko & Sternberg, 1997; Sternberg et al., 1998; Campbell & Campbell, 1999). Lastly, differentiation had a positive impact on both short term and long term learning outcomes (Hebert, 1993), with students scoring higher in their attitudes toward learning in DI classrooms (Lou et al., 1996; Campbell & Campbell, 1999).

2.3.1 Divergent perspectives in the field of differentiation

Notwithstanding a wealth of research in favor of differentiation in a classroom, there are those who argue against particular dimensions of differentiation, as outlined by Tomlinson (1999, 2003). Because the learning profile dimension of the model of DI includes learning styles, some scholars argue for the reconceptualization of DI (McDuffie & Landrum, 2010; Pham, 2012). They contend that the differentiation in the classroom is necessary, but maintain that it should not be based on students’ learning styles (McDuffie & Landrum, 2010; Pham, 2012).

While there are many learning style models (e.g., Hill, 1971; Ramirez & Castenada, 1974; Canfield & Lafferty, 1976), the Dunn and Dunn (1993, 1999) model has received the most attention (McDuffie & Landrum, 2010). This learning style theory proposes that individuals have different styles of learning in ways that they focus, engage and retain new knowledge, and that to expand their academic performance, instructional approaches should accommodate these diverse learning modes (Dunn, 1983, 2000). Individuals’ learning styles are comprised of a combination
of emotional, physical, environmental, sociological and psychological elements, which influence how they obtain, store and utilize knowledge (Dunn, 1983). Physical elements include visual, auditory and kinesthetic perceptual strengths (Dunn & Dunn, 1979). According to this model, individual learning preferences are real and can be measured (Burke et al., 1999/2000, as cited in Dunn, 2000), all individuals have diverse strengths and most people are capable of learning (Dunn, 2000). Lastly, responsive environments, methods and resources, matched to students’ learning styles and perceptual strengths, can help them to obtain statistically higher attitude and achievement test scores (Dunn, 1983; Dunn & Dunn, 1992, 1993, as cited in Dunn, 2000).

Despite the logical appeal of the learning styles concept in the field of education, it has generated plenty of controversy (McDuffie & Landrum, 2010). For example, Lilienfeld, Lynn, Ruscio, and Beyerstein, (2009) argue that there are four problems with the learning styles theory, such as (1) there is no clear definition of learning styles, (2) there are no reliable and valid means to measure learning styles, (3) innovative methods of instruction, that differ from students’ regular styles, may produce better outcomes than instruction matched to students’ learning styles, and (4) there are only a few well conducted studies that suggest positive outcomes for learning styles. A dominant concern with the theory, is that there is lack of reliable evidence in support of usefulness of the learning styles, the existence of which have not been scientifically established, and that modifying instruction to match students learning styles does not secure academic attainment (Kavale & Forness, 1987; Pashler, McDaniel, Rohrer, & Bjork, 2008; Scott, 2010; Pham, 2012). Research shows, that while students may report preferences in ways they learn, when these are tested in controlled conditions, they do not appear to make a difference, as learning remains the same, regardless of students’ learning mode (Riener & Willingham, 2010). Although most studies have not used an experimental methodology that can test the validity of
learning styles capably (Pashler et al., 2008). For example, in the overview of research on learning styles, Stahl (1999) concluded that he could not find studies validating the use of learning styles model. Similarly, in their study of interactions between cognitive and learning styles and instructional methods, Cook, Gelula, Dupras, and Schwartz (2007) found that learning and cognitive styles had no effect on learning outcomes.

2.3.2 Implications

When considering tensions concerning learning styles theory, it is important to keep in mind that (1) learning styles theory is one facet of DI, (2) the concept of differentiation as defined by Tomlinson (1999), is multidimensional and should not be dismissed based on one of its elements. Furthermore, while the literature reviewed is instrumental in gaining insight in the field of DI, its purpose is not to serve as “authority to be deferred to, but as a useful but fallible source of ideas about what’s going on, and to attempt to see alternative ways of framing the issues” (Locke, Silverman, & Spirduso, 2004, as cited in Maxwell, 2009, p. 223). A large amount of studies on DI are of quantitative nature (e.g., Geisler et al., 2009; Alavinia & Farhady, 2012; Smit & Humpert, 2012; Valiandes, 2015) and they attempt to explain causality in terms of “observed regularities in associations of events” (Maxwell, 2012, p. 34). This study does not conceptualize causality in terms of positivist perspective. A traditional viewpoint that causal relationships cannot be identified using qualitative research, is rooted in the outdated notion of causality (Maxwell, 2004). Many researchers are gradually accepting qualitative methods as legitimate for causal inference (e.g., Shadish, Cook, & Campbell, 2002). Consequently, this study is approaching causality between DI and student outcomes in terms of “mechanisms and processes that are involved in particular events and situations” (Maxwell, 2012, p. 35).
2.4 Implementation

To differentiate instruction is to acknowledge students’ diverse levels of readiness, learning preferences, interests, language, and background knowledge and to respond appropriately in planning content, process and product dimensions (Dixon et al., 2014). Teachers who employ differentiation attempt to attend to the differences among learners through a wide variety of approaches that adapt and enrich curriculum and teaching methods to meet students’ needs (Tomlinson, 2000). Research suggests that some of the ways teachers differentiate is by providing scaffolding and individualized feedback and instruction, through tiered products and flexible grouping, and by the means of expert tutoring and multi sensorial resources (Werderich, 2002; Tobin & McInnes, 2008; Nicolae, 2014). While many teachers practice differentiation, few differentiate their instruction in ways consistent with the literature on DI (Tomplinson & Cunningham, 2003; Lawrence-Brown, 2004). For example, Tobin and McInnes (2008) reported that while all ten teachers in their study differentiated their instruction, only two consistently complied with the DI framework. Both of these teachers’ approaches “included a propensity towards student choice, organizational variety and validating discourse with their students” (Tobin & McInnes, 2008, p. 6). One of the teachers had full support of her principal, while another did not (Tobin & McInnes, 2008). They differentiated instruction through tiered materials and activities, enabling students to focus on the same understandings, while providing them with varying access routes, expert tutoring, additional supports, scaffolding, whole class and small group instruction, as well as by allowing students’ choice of reading materials and making decisions for them (Tobin & McInnes, 2008).
2.4.1 Outcomes

Studies that examine the impact of DI on students’ learning, report a range of positive outcomes that include improvements to learners’ overall performance, greater gains in mathematics, reading comprehension and word reading, compared to students for whom instruction was not differentiated (Gartin, Murdick, Imbeau, & Perner, 2002; Tieso, 2005; Alavinia & Farhady, 2012; Connor, 2011, as cited in Watts-Taffe et al., 2013). Differentiation was also reported to have a positive effect on test scores of both lower and higher performing students, helped them gain confidence in their mathematical capacities and increased their motivation to achieve and improve in mathematics (Grimes & Stevens, 2009). Despite many studies that observe a positive relationship between DI and learning outcomes, there are those that do not. For example, Smit and Humpert (2012) report that, while the classes that “implement DI do not experience poorer performance on standardized achievement tests” than those that do not differentiate, their study “could not confirm the positive results from DI on student achievement” (p. 1160). The authors cite that a likely reason for the lack of evidence of positive outcomes of DI on student achievement is the standardized format in which students were assessed (Smit & Humpert, 2012). Because the formative assessments were not aligned with the principles of DI, which underline the importance of authentic assessment strategies, the relevance of DI to students’ learning was not fully realized (Smit & Humpert, 2012). On the whole, studies that question the relationship between DI and learning outcomes, are generally those which critique learning styles as a basis for differentiation, as discussed above (e.g., Cook, Gelula, Dupras, & Schwartz, 2007).
2.4.2 Challenges and misconceptions

Teachers who differentiate their instruction adapt their teaching to accommodate the needs of all students in their class, by meeting them where they are at and supporting them in the learning process, in order to maximize each student’s individual growth and success (Dixon et al., 2014). Despite a wealth of research supporting the use of DI in classrooms (e.g., Campbell & Campbell, 1999; Tomlinson, 1999, 2003; George, 2005; Beecher & Sweeny, 2008; Tomlinson et al., 2008), many teachers are hesitant to pursue differentiation and few accommodate varying learner differences (e.g., Gable, Hendrickson, Tonelson, & Van Acker, 2000; Tomlinson & Allan, 2000). Even though teachers often acknowledge the need to address learner variance, they rarely utilize elements of DI to accomplish that goal (Tomlinson et al., 2003). For example, studies show that when planning lessons, few teachers consider students’ learning profiles, interests and cultural differences (Alavinia & Farhady, 2012). Similarly, in a study by Smit and Humpert (2012), teachers reported that they differentiated tasks and goals and adapted the time allocated to each task, but that these practices were not a daily occurrence, rather an occasional add on to their regular instruction.

Research also suggests that teachers may have misconceptions with regard to the practice of DI; specifically, they may assert that they practice differentiation, while in fact, following the traditional approach (Alavinia & Farhady, 2012). One reason for that could be that many teachers are unsure how to differentiate their instruction due to lack of training (Subban 2006; Cha & Ahn, 2014). Teachers often report that as one of their main challenges with DI (Baumann et al., 2000; Jordan & Stanovich, 2004; Tomlinson, 2004). Other challenges teachers experience include large class sizes, limited resources, inadequate preparation time, heavy workloads, and lack of incentive to differentiate (Chan, Chang, Westwood & Yuen, 2002). Furthermore, teachers
are often missing student information and experience difficulties managing it, due to inconsistent communications with parents and lack of time (Cha & Ahn, 2014). Finally, because DI necessitates enhanced classroom management, some teachers are uncertain that successful implementation of differentiation is possible (Nicolae, 2014).

2.5 Conclusion

During the past decade, the notion of differentiation has gained momentum in the educational circles. Differentiation is founded on the idea that there are learner differences, which need to be accommodated. Within the framework of DI, educators modify the content, process, products and the environment to match students’ readiness levels, interests, and learning profiles. Despite a wide appeal of differentiation and educators’ acknowledgement of the need to address learner variance, few teachers differentiate their instruction in accordance with DI principles. One of the key challenges they report is their limited knowledge of DI due to the lack of training. Other challenges are of the structural nature, such as limited resources, heavy workloads, large class sizes and insufficient preparation time. Within educational research there is much support of differentiation, as it is thought to promote an inclusive classroom environment and improve learning outcomes. Although there are divergent perspectives on ways differentiation should be implemented, there is general consensus that it is needed.

As discussed, research has found that educators have many misconceptions and disagreements regarding DI and its implementation. Moreover, many report that their ability to differentiate is hindered by numerous challenges. While there are a number of studies regarding the relationship between DI and student outcomes, greater insight in teachers’ conceptualizations of DI is needed. Likewise, more research with regard to teachers’ implementation of DI is necessary. The present study seeks to understand how teachers conceptualize DI and ways in
which they practice differentiation in their own classrooms. It examines teachers’ experiences with DI, its implementation and the outcomes they observe. This study also explores teachers’ challenges with DI and their response to them – an area often overlooked in educational research on differentiation.
Chapter 3: Research Methodology

3.0 Introduction

In this chapter, I describe the research methodology of the study and the rationale for the decisions that were made. I begin with the discussion of research approach and procedures, where I elaborate on the value of qualitative research and its pertinence to my study. I proceed to identify data collection instruments and review strategies for participant sampling and recruitment. I then explain data analysis procedures and review the ethical considerations relevant to my research study. Following a discussion of methodological limitations and strengths, I conclude the chapter with a brief summary of methodological decisions that I have made and a rationale for those decisions in the context of my research purpose and questions.

3.1 Research Approach and Procedures

Qualitative approaches are often discussed in conjunction with the quantitative methods, and the fundamental differences of the two are often underscored (Carr, 1994). Throughout this process, the superiority of the quantitative methodologies for their ability to produce generalizable results and explain causal relationships, is often implied (Corner, 1991; Marshall, 1996; Shadish et al., 2002), and qualitative approaches are frequently perceived as being inadequate in providing solutions or in bringing forth social change (Carr, 1994). Over the years, this historical bias against qualitative inquiry (Carr, 1994) diminished and many researchers now recognize it as a reliable form of inquiry (e.g., Shadish et al., 2002).

Qualitative research can be defined as “a situated activity that locates the observer in the world”, and that, which “consists of a set of interpretive, material practices that make the world visible” and transform it (Denzin & Lincoln, 2011, p. 3). This explanatory and naturalistic approach to the social world, studies it from the perspectives of its subjects and the meanings
that they bring to complex matters (Marshall, 1996; Hageman, 2008; Denzin & Lincoln, 2011; Creswell, 2013). Rather than aiming at being generalizable, qualitative research strives to explore particular issues or aspects of a phenomena in depth (Giacomini & Cook, 2000), in order to gain a rich and detailed understanding thereof (Creswell, 2013). An important aspect of qualitative research is that it empowers individuals to share their perspectives, enabling for their voices to be heard, while minimizing the power relationships that sometimes exist between researchers and study participants (Creswell, 2013). Given that the purpose of the present study is closely aligned with the goals of qualitative research, the latter is an appropriate strategy for this study. Consequently, this study was conducted using a qualitative research approach and included a literature review, as well as semi-structured interviews with two teachers, who have demonstrated a commitment to differentiating their instruction in order to accommodate the learning needs of their students. Because this research was directed by an open-ended research question, predictions about participants’ experiences were not made, and data from this study was used instead to generate explanations (Swift & Tischler, 2010).

Phenomenology proposes that experience is distinct from reality, and is focused on individual interpretations and meanings (Ashworth, 2008, as cited in Swift & Tischler, 2010). Seeing that the focus of this study was on the examination of teachers’ experiences with differentiation, a phenomenological approach of inquiry was appropriate (Swift & Tischler, 2010). As such, to gain insight in their perspectives on differentiation, with a purpose of understanding the issue of differentiation in a classroom, this study implemented particular features of phenomenological methodology, which included (1) a focus on a phenomenon that was studied, (2) an investigation of the phenomenon with individuals who have had an experience with it, (3) a data collection technique that consisted of interviews with individuals
who have had an experience with the phenomenon, (4) data analysis that followed methodical procedures, which moved from narrow to broader units of analysis (Creswell, 2013), as well as (5) an inclusion of descriptive passages that depicted the “essence of the experience for individuals, incorporating ‘what’ they have experienced and ‘how’ they have experienced it” (Moustakas, 1994, as cited in Creswell, 2013, p. 78).

3.2 Instruments of Data Collection

Observations, interviews, documents and audiovisual materials, are four basic types of data that is gathered as a result of qualitative research studies (Creswell, 2013). The research interview is often considered as one of the most important and widely used data collection methods in qualitative research (Qu & Dumay, 2011). Despite being categorized in a variety of ways, qualitative interviews are often distinguished as unstructured, semi-structured and structured (Fontana & Frey, 2005). A structured interview is comprised of a series of pre-established questions with a limited number of response categories and little deviation from an interview script (Qu & Dumay, 2011). As discussed, the purpose of this research study was to gain insight into teachers’ perspectives on differentiation. As such, a structured interview was inappropriate for this study, as it likely would have limited teachers’ responses. With its roots in ethnography, an unstructured interview is inherently informal and open-ended (Qu & Dumay, 2011). Because most of the data is gathered through participant observation and informal conversations (Fontana & Frey, 1998, as cited in Qu & Dumay, 2011), structural constraints associated with the present study rendered an unstructured interview as unsuitable.

A semi-structured interview is the most common type of interview in qualitative research (Alvesson & Deetz, 2000). It is organized around a series of pre-determined open-ended questions, as well as questions that arise as a result of an exchange between the interviewer and
study participant(s) (DiCicco-Bloom & Crabtree, 2006). The questions are grouped by themes and interpolated with probes, which are designed to provoke more detailed responses (Qu & Dumay, 2011). The emphasis is on guiding the conversation toward the issue about which the interviewer would like to learn (Qu & Dumay, 2011). A semi-structured in-depth interview can take place with an individual or with groups and can last from 30 minutes to several hours (DiCicco-Bloom & Crabtree, 2006). Because of the flexibility embedded in the structure of a semi-structured interview, as well as its comprehensible and accessible format and its ability to disclose important facets of human conduct (Qu & Dumay, 2011), the semi-structured interview protocol was an appropriate instrument of data collection for this study.

An individual in-depth interview allows interviewer to examine social matters more deeply, when compared to a group interview (DiCicco-Bloom & Crabtree, 2006). Consequently, this study consisted of two individual audio-recorded interviews, which were 45 to 60 minutes in length, and took place outside of schools via telephone at a time and place convenient for study participants. The interview protocol (Appendix B) was organized into five sections, beginning with the background information of study participants, their perspectives regarding DI, their practices, the supports and the challenges they experienced with the implementation of DI in the classroom, and then concluding with the next steps where participants were asked to outline their professional goals regarding differentiation, as well as any advice that they may have had for pre-service teachers. Questions included:

- What does differentiated instruction mean to you?
- How do you differentiate your instruction for your students?
- What factors hinder your implementation of differentiated instruction?
3.3 Participants

Sampling procedures are important facets of qualitative research, as they amount to “crucial moments within the overall research design…where the type of contact between researcher(s) and informants is conceptualized – to be later embodied” (Noy, 2008, p. 328). The sample of participants, as outlined below, consisted of individuals who had an experience with a particular phenomenon being examined (Creswell, 2013) and who satisfied a particular sampling criteria. Methodological decisions pertaining to sampling criteria and procedures are outlined below.

3.3.1 Sampling criteria

Participants were selected based on the criteria outlined below.

- Participants were teachers in the Greater Toronto Area (GTA).
- Participants were elementary school teachers.
- Participants had taught at various grade levels.
- Participants had at least five years of teaching experience.
- Participants demonstrated their commitment to differentiating their instruction and had completed professional development in this area.

Selecting a sample is often dependent on the research question and the scope of the study, and thus, qualitative researchers can have different goals when selecting a sample (Koerber & McMichael, 2008). Because the aim of this study was to learn how elementary teachers differentiate their instruction in order to accommodate their learners, the sample criteria was reflective of that aim. To answer my research questions, the participants were elementary school teachers, as the focus of my study was on differentiation in elementary schools. Due to the scope of this study, these teachers were working in the GTA. Participants had also taught at various
grade levels, as I was interested in learning how differentiation was enacted across grade levels. Furthermore, because I wanted to gain insight into differentiation practices from experienced teachers, the participants had at least five years of teaching experience. I believe that five years is a long enough period of time for teachers to gain experience with DI. Lastly, study participants demonstrated their commitment to differentiating their instruction by seeking professional development in that area. This was important, because when teachers seek ways to expand their knowledge in a particular area, they show their commitment to growth within that area. Thus, professional development in the area of DI is indicative of teachers’ dedication to differentiating their instruction.

3.3.2 Sampling procedures

Despite the many terms that often describe qualitative sampling, most fall into one of three major sampling categories in qualitative research, such as theoretical, convenience and purposeful (Marshall, 1996; Koerber & McMichael, 2008). Determining which sampling technique to use mainly depends on the scope of the study and the nature of a research question (Koerber & McMichael, 2008). Theoretical sampling can be best understood in the context of grounded theory, as it is its basic principle (Koerber & McMichael, 2008). Because grounded theory is centered on the idea that data provides theory, the criteria for theoretical sampling emerges along with the research study itself (Koerber & McMichael, 2008). Because this study did not seek to develop a theory, this sampling technique was inappropriate.

Convenience sampling, which is often referred to as opportunistic (Barton, 2001) or accidental (Burnard, 2004), underscores ready availability of the participants (Koerber & McMichael, 2008). A drawback of this sampling technique lies with the researcher’s familiarity with the subject matter or with the population under examination, which can prompt the former
to generalize beyond this population (Koerber & McMichael, 2008). Conversely, this close relationship frequently allows a researcher to gain greater access to the sample, which can guarantee richness of the data that otherwise, could not be realized (Koerber & McMichael, 2008). Snowball sampling is a technique that bears a striking similarity to convenience sampling, in that a researcher commonly begins with a small sample of participants, which is then later expanded to include other potential participants who are recommended by the preceding few (Higginbottom, 2004; Noy, 2008). Snowball sampling technique is both diachronic and dynamic in nature and is often used as a supplementary mean, which helps researchers to enhance their sampling clusters (Noy, 2008). Purposeful sampling is the most common sampling strategy (Marshall, 1996). It entails a process, whereby a researcher is actively searching for participants who fulfill particular criteria (Koerber & McMichael, 2008). In implementing this method, a researcher considers the purpose of the research and chooses samples according to that purpose (Coyne, 1997). An important principle of this technique is selecting individuals with a wide variety of standpoints possible, in order to represent the variation that exists in the population (Higginbottom, 2004).

To recruit participants, this study implemented purposeful, convenience and snowball sampling strategies, as they fit the methodological parameters of this study. In implementing a purposeful sampling technique, the researcher searched for participants by using pre-determined criteria, discussed in section 3.3.1. The researcher is a pre-service teacher who is immersed in a community of both, mentor teachers and teacher colleagues. For that reason, when utilizing a convenience sampling technique, the researcher reached out to that community and asked these individuals to forward her contact information to the people they thought were suitable to participate in her study. This process ensured that the teachers were not under any obligation to
participate, and were doing so voluntarily. Finally, with the implementation of snowball sampling technique, the researcher asked study participants to refer her to individuals who may be appropriate for this study.

3.3.3 Participant biographies

Both participants are elementary school teachers, who work in mainstream classrooms, in a publicly funded school in the GTA. Both have demonstrated their commitment to differentiating their instruction and have completed professional development in this area. To maintain anonymity, they are assigned pseudonyms.

Lea

At the time of the interview, Lea has taught for 13 years at various schools in the GTA. She began her teaching career working in special education classrooms, where she has taught for many years. Her interest and expertise in differentiation, stems from her experience working within these classrooms. Throughout her teaching career, Lea has taught grades one through eight. In addition to her experience in special education classrooms, Lea has experience in teaching computer classes and coaching students. Furthermore, Lea regularly takes part in many other extracurricular commitments.

Emma

Emma, likewise, has an extensive teaching career. At the time of the interview, Emma has taught for over 16 years. She has experience in teaching students from junior kindergarten to grade six. Similarly to Lea, Emma has experience working in special education classrooms. Her work in the Home School Program (HSP) and being a Special Education Resource Teacher (SERT), has helped her to develop competence in differentiating her instruction. As part of her work in these environments, Emma has experience writing Individual Education Plans (IEPs). In
addition, Emma has coaching experience and is part of many other extracurricular engagements.

3.4 Data Analysis

Qualitative data analysis is a methodical process that involves sorting and classifying data collected as a result of a research study (Green et al., 2007). It consists of four steps, which include immersion with the data, coding, creation of categories, and the identification of themes (Green et al., 2007). Data analysis is an iterative process that occurs alongside the data collection (Green et al., 2007). It enables the interviewer to develop an emerging understanding pertaining to the research questions, which informs the questions that are being asked, as well as the sampling (DiCicco-Bloom & Crabtree, 2006). By moving back and forth between the immersion, coding, categorizing and the creation of themes, the researcher is able to systematically make sense of the dataset (Green et al., 2007). Engaging in this analytical process enables the researcher to “test the fit”, as the new data gets incorporated into the analysis (Green et al., 2007).

In the first stage of data analysis, the researcher immerses in the data, which involves reading and re-reading of the transcripts, as well as listening to the recorded interviews (Green et al., 2007). Next, the researcher examines and organizes the information in the data set and assigns descriptive labels or codes to sections of the transcript (Green et al., 2007). Following the coding, the data is revisited and categorized according to the ways in which the research participants discuss particular aspects of a matter under investigation (Green et al., 2007). Finally, the researcher moves beyond descriptive categories toward an explanation or an interpretation of the phenomenon under examination, and the generation of themes occurs (Green et al., 2007). Throughout the process of data analysis, this study followed the procedure discussed above. Subsequent to interview transcription, the researcher immersed herself in the
data, laying the foundation for the steps that followed. Using research questions as an interpretive tool, each transcript was individually coded, and categories of data and themes within the latter were identified. Following these initial stages, the researcher engaged in the meaning making process and discussed the significance of the findings in relation to the existing research on the topic of differentiation in classrooms.

3.5 Ethical Review Procedures

Irrespective of the approach to qualitative inquiry, researchers face numerous ethical issues that surface both during the data collection process and during the analysis of qualitative reports (Creswell, 2013). These embody principles largely connected to the privacy and dignity of individuals, the confidentiality of research findings, as well as the avoidance of harm (Punch, 1986, as cited in Qu & Dumay, 2011). In examining the ethical considerations, DiCicco-Bloom and Crabtree (2006) identify four ethical concerns associated with the interview process. These include (1) reducing the possibility of unanticipated harm, (2) protecting study participants’ information, (3) informing participants about the nature of research, and (4) diminishing the risk of exploitation.

The task of the interviewers is to gather data while listening and encouraging study participants to continue to speak (DiCicco-Bloom & Crabtree, 2006). During this process, the interviewer often reflects on what is said, by conveying the information back to the interviewee (DiCicco-Bloom & Crabtree, 2006). This process can result in unexpected outcomes, with unintended harm to study participants (DiCicco-Bloom & Crabtree, 2006). Researchers must be prepared to offer psychological assistance to the interviewees, should the interviews cause undue harm (DiCicco-Bloom & Crabtree, 2006). During the interviews, study participants may disclose sensitive information that can jeopardize their position within a particular system (DiCicco-
Bloom & Crabtree, 2006). As such, this information must remain confidential, protecting the interests of the interviewees (DiCicco-Bloom & Crabtree, 2006; Qu & Dumay, 2011). Informing the study participants of the nature of the study, may be complicated by the fact that the researcher may not know the type of data that may be uncovered at the outset, and thus, the aims of the study may emerge as a result of the process of data collection (DiCicco-Bloom & Crabtree, 2006). It is suggested that participants consent to participate a number of times throughout the interview process (Ramos, 1989), as well as understand their right to withdraw from the study at any point (Qu & Dumay, 2011). Lastly, because interviewing can be perceived as an exploitative process (Qu & Dumay, 2011), participants should be acknowledged for their contributions to the study (Anderson, 1991).

In order to address ethical issues discussed, as well as others that could arise as a result of this study, a number of ethical review procedures were enacted. To begin, all study participants were assigned a pseudonym and their identities remained confidential. Any identifying markers related to their school or students were omitted. Participants were notified of their right to withdraw from participation at any stage of the process. Although there were no known risks to participation in this study, to anticipate any such outcomes, participants were reassured throughout the interview, as well as the letter of consent, that they had the right to refrain from answering any question that they were uncomfortable with. Moreover, their right to withdraw from participation was reiterated. Participants signed a letter of consent (Appendix A), giving their consent to be interviewed and audio-recorded. The consent letter included an overview of the study, addressed ethical implications, as well as specified the expectations of participation. Upon the completion of the transcription process, study participants had an opportunity to review the transcripts, as well as clarify or retract any statements prior to the data analysis. All raw data
(audio recordings) was stored on the researcher’s password protected computer. This data will be destroyed after five years.

3.6 Methodological Limitations and Strengths

The purpose of the study was to learn how elementary school teachers approach differentiation in the classroom and the type of outcomes they observe as a result of their efforts. Although this study was able to accomplish its goals, there were some limitations. First, due to the scope of the study, the research findings cannot be generalized, as one of the main elements of generalizability is the representativeness of the study sample (Ferguson, 2004). This limitation may lower the credibility of the study. In addition, although this study was able to integrate its findings with other similar studies in the literature on DI, thus positioning itself within the knowledge of that field (Hegyvary, 2002, as cited in Ferguson, 2004), the findings of the study are restricted to the study participants. Second, because observations are one of the key methods of data collection, which can help the researcher to gain an insider view, as well as gain access to a subjective data (Creswell, 2013), not being able to pursue this method of data collection, as a result of ethical parameters of this study, is a second limitation. Finally, while qualitative methodologies do not adhere to any particular sample size standards (Marshall, Cardon, Poddar, & Fontenot, 2013), one of the criteria for determining sample size, is that the latter should maximize what researchers would like to learn (Mertens, 1998). While small sample sizes are known to generate rich data (Koerber & McMichael, 2008), as evidenced in the present study, having a larger sample size would enable an even greater understanding of differentiation, as it occurs in the classroom.

Despite the limitations discussed above, this study has a number of strengths. As conferred, the primary goal of qualitative research is to describe particular facets of a
phenomenon and to understand its deeper meaning (Hageman, 2008). Because this study was able to gain great insight into differentiation and expand understanding of its practical implementation, it was able to achieve that goal. As noted, qualitative research is also known for its ability to give voice to study participants, as well as a space to share their stories (Creswell, 2013). This study created opportunities for teachers to share their personal experiences with differentiation and to make meaning of those experiences. One of the features of phenomenology is an idea that understanding particular phenomenon can be better achieved when the insights about it are gained from those who experienced it firsthand (Creswell, 2013). Seeing that this study was informed by particular aspects of phenomenological methodology, learning about DI from teachers who practice it, enabled for a more authentic understanding of this issue.

3.7 Conclusion

This chapter explained the research methodology implemented in this study. In the discussion of research approach and procedures, I reviewed the definitions of qualitative research, as well as important aspects associated with its implementation, while providing rationale for its utilization in the study. I then explored various instruments of data collection and provided explanations for choosing individual semi-structured interviews as a primary instrument of data collection in this study. Strategies for participant sampling and recruitment were also explored and a sampling criteria was outlined. Following the discussion of four stages of qualitative data analysis, ethical concerns, which could arise as a result of both data collection process and the analysis of qualitative reports, were examined. Accordingly, ethical review procedures implemented in this study were addressed. Subsequent the discussion of methodological limitations, which involved issues associated with generalizability, methods of data collection and those pertaining to the sample size, the strengths of the study were delineated.
These included gaining a deeper understanding of the differentiation, empowering teachers by giving them a voice and a platform to discuss DI, as well as being able to gather data from individuals who firsthand experienced differentiation.

Next, in Chapter Four, I report on the findings of the research.
Chapter 4: Research Findings

4.0 Introduction

In this chapter, I report and discuss the findings that were gathered as a result of semi-structured interviews with two Toronto District School Board (TDSB) teachers in Toronto. The purpose of this project and the interviews is to understand how teachers differentiate their instruction in order to meet the learning needs of their students. Teachers’ conceptualizations of DI and the challenges they experience with its implementation, as well as their response to them, are also explored. Accordingly, the main research question guiding this study is: How do teachers differentiate their instruction to meet the learning needs of their students and what outcomes do they observe? The findings that emerged from the interviews are organized into five main themes. They include:

1. Educators conceptualize DI as an instructional approach that focuses on students’ diverse characteristics and supports them in being able to reach their full potential,

2. Educators’ own formal and informal learning experiences informed their understanding of DI and prepared them to develop competence differentiating their instruction,

3. Teachers utilize formal assessment strategies and informal communication with parents to learn more about their students’ learning needs,

4. Educators use various instructional and interpersonal approaches to assist them in meeting their students’ learning needs, and

5. Educators address challenges to differentiating instruction that arise from limited human resources by prioritizing their tasks and by drawing on supportive networks.

Each theme contains two to three subthemes, which help to further illuminate teachers’ experience with differentiation in their classrooms, as well as their perceptions thereof. Within
each theme, I will begin with the description of the theme, and then move to report the research findings. I will conclude with the discussion of the findings in the context of research literature on differentiation and outline findings that contribute to the latter.

4.1 Educators Conceptualize DI as an Instructional Approach that Focuses on Students’ Diverse Characteristics and Supports Them in Being Able to Reach Their Full Potential

Educators conceptualize differentiation as an instructional approach that enables them to accommodate their students’ learning needs. They suggest that differentiation allows them to focus on their students’ diverse abilities and creates conditions, whereby all students can reach their full potential. Because there is limited data about teachers’ conceptualizations of DI in the literature on differentiation, these findings will help to fill that gap. They will also help to gain insight into beliefs that motivate teachers in their implementation of DI into their practice, thus deepening the understanding of differentiation as it occurs in classrooms. In the sections below, I will first, discuss these educators’ conceptualizations of differentiation as an instructional approach. Then, I will elaborate on their understanding of differentiation as means to focus on students’ diverse abilities and that, which enables them to reach their full potential.

4.1.1 Educators perceive DI as a means of providing varying instruction to their students

One of the ways educators understand differentiation is an approach where the instruction is tailored to students’ learning needs. When asked to interpret the meaning of DI, Emma stated that,

differentiated instruction is…a way of teaching…it’s about getting to know my students as well as possible, and in that way, I can provide each student with experiences and tasks that will help improve and develop their learning…it's giving my students a variety of options for taking in information and it's about observing and understanding the
differences and similarities among [them] and using that information to plan my instruction.

For Lea, differentiation is “teaching different kids differently” and “giving them work in different ways.”

Both teachers allude to the idea that students are diverse and their learning needs are likely to differ. Their conceptualizations of differentiation are in congruence with those found in literature on DI, where the latter is construed as an instructional approach and a philosophy premised on the notion that students are indeed, a diverse group of people, and that instruction, resources, curriculum and activities, should be adjusted in accordance with students’ diverse needs (Tomlinson, 1999, 2000; Tomlinson & Allan, 2000; Willis & Mann, 2000; Tobin & McInnes, 2008). The parallels between these teachers’ understandings of differentiation and those found in literature, suggest that they do not have misconceptions with regard to the practice of DI, as sometimes noted in research (Alavinia & Farhady, 2012).

### 4.1.2 Educators suggest that differentiation is a focus on students’ diverse abilities

Another way teachers in this study conceptualize DI, is as an approach that enables them to focus on students’ diverse abilities. In Lea’s discussion of students in her classroom, she stated that all learners are different and that each one has a different skill set that they bring with them into the classroom. She viewed these skills as strengths and believed that differentiation allows teachers to harness them. Emma’s comments reiterate the conceptualization of differentiation as an emphasis on students’ diverse capacities. For her, students have a “diverse level of expertise and experience in an array of subjects [such as], reading, writing, thinking, problem-solving and speaking.” Similarly to Lea, Emma also perceived students’ diverse abilities as strengths. She described differentiation as a “matter of tapping into their strengths” and suggested the
importance of allowing students to remain true to who they are by “allowing them to be themselves and to respond in a way that they feel safe.” For example, “if they struggle in writing, they certainly can show that they understood the concept through…their strength [such as], dance and drama.”

Lea and Emma’s conceptions of differentiation as a focus on their students’ varying skills and their perception of those skills as strengths, speaks to the research on DI. As discussed in Chapter Two, differentiation is often conceptualized as teachers’ response to their students’ diverse readiness levels, learning profiles and interests (Tomlinson, 1999, 2000). Although these teachers do not use the formal language of differentiation, their descriptions of differentiation as a focus on students’ diverse skills, matches that of readiness and learning profile differentiation, as discussed in literature (Tomlinson, 1999; Joseph et al., 2013). Furthermore, Emma’s suggestion that students need to remain true to who they are is a reference to not only their readiness levels and learning profiles, but also to their interests. Finally, while the research on differentiation points to the latter as being a means of accommodating students’ diverse readiness levels, learning profiles and interests (Tomlinson, 1999, 2000; Tomlinson et al., 2003; Subban 2006; Tobin & McInnes, 2008), it does not specifically address students’ strengths in the context of DI. Consequently, the finding that differentiation enables teachers to harness students’ strengths and their conceptualization of students’ diverse abilities as strengths is significant.

4.1.3 Educators indicate that DI is a process that enables all students to reach their full potential

Conceptualization of differentiation as a process that facilitates conditions, whereby all students can reach their full potential, concludes the discussion of teachers’ perceptions of DI. Both Lea and Emma conceptualize DI as an approach that can help them to reach their students,
to enable them to grow and to help them reach their full potential. Emma stated that the idea behind differentiation is,

maximizing learning of every student…every student has the potential to bring out their best responses. I think the key part of this [differentiation] is…developing problem solving, wanting students to dig deep…that means analyzing and synthesizing versus…just a simple retell…it's about bringing out and exploring big ideas, getting students to ask relevant questions, and…expanding understanding and key concepts…so taking students from…the most basic sort of answer possible, to digging as deep as possible.

Taking students from the most basic interpretations to deep understandings, speaks to Emma’s belief that DI can maximize the learning of every student and help them grow. In addition, for her, differentiation is also about giving students empowerment and a voice, as well as an ability to reach their full potential. In stating that “every kid can do anything”, Lea reinforced the notion of empowerment as a result of differentiation. She also added, that without differentiation, “kids who need it, won’t be successful…they will act out…the won’t succeed…you will lose them”, suggesting the urgency and necessity of the approach.

Teachers’ conceptualization of differentiation, as a process that enables students to achieve personal growth and reach their maximum potential, is reflected in the literature on DI. For example, Tomlinson and Allan (2000), contend that the primary goal of differentiation is to create conditions conducive to students’ learning, where they can grow exponentially and achieve success. The adjustments to content, process, products and the environment, are thought to enable students to make the most of their time at school (Dixon et al., 2014). While the notion of differentiation, as means to help all students achieve their full potential, is supported by
research (Tomlinson et al., 2008; Geisler et al., 2009), the latter is limited to the discussion of the
effect of DI on student learning (e.g., Dunn & Griggs, 1995; Sternberg, 1997; Campbell &
Campbell, 1999; Beecher & Sweeny, 2008) and teachers’ hesitation or limited capacity to
implement differentiation into their practice (e.g., Gable et al., 2000; Tomlinson & Allan, 2000;
Alavinia & Farhady, 2012). As such, teachers’ appreciation of differentiation and their
perceptions of its urgency in their classrooms is a significant finding that extends the research on
differentiation.

4.2 Educators’ Own Formal and Informal Learning Experiences Informed Their
Understanding of DI and Prepared Them to Develop Competence Differentiating Their
Instruction

Teachers contend that their work in special education classrooms with students, who have
diverse learning needs, helped them to gain greater insight into the practice of DI. Similarly, their
learning about differentiation from others through observations, collaboration, and professional
development, further informed their understanding of differentiation and better prepared them to
incorporate it into their practice. Getting insight into experiences that helped to prepare these
educators to practice differentiation is of importance, as it can help direct other teachers,
particularly those in the beginning of their career, towards resources that can be of assistance in
their own practice of DI. Following a discussion of educators’ experiences when working with
students with various learning requirements, I address their experiences of learning about
differentiation from others through observations, collaboration, and professional development.
4.2.1 Educators’ experience in specialized classrooms working with students who have diverse learning requirements informed their understanding and competence in DI

Both teachers indicated that their work in specialized classrooms, with students with diverse learning needs, helped them to gain a greater understanding of differentiation. When asked about the experiences that prepared her to practice DI in her classroom, Emma stated that differentiation was something that she learned through her “first hand teaching instruction” and getting to know her students’ learning needs. She drew on the knowledge she gained being a SERT, as well as her work in the HSP, and stated that the former informed her ability to differentiate. The skills that she acquired as a result of her experiences working with small groups of children with diverse needs, “carried over into a larger group class setting.” Lea’s account of her experience in a specialized classroom reinforced the significance of the latter to an educator’s understanding of DI.

I think that if you teach in a specialized class…a self-contained class like an ISP [Intensive Support Program] class or a home-school program, you just see kids that have such a varied intellectual structure, where they have these really strong strengths but at the same time drowning in a regular classroom because of some need that they have around reading or writing or math, and you just get to learn that you can help them so much if you can harness these strengths…to help them in the areas of need…you have to find where people are at and…as much as you can…give them a starting place of where they are at.

Lea added, that teaching in an environment as mentioned above, taught her to be able to understand the needs of the students in her own classroom.
Both Emma and Lea’s experiences point to their deep understanding of differentiation, which they acquired as a result of their work with students with diverse learning needs. Although these teachers do not consider themselves to be “experts” at differentiation and believe that every classroom presents them with new opportunities to further improve upon their teaching skills, their experiences indicate that they are well prepared to practice DI in their classrooms. This finding contradicts the research on teacher practices of DI, which suggests that educators are hesitant to pursue differentiation (e.g., Gable et al., 2000; Tomlinson & Allan, 2000) due to their limited experience with the latter (Subban 2006; Cha & Ahn, 2014). Throughout the interviews, both teachers argue the importance of differentiation to their students’ learning and offer many examples of their experiences practicing DI. Moreover, the significance of their experience in specialized classrooms, while supporting students with diverse learning requirements to their development of competence in DI, is a finding that was not previously documented in research on differentiation. Teachers’ gradual introduction to differentiation and confidence, which they gained as a result thereof, likewise extends the research on this topic.

4.2.2 Learning about DI from others informed educators’ understanding of it and prepared them to develop competence differentiating their instruction

In addition to their direct work experience with students who have diverse learning requirements, teachers indicated that their understanding of differentiation and their competence in differentiating their instruction were influenced by others through their observations of their practice, collaboration and professional development. While Lea emphasized the importance of professional development to her practice of DI, Emma stated that, in addition to professional development, her competency in differentiation was influenced by her collaboration with her peers and in sharing the expertise, as well as observations of their own differentiated practices.
I was going…through professional development, talking to my peers and colleagues, observing, going into other classrooms and watching it [differentiation] in action…just hands-on…reading professional articles on the Internet or talking amongst colleagues…we dialogue and we exchange, ‘You know I have this student, this learning need, this strength’…so it’s actually sharing information and expertise amongst my colleagues has been really, really vital and helpful.

As noted, within the literature on differentiation, there is much discussion about teachers’ lack of knowledge of DI, their reluctance to implement it in their practice (e.g., Gable et al., 2000; Tomlinson & Allan, 2000), and the outcomes of differentiation on student learning (e.g., Gartin et al., 2002; Tomlinson et al., 2003; Tieso, 2005). There is also some discussion pertaining to educators’ experience with differentiation, their perceptions thereof and the instructional approaches, which they enact when differentiating their instruction (e.g., Alavinia & Farhady, 2012; Smit & Humpert, 2012; Watts-Taffe et al., 2013; Dixon et al., 2014). Despite this rich dialogue among educators and researchers with regard to differentiation, no attention is paid to the experiences that helped teachers to develop competence in their ability to differentiate their instruction. As such, similarly to educators’ work with students in specialized classrooms, the finding that teachers’ competence with differentiation is influenced by their learning from others adds to research on differentiation.

4.3 Teachers Utilize Formal Assessment Strategies and Informal Communication with Parents to Learn More About Their Students’ Learning Needs

Teachers employ formal assessment strategies, such as diagnostic and formative evaluation techniques and students’ output, in order to gain insight into their learning needs. Furthermore, teachers’ communications with students’ parents enable them to expand their
understanding of those needs. Because having a clear picture of students’ learning needs is essential for educators to be able to differentiate their instruction, gaining insight into the strategies that they use to determine students’ needs, will be of importance to educational community. Accordingly, these insights can be further used to inform other educators’ practice of DI. I will begin by addressing formal assessment strategies that educators use, in order to gain a greater understanding of their students’ needs. Following that, I will discuss teachers’ communications with their students’ parents, which help them to extend their knowledge of their students’ diverse learning requirements.

4.3.1 Teachers look at students' academic work for gaps in understanding, which may be indicators of their underlying learning needs

When asked about the means by which they identify their students’ learning needs in order to differentiate their instruction, teachers emphasized the importance of looking at their students’ academic work, using diagnostic and formative assessment strategies, as means to gain insight into their levels of understanding. In helping them to locate students’ gaps in understanding, these strategies pointed teachers to their underlying learning needs. Both teachers indicated that they used Diagnostic Reading Assessment (DRA), as well as their students’ daily written and verbal output, in order to determine their learning requirements and plan their instruction in accordance with them. To reiterate the importance of diagnostic assessment, Emma stated,

whatever it is that we are learning in class, I want to know: ‘What does the student know?’ So…as a starting point, in order to have a sense of where that student is at, I use an array of assessments and [those] assessments tell me where I need to go with that student. Essentially, ‘What does a student know?’ We have an objective and a goal based
on the expectations that tie to the curriculum…and ‘How do I get that student to that point…to think deeply, to be a problem solver, to be a critical thinker?’ And so, that assessment…will paint a picture of that student’s needs.

When it comes to formative assessment, Emma looks for clues to her students’ learning needs in their reading and mathematics response journals, as well as through peer and self-assessment. In addition, she uses observation, anecdotal notes, rubrics and checklists to further inform her understanding of her students’ learning needs.

Literature on teachers’ practices of DI suggests that they are often missing student information, which pertains to their learning needs, and experience difficulties in their ability to manage that information (Cha & Ahn, 2014). The findings discussed above demonstrate two teachers’ proficiency in being able to use formal assessment strategies, to determine their students’ learning needs. Because the latter is an important step in teachers’ ability to differentiate their instruction, this is a significant finding that can add to the research on differentiation. Emma and Lea’s experiences learning about their students’ needs also reveal their ability to recognize the importance of getting to know their students’ learning needs to their practice of DI, as well as their capacity to generate and utilize a wide range of strategies, in order to accomplish that goal.

4.3.2 Teachers communicate with parents to learn about their students' learning needs

In addition to using formal assessment strategies, educators use their informal communications with parents in order to get acquainted with their students’ learning needs. In her discussion of her students’ learning needs, interests and strengths, Emma underlined the significance of engaging in continuous communications with their parents to her ability to get to know her students at a deeper level. Lea’s comments reiterated that sentiment.
Parents, in my experience, are so willing to...they go overboard, they fill out more than they possibly [can] on that piece of paper [letter], both sides...that kind of thing. They are always really happy to help...and tell you what...their [students’] strengths [are], what...their weaknesses [are].

She strengthened her argument by not only indicating the importance of teacher-parent communications to gaining knowledge of her students’ needs, but also to that of her teaching practice. She argued that her planning is dependent on getting to know her students. Without the latter, she noted, her lessons would be unsuccessful.

These findings suggest that, in this study, teachers perceived their communications with students’ parents as an important step in their gaining insight into their learning needs, interests, strengths and weaknesses. They also suggest the relationship between teachers’ capacity to differentiate their lessons according to their students’ learning needs and gaining insight into those needs, through teacher-parent communications. These teachers’ experiences, likewise, indicate that their communications with their students’ parents were effective. This is an important finding in the research on DI, as it contrasts the literature on differentiation, which suggests that teachers experience difficulties in their communications with their students’ parents (Cha & Ahn, 2014). These include inconsistency of communications between teachers and parents and parents’ unwillingness to provide detailed information pertaining to their children’s learning needs to their teachers (Cha & Ahn, 2014). Consequently, parents’ eagerness to provide information about their children’s learning needs to their teachers through ongoing communications and the significance of those communications to teachers’ ability to differentiate their instruction according to their students’ learning needs is a finding, which extends the research on DI.
4.4 Educators Use Various Instructional and Interpersonal Approaches to Assist Them in Meeting Their Students’ Learning Needs

To accommodate their students’ learning needs, educators utilize diverse instructional approaches in their teaching practice. In addition, they emphasize the importance of interpersonal approaches when differentiating their instruction, such as creating a culture of acceptance in their classrooms and developing relationships with their students. As discussed, literature on differentiation often portrays teachers as lacking both, skills and understanding of DI (Subban, 2006; Alavinia & Farhady, 2012; Cha & Ahn, 2014). Gaining insight into strategies that teachers utilize when differentiating their instruction will help to uncover the extent to which they are able to recognize the components of differentiation and to apply them to their practice. I will begin with a discussion of instructional approaches, which teachers use when differentiating their instruction. Then, I will explore the various assessment strategies that they incorporate in order to meet the learning needs of their students. Finally, I will address the role of interpersonal approaches to differentiation, and educators’ ability to meet their students’ learning needs.

4.4.1 Educators implement diverse modes of instruction as a strategy that enables them to meet their students’ learning needs

When incorporating DI into their practice, both educators use diverse instructional strategies in order to accommodate their students’ learning needs. One of these strategies is grouping students according to their strengths and learning needs. For Lea, strength and need-based grouping is enabling all students to engage with content material and being part of a larger learning community. It is also about collaboration and being able to learn from each other.

If a kid is really strong at something, then I try to put him in a group as an expert…if they have really good technological skills, I will put them in the group where there is a need
for a technological person, and then the same thing for needs…if they don't like to write…I will put them in the group where there is a stronger writer.

Emma’s strength and need-based grouping looks like “students working at group tables…listening to one another”, while taking on a specific role. Students who are strong writers are the recorders who take down everyone’s ideas, whereas students who have a deep appreciation for art may draw and focus on visual representation of information. In her classroom, students work in pairs and in small groups, while engaging in meaningful discussions. Similarly to Lea, grouping for Emma is about creating reciprocal learning opportunities for her students, while enabling everyone to be able to contribute. She also recognizes that some students have a preference for working alone, and so she creates opportunities for the latter to take place in her classroom.

In addition to grouping strategies, when differentiating direct instruction and activities that students are engaged in, teachers incorporate a range of materials that are selected in accordance with their learning needs. These include iPads, computers and a whiteboard, as well as manipulatives, Post-Its and leveled books. Enabling their students to have choices in both, tasks and the ways they take in information is of importance to these teachers. Emma explained the significance of student choice: “I provide a lot of choice for students in tasks, in assignments and in projects…giving a choice…motivates students and allows [me] to tap into their strengths and meet [their] needs and diverse interests.” Other instructional strategies, which Emma and Lea incorporate in their practice, include scribing for students who struggle with writing, task modeling, as well as one-on-one instruction.

These findings suggest that the teachers in this study differentiate their instruction in accordance to their students’ readiness levels, learning profiles and interests. They provide their
students with choices, create opportunities for them to engage with content material in ways that feel most natural to them and are cognizant of their readiness levels relative to instruction. They also provide opportunities for all students to access the same classroom and content material, while enabling for multiple pathways to understanding. Their instructional practices correspond to those outlined in the literature on differentiation, which describe the latter as an approach that focuses on students’ readiness levels, learning profiles and interests (Tomlinson & Allan, 2000; Brimijoin, 2005; Tomlinson & McTighe, 2006; Tomlinson & Jarvis, 2009), and which facilitates student choice (Tobin & McInnes, 2008). They also challenge the notion that teachers may not accommodate varying learner differences (e.g., Gable et al., 2000; Tomlinson & Allan, 2000), which include learning profiles and interests (Alavinia & Farhady, 2012).

4.4.2 Educators use diverse assessment strategies in order to meet their students’ learning needs

In integrating DI into their practice, educators use varying assessment strategies in order to gain insight into their students’ levels of understanding and to accommodate their learning needs. These strategies are implemented in accordance with students’ learning needs and consider their readiness levels, learning profiles, strengths, and interests. They include role-play, making videos, drawing pictures, and creating art pieces, as well as drama, dance and using students’ bodies to present information. Other strategies include, pen and paper tasks and scribing. In her description of assessment differentiation, Emma outlined the ways she used students’ strengths to assess their knowledge, while also creating opportunities for them to work on the skills needed for further development.

Children who don't like to write or are having difficulty around writing…we start off with using a pencil grip, doing a lot of exercises around building muscles, developing
muscles in their fingers…manipulating Plasticine, rolling a ball in their hands…but then when it comes to showing [their] level of comprehension and…showcasing what it is that they need to showcase, they will move into…oral responses…I will use questioning and they will provide the answers verbally, and I will write [them] down or I will record [them], using the iPads or any kind of recording device. If they are being asked to put together [ideas]…they might do Author’s Chair. They play a character or moment in the story that they’ve read, or do…a collage, or draw a storyboard. It’s essentially [about] finding creative means for them to showcase what it is that they know.

Both teachers demonstrated their passion for differentiating their assessment strategies and creating opportunities for all students to succeed. Lea outlined the importance of the latter by stating:

He [a student] could tell you everything about it [topic of study], but he won't because the only place that you [a teacher] let him do it, is with a pencil and a piece of paper, the thing that he hates to do. So he won't do it. And you'll never know, whereas if you just sat across from him and just asked him, or videotaped it [or] scribed it, or he was in a group talking with his friends and [they] all presented it...there's so many other ways.

Her comment suggests that without differentiated assessment practice, educators may not only neglect their students’ needs, but they may also not be able to assess their knowledge appropriately. This finding reinforces the role of authentic assessment strategies to students’ learning and to the overall success of DI in the classroom (Smit & Humpert, 2012).

As discussed, differentiation is teachers' response to their students’ learning needs based on their readiness levels, learning profiles and interests, which enables all students to have optimal learning opportunities (Tomlinson, 2003; Brimijoin, 2005; Tomlinson & McTighe,
2006; Simpkins et al., 2009). The strategies, which Emma and Lea implemented in order to differentiate their assessment and accommodate their students’ learning needs, are consistent with those found in literature on DI. In addition, within their strategies there is also a particular emphasis on students’ strengths. Although the research on DI addresses the readiness, learning profile and interest differentiation, it does not specifically address students’ strengths (e.g., Tomlinson, 2003; Brimijoin, 2005; Tomlinson & McTighe, 2006). Strength based differentiation differs from readiness, learning profile and interest differentiation, in that it addresses what students are inherently good at. Accordingly, differentiating one’s instruction according to students’ strengths is a valuable contribution to the research on differentiation, as it can help educators to expand their differentiation strategies.

4.4.3 Educators believe in the importance of interpersonal approaches when meeting their students’ learning needs

Teachers emphasize the importance of creating a culture of acceptance in their classrooms and developing relationships with their students to their ability to differentiate their instruction. In the discussion of her students’ learning needs, Lea argued that,

the key to working with any kid is relationship…so I think that establishing relationships with all kids is important…but if you're working with a kid that [has] some academic hang-ups, especially if they have been dealing with them for a while… maybe they didn't have very good teachers before… it’s going to manifest itself in so many ways…so…the number one thing you have to do, is build that relationship.

Emma suggested having an open door policy and making oneself available to her students. Furthermore, Lea argued that, to be able to differentiate and accommodate students’ needs,
creating a culture of acceptance in one’s classroom is necessary. The latter should be accomplished through both the instruction and peer interactions.

You have to create a culture that is accepting...you have to promote that not just with your instruction with the students, but through peer interactions. You have to teach them how...just like what your parents taught you. If you meet someone that has special needs or maybe acts inappropriately...you are not going to be rude to them because of it. You are going to be understanding and accepting, right? Well, kids are not necessarily like that on their own...you need to teach that to them.

Creating a culture of acceptance and building relationships with students, is an important finding that speaks to social-emotional components of learning. There are many researchers and educators that advocate for the implementation of differentiation in the classrooms (e.g., Beecher & Sweeny, 2008; Tomlinson et al., 2008; Geisler et al., 2009). Their rationale is that differentiation enables educators to create an inclusive classroom environment, as it considers the needs of all students and addresses the social-emotional components of learning (Bondy et al., 2007; Simpkins et al., 2009). Consequently, inclusive learning environment and social-emotional components of learning, such as relationship skills, social and self-awareness, are often perceived as outcomes of differentiation. Conversely, the findings of this study suggest that social-emotional components of learning are also the building blocks of differentiation, which help to facilitate conditions that enable teachers to effectively accommodate the learning needs of their students.
4.5 Educators Address Challenges to Differentiating Instruction That Arise From Limited Human Resources by Prioritizing Their Tasks and by Drawing on Supportive Networks

Teachers asserted that limited human resources pose challenges to their ability to differentiate their instruction and address their students’ individual learning needs. They respond to these challenges by prioritizing their tasks and by relying on their personal supportive networks. Gaining insight into challenges that these educators experience while differentiating their instruction, and the ways that they respond to them, can help other educators in their own practice of DI, as they may have similar difficulties with its implementation. In addition, illuminating teachers’ challenges with differentiation can help to inform the decisions of administrators and other stakeholders, who are responsible for the provision of services to students, in public schools across Canada. I will begin my discussion with the account of teachers’ difficulties with their practice of DI, due to the lack of human resources. I will then address the ways in which these teachers respond to the latter.

4.5.1 Participants face an inability to differentiate their instruction and struggle to support students individually when there is a lack of human resources

Both teachers stated that their roles extend to include various other responsibilities, while providing their instruction and that lack of human resources sometimes deters them from being able to accommodate their students’ individual learning needs. The latter also impedes on their ability to differentiate their instruction. Lea asserted that being a teacher is like being a mother, a social worker and a friend, and that her job is always changing.

Sometimes I need a little bit more time with one student. I find this [happens] a lot with [students] when you are getting to know [them], especially if they have…social skills difficulties or they're fragile or they have behavioral moments. You know, sometimes I
need to just be with them, but I can't because I'm still a teacher and I still have 20 other kids that I'm working with.

Emma maintained that having students with behavioral challenges or other difficulties, such as Flight Risk students, affects the flow of her instruction and takes her away from her ability to differentiate.

I could be organized and have this “perfectly” laid out lesson and tasks that follow, and then I have that student that runs out of not only my classroom, but out of the school…and I have to turn my back and make sure that that student that ran out…is safe and returned back to class. A lot of my time resorts to making sure that this child, is in the class…is safe…and not interfering with the learning of the other students. It means having me call the office multiple times. So the instructional day is continually being interrupted.

Within the literature on DI, teachers report a number of challenges that deter them from being able to accommodate their students’ needs and to employ differentiation into their practice. These include difficulties managing large class sizes, limited resources and heavy workloads (Chan, Chang, Westwood & Yuen, 2002), as well as limited information pertaining to their students’ needs (Cha & Ahn, 2014) and challenges in managing student information (Subban 2006). There are parallels between the findings of this study and the research on DI, in that the issues outlined in the former and in the latter, may occur concurrently and be mutually dependent. For example, one can hypothesize that if a lack of human resources were not an issue, the presence of large class sizes would not have an effect on teachers’ ability to differentiate. Similarly, if classrooms were smaller, being short-staffed, would not threaten that ability. Nevertheless, because implementation challenges, is an area of research that needs further
investigation (Subban 2006), gaining insight into ways limited human resources affect educators’ ability to differentiate, contributes to the literature on differentiation.

4.5.2 Educators respond to the challenges that they experience by prioritizing their tasks and by drawing on supportive networks

In response to the challenges associated with the lack of human resources, which impede on their ability to be able to differentiate their instruction, teachers draw on supportive networks and prioritize their efforts when accommodating their students’ learning needs. When asked about the ways she addresses the issues of not always being able to accommodate the needs of individual students and differentiate her instruction, Lea responded with, “the best thing, I think, is to put your effort where it’s needed most.” Open and ongoing communications with students and parents, as well as administration, colleagues and the support staff, is what helps Emma to deal with those issues.

Number one is the ongoing, open communication with my students…with the class. I am fortunate to have support staff for most of the day…administration, my colleagues, open dialogue…communication with parents, because I want to share with my parents what their child's needs, abilities and strengths are...this is what I'm doing on a daily basis in the classroom…so tap that supportive climate and environment and partnerships.

As discussed in Chapter Two, there is much research about the principles of differentiation, the major components of this approach and its implementation in classrooms (e.g., Tomlinson, 1999, 2000; Willis & Mann, 2000; Tomlinson & Allan, 2000; Baumann et al., 2000; Jordan & Stanovich, 2004; Tobin & McInnes, 2008). Teachers’ lack of preparedness to differentiate and other hindrances that challenge their implementation of differentiation into their practice are also discussed (Subban 2006; Alavinia & Farhady, 2012; Cha & Ahn, 2014). Despite
the wealth of research on differentiation, educators’ response to the challenges that they experience when differentiating their instruction, is an area that is often overlooked. Moreover, educators’ capacity to overcome difficulties associated with differentiation and their determination to differentiate their instruction in spite of these difficulties is also not discussed (e.g., Baumann et al., 2000; Jordan & Stanovich, 2004; Smit & Humpert, 2012). Contrary to research, the teachers in this study demonstrate their capacity to respond to the challenges that they encounter when differentiating their instruction, as well as their commitment to DI, in spite of those challenges. The strategies that they implement, to address the barriers to differentiation, can be used to inform other teachers’ practice of DI.

4.6 Conclusion

The purpose of this study was to gain insight into teachers’ experiences differentiating their instruction, the challenges that they experience with its implementation into their practice and their response to those challenges. Another goal was to gain deeper understanding into teachers’ conceptualizations of DI. The first finding of this study suggests that educators practice differentiation in congruence with the research on DI. That is, they differentiate content, process, products and the environment, in order to accommodate their students’ readiness levels, learning profiles and interests. In addition, educators conceptualize differentiation as means of providing varying instruction to their students, in order to accommodate their diverse learning needs and to enable them to reach their full potential. This finding is likewise, in line with the best practices of differentiation, as outlined in the literature review, in Chapter Two. It is important to note, that these teachers’ confidence in their practice of DI and their conceptualization thereof, are influenced by their extensive experience with differentiation, which includes their work in
specialized classrooms, as well as learning from others through observations, direct collaboration or professional development.

The findings that educators practice and conceptualize differentiation in congruence with research on DI, are significant, as (1) they challenge the idea that educators are not likely to differentiate their instruction in accordance with literature on DI, and accommodate students’ learning profiles and interests, and (2) they contest the notion that teachers misconstrue differentiation, due to their limited understanding thereof. Another finding, which emerged as a result of this study, pertains to educators’ response to the challenges that they experience when differentiating their instruction. When faced with staff shortages, educators reported that they continue to accommodate their students’ learning needs by prioritizing their tasks and by their reliance on supportive networks, such as students, colleagues, administration and parents, via open and ongoing communications. Because teachers’ response to challenges with differentiation is an area that is largely overlooked in the research on DI, the latter is an important finding in the field of differentiation.

Next, in Chapter Five, I consider broad and narrow implications of these findings, provide recommendations and outline areas for further research.
Chapter 5: Implications

5.0 Introduction

In this chapter, I examine the implications of my research study. I begin with an overview of key findings and their significance. Then, I consider the implications of my findings for the educational community and for my own professional identity and practice. I make recommendations that can improve educators’ practice of DI, which are directed towards various stakeholders and the educational community. Next, I identify areas for further research and consider their importance. I conclude this chapter with the summary of my findings and speak to their significance.

5.1 Overview of Key Findings and Their Significance

One of the key findings of this study is educators’ conceptualization of differentiation. Participants perceive differentiation as an approach that enables them to accommodate their students’ learning needs. In implementing differentiation in their practice, they recognize that their students are diverse and that their learning needs are likely to differ, and they adjust their instruction in accordance with the latter. They view students’ individual skills as strengths and believe that differentiation enables them to harness them. Finally, teachers conceive differentiation as a process by the means of which their students can feel empowered and reach their full potential. These teachers’ conceptualization of differentiation is significant, as it is in line with the concept of DI, as outlined in the research (Tomlinson, 1999, 2000; Tomlinson & Allan, 2000; Willis & Mann, 2000). Contrary to the research on teacher practices of DI, which suggests that they do not fully understand differentiation (Alavinia & Farhady, 2012), this study demonstrates that educators have a solid grasp on differentiation, conceptually and in practice.

Another finding of this study speaks to the experiences that inform teachers’
understanding of DI and prepare them to develop competence in differentiating their instruction. These experiences include work in special education classrooms and learning about DI from others. In their discussion of their work in specialized classrooms, teachers indicate the importance of first hand teaching experiences to their understanding of differentiation. They attribute their ability to understand their students’ needs to their work with students with diverse learning needs in small group settings, as part of being a SERT, teaching in HSP or an Intensive Support Program (ISP). When it comes to learning about DI from others, teachers’ observations of their peers’ practice, collaboration and professional development, further contribute to their competency in this area. Research on differentiation often suggests that teachers may not pursue DI (e.g., Gable et al., 2000; Tomlinson & Allan, 2000) due to their limited experience with the latter (Subban 2006; Cha & Ahn, 2014). Yet, the present study demonstrates that teachers have extensive experience with differentiation and that their knowledge thereof, which they have acquired as a result of that experience, enables them to be well equipped to practice DI in their classrooms.

When it comes to matching their instruction to their students’ learning needs, teachers underline the importance of getting to know their students and their needs. To gain insight into their students’ underlying learning needs, they utilize formal assessment strategies, which include diagnostic and formative evaluation techniques, and students’ output. These techniques include DRA, reading and mathematics response journals, observation, peer and self-assessment, as well as anecdotal notes, rubrics and checklists. To further their understanding of their students’ learning needs, as well as their interests and strengths, teachers reach out to their parents for support. The information, which teachers gather as a result of their informal communications with their students’ parents, enables them to plan their instruction in accordance
with their students’ needs. Research on DI suggests that teachers have difficulties obtaining student information and that students’ parents are unwilling to provide detailed information pertaining to their children’s learning needs (Cha & Ahn, 2014). In contrast, the findings of this study suggest teachers’ proficiency in being able to obtain information pertaining to their students’ learning needs. These findings also demonstrate parents’ eagerness to provide information regarding their children’s needs to their teachers.

To meet their students’ learning needs, teachers employ various instructional and interpersonal approaches when differentiating their instruction. Instructional strategies, which these teachers utilize, include scribing, task modeling and one-on-one instruction, as well as grouping students according to their strengths and learning needs, while assigning them specific roles. The materials are also selected in accordance with students’ individual learning needs. In order to assess their students’ levels of understanding, teachers implement assessment strategies that consider their students’ readiness levels, learning profiles, strengths and interests. These instructional approaches, which are consistent with research on differentiation (Brimijoin, 2005; Tomlinson & McTighe, 2006; Tobin & McInnes, 2008; Tomlinson & Jarvis, 2009), challenge the perception that educators may not accommodate varying learner differences (e.g., Gable et al., 2000; Tomlinson & Allan, 2000). When it comes to interpersonal approaches, teachers in this study believe in the importance of creating a culture of acceptance in their classrooms and in developing relationships with their students to their ability to differentiate their instruction. Even though social-emotional components of learning are often perceived as the outcomes of differentiation (Bondy et al., 2007; Simpkins et al., 2009), this finding is significant as it positions the culture of acceptance as the precondition of differentiation.

The final finding of this study pertains to the challenges that educators experience when
differentiating their instruction and the ways they address them. Both teachers believe that lack of human resources limits their ability to differentiate their instruction. This limitation manifests itself in teachers having to take on many roles in their classrooms (e.g., being a mother, a social worker, a friend) and having to attend to various students’ needs simultaneously. Some of these needs include behavioural issues and other difficulties (e.g., Flight Risk students). Although within the literature on DI, there is some discussion of the difficulties that teachers experience when differentiating their instruction (Chan, Chang, Westwood, & Yuen, 2002; Cha & Ahn, 2014), it is an area that requires further investigation (Subban, 2006). Accordingly, learning about the effect of limited human resources on teachers’ ability to differentiate their instruction, contributes to the literature on DI.

When faced with limited human resources, teachers respond by prioritizing their efforts and by drawing on their supportive networks. This process includes open and ongoing communications with students, parents and administration, as well as with colleagues and the support staff, about the difficulties they experience in their classrooms. Despite a wealth of research on differentiation, the areas that receive most attention include a general overview of DI and its principles, as well as its implementation in the classroom and its effect on student learning (e.g., Tomlinson, 1999, 2000; Tomlinson & Allan, 2000; Werderich, 2002; Tieso, 2005; Tobin & McInnes, 2008; Grimes & Stevens, 2009; Smit & Humpert, 2012). Consequently, because teachers’ response to their challenges with differentiation is an area that requires further attention, the findings of this study are noteworthy, as they enable to gain greater insight into this matter.

5.2 Implications

In this section, I outline the implications of my research findings for the educational
community, which includes teachers, researchers, parents and school administration. I conclude this section with the discussion of implications of these research findings for my own professional identity and practice.

5.2.1 The educational community

In light of the existing literature on differentiation, this study raises several points that are of value to the educational community, particularly to teachers, researchers, parents and school administration. First, within the research on differentiation, teachers are positioned as having limited knowledge of DI and as reluctant to incorporate it into their practice. Accordingly, it is often argued that teachers are unlikely to employ instructional approaches associated with DI, or accommodate varying learner differences. Conversely, the results of this study demonstrate that teachers’ conceptualizations of DI and their instructional approaches are consistent with the best practices of differentiation, as outlined in the literature (Tomlinson, 1999, 2000). Second, when teachers’ practice of DI is investigated, it is often maintained that they have limited experiences with differentiation (Subban 2006; Cha & Ahn, 2014). Nonetheless, teachers in this study have extensive teaching experiences, where they have practiced differentiation, which has enabled them to develop competence in the latter. Third, literature on DI suggests that teachers have difficulties obtaining information pertaining to their students’ learning needs. The findings of this study suggest that teachers are adept at gaining insight into their students’ learning needs. Although they utilize a number of pertinent strategies to gather information about their students’ learning needs, their communications with their students’ parents are particularly noteworthy. Finally, because both the challenges that teachers experience when differentiating their instruction and their response to those challenges are areas that have not been fully explored, this present study raises awareness of the type of difficulties that teachers face, their capacity to deal
with these difficulties and their commitment to DI in spite of the latter.

5.2.2 My professional identity and practice

In line with my philosophy of teaching and learning, which involves facilitating conditions, whereby all students can reach their full potential, I have an ongoing commitment to creating inclusionary educational experiences for my students. In recognizing and accommodating students’ individual learning, I believe that DI can help me to create such experiences in my classroom. My work on this project enabled me to gain insight into theoretical underpinnings of differentiation and into practical experiences of educators with the latter. While I have gained much knowledge on differentiation, these experiences allowed me to recognize that I need to further my understanding of DI, particularly in the context of my teaching practice.

Based on the findings of my study, I appreciate the importance of learning about differentiation from others through collaboration with my peers, observation of their practice of DI and professional development. As such, in my own teaching practice, I will seek out opportunities to learn from my colleagues, through the ongoing sharing of expertise and observations of their teaching strategies, when differentiating their instruction. I will also engage in more formal professional development activities that can improve my practice of DI, such as action research, attending conferences and school-based workshops, as well as reading professional books and journals regarding differentiation and attaining further training. Because my research also enabled me to recognize the relevance of having opportunities to work with students in specialized classrooms in various capacities, such as being a SERT, or teaching in HSP and ISP classrooms, I will work towards achieving qualifications that will enable me to work in those environments.
5.3 Recommendations

Education is an important asset that individuals can possess in our society. Elementary education provides children with foundational knowledge and skills which are necessary to pursue further studies and to develop as individuals. Accordingly, in line with Ontario’s equity and inclusive education strategy (Ontario Ministry of Education, 2009), all students should have access to educational experiences that are equitable, tailored to their individual learning needs, and those, which enable them to reach their full potential. In order to achieve student success and create conditions conducive to learning for all students, members of the educational community and stakeholders must work together. Based on the findings of this study, I offer a number of recommendations directed towards faculties of education, schools, and teachers.

5.3.1 Faculties of education

The findings of this study suggest that educators’ teaching experiences in specialized classrooms help them to gain understanding of DI and to develop competence in differentiating their instruction. Because all teachers can benefit from being able to work in classrooms with students with diverse learning requirements, teacher education programs in Ontario should prepare them to be able to enter these classrooms upon graduation. Consequently, my recommendation to faculties of education is to include comprehensive special education training in their teacher training programs, whereby preservice teachers can attain skills and certification to be able to work in specialized classrooms. In addition, I recommend that preservice teachers spend at least one practicum experience in specialized environments, such as an HSP or an ISP. This will enable them to connect their theoretical knowledge and practice, and to learn by doing.

5.3.2 Schools

As discussed in Chapter Four, learning about differentiation from others through
observations of their practice of DI, collaboration, and professional development has helped educators to further expand their knowledge of DI and to improve upon their ability to differentiate their instruction. Accordingly, my recommendation to schools in Ontario is to encourage their teachers to develop and expand upon their knowledge of DI by (1) creating an environment conducive to learning and professional growth, (2) inspiring collaboration between teachers, (3) creating opportunities and space for teachers to be able to work with their peers and exchange ideas, and (4) facilitating school-based development workshops. I also recommend that schools encourage educators to expand upon their practice and skills by providing them with an option to teach in specialized classrooms.

5.3.3 Teachers

In order to develop competence in differentiating their instruction, teachers should seek ways to expand their knowledge of DI and means to address particular learning needs. They can achieve this by learning from others and by engaging in experiences, which will enable them to practice differentiation. Some of the ways educators can learn from others is by observing their peers’ practice, by collaborating with them on projects, and by engaging in the ongoing and reciprocal process of sharing the expertise. Further professional development, such as partaking in professional learning communities (PLCs), attending post-secondary courses and workshops, and reading books and professional journals about differentiation, is also advised. Because teaching experiences in specialized classrooms extend teachers’ knowledge of DI and their practice thereof, as found in this study, I recommend that teachers attain qualifications necessary in order to be able to teach in these classrooms and actively seek opportunities to teach there. Finally, the findings of this study suggest that understanding students’ learning needs helps teachers to be better equipped to differentiate their instruction. Consequently, teachers should get
to know their students by developing relationships with them and by engaging in ongoing and open communications with their parents, who can assist them in getting to know their children better.

5.4 Areas for Further Research

Although there is much literature on differentiation, the areas that are often covered include the principles of differentiation, the extent to which the latter is implemented in classrooms, and the relationship between DI and student achievement. The present study aimed to understand how two elementary school teachers differentiate their instruction in order to meet their students’ learning needs. It also explored teachers’ conceptualizations of differentiation, the challenges they experience with its implementation and their response to them. Although this study was able to produce a lot of rich data, its findings cannot be generalized to the broader community, due to a relatively small sample size. As such, to gain greater understanding into teachers’ conceptualizations of differentiation and the instructional approaches that they enact in order to meet their students’ needs, further studies are needed. Larger sample sizes are also recommended.

This study uncovered that when differentiating their instruction, educators may experience certain challenges, and that ways in which they address these challenges demonstrate resilience, perseverance and their commitment to DI. Because challenges with differentiation and educators’ response to them are areas that have not yet been adequately explored, further research may help to gain insight into the complexity of teachers’ experiences with differentiation. Another key finding of this study pertains to the experiences that help educators to gain confidence in differentiating their instruction. These include their work in specialized classrooms and learning about DI from others. I believe that understanding the experiences that
help educators to develop proficiency in differentiating their instruction is vital, as it can assist others in developing their confidence in this area. For that reason, the relationship between teachers’ experiences in specialized classrooms, as well as their experiences of learning from others and their competence with DI, should be further explored.

5.5 Concluding Comments

In this chapter, I provided a brief summary of my research findings and their significance, and discussed broad and narrow implications of these findings. Based on the research findings of this study, I offered recommendations to various stakeholders and members of the educational community, and outlined areas for further research. The key findings of this study pertain to educators’ conceptualization of differentiation, the experiences that help them to gain competence in differentiating their instruction, and strategies that they utilize in order to gain insight into their students’ learning needs and to accommodate them. These findings are significant, as they enable to (1) gain insight into educators’ experiences with differentiation that were not previously addressed in research and (2) extend the educational community’s understanding of teacher practices of DI, which include their conceptualization of the latter, the instructional approaches that they enact, as well as challenges that they experience when differentiating their instruction and their response to those challenges.

One of my study participants, Lea, stated that “every kid can do everything.” I agree with this sentiment. I believe that DI is one way by the means of which educators can help students to achieve success. I hope that my research findings will enable the educational community to gain insight into differentiation as it occurs in the classroom and will allow them to recognize its significance to student learning. I also hope that my findings will empower researchers to further explore differentiation and encourage them to turn to teachers for direction in their research.
References


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Appendix A: Letter of Consent

Date:

Dear _______________________________,

My name is Svetlana Kovtiuh and I am a student in the Master of Teaching program at the Ontario Institute for Studies in Education at the University of Toronto (OISE/UT). A component of this degree program involves conducting a small-scale qualitative research study. My research will focus on how elementary teachers differentiate their instruction to accommodate the learning needs of their students and the outcomes of differentiation that they observe. I am interested in interviewing teachers who have demonstrated a commitment to differentiating their instruction. I think that your knowledge and experience will provide insights into this topic.

Your participation in this research will involve one 45-60 minute interview, which will be transcribed and audio-recorded. I would be grateful if you would allow me to interview you at a place and time convenient for you, outside of school time. The contents of this interview will be used for my research project, which will include a final paper, as well as informal presentations to my classmates. I may also present my research findings via conference presentations and/or through publication. You will be assigned a pseudonym to maintain your anonymity and I will not use your name or any other content that might identify you in my written work, oral presentations, or publications. This information will remain confidential. Any information that identifies your school or students will also be excluded. The interview data will be stored on my password-protected computer and the only person who will have access to the research data will be my course instructor Dr. Angela MacDonald-Vemic. You are free to change your mind about your participation at any time, and to withdraw even after you have consented to participate. You may also choose to decline to answer any specific question during the interview. I will destroy the audio recording after the paper has been presented and/or published, which may take up to a maximum of five years after the data has been collected. There are no known risks to participation, and I will share a copy of the transcript with you shortly after the interview to ensure accuracy.

Please sign this consent form, if you agree to be interviewed. The second copy is for your records. I am very grateful for your participation.

Sincerely,

Svetlana Kovtiuh
Phone Number:
Email:
Course Instructor’s Name:
Contact Info:
Consent Form

I acknowledge that the topic of this interview has been explained to me and that any questions that I have asked have been answered to my satisfaction. I understand that I can withdraw from this research study at any time without penalty.

I have read the letter provided to me by Svetlana Kovtiuh and agree to participate in an interview for the purposes described. I agree to have the interview audio-recorded.

Signature: ____________________________________________________

Name: (printed) ________________________________

Date: ________________________________________________
Appendix B: Interview Protocol Questions

Thank you for agreeing to participate in this research study, and for making time to be interviewed today. This research study aims to learn how elementary school teachers differentiate their instruction to accommodate the learning needs of their students and the outcomes of differentiation that they observe, for the purpose of gaining understanding of the process of differentiation as it occurs in classrooms. This interview will last approximately 45-60 minutes, and I will ask you a series of questions focused on your perspectives regarding differentiation and classroom practices, as well as challenges and supports related to the process of differentiation. I want to remind you that you may refrain from answering any question, and you have the right to withdraw your participation from the study at any time. As I explained in the consent letter, this interview will be audio recorded. Do you have any questions before we begin?

Background Information
1. How long have you been teaching?
2. What is your current teaching position?
   a. What grade do you teach?
   b. What grades have you taught in the past?
   c. Do you fulfill any other roles in the school? If yes, which ones? (E.g., coach, advisor, leader, resource support etc.)
3. When did you start teaching at this school?
4. Can you tell me more about the school? (E.g., size, demographics, program priorities)
5. As you know, I am interested in speaking with you about differentiating instruction. Can you tell me more about what experiences contributed to developing your interest in this topic, and which ones helped prepare you to practice this approach in teaching?
6. What prior experience do you have that has helped you to develop competence in differentiating instruction?

Teacher Perspectives/Beliefs
1. What does differentiated instruction mean to you? What key characteristics do you associate with this approach to teaching?
   a. What sources contributed to developing your understanding of differentiated instruction?
2. What do you not consider to be differentiated instruction?
3. What key considerations do you believe are important when differentiating instruction?
4. Why do you believe that it is important to differentiate instruction?
   a. What benefits have you observed from this approach to teaching?
   b. What are your key motivations for differentiating your instruction?
5. In your view, is it possible to accommodate the learning needs of all students?
   a. (If yes) How can that be best accomplished?
   b. (If no) What barriers do you believe get in the way of attaining this?
6. In your view, whose learning needs are most commonly neglected in schools and why?

**Teacher Practices**

1. How do you differentiate your instruction for your students?
   a. What does this look like in your classroom? If I were to spend the day in your class, what evidence of differentiated instruction would I see and hear?
   b. On what basis do you typically differentiate? How do you recognize the need to differentiate your instruction? What are the circumstances that lead you to believe that you need to differentiate your instruction?
   c. What is the range of learning needs that you typically need to meet?
   d. Can you describe the range of methods that you use when differentiating instruction?

2. Can you describe what a lesson where you differentiate your instruction typically looks like?
   a. How, if at all, does differentiation factor into your planning?
   b. How, if at all, does differentiation factor into the opportunities for learning that you create?
   c. And what about your assessment practices? Can you provide me some examples of how you have differentiated your assessment practice?

3. What range of outcomes do you observe from students when you differentiate your instruction?

4. How do you identify the learning needs of your students?

5. Can you describe some strategies and approaches that you used to meet specific learning needs?
   a. Can you provide some examples?
   b. Where these strategies effective? How do you know they were effective?

6. In what ways, if any, do you collaborate with colleagues to further improve your practice of differentiation?

**Supports and Challenges**

1. What range of factors and resources support you in being able to differentiate your instruction? (E.g., school climate, leadership from administration, physical space, access to technology or material resources, such as books, music, video)

2. What factors hinder your implementation of differentiated instruction? What challenges do you experience differentiating instruction?
   a. (If any) How do you address these challenges?

3. How can the educational system further support you in your efforts to differentiate your instruction?

**Next Steps**

1. What advice do you have for teachers in the beginning of their career when it comes to meeting students’ learning needs and differentiating their instruction?

Thank you for your participation in this research study.