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Teacher Conceptualization And Implementation Of Differentiated Instruction In The Elementary Reading Classroom

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TEACHER CONCEPTUALIZATION AND IMPLEMENTATION OF
DIFFERENTIATED INSTRUCTION IN THE ELEMENTARY READING
CLASSROOM

A Dissertation

Presented to

The Faculty of the School of Education

The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education

By
Concepcion C. Santana
February 2020
TEACHER CONCEPTUALIZATION AND IMPLEMENTATION OF DIFFERENTIATED INSTRUCTION IN THE ELEMENTARY READING CLASSROOM

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This dissertation was completed in fulfillment of the culminating group research project in compliance with the requirements of the Executive Ed.D, program in Educational Policy, Planning, and Leadership at the College of William and Mary.

Kimberly Y. Davis

Felicia K. Joseph

Concepcion C. Santana
Dedication

This dissertation is the product of a three-year journey that has truly been at the sacrifice of our families and for that, we humbly dedicate our dissertation to them. We remain grateful to their steadfast support and understanding as we ventured on this journey to meet our personal and professional goals. Their willingness to accept our absence from their lives as we secluded ourselves to read and research, participated in regular weekend meetings, and wrote through the wee hours of the night, has aided in our success. We know that time cannot be returned and thus we offer this as a small token to them, which will be forever memorialized.

Kimberly Y. Davis

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Felicia K. Joseph

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Concepcion C. Santana

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Leadership transformation

Collaborative scholarship

Felicia Joseph

Leadership transformation

Collaborative scholarship

Concepcion Santana

Leadership transformation

Collaborative scholarship

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outlive this three-year journey.
Abstract

Differentiated instruction (DI) is an approach to teaching that considers the individual needs of students based on readiness levels, interest, learning styles, and learning profiles. This pragmatic, exploratory, sequential mixed-methods study investigated the conceptualizations of teachers at high-performing elementary schools within Miami-Dade County Public Schools (M-DCPS) regarding DI, the degree of successful implementation, and the extent to which the degree of implementation correlates with student achievement in reading. Data were collected from 29 semi-structured teacher participant interviews, two 90-minute observations of each participant’s reading instruction, and a comparison of i-Ready reading achievement data over two diagnostic assessments. The participants conceptualized that Instructional Delivery and Engagement and Learning Environment were the most important domains within the M-DCPS Framework of Effective Instruction (FEI; Appendix A), which encompasses six areas in which teachers are directly responsible for the actions needed for student success, related to DI. The qualitative and quantitative observational data indicated that Knowledge of Learners, Learning Environment, and Instructional Planning practices, as contained in the FEI, were equally implemented during instruction. Correlation analysis of the frequency of implementation and i-Ready gain scores between diagnostic assessments found a significantly positive correlation of three domains: Knowledge of Learners, Learning Environment, and Instructional Delivery and Engagement. Gaining knowledge of teachers’ conceptualizations and implementation of this approach at high-performing, schools can assist the schools and the district in providing training and support to teachers, which can further promote the effective use of DI in the classroom.
TEACHER CONCEPTUALIZATION AND IMPLEMENTATION OF DIFFERENTIATED INSTRUCTION IN THE ELEMENTARY READING CLASSROOM
CHAPTER 1
INTRODUCTION

Background

In today’s schools there are many struggling readers (Armbruster, Lehr, & Osborn, 2001). Research shows that children who fail in reading and do not improve by the end of their first-grade year are at an elevated risk of failing in other academic areas throughout the school (Shafiuddin, 2012). Furthermore, Hernandez (2011) and Fiester (2010) point out that students not reading proficiently in the third grade are more likely to drop out of high school, making reading performance during third grade a strong predictor of future academic success in secondary education. Additionally, many teachers and parents will attest that reading failure has a detrimental long-term consequence for children’s developing self-confidence and motivation to learn, as well as for their later school performance (Armbruster et al., 2001). Due to these realities, the importance of early learning at the elementary school level must be acknowledged. Lack of reading readiness and performance will prevent or limit students’ access to a variety of future opportunities in life. Therefore, there is a tremendous need to address and increase the number of proficient readers within our society.

The ability for students to read, comprehend, and communicate effectively is crucial if students are to achieve the goals established by the Florida Standards in English
Language Arts, which are based on the Common Core State Standards (Curriculum Associates, 2015). Processing information at various levels of complexity is key to comprehending subject matter within all disciplines. However, results on the 2015 National Assessment of Educational Progress, a national assessment given to fourth graders to measure reading comprehension within the three contexts of literary, informational, and performance task reading, indicate that students in the United States continue to face notable challenges in acquiring the essential skills in reading (Nation’s Report Card, 2015). As of 2015, only 36% of Grade 4 students performed at the proficient or advanced level in reading achievement based on national assessment results. In comparison, only 39% of Grade 4 students performed at the proficient or advanced level in reading achievement in the state of Florida. Miami-Dade County fourth-grade students scored on par with the state (Nation’s Report Card, 2015). Moreover, the results of the 2017 National Assessment of Educational Progress assessment showed no significant difference from the 2015 results with 35% of Grade 4 students performing at the proficient or advanced level in reading achievement at the national level, 41% in the state of Florida, and 42% in Miami-Dade County respectively (Nation’s Report Card, 2017). While the state of Florida and Miami-Dade County outperformed the nation, these results still indicate that less than half of the student population tested is reading proficiently and that there has been no significant increase in measured student achievement, supporting the need for further investigation on how educators can better help their students become proficient readers.

Many factors can influence a student’s ability to read proficiently, including a child’s school readiness, school attendance, family stressors/homelife, limited English
proficiency, and the quality of teaching (Baecher, Artiglieri, Patterson, & Spatzer, 2012; Fiester, 2010). Students come in all shapes and sizes and enter school at various levels of readiness. Each student brings with him or her a variety of knowledge and academic abilities that can contribute positively or negatively to his or her school experience. Some students come in with the basic knowledge of number and letter recognition, while others begin without any exposure to basic school readiness skills such as holding a pencil or having held a book. These differing abilities in a classroom lead to students working at different speeds and some requiring additional time to process information (Whipple, 2012). Today’s classroom teachers are tasked with “providing vastly different students with appropriate instruction to close the inherent gaps, while pushing high achieving students to reach their full potential” (Schmidt, 2017, p. 2). Differentiated instruction (DI) assists teachers in addressing this diversity and allows them to tailor the instruction to meet the needs of all students.

DI is defined as the teacher’s intentional and purposeful planning to implement teaching strategies to meet the individual needs of all learners within an academically diverse learning environment (K. D. Moore, 2015; Tomlinson & Allan, 2000). Given the differences in students’ academic readiness, learning style, interest, and social/emotional standing, teachers must present a variety of teaching approaches and adapt to the needs of the learner: “The model of differentiated instruction requires teachers to be flexible in their approach to teaching and adjust the curriculum and presentation of information to learners rather than expecting students to modify themselves for the curriculum” (Dutt-Doner & Grande, 2011, p. 1). The teacher who takes the responsibility of identifying the needs of the learner, adapting to those needs, and reacting responsively will maximize
student growth and individual student success in the learning process (Stronge, 2018; Tomlinson, 2014). DI is not a formulaic way of teaching; rather, it is a prescription designed to meet the learners where they are in a way that is best suited for their learning and work toward academic achievement.

**Standards-based education.** Given the national emphasis on high-stakes testing and accountability, federal and state policymakers are conscious of the importance of reading at grade level and of the needed focus on increasing student achievement for all students regardless of race, ethnicity, culture, disabilities, and socioeconomic status. With this emphasis in mind, reforms have taken place such as Goals 2000, to the No Child Left Behind Act (NCLB) of 2002, to today’s Every Student Succeeds Act (ESSA), to address reading achievement in the elementary grades and into high school (Schmidt, 2017).

In 1965, the original Elementary and Secondary Education Act (ESEA) was developed to promote legislation aimed at ensuring and providing federal funding to states to ensure every student had access to a quality education (ESEA, 1965). In 2001, the ESEA was reauthorized by Congress under the new title of No Child Left Behind (NCLB), setting high standards in an effort to address the growing achievement gap, promising a new start for students in low-achieving schools (Haller, Hunt, Pacha, & Fazekas, 2016; NCLB, 2001). As former President George W. Bush stated, “The fundamental principle of this bill is that every child can learn, we expect every child to learn, and you must show us whether or not every child is learning” (Strauss, 2015). The stringent provisions within NCLB proved to establish barriers due to single assessment results defining student successes and failures with low scores adversely affecting
students, schools, and school districts (Jackson, 2015). While the emphasis on closing the achievement gap through high standards and accountability was admirable, the prescriptive requirements forcing all school districts to adopt the same approaches regardless of local needs and context and the amount of time devoted to testing, thus reducing the quality and quantity of instruction, were considered flaws in the law (Haller et al., 2016; U.S. Department of Education, 2015).

In 2015, ESEA was, once again, reauthorized and resulted in the passage of the Every Student Succeeds Act (ESSA) of 2015. The revisions found in ESSA reflect current research and emerging best practices and are designed to address many of the barriers and challenges found in NCLB (Dynarski, 2015). Keeping with the original purpose of ESEA, ESSA requires states to provide support for students and schools at risk of academic failure due to inequitable social and economic conditions (ESSA, 2015; Zinskie & Rea, 2016). ESSA shifts the responsibility of accountability back to states, giving them local control for the development of their accountability systems (Weiss & McGuinn, 2016). While ESSA increases states’ flexibility and controls, it also imposes a higher level of responsibility for them to create and implement accountability systems designed to support teaching and learning (ESSA, 2015; Zinskie & Rea, 2016).

In response to the charge of increasing achievement for all students, many states have adopted rigorous curriculum standards with the goal of increasing student performance. The expectations of adhering to high-stakes accountability standards create a challenge for teachers who must ensure that these standards are met while accommodating to the individual needs and strengths of varied learners (McTighe & Brown, 2005). McTighe and Brown (2005) contend that educators must find a balance
between educational standards and individualized approaches to teaching and learning. Standards-based education and DI “must function together as two sides of the same accountability coin” (McTighe & Brown, 2005, p. 235).

Standards-based education calls for clear, measurable, academic standards for all students. These standards outline what students should know and be able to do. Standards-based education strives to provide an equitable educational system, ensuring all students have an opportunity to meet high curriculum standards regardless of ethnicity, socioeconomic status, or learning needs (Thompson, 2009). Curriculum, assessments, and instruction are all aligned to the standards. The standards can be used as a reference point for planning teaching and learning activities and for assessing student progress (Kluth & Straut, 2001). Standards-based instruction offers opportunities for students to meet individual learning goals while engaging in meaningful, content-based activities with peers in the classroom (Kluth & Straut, 2001; Thompson, 2009).

Standards should help teachers set targets and monitor achievement and develop programs that support and improve student learning. Lawrence-Brown (2004), McTighe and Brown (2005), and Tomlinson (2017) recommend that all students participate in an education that addresses rigorous content while honoring differences in learners’ readiness levels, interests, and learning profiles. In standards-based education, the standards provide the curriculum, not the teaching and assessment methods. Tomlinson (2000b) contends that there should be no discord between “effective standards-based instruction and differentiation…. Curriculum tells us what to teach: Differentiation tells us how” (p. 4). Through DI strategies, the teacher takes the curriculum and differentiates the content (what students learn), the process (how students learn), and the product (how
students demonstrate what they learn), thereby leading to a high-quality curriculum and instructional approaches that are inclusive of all students and maximize student learning (Lawrence-Brown, 2004; McTighe & Brown, 2005; Tomlinson, 2000b, 2014, 2017; Tomlinson & Imbeau, 2010).

Federal and state mandates also require teachers to implement scientifically, research-based instructional strategies, holding schools responsible for finding and implementing these strategies while maintaining high expectations for student achievement (Burkett, 2013; Zinskie & Rea, 2016). Thompson (2009) found, “standards-based instruction and a focus on the individual learner have merged on the basis of sound educational theory and effective teaching practices to address the academic divide among learners” (p. 1). With this academic divide in mind, teachers need an effective instructional approach that assists them in meeting the curricular and standards demands while focusing on the individual learning styles and needs of all students. The DI approach is a framework designed to meet the needs of all learners (Lawrence-Brown, 2004; Tomlinson, 2000b, 2017).

**Differentiated instruction.** The growth of cultural and ethnic diversity in America’s classrooms and the mission of providing equal access to the general education curriculum to talented and gifted children, students with learning disabilities, and those in between, makes teaching rather challenging in today’s age (Dixon, Yssel, McConnell, & Hardin, 2014). Nowadays, teachers must provide equal opportunities of learning for children with different interests, learning styles, and readiness for tasks (Tomlinson et al., 2003). Differentiation is an effective approach for teaching diverse students as it implies designing and implementing instruction according to students’ readiness to tasks,
interests, and learning profiles (Algozzine & Anderson, 2007). Differentiated instruction allows teachers to meet the needs of all students by actively engaging them in the learning process. However, the introduction of DI in the classroom is rather challenging for teachers, since teachers sometimes lack the practical skills for successful implementation of DI in the workplace (Rock, Gregg, Ellis, & Gable, 2008; Tomlinson & Imbeau, 2010).

DI enables teachers to address individual student interests, school readiness skills, and learning styles and encourages students to work harder at acquiring a proper level of education (Rock et al., 2008; Tomlinson, 2005). Campbell (2009) stated, “We can differentiate the resources we use, the ways we ask students to interact with the content, and the ways we ask students to demonstrate their learning” (p. 7). Differentiating instruction to meet individual student needs helps children feel that they are valued and respected by the teachers and motivates them to become more involved in the learning process (Rock et al., 2008). Although sufficient literature supports the effectiveness of DI on student achievement, differentiation is not widely implemented in classrooms across the United States (Rock et al., 2008). A plausible explanation for this limited implementation of DI is that educators are ill-prepared for the effective implementation of DI strategies into the classroom setting. While many teachers believe that differentiated teaching would benefit students, they also believe it is not feasible for them to differentiate instruction (Tomlinson, 2005). Teachers are also “creatures of habit,” and modifying established, automatic classroom routines is difficult, considering the demands placed on them by the profession. Additional barriers to effective differentiation include a lack of reflection on students as individuals; a lack of clarity about the expected
learning outcomes for students; an inadequate repertoire of student-centered, flexible instructional approaches; a lack of skills to manage and facilitate flexible instruction; and the lack of reflection on the quality of the content that is being differentiated (Tomlinson, 2005). According to Latz, Neumeister, Adams, and Pierce (2009) and Corley (2005), lack of administrative support, students’ behavioral problems, classroom management problems, and lack of time for differentiation were the main reasons for teachers’ avoidance of the use of DI in the classroom.

**Conceptual Framework**

Numerous foundational educational theorists have identified model circumstances where learning occurs both efficiently and effectively. The theory of constructivism is the building block of DI which is aimed at creating a learning environment that is conducive to learning for all students. The works of Tomlinson provide the conceptual framework for this research study in differentiation in the elementary school reading classroom. Tomlinson provides relevance to support teachers’ use of DI in meeting the needs for all learners.

Tomlinson’s (2009, 2010) Learner Profile Theory suggests that students have a learning preference comprised of four categories that intersect with one another and potentially impact student learning. These four categories—(a) culture, (b) gender, (c) learning styles, and (d) intelligence preferences—help determine the variety of ways students learn. Tomlinson (2009) suggests that learning patterns differ and are affected by both culture and gender, but it is important to refrain from making generalizations of learning style based on these attributes. The way in which students live and interact within their communities and their practiced norms reflect the students’ culture and may
shape their approaches to learning (Tomlinson, 2010). Students’ culture in communication, forms of respect, celebrations, and generational relations adds to their pattern of learning. As with culture-based patterns, Tomlinson (2010) states that gender patterns in learning exist and may be shaped genetically or through socially accepted norms. The Learner Profile Theory describes learning style related to the elements of the environment, social interactions, and personal needs (Dunn & Honigsfeld, 2013; Tomlinson, 2009). The preferred contextual approach to learning may include styles such as working in isolation versus with a peer, working in silence versus working with forms of sound stimulation, or being in a well-lit room versus a room with dim lighting (Dunn & Honigsfeld, 2013; Tomlinson, 2010). Intelligence preferences are neurologically based preferences that shape both learning and thinking (Gardner, 2011; Sternberg, 2012, 2014). It is suggested that the learner is predisposed to a particular intelligence or set of intelligences and that when teachers teach to strengthen and expand these preferences during the process of learning, students are more likely to succeed (Sternberg, 2012; Tomlinson, 2009).

According to Tomlinson (2000b, 2009, 2010), the need for differentiation in instruction within the classroom is based on the varied context in which students learn, the students’ readiness level, and the individual learning profile. To enhance learning, teachers may match the mode of instruction and the approaches to learning preferences but must not abandon the awareness and consideration of the level at which instruction challenges students, without frustration (Tomlinson, 2009; Vygotsky & Cole, 1981). By understanding learning profiles, teachers are able to combine multimodal approaches within the classroom and positively affect teaching and learning. Tomlinson (2010)
further stated that instruction and the learning environment should be differentiated to meet the needs of students who learn differently.

Figure 1 illustrates the conceptual framework that is central to this study. Tomlinson’s Differentiated Instruction Theory encompasses the constructs of Vygotsky and Cole (1981) and Gardner (2011) and was birthed from research findings identifying the influences of readiness, student interest, and preferred intelligences (Tomlinson & Allan, 2000). This theory explains that in order for effective instruction to occur, teachers must respond to the needs of the learner by intentionally modifying content, process, product, and environment (Tomlinson, 2014). T. Hall, Vue, Strangman, and Meyer (2004) define DI as a responsive reaction to the recognition of student differences in the areas of background knowledge, readiness, language, interests, and learning preferences. Teachers may adapt the elements of curriculum and instruction based on these factors (T. Hall et al., 2004). Riddle and Dabbagh (1999) assert that to provide DI successfully, a teacher must accept the responsibility of becoming an intentional and purposeful educator, the facilitator of scaffolded learning activities, and the provider of learning experiences at an individual level of instruction. Corley (2005) and Tomlinson (2003) affirm that active planning is at the cornerstone of effective differentiation and requires offering multiple ways to provide opportunities for access, understanding, and application of learning by students.
Differentiated instruction is a practice nested in the theories of Vygotsky, Gardner, and Tomlinson. The student’s readiness level, learning style, intelligence, and interest are all components of DI. When instruction is modified to meet the needs and interests of the learner, the student is more likely to learn and demonstrate proficiency (Algozzine & Anderson, 2007; Baumgartner, Lipowski, & Rush, 2003; Dixon et al., 2014; B. Hall, 2009; Levy, 2008; Rock et al., 2008; Stronge, 2018; Tomlinson, 2015). The teacher’s adoption of DI will aid in meeting the needs of all students by addressing the individual characteristics of readiness, interests, and learning profiles (Corley, 2005; Lawrence-Brown, 2004; Tiesco, 2003; Tomlinson et al., 2003).

The Miami-Dade County Public Schools (M-DCPS) system has adopted the Framework of Effective Instruction (FEI; Appendix A), which encompasses six areas in which teachers are directly responsible for the actions needed for student success. The framework includes Knowledge of Learners, Instructional Planning, Instructional Delivery, Engagement, Assessment, and Learning Environment, all areas in which teachers are expected to understand, plan for, and effectively implement and deliver instruction that addresses and considers the diverse needs of all students through the use
of DI strategies and activities (M-DCPS, 2015). Each of these areas applies the principles and beliefs outlined by Tomlinson and Imbeau (2010) of the need for teachers to be responsive to students’ readiness to learn, their interests, their styles of learning, their experiences, and their life circumstances (Tomlinson, 2000a).

Tomlinson and Imbeau (2010) stated that “differentiated instruction is a principle-guided method...implemented in the context of a classroom system that contains four interdependent elements: learning environment, curriculum, assessment, and instruction” (p. 19). The FEI takes these elements into account within its six areas of focus, or domains. In the area of Knowledge of Learners, teachers are called upon to be knowledgeable of and responsive to students’ developmental levels and learning needs by providing a range of differentiated activities in the classroom. In the areas of Assessment and Instructional Planning, teachers must use both formative and summative assessments to inform instruction and guide planning (M-DCPS, 2015; Tomlinson & Imbeau, 2010). In the areas of Instructional Delivery, Engagement, and Learning Environment, effective teachers maintain a culture of inclusivity by connecting students’ knowledge, experiences, and interests to learning goals and to engaging diverse activity structures in an environment that is stimulating and challenging and fosters intellectual risk-taking (M-DCPS, 2015). The teachers’ ability to implement differentiation in methodologies and environment is essential to the success of the students within the diverse classrooms throughout M-DCPS.

Problem Statement

Differentiated instruction is a primary concern for teachers who work in present-day classrooms given the varying abilities of students. Meeting the learning needs of
academically diverse students is a priority in today’s schools (Tomlinson, 2005). Schools are racially, culturally, and economically diverse and serve students with different learning abilities, including children with special needs, such as English Language Learners, students with specific learning disabilities, and talented and gifted learners (Dixon et al., 2014). The diversity of student culture and language within M-DCPS, the school district in which the study took place, echoes the needs of the nation as they relate to the importance of the implementation of differentiated instruction in the reading classroom. According to the M-DCPS (2019) Statistical Highlights, M-DCPS currently serves slightly over 350,000 students in 476 schools. The ethnic breakdown of the 350,000 students reflects 7% White, non-Hispanic; 20% Black, non-Hispanic; 71.6% Hispanic; and 1% other. As well, nearly 19% of the students are identified as English Language Learners and receive services through the English for Speakers of Other Languages program.

In addition to the diversity of cultures and languages of the students in M-DCPS, the district is also significantly impacted by varying levels of wealth and poverty. While 74.3% of elementary school students in M-DCPS are eligible for the Free and/or Reduced-Price Lunch program, a disproportionate number of students in higher poverty areas qualify for this program. Teachers in M-DCPS must also provide adequate instruction for students with exceptional needs. M-DCPS serves 81,654 students, or approximately 23% of the student population, with a documented Exceptional Student Education Primary Exceptionality. Of these students 43,990 or 12.5% have been identified as Gifted, with the remaining 37,664 or 10.5% of students being identified within varying exceptionalities such as Specific Learning Disabilities, Autism Spectrum
Disorder, Other Health Impaired, and Developmentally Delayed. The need for a variety of instructional strategies and the purposeful implementation of DI is vital to providing fair and equitable opportunities for academic success to all students in M-DCPS.

The work of education is to promote student learning and to increase student achievement. Fiester (2010) and Hernandez (2011) point out that the time between third and fourth grade is crucial for students learning to read because it is when students make the transition between learning to read and reading to learn. If students do not make that transition effectively, they are at risk of becoming unsuccessful in school (Fiester, 2010). These results support the importance of gauging and determining if the implementation of effective DI in the classroom can contribute to increased student achievement for students at all levels.

The purpose of this study was to investigate the conceptualizations of teachers at high-performing elementary schools within M-DCPS regarding DI, the degree of successful implementation based on these perceptions, and the extent to which the degree of implementation correlates with student achievement in reading. Researching this problem sought to provide evidence that some teachers in the classroom actively implement DI and are successful in increasing student achievement. Conversely, researching this problem provided a means to identify a possible lack of implementation of DI in the two high-performing schools in this study that may be adversely affecting student achievement and growth.

Research Questions

This study addressed the following questions:
1. How do elementary teachers in two high-performing schools conceptualize differentiated instruction?

2. To what extent do third- through fifth-grade reading teachers in high-performing elementary schools in M-DCPS implement differentiated instruction as outlined by the indicators of the district’s FEI?

3. To what extent does the degree of implementation of differentiated instruction in the third- through fifth-grade reading classrooms in high-performing elementary schools correlate with student learning as measured by the i-Ready Diagnostic Assessments?

Significance of the Study

Literacy is an essential skill in today’s society. Low literacy skills can impact the ability to communicate effectively, to understand what is happening in the world, and to obtain employment (Fiester, 2010; Hernandez, 2011). The Alliance for Excellent Education Fact Sheet (2010) noted that the lack of literacy skills contributes significantly to the drop-out rate in the United States, which reaches approximately 1.3 million students annually, and negatively impacts both student achievement and the economy. Although literacy skills may not be the only factors contributing to school drop-out rates, they do play a key role. Students must develop strong literacy skills early that are reinforced and extended throughout their educational careers. Knowles (2009) stated that teachers who utilize DI strategies for reading while keeping their students’ readiness levels, interests, and learning styles in mind provide stimulating learning experiences for students and make reading exciting instead of boring and frustrating. This type of stimulation promotes student engagement, which is associated with academic
achievement and may ultimately help to decrease drop-out rates (Klem & Connell, 2004). Furthermore, Latz et al. (2009) recommended that “differentiation usage is key in reaching and engaging students of mixed ability levels in a traditional classroom” (p. 33).

Our study is valuable to school leaders and classroom educators alike because, much like the one-room schoolhouse of over a century ago, teachers today still face the challenge of meeting the needs of academically diverse students with as large an array of needs as those from the past (Tomlinson, 2014). Teachers are charged with being responsive to the needs of all learners and ensuring that all students realize their potentials and succeed in school (Levy, 2008; Tomlinson, 2000b). Differentiated instruction is an effective approach for all grade levels, subjects, and learners (Algozzine & Anderson, 2007; Tomlinson, 2015). DI “will help teachers meet each child where they are when they enter class and move them forward as far as possible on their educational path” (Levy, 2008, p. 162).

DI is vital in the environment of high-stakes testing and rigorous curriculum standards. Within the M-DCPS system, teachers are expected to ensure that all students demonstrate proficiency of the Florida Standards in each of the core curriculum subject areas, specifically, mathematics, reading, and writing. Teachers are required to respond to the academic needs of all students regarding readiness, interests, and learning styles and must prepare them to meet their full potential (Tomlinson, 2017). This study adds to existing scholarly research on DI and extends current knowledge on how teachers perceive and use DI in their daily teaching. It is important to understand the extent to which teachers conceptualize DI and how this conceptualization influences their use of it as part of their classroom practices. Gaining knowledge of teachers’ perceptions and
implementation of this approach at high-performing, Tier 1 schools can assist the schools and the district in providing support to teachers, which can further promote the effective use of DI in the classroom. Additionally, through thoughtful reflection about their knowledge and experiences with DI, teachers may become more self-efficacious with this approach, leading to its greater implementation in the classroom (Dixon et al., 2014).

Further, the identification of the frequency that recommended DI strategies are used within the elementary reading classroom may strengthen the alignment of identified instructional methodologies suggested within the M-DCPS quarterly pacing guides. Curriculum support specialists who develop quarterly instructional pacing guides may utilize the results of this study to improve recommendations to meet the needs of the diverse learners within M-DCPS better.

While DI strategies are embedded into the district’s FEI, not all teachers within high-performing, Tier 1 schools may have the same conceptual knowledge of DI and may not be implementing these DI strategies to the same degree as teachers may feel overwhelmed or confused about what differentiation means or what differentiation should look like in their classrooms. Wormeli (2005) points out that most schools claim to differentiate instruction for diverse learners, but they are often not able to come to a collective or accurate definition of DI or often have unclear or misdirected explanations. Corley (2005) furthers this assertion, identifying three issues for educators’ reluctance in the use of DI: (a) limited time in planning, (b) adjustment to the role of facilitator, and (c) the need to acquire the skills required to implement DI. These issues can lead to apprehension or reluctance in the implementation of DI strategies in the classroom.
If a correlation is found among a teacher’s conceptualization of DI, the effects of this conceptualization on classroom practice, its alignment to M-DCPS district standards in reading, and increased student learning in reading, a future goal for schools and the district may be to design specific trainings or mentoring programs based on the research data to enhance teachers’ knowledge of DI and increase teachers’ confidence in developing strategies for its effective implementation.

**Definitions of Terms**

*Assessment:* The process of gathering and analyzing data to identify the degree to which students have mastered expected outcomes and further determine instructional decisions (Tomlinson, 2010).

*Content:* “input, what students learn” (Tomlinson, 2017, p. 7).

*Differentiated Instruction:* Instruction which consists of variances in the educator’s delivery of content, process, product, and the learning environment (Tomlinson, 2000a).

*Flexible Grouping:* Instructional groups that continuously change depending on the lesson and the needs of the learner. Groups are formed by the teacher based on learning objectives, student interest, learning preferences, products, achievement levels, and assessment (Brulles & Brown, 2018).

*High Performing School:* Schools within M-DCPS that have earned a school grade rating of A or B from the Florida Department of Education, based on results from annual high-stakes state assessments.

*Interests:* “That which engages the attention, curiosity, and involvement of a student” (Tomlinson, 2010, p. 16).
*i-Ready*: a computer-based instructional program aimed at providing adaptive, leveled lessons and diagnostic assessments that are reflective of state standard in Reading and Mathematics (Curriculum Associates, 2014).

*Learning Profile*: “A preference for taking in, exploring, or expressing content, shaped into four elements and the interactions among them” (Tomlinson, 2010, p. 17).


*Phenomenological Research*: research grounded in philosophy and psychology that is based on the individual’s described “lived experiences” and culminates with descriptions from a group of persons who have experienced the same phenomenon (Creswell, 2014).


*Product*: “output, or how students demonstrate what they have learned” (Tomlinson, 2017, p. 7).

*Readiness Level*: “A student’s current proximity to specified knowledge, understanding, and skills” (Tomlinson & Imbeau, 2010, p. 14).

*Regular Education Initiative*: First formally introduced in 1986 by former Assistant Secretary of Education, Madeleine C. Will, this initiative calls for general educators to become more responsible for the education of students who have special needs in school.
**Scaffolding:** Support and guidance offered to students during instruction within the classroom setting (Boblett, 2012).

**Standard-based Education:** a process for planning, delivering, monitoring and improving academic programs in which clearly defined academic content standards provide the basis for content in instruction and assessment (Lawrence-Brown, 2004).

**Tiered School:** M-DCPS relies on an academic support system that categorizes schools utilizing the District Support Formula to target curriculum support to all schools within the district through a three-tiered system. Schools are ranked based on the District Support Formula score from lowest to highest, with the lowest 25% of schools identified as Tier 3, schools previously identified as Tier 3 and currently demonstrating improved student performance identified as Tier 2, and all other schools identified as Tier 1 (D. Moore, 2018).
CHAPTER 2
REVIEW OF RELATED LITERATURE

In an age when schools are accountable for teaching and classrooms are filled with students differing in academic, social, and cultural characteristics, it is critical to understand what differentiated instruction (DI) is and what it is not as well as its relevance in classrooms today. It is common knowledge that no two students are alike. DI is “teaching with student variance in mind” (Tomlinson, 2005, p. 9). This philosophy is based on the premise that instruction should vary and be adapted to meet the needs of diverse learners in the classroom better based on students’ readiness levels, interests, and learning profiles (Algozzine & Anderson, 2007; B. Hall, 2009; Tomlinson, 2000a, 2014, 2017). As such, “differentiated instruction is ‘responsive’ teaching rather than ‘one-size-fits-all’ teaching” (Tomlinson et al., 2003, p. 1). Differentiation challenges both the advanced and the struggling learners to meet the learning goals through a variety of methods while maintaining the consistency of the academic, curriculum standards (Gregory & Kuzmich, 2004; Tomlinson, 2014).

In addition to what differentiation is, Tomlinson (2017) further described what differentiation is not. Differentiation is not (a) “individualized instruction,” (b) chaotic, (c) just another way to provide homogeneous grouping, (d) just for outliers, or (e) just “tailoring the same suit of clothes” (Tomlinson, 2017, p. 4), meaning making just a small adjustment to a lesson or lesson activity.
DI is directly relevant to the classroom and offers several advantages over traditional instruction. This format meets the needs of a diverse student body with a variety of learning styles, accommodates students with disabilities or special needs, facilitates language learning among ESL students, stimulates creativity, and promotes higher-order thinking skills (De Jesus, 2012). Students of all backgrounds and abilities can benefit from this differentiated approach.

The purpose of this chapter is to review the professional literature pertaining to DI. This chapter begins with a discussion of the historical background of DI, including three major underlying theories: Vygotsky’s constructivist learning theory, Dewey’s progressive education theory, and Gardner’s theory of multiple intelligences. Next the discussion focuses on critical aspects of DI, including learning environment, curriculum, assessment, instruction, student characteristics, elements of DI, and flexible grouping. Following is a review of relevant articles and research studies pertaining to teacher efficacy and challenges in implementing DI, DI in the reading classroom, using DI to meet the needs of diverse students, and DI and increased student performance. The discussion closes with an overview of DI in reading within the M-DCPS system.

**Historical Perspective of Differentiated Instruction**

The practices of differentiated instruction are not new to the world of education. Since the establishment of the United States, the one-room schoolhouse set the expectation of instructing students at various ages and abilities within the same classroom. Given the constraints related to time, resources, and space, teachers needed to be flexible in addressing multiple learning needs according to individualized timetables (Gutek, 2010; Tomlinson, 2005). Tomlinson (2005) further asserted,
In the United States, differentiation was a way of life in the one-room schoolhouse. There, the teacher knew students would vary greatly in age, experience, motivation to learn, and proficiency. To effectively instruct the range of students, teachers had to be flexible in their use of time, space, materials, student groupings, and instructional contact with learners. Teachers could not assume students were essentially alike in their learning needs, and could not suppose that teaching one topic in one way according to one timetable was a viable practice. (p. 8)

The later transition to multi-classroom schools structured by grade level, age, and exceptionalities brought about the expectation of homogeneously grouped students, and the use of differentiation declined (Tomlinson, 2005). However, more recently the increased emphasis on high-stakes standardized assessment has reignited the need to differentiate instruction in order to meet the needs of the individual learner better (Beecher & Sweeny, 2008; Gregory & Kuzmich, 2004; Levy, 2008; Tomlinson, 2005).

**Theoretical Framework**

Educators and theorists have refined the practices of DI to meet the specific needs of students through decades of changing curricular expectations and instructional practices. As such, “differentiated instruction is a compilation of many theories and practices” borne out of the initial desire to challenge gifted and talented students in the general education classroom (T. Hall, 2002, p. 2). Together, the theories of Vygotsky, Dewey, Gardner, and Tomlinson provided the conceptual framework for this research study in differentiation in the elementary school reading classroom.
Vygotsky’s constructivist learning theory. In general, constructivist learning theory explains that learners build, or construct, new understandings by drawing upon prior knowledge and experience (Yoders, 2014). Like experience, knowledge is an individual property that varies with each person (D. L. Meyer, 2009). Vygotsky’s zone of proximal development (ZPD), grounded in constructivist learning theory, is the precarious range between what the learner knows and what is unknown (Vygotsky & Cole, 1981) or what the learner can accomplish with and without aid from the teacher (Yoders, 2014). Vygotsky’s theory supported the notion that “when a student is in the zone of proximal development for a particular task, providing the appropriate assistance will give the student enough of a ‘boost’ to achieve the task” (McLeod, 2012, p. 1).

Scaffolding is one technique by which the teacher moves the learner through the ZPD by providing high levels of support that progressively decrease in a planned manner as the learner experiences success (Yoders, 2014). Educators must provide instruction just beyond the student’s independent instructional level and engage the learner in meaningful scaffolding of instruction (Vygotsky & Cole, 1981). Thus, in the ZPD, the teacher accepts the responsibility of becoming an intentional and purposeful educator, the facilitator of scaffolded learning activities, and the provider of learning experiences at an individual level of instruction (Riddle & Dabbagh, 1999).

Students will reach and move through their individual zones at a variety of times (Colter & Ulatowski, 2017). By planning for individual development levels, building on students’ prior knowledge and empowering students to accept challenging tasks, educators can apply Vygotsky’s theory to lesson design. Achievement is associated with moderate challenges in learning tasks; therefore, it is important for teachers to identify
student readiness in order to push them to a challenging level. Vygotsky’s description of modifying instruction to meet the needs of the individual student is differentiated instruction.

**Dewey’s progressive education theory.** Dewey’s (1938) progressive education theory further supported the conceptual framework for this study in DI. Students learn best when learning is based on individual interests, abilities, and habits (Dewey, 1938). Dewey (1938) further asserted that by building on a student’s prior knowledge through authentic opportunities facilitated by the educator, students can make connections, and new learning occurs. As partners in students’ education, teachers foster independence in learning and guide students to discover meaning within content (Dewey, 1929). Teachers must also modify curriculum and pedagogy to meet individual interests and abilities (Dewey, 1938), ideas that influenced educational reforms, particularly for special needs students (Shyman, 2012; Sikander, 2015). Furthermore, by making learning interesting to students through instruction that incorporates real-life experiences, students are intrinsically motivated and empowered to become lifelong learners (Dewey, 1900/1902/2001; Nordgren, 2013).

**Gardner’s multiple intelligences theory.** Gardner’s (2011) multiple intelligences theory explains that individuals possess different types of intelligences. Although students possess more than one type of intelligence, they learn best when they work within their area of strongest intelligence (Ceylan, 2018; Gardner, 1993). Gardner (2011) identified nine distinct intelligences: (a) logical/mathematics, (b) interpersonal, (c) intrapersonal, (d) spatial, (e) verbal, (f) auditory, (g) naturalist, (h) musical, and (i) existential. Teachers must identify the student’s strength from these nine intelligences
and then purposefully differentiate instruction through methodologies that address the specific learning style of each student (Gardner, 2011; Kelly, 2008). Gardner’s multiple intelligences theory supports the idea that all intelligences must be nurtured individually and in combination by offering a repertoire of teaching methodologies that go beyond traditional teaching practices (Armstrong, 2004).

The theories of Vygotsky, Dewey, and Gardner provide the constructs of Carol Tomlinson’s principles of DI. Table 1 provides a succinct crosswalk of the alignment of DI and these historical theories. These principles are embedded in the components and elements of Tomlinson’s Differentiated Instruction Theory (Tomlinson, 1999a).

Table 1

**Crosswalk of Theoretical Frameworks**

<table>
<thead>
<tr>
<th>Tomlinson’s Principles of Differentiated Instruction</th>
<th>Vygotsky’s Constructivist Learning Theory</th>
<th>Dewey’s Progressive Education Theory</th>
<th>Gardner’s Multiple Intelligences Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readiness</td>
<td>A student’s proximity to specified learning goals</td>
<td>Passions, affinities, kinships that motivate learning</td>
<td>Preferred approaches to learning</td>
</tr>
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<td>Learner Interest</td>
<td></td>
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<tr>
<td>Learning Profile</td>
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**Components of Differentiated Instruction**

Although no single formula for creating a differentiated classroom and no one right way to differentiate instruction exists, there are some principles that guide the approach. Rock et al. (2008) and Tomlinson (1999a) identified the following principles as guides to developing differentiated classrooms:

1. The teacher focuses on essential ideas and skills in each content area.
2. The teacher responds to individual student differences.

3. There is an ongoing integration of assessment and instruction.

4. Teachers and students work collaboratively and flexibly together.

5. Students participate in respectful work that addresses their readiness, interests, and learning profiles.

6. The teacher adjusts or modifies content, process, and products to meet individual students’ levels of prior knowledge, critical thinking, and expression styles.

In this section, these principles are explored through the discussion of the following components of DI: learning environment, curriculum, assessment, instruction, student characteristics, elements of DI, and flexible grouping. The first four components of DI discussed below are elements of the classroom system. Tomlinson (2015) stated that the heuristic manner of differentiation “stresses the interrelated roles of classroom environment, curriculum, assessment, and instruction…in addressing the varied readiness levels, interests, and approaches to learning that are inevitable” (p. 203) in the academically diverse classrooms of today.

**Learning environment.** Learning environment refers to “the physical and emotional context in which learning occurs” (Tomlinson & Imbeau, 2010, p. 19). In differentiated classrooms, teachers create a positive classroom climate that promotes optimal learning by viewing students as individuals to be appreciated and respected (Burke & Burke-Samide, 2004). The first step in creating a positive classroom climate is tending to the physical appearance, organization, and structure of the classroom, such as through the use of colorful décor, displays of student work, and arrangement of furniture.
to support both collaborative and independent work that can help attract student interest and help shape student success (Tomlinson, 2017; Tomlinson & Imbeau, 2010). The second and more significant context of the learning environment is the intangible emotional climate. Teachers share the responsibility for learning with students, who are encouraged to take risks by sharing ideas, questioning, and providing solutions to problems with the assurance that they will not be judged (de Anda, 2007; Tomlinson, 1999a). A positive learning environment promotes student autonomy, motivation, and self-regulation (Young, 2005).

In a differentiated classroom, the learning environment is structured around learner needs and high expectations for all learners. Teachers challenge advanced learners and scaffold instruction for all other students, fostering success among all students (Tomlinson, 2017). These same learning environments are powered by the building of trust and demonstration of respect for students, which fosters self-worth and perseverance in learning (Tomlinson, 2008). Strategies helpful in building trust and respect include using praise and positive feedback, demonstrating compassion towards students, developing warm interpersonal relationships, using varied learning strategies, connecting learning tasks to student interests, and allowing students to express their ideas, problem-solving strategies, and emotions through speaking opportunities in the classroom (Calisoglu, 2018; Floress, Beschta, Meyer, & Reinke, 2017; Royston, 2017; Tomlinson, 2008). Lastly, Tomlinson (2008) stated that “academic awareness builds academic success” (p. 5). Developing students’ awareness of their own learning and providing them with opportunities to self-reflect on their work creates student ownership of learning and fosters deep learning (Azer, Guerrero, & Walsh, 2013; Tomlinson, 2008).
**Curriculum.** Curriculum refers to “an organized plan to engage learners with important knowledge, understanding, and skills” (Tomlinson & Imbeau, 2010, p. 20). Rather than a list of standards or textbooks, it calls on the teacher’s knowledge of the essential concepts, principles, and skills within each content area that the students should possess as a result of a unit of study (Tomlinson, 1999a; Tomlinson & Imbeau, 2010). A high-quality curriculum in a differentiated classroom is designed to be significantly relevant, meaning-rich, student-centered, and engaging to all learners (Tomlinson, 2017). Rock et al. (2008) further stress the importance of the teacher’s responsibility to evaluate the curriculum they teach. Guided by district, state, and national standards, teachers must adapt and make choices about the curriculum they teach based on the abilities, interests, and educational needs of the children in their classes (Rock et al., 2008).

Teachers of diverse and differentiated classrooms must have a plan, including thoughtfully planned lessons and engaging learning experiences, to help students achieve learning goals and experience success (Tomlinson & Imbeau, 2010). As Tomlinson (1999b) stated, “We have to know where we want to end up before we start out—and plan to get there” (p. 13). Teachers must also understand the individual differences amongst learners and their progression of growth in critical content and skills in order to create learning opportunities that engage and excite them and to “build bridges between the learner and learning” (Tomlinson, 2017, p. 15).

**Assessment.** Assessment is “a data gathering and analysis process that determines the degree to which students have achieved essential outcomes and informs decisions about and planning for instruction” (Tomlinson & Imbeau, 2010, p. 21). Heritage, Kim, Vendlinski, and Herman (2009) further stated that “assessment is essential
to effective teaching and learning” (p. 24). In a differentiated classroom, assessments are continuously and systematically used and are the driving force behind the instruction provided to students.

There are three types of assessment that are vital components in the implementation of DI: diagnostic assessments, formative assessments, and summative assessments (Levy, 2008; Tomlinson & Imbeau, 2010). Diagnostic assessments are informal tools administered prior to learning that assist the teacher in determining students’ abilities, readiness, interests, and learning profiles. The information gained from diagnostic assessments may also serve as a baseline to determine how much learning has taken place once instruction has been presented to students (Moon, 2005). This informal process is essential in guiding the teacher’s planning to meet the varied needs of all learners (Tomlinson & Imbeau, 2010).

Formative assessments are ongoing throughout the unit of study and provide the teacher with continual information on student progress toward the curriculum goals. Heritage et al. (2009) described formative assessments as “a systematic process to continuously gather evidence and provide feedback about learning while instruction is under way” (p. 24). The goal of formative assessments is to provide teachers with immediate feedback regarding student understanding that informs the current and future lessons (Burkett, 2013; Tomlinson, 2003). Using formative strategies such as teacher questioning, student responses to questions, group discussions, exit tickets, or journal entries, teachers can make immediate adjustments to instruction to assist students in their understanding of key ideas and targeted skills (Tomlinson, 1999b).
Lastly, summative assessments conducted at the end of a unit of study provide valuable information for teachers that can support student understanding of expected essential outcomes (Tomlinson, 1999b; Tomlinson & Imbeau, 2010). Although summative assessments, such as unit tests or projects, are more formal than formative assessments, both are used to measure student growth and progress towards learning goals. Assessments in DI classrooms focus more on helping students grow than on documenting their mistakes and labeling their ability to learn (Tomlinson, 1999b, 2014).

**Instruction.** Instruction refers to “the process of teaching, educating, and engaging students with content” (Tomlinson & Imbeau, 2010, p. 22). Tomlinson (1999a) asserted that “assessment and instruction are inseparable” (p. 10). Information gathered from formative assessments must guide teachers’ planning and instructional practices (Tomlinson, 2015). Effective teachers in differentiated classrooms recognize the range of individual and group student needs and abilities and adjust their curriculum, learning activities, materials, and assessments to ensure that all students in academically diverse classrooms can process knowledge and develop skills in a variety of ways, allowing them to access a high-quality education that meets their needs (Stronge, 2018; Tomlinson, 2014, 2015, 2017). Students learn best when the instruction is tailored to their abilities and learning needs, considers prior knowledge and experience, and is delivered through flexible grouping strategies (Bates, 2013; Connor et al., 2013; Stronge 2018; Tomlinson, 2017).

Tomlinson and Imbeau (2010) emphasized that as educators continue in their development as professionals, they must remain cognizant of the inevitable interdependence of the four classroom elements of learning environment, curriculum,
assessment, and instruction. If the learning environment fails to foster a sense of belonging in the classroom, students will not commit to interacting with the content or the learning activities. Similarly, curriculum and learning tasks that go beyond the abilities of students can cause students to feel unsafe and view the classroom environment in a negative fashion. Students are more likely to have a positive classroom experience when instruction is scaffolded and assessments allow for multiple ways to demonstrate understanding based upon the students’ unique characteristics and learning styles (Algozzine & Anderson, 2007; B. Hall, 2009; Huebner, 2010; Tomlinson, 1999b, 2015; Tomlinson & Imbeau, 2010).

**Student characteristics.** Classrooms must be flexible and attentive to student variances in the areas of student readiness, interest, and learning profile (Tomlinson et al., 2003). These three dimensions of student variance guide planning for differentiation (Tomlinson, 2017).

Readiness refers to a student’s ability to process the knowledge, understanding, and skills of given standards and the extent to which the student can be challenged with a task and still be successful (Cox, 2008; Tomlinson, 2014). In terms of student readiness, The National Research Council (2000) states that students must be challenged academically at the proper level of difficulty for tasks to remain motivating: Tasks too easy become boring, and tasks too difficult become frustrating. Tomlinson et al. (2003) notes that “students should work at a level of moderate challenge for learning to occur” (p. 126). This notion demonstrates “the essence of readiness differentiation for all students and a central challenge for teachers” given the diversity in contemporary schools (Tomlinson et al., 2003, p. 127). Determining student readiness levels begins with
assessments that allow teachers to gain an understanding of current student knowledge or misconceptions about the topic of study (Burkett, 2013). Differentiating in response to student readiness compels the teacher to provide learning opportunities at various levels of complexity by altering the difficulty level of a task; modifying the amount of direct support during flexible, small group instruction; posing a variety of questions at different levels; and providing additional remedial or enrichment materials as needed (Heacox, 2002; Rock et al., 2008; Tomlinson, 2014).

Learner interest is as important as readiness. Tomlinson and Imbeau (2010) defined interest as “that which engages the attention, curiosity, and involvement of a student” (p. 16). Modifying and differentiating instruction based on student interest by linking skills to meaningful content can enhance motivation, productivity, and achievement (Tomlinson, 2017; Tomlinson et al., 2003; Tomlinson & Imbeau, 2010). These interests are closely linked to students’ cultural background, personal experiences, and academic and social interests (Tomlinson & Imbeau, 2010).

Finally, when teachers address students’ learning profiles, or their preferred modes of learning, DI results in improved achievement and attitude gains in students (Tomlinson et al., 2003). The goal of learning profile differentiation is to help students know the ways in which they learn best as individuals. Several factors can influence a student’s learning profile. Learning style reflects the environmental and individual factors that may impact the learning process for students, including emotions; interactions; physical needs, such as seating arrangement, temperature, light, and demand for concentration; and learner mobility (Heacox, 2002; Tomlinson, 2017; Tomlinson et al., 2003). While matching students’ learning styles with appropriate instructional
strategies in the classroom improves their ability to concentrate and learn, Tomlinson (2017) warns that we must be careful about teaching students only in the mode they prefer. Providing instructional activities in a variety of styles allows students the flexibility to choose what works best for them within varied times and in varied contexts.

Intelligence preference refers to the ways of learning and thinking that reflect personal strengths and weaknesses (Heacox, 2002). Gardner (1993) explained that all individuals have a combination of the following intelligences with varying strengths: verbal-linguistic, logical-mathematical, visual-spatial, musical-rhythmic, bodily-kinesthetic, interpersonal, intrapersonal, naturalistic, and existential. Sternberg (1985) suggested that individuals vary in strength in a combination of analytical, practical, and creative intelligences. Each of these forms of intelligence guides student thinking and decision-making and when incorporated into the learning process can lead to positive outcomes (Heacox, 2002; Tomlinson, 2009, 2017).

Lastly, culture-influenced and gender preferences also influence how students learn (Heacox, 2002; Tomlinson, 2017; Tomlinson & Allan, 2000; Tomlinson & Imbeau, 2010). Culture-influenced preferences include perceptions of time as rigid or flexible, emotional expression methods (articulate or reserved), whole to part versus part to whole learning approach, group versus individual work preferences, and valuing creativity versus conformity (Tomlinson, 2017). Gender patterns can also vary and influence how students learn. For example, while males tend to prefer and engage in more competitive learning than females, a teacher could have a classroom with several competitive females (Tomlinson, 2017).
Key elements of differentiated instruction. Three primary elements of DI exist, including content, product, and process. Content, process, and product can be differentiated in response to students’ readiness levels, interests, and learning profiles (Tomlinson, 2017).

Content involves teaching the curriculum that reflects state standards, which are mandated by the state, district, and school (Scigliano & Hipsky, 2010). Content is what is taught and what students are expected to learn (Tomlinson, 2017). Gregory and Chapman (2007) reported that differentiating content is implemented by “using different genres, leveling materials, using a variety of instructional materials, and providing choice” (p. 3). Tomlinson (2003) emphasized that when content is differentiated, teachers make modifications and structure activities based on curriculum material they desire students to learn and master, not restricting any student from reaching his or her maximum potential.

All students in a classroom essentially need to master the same content based on grade-level state standards; however, with the diversities of learning, not all children are able to process information in the same way (Ferreri, 2009; Watts-Taffe et al., 2012). Tomlinson (2017) suggested that educators ponder the ways of thinking about differentiating content. Teachers must think about (a) adapting what they teach or want students to learn or (b) adapting how they give access to students on what they teach and want students to learn (Tomlinson, 2017). Differentiating content in response to students’ readiness levels requires that the material or information students are being asked to learn matches those students’ proficiency levels in reading and comprehension levels (Tomlinson, 2017). As an example, students with reading proficiency levels above
the current academic grade level they are in can be provided with opportunities to engage in novel studies outside of the grade-level reading series. Differentiating content according to interest involves incorporating ideas, activities, and instructional materials into the curriculum that build upon student interests (Tomlinson, 2017). For example, a language arts teacher can assist students in locating resources and encourage them to write about topics of interest such as sports, dinosaurs, and history, instead of providing one writing prompt to all. Finally, differentiating content in response to learning profile requires a teacher to ensure that the presentation of the materials and concepts are aligned with a student’s preferred approach to learning (Tomlinson, 2017). For example, teachers can incorporate visuals and movement when presenting concepts in a lecture format in order to accommodate the visual, kinesthetic, and auditory modalities.

Process is the method students use to make sense out of the content and addresses how students learn the information that has been taught by the teacher (Adams & Pierce, 2006). When instruction is differentiated, students’ learning styles and preferences are reflected in the way the teacher teaches (Heacox, 2002). Heacox (2002) indicated that process can be modified by creating assignments that are more complex or abstract, which will give students opportunities to become engaged in critical and creative thinking. Differentiating process in response to student readiness involves pairing the complexity of a task, materials, and support a student receives with the student’s current knowledge, understanding, and skill (Tomlinson, 2017). For example, language arts teachers can provide different levels of directions on a writing assignment based on the student’s current level of writing skills. Some students may receive additional support by being provided with an annotated writing template while others may receive a rubric or
checklist featuring indicators for the writing in a more sophisticated language and format. Process can be differentiated based on student readiness through the development of learning contracts, small group instruction, tiered classwork and homework assignments, and peer partners/peer tutoring, to name a few. Differentiating process in response to interest means giving students an opportunity to make choices on a particular facet of a topic they wish to address. Process can be differentiated based on interest through class discussions, interactive journals, independent studies, and anchor activities based on student interest. Finally, differentiating process according to learning profile involves encouraging students to make sense of an idea based on their preferred way of learning (Tomlinson, 2017). Students may be provided with choice of working arrangements by providing them with opportunities to work individually on an assigned task or with a partner or small group. Similarly, students may choose to complete work while sitting on the floor or standing at their desk, rather than the typical sitting. Additionally, learning profiles can be addressed using manipulatives and models.

Learning occurs because students are taught to their understanding and are provided a choice (Coulson & Harvey, 2013). For example, a teacher instructing on fluency offers multiple pathways to learning by providing the students with a choice of listening to a recorded text, participating in buddy reading, reading independently, or reading poetry. The teacher can facilitate the learners in the centers and challenge each student, despite the range of learning activities simultaneously occurring in the classroom. The result of this learning experience will be higher achievement and more interested learners (Coulson & Harvey, 2013).
Products are the culminating results that represent what students have learned. Tomlinson (2004) noted that products are the means by which students can demonstrate and expand on what they have learned and can be differentiated depending on the students’ learning strengths, learning styles, and interests. It is important for teachers to provide students with a range of authentic products, since assessments guide the instruction. Accurate data are essential for effective instruction; therefore, the products need to be interesting for the students. Unsworth and McMillan (2013) concluded that students’ minds will wander if learning is not made interesting and meaningful. Mind wandering can lead to inaccurate assessments because the students are not interested in the content. In DI, teachers use checkpoints and questions to progress monitor the students (York-Barr, Sommers, Ghere, & Montie, 2016). To avoid mind wandering, the teacher should select content that is based on prior knowledge. Students will be motivated to learn when the instruction is presented at their readiness level (Tomlinson, 2014).

**Flexible grouping.** In the DI classroom, teachers use small groups to teach different learning styles. Grouping often occurs with support from data. Effective grouping enables students to interact with a variety of peers while learning at an appropriate level. However, it is important to note that ability- and skills-based grouping should not be the primary means of differentiating instruction. Grouping should be flexible and based on specific learner needs (Park & Datnow, 2017). For example, kinesthetic learners will work in a group that offers hands-on activities, while other groups may challenge students with discussions, texts, or academic projects. According to Connor et al. (2013), flexible, cooperative group learning allowed time for the teacher
to work with students’ individual needs where content was delivered in response to students’ interests. Flexible grouping options allow students to learn via different pathways (Connor et al., 2013).

**Related Studies in Differentiated Instruction**

Research continues to focus on the use of DI to meet the needs of all learners. Gregory and Chapman (2007) describe DI as a philosophy that requires strategic planning to meet the needs of all learners. A review of the literature supports the benefits of DI and the ways in which educators may implement a variety of approaches to modify content, process, and product (Algozzine & Anderson, 2007; Lewis & Batts, 2005; Tomlinson, 2000a, 2000b; Williams, 2012; Wormeli, 2005, 2011). Studies further demonstrate that through the deliberate and consistent use of DI strategies, student performance is increased and schools are able to close the achievement gap, leading to higher performing schools (Beecher & Sweeny, 2008; Caldwell, 2012; Cusumano & Mueller, 2007; Levy, 2008).

**Teacher efficacy and obstacles in the implementation of differentiated instruction.** Differentiated instruction is a validated teaching approach that responds to and accommodates the learning needs of all students. However, several reasons exist as to why this teaching approach is not a common practice used in many classrooms, including time constraints, ineffective student grouping, and inconsistent professional development. Time constraints are a notable barrier to implementing DI. To meet school accountability requirements in reading and math, teachers in one North Carolina school implemented DI. While their efforts were successful, raising the percentage of students in grades three through five who were proficient in both subjects from 79% to 95% in 5
years, challenges existed. Teachers identified the most significant challenge as planning time. In addition to time spent during the school day planning for differentiation, teachers worked after school and during the summers in order to plan adequately for DI implementation (Lewis & Batts, 2005).

As in the case of this North Carolina elementary school, time is a crucial factor that administrators should consider when implementing DI, which means they may need to adjust daily schedules to allocate more instructional and planning time. Results from a study of 120 middle school teachers indicated that 15% of teachers reported adequate time during the school day for DI, while only 13% of the sample perceived that they had adequate planning time for DI. The shortages of both planning and instructional time were significant hurdles to implementation (Aftab, 2015). Tomlinson and Allan (2000) stressed that leaders must provide teachers with time. Teachers should have a larger block of instructional time to accommodate students’ diverse learning needs effectively. Teachers’ planning time should be increased to allow teachers time to plan, share, discuss, and exchange ideas with their colleagues. In addition, increased planning time can give teachers opportunities to observe their colleagues implementing DI and to collaborate with their peers regarding teacher and student learning. Ismail, Kanesan, and Muhammad (2018) noted that teacher collaboration is significantly associated with high-quality teaching.

Another barrier to implementing DI is student grouping. Differentiation can be difficult to manage when a wide variety of abilities exist within the same class. Both like-ability grouping and varied-ability grouping, the two most common approaches to DI, possess disadvantages. For example, students in homogenously grouped classrooms
may lack academic role models, particularly in the lower ability groups, and lower expectations for lower-ability groups may reinforce achievement gaps. Less opportunity also exists for varied social interaction. Disadvantages of varied-ability grouping include limited social interactions with like-ability peers, increased need for planning time, difficulty in managing the acceleration of higher-ability students, and a tendency for the teacher to teach to the middle-level abilities (Morret & Machado, 2017).

Given the disadvantages of both common types of grouping, a more flexible system may be appropriate. Tomlinson (2017) contends that the use of flexible grouping is the key to an effective classroom. Thus, grouping strategies may differ according to the specific learning task. For example, one student may excel at reading comprehension but struggle with spelling. In a task involving spelling, it may be reasonable to place that student in a group with another student who has strong spelling skills. That same student may be grouped with different peers on another task involving comprehension.

Sometimes students are assigned to groups based upon need, while other times it may be appropriate to allow students to choose their own groups (Tomlinson, 2017). Creating different and flexible groups based upon specific situations or learning needs can be challenging to create and manage.

A lack of consistent professional development is also a barrier to implementing DI. In most cases, professional development is a one-time event that does not fulfill the instructional and learning needs of all teachers. According to Hawkins (2009), ongoing professional development is an essential component of DI that can provide teachers with the essential skills and dispositions that will enable them to respond effectively to the learning needs of diverse students. However, professional development in DI typically
occurs in response to an issue or problem, such as achievement gaps between subgroups, such as those with Individual Education Programs (IEPs) or low socioeconomic status. Rather than be reactive, professional development should be proactive, as well as consistent, engaging, and based on the needs of teachers. Lee (2010) noted that effective professional development should begin with a shared vision and provide opportunities for collaboration, leadership development, and professional networking. The ultimate goal of these professional development opportunities is improved student learning and achievement (Lee, 2010). Without adequate instructional and planning time, appropriate grouping practices to accommodate students’ diverse learning needs and continuous engaging professional development opportunities, teachers will not be able to implement DI effectively.

**Differentiated instruction in reading-related studies.** Effective reading instruction plays a vital role in improving students’ outcomes in reading comprehension and student achievement (Hock, Brasseur-Hock, & Deshler, 2014). Differentiated instruction is used for a variety of purposes in the elementary reading classroom. Several research studies, including those concerning students with varying academic abilities and backgrounds from low-performing, special needs students to gifted students in both inclusive and regular classroom settings, have determined that DI can have positive effects on student success in the classroom.

Students with reading deficits in the inclusive setting can improve their reading ability with the implementation of DI (Beck, Buehl, & Barber, 2015; Little, McCoach, & Reis, 2014). To understand better how to improve reading comprehension of science text, Kaldenberg, Watt, and Therrien (2015) conducted a meta-analysis of 20 studies that
incorporated several reading instruction practices in science for special needs students who struggled with understanding basic science concepts in the inclusive classrooms. The study focused on teaching students with specific learning disabilities reading comprehension instructional strategies using science content. Kaldenberg et al. (2015) noted that findings associated with the previous research studies on reading comprehension of expository text showed that students with specific learning disabilities benefitted from explicit vocabulary instruction and the use of multicomponent reading interventions when reading science-related materials.

Flaherty and Hackler (2010) applied DI and cooperative learning to a group of fourth- and sixth-grade students in order to improve intrinsic motivation and academic achievement in reading. Lessons and assignments addressed student interest and learning styles, provided positive feedback, and emphasized trust, fairness, and structured routines. Results indicated that, after the intervention, students demonstrated improved work and study habits, increased independence in completing homework on time without reminders, and improved levels of organization (Flaherty & Hackler, 2010). While this study did not address reading achievement, the results suggest that DI can improve several skills and behaviors that may be related to reading achievement, including completing homework, being organized, and demonstrating intrinsic motivation to achieve.

To address reading achievement, Firmender, Reis, and Sweeny (2013) examined reading fluency and comprehension in students with diverse backgrounds to test the efficacy of differential reading among diverse populations. The study was corroborated by the research of Mims and Lockley (2017), which emphasized that differentiated
reading instruction is a possible solution for diverse populations, as it allows for the implementation, monitoring, and reinforcement of data-driven decision-making.

Other studies in the literature address the relationship between DI and reading achievement. Reis, McCoach, Little, Muller, and Kaniskan (2011) conducted a randomized controlled study to investigate the impact of DI interventions on reading comprehension and fluency among a group of second- through fifth-grade students. Results indicated that students who received DI demonstrated small to moderate improvements in both variables, particularly among students from high-poverty urban schools. In another study, Aliakbari and Haghighi (2014) investigated the effectiveness of DI on improving the reading comprehension of fourth-grade students categorized according to ability as elementary, intermediate, or advanced. Results from this randomized, controlled trial indicated that students in the lower two ability groups demonstrated improvement in reading comprehension with the use of DI.

Baumgartner et al. (2003) conducted a study on the effects of DI and the reading achievement of elementary and middle school age students. The study looked at predominately middle-class students from various ethnic backgrounds who struggled in reading and lacked motivation to read. Favorable to the DI approach, several different assessment tools were utilized to determine student need for improvement in reading, including teacher-made checklists demonstrating reading skills, formal reading assessments in phonological awareness and reading levels, and student surveys measuring attitude toward reading. Teachers in this study were actively involved in administering assessments to determine reading levels, constructing lesson plans that provided task choices for students and flexible reading group instruction, providing mini-
lessons on the different skill areas in reading, and using checklists for documenting reading strategies. Assessment test results, teacher running records, students’ interests, and students’ reading levels were taken into consideration as they were placed in groups.

The results of the Baumgartner et al. (2003) study evidenced the effectiveness of using DI to promote reading achievement. Flexible grouping focusing on reading strategies based on student needs and interests proved to be successful, especially in the upper grades. Post-assessment data in phonemic awareness and reading levels demonstrated that all students increased the number of reading comprehension strategies utilized during reading. Results from a survey administered to students after receiving instruction utilizing DI strategies indicated an increased positive attitude towards reading and improved student perceptions about their reading ability. Finally, Baumgartner et al. (2003) concluded that the mini-lessons held during the small group DI sessions were likely to have had an impact on student achievement according to the post-assessment results in phonemic awareness and grade level assessments.

In two additional studies, DI was examined through the lens of scaffolding and small group instruction and concluded that DI in reading offers an opportunity for “deep learning” and in-depth, teacher-directed instruction (Ankrum, Genest, & Morewood, 2017, p. 321). The study by Ankrum et al. (2017) noted that differential learning in the realm of reading is particularly adept at offering a more responsive and dynamic approach to reading instruction and focuses on critical thinking and developing agency in owning the learning process and information (Ankrum et al., 2017). Ankrum, Genest, and Belcastro (2014) also supported the use of scaffolding in DI as a reading strategy.
Schumm, Moody, and Vaughn (2000) reported on data from several studies with results that addressed the longstanding debate over how primary-grade children should best be grouped during reading instruction. The authors reported that the passage of the Regular Education Initiative has resulted in widespread change in the way that students are grouped for reading instruction. Although prior to the initiative, surveys most often reported that teachers preferred small, homogenous groups, in the post-Regular Education Initiative era, the majority are using whole-group strategies within mixed-ability classroom environments. Schumm et al. (2000) also cited a study reporting that students in third to fifth grade expressed their own strong preference for mixed-ability groups and/or pairs during reading instruction. However, the survey results also revealed that the students were most often taught to read using whole-group methods. Schumm et al. (2000) suggested that allotting sufficient funds for differentiated instructional methods to be implemented in elementary reading instruction should be made a priority within the American public school system. In addition, Schumm et al. (2000) stated that more pre- and in-service training is needed to familiarize teachers with the concept of DI. In the reviewed studies, research has demonstrated that the use of DI strategies within a diverse population of students has impacted students’ learning in regard to content, aided in the improvement of positive learning behaviors and reading skills, and showed increased reading comprehension in low-performing students. Additional studies in the use of DI strategies with high-performing diverse students will be beneficial to educators and school leaders.

**Meeting student needs in a diverse classroom setting.** A heterogeneous classroom that encompasses a diverse student body is advantageous for several reasons.
According to George (2005), diversity is consistent with the nation’s democratic goals, in which citizens of all walks of life work and live together. Diversity in the classroom promotes racial integration, reduces the chances of a student being labeled or stigmatized, and increases the equitable distribution of teaching talent across schools. In addition, students exposed to a diverse set of peers are more likely to have a realistic picture of their own abilities when comparing themselves to others (George, 2005). Such diversity requires that teachers consider students as individuals rather than planning lessons in a traditional, systematic fashion (Gregory & Chapman, 2007).

The need for DI in the diverse classroom to achieve positive outcomes is supported in the literature. Firmender et al. (2013) examined the diversity of reading fluency and comprehension in 1,149 students in Grades 3, 4, and 5 across five schools. Results revealed that, overall, fluency scores ranged from the 10th to the 90th percentile. The range of reading comprehension levels in Grades 3, 4, and 5 covered 9.2, 11.3, and 11.6 grade levels, respectively (Firmender et al., 2013). Given these results, it is unreasonable to consider instructing all students in a single classroom at the same level. Additional support for DI in diverse classrooms is found in Valiandes (2015) in which a quasi-experimental study compared the achievement of 479 fourth-grade students educated with and without DI practices. Results indicated that students who received DI academically outperformed those who did not.

Brain research also supports the use of DI in the heterogeneous classroom. According to Subban (2006), students who feel unsafe, insecure, or rejected may struggle to learn. Differentiated instruction conveys the value of each student and his or her unique worth. Furthermore, students learn best when they are moderately challenged
rather than being challenged at levels below or above their capabilities. Differentiated instruction allows for the determination of the most appropriate level of challenge for each student rather than applying the same level of challenge to every student (Subban, 2006).

A variety of strategies and best practices exist regarding the implementation of DI in diverse classrooms. For example, one might begin by creating a learning profile for each student which includes aspects such as family structure information, hobbies and interests, data regarding fluency and Lexile scores, and learning preferences (Algozzine & Anderson, 2007). The latter of these, learning preferences, relates to the different types of learning styles that students possess. The learning styles hypothesis explains that DI, which is tailored to the unique learning style of each student, promotes improved learning outcomes (Pashler, McDaniel, Rohrer, & Bjork, 2008). Seven main types of learning styles exist: visual spatial, bodily kinesthetic, musical, interpersonal, intrapersonal, linguistic, and logical mathematical (De Jesus, 2012). Differentiated instruction should consider the dominant learning styles of each student. Other evidence-based strategies useful in DI implementation include cooperative learning, in which small groups of students set an overarching goal related to a task that can only be accomplished through the reaching of related individual goals, and problem-based learning, in which students work together to solve real-world problems with the teacher acting as a facilitator and coach (De Jesus, 2012). Best practices in DI implementation in the diverse classroom consider all learners and closely attend to academic, cultural, linguistic, and socioeconomic diversity while at the same time considering the political dynamics of the school system (Holme, Diem, & Welton, 2014; Santamaria, 2009).
Differentiated instruction and increasing student performance. Differentiated instruction is a hallmark of high-performing schools. Dolejs (2006) described several characteristics of successful schools, including the use of both instructional differentiation and technology to focus on broad learning objectives. In this manner, instructional objectives are not watered down for students who require additional assistance but are taught using methods appropriate for each learner (Dolejs, 2006).

Beecher and Sweeny (2008) discussed this same approach as a means to close an achievement gap that existed between two geographically close elementary schools, one of which was high performing and positioned in a suburban area, bordering a large city, and the other a nearby failing school. Students in the latter of these two schools achieved less than 30% proficiency on math and reading standardized tests. In addition, 45% of these students received free or reduced lunches, and 30% spoke English as a second language. One aspect of the comprehensive school improvement plan created by administrators was the training of all staff members in DI. Every teacher was required to incorporate differentiated lessons in all aspects of the curriculum, ensuring that students had multiple ways to take in information and demonstrate their learning. These efforts were not without challenges, as several students in the low-performing school had attended multiple schools in the past, possessed well below-grade level math and reading skills, experienced chronic illness, and lived in poverty. Over the course of eight years, the implementation of school-wide differentiated learning plans resulted in a significant narrowing of the achievement gap between the two schools, cutting the difference in math and reading proficiency by about one half (Beecher & Sweeny, 2008).
Other success stories exist at the elementary and secondary levels. For example, Kirkey (2005) conducted an action research project aimed at determining the outcomes of DI in a third-grade math classroom, in which almost one half of students possessed an IEP and 58% of students performed below grade level. Using strategies such as flexible grouping, peer tutoring and mentorship, and cooperative learning, Kirkey (2005) witnessed a change in the classroom environment as well as the students. A greater sense of community developed, and students established an increased sense of self-confidence, expressed more positive emotions, and increased their participation in leadership roles. In addition, students demonstrated marked growth in both reading and math performance by the end of the school year (Kirkey, 2005). Similarly, Baumgartner et al. (2003), implemented DI strategies in the 2003 action research project in an effort to increase reading performance in second-, third-, and seventh-grade students. Students were provided task choices, flexible grouping, varied assessment techniques and offered opportunities to self-select reading materials based on interest and ability level. The pre-to posttest results indicated an increase in the percent of students reading on or above grade level within all three groups of students. Second-grade students increased from 64% to 88%; third-grade students increased from 48% to 89%; and seventh-grade students increased from 16% to 64%. Both studies demonstrated the benefits of using DI to increase student academic performance and attitude toward learning.

Like Kirkey (2005) and Baumgartner et al. (2003), Reis et al. (2011) investigated the effects of differentiated learning on student performance. In this experimental approach, the authors randomly assigned 63 teachers and 1,192 second- through fifth-grade students either to a differentiated learning intervention or a control group. The
intervention was an enrichment-based reading program that entailed allowing children to choose books to read that were slightly to moderately above their current abilities. During in-class reading time, teachers conducted brief individualized conferences with students, focusing on student-centered DI. Results from this study indicated that, when compared with the nondifferentiated control group, students in the intervention group demonstrated significant increases in reading fluency and comprehension. In addition, the achievement gap that existed between upper income and lower income schools from which the sample was drawn was resolved (Reis et al., 2011).

Differentiated instruction provides superior results at the secondary school level as well. Wilcox and Angelis (2012) studied high-performing middle schools in order to identify which instructional practices had the greatest impact on student achievement. Using a mixed-methods design, the authors interviewed 179 teachers and administrators and collected English Language Arts state standardized assessment scores from middle school students in 10 high-performing middle schools in which at least 52% of the students received free or reduced lunch. Findings from this study indicated that educators and administrators attributed their success to trusting and respectful relationships within the school and with the community; shared responsibility for performance among educators, staff, and parents; meaningful professional development; and the differentiation of instruction, which benefitted not only mainstremed special needs students but the entire student body (Wilcox & Angelis, 2012).

**Differentiated Instruction in Reading in M-DCPS**

DI is an expectation of instruction in all classrooms within the M-DCPS system. To support the proper implementation of strategies, a variety of district resources are
provided to teachers through an assortment of platforms. The district’s tiered system of schools, Framework of Effective Instruction (FEI), and Instructional Performance Evaluation and Growth System (IPEGS) provide the base of expectations for diversified instruction through adaptable indicators that may be applied in all grades and subject areas. (A detailed explanation of the FEI and its alignment to Tomlinson’s DI theory is provided in Chapter 3.)

In 2011, the state of Florida transitioned from its Response to Instruction/Intervention Implementation Plan to a statewide implementation of Florida’s Multi-Tiered System of Supports (MTSS). The essential elements of Florida’s MTSS, which are required by the Elementary and Secondary Education Act and the Individuals with Disabilities Education Act, serve as the basis for initiatives aimed at increasing student achievement. The MTSS implementation components ensure that all stakeholders share a common language and understanding. The MTSS is an evidence-based model of schooling that uses data-based problem solving to integrate academic and behavioral instruction and intervention. Using evidence gathered through school-site data collection and problem-solving processes, integrated instruction and intervention are delivered to students in varying intensities (multiple tiers) based on student need. “Needs-driven” decision-making seeks to ensure that district resources reach the appropriate students at the appropriate levels to accelerate the performance of all students to achieve and/or exceed proficiency (Florida Center for Interactive Media, n.d.).

The MTSS consists of three levels, or tiers, that offer increasingly more intense instruction and interventions matched to the needs of individual students. Tier 1 includes what “all” students receive in the form of instruction and student support. Tier 2 is what
“some” students receive in addition to Tier 1 instruction, and Tier 3 is what “few” students receive. This last tier is the most intense service level a school can provide to its students (Florida Center for Interactive Media, n.d.).

Another key component of the MTSS is the planning and problem-solving process. Throughout instruction and intervention, educators rely on a problem-solving process to ensure that instruction meets the specific needs of students. The first step in the four-step iterative process is to define the problem. Here, teachers compare their expectations for a student with the student’s actual performance and behavior. Once this gap is identified, teachers generate hypotheses regarding the etiology of the problem, collect data in order to validate or rule out hypotheses, and then link the validated hypotheses to instructional strategies. In step three of the process, develop and implement a plan, which includes specific performance goals. Finally, educators use data to monitor and assess progress towards goals and the effectiveness of the intervention plan. If the plan is not achieving the desired results, the planning and problem-solving process begins anew (Florida Center for Interactive Media, n.d.). M-DCPS has implemented Florida’s MTSS, including the three-tiered system and the planning and problem-solving process, with fidelity to ensure that all students receive the appropriate interventions and support needed to enhance their opportunity to achieve proficiency.

Summary

This chapter has provided an overview of the literature relevant to the development and use of DI in the classroom. Differentiated instruction is a responsive teaching approach designed to meet the individual needs of students according to characteristics such as culture, learning style, ability, and interests while at the same time
maintaining high standards and expectations for the curriculum and student achievement. The foundation of DI includes Vygotsky’s constructivist theory of the ZPD, Dewey’s progressive education theory, and Gardner’s theory of multiple intelligences. Taken together, these theories suggest that students learn best when they can capitalize on their individual interests, needs, and strengths; when they are moderately challenged to bridge the gap between what they currently and do not yet know; and when individual learning styles guide their academic tasks.

Although several advantages exist to the use of DI, its implementation is not without challenges. The benefits of DI in the classroom, including the elementary level reading classroom, include improved intrinsic motivation, improved reading comprehension and fluency, and the promotion of social justice, in which all students, regardless of cultural or economic background or ability, are treated with equal respect and provided with equitable instruction and resources. These advantages likely play a key role in the significant academic gains made in low-income yet high-performing schools. Despite these advantages, disadvantages do exist, including time constraints, ineffective student grouping, and inconsistent professional development for teachers.

The M-DCPS system has implemented policies which promote the use of DI in the classroom. The school district uses a tiered system of support to ensure that students at all levels of ability receive appropriate and adequate instruction and resources. Teacher professional development is a priority, and teachers are trained to incorporate differentiation at multiple levels, including the classroom environment, instruction, and assessment while attending to differences in student ability, needs, interests, and culture.
Chapter 3 builds upon the background presented in this chapter. Chapter 3 presents the three research questions guiding this study, research methods and design, sources of data, and data analysis strategy. The findings from this study are presented in Chapter 4 and discussed further in Chapter 5.
CHAPTER 3

METHODS

The purpose of this pragmatic, exploratory, sequential mixed-methods study was to investigate the conceptualizations and implementation of differentiated instruction (DI) strategies through the lived experiences and observations of third- through fifth-grade reading teachers in two high performing, Tier 1 schools in Miami-Dade County Public Schools (M-DCPS). This was accomplished by examining themes and patterns obtained from both quantitative and qualitative data related to teachers’ perceptions on, and experiences with, DI. The qualitative data were obtained from an equal-sized, non-proportional, stratified convenience sample of third-, fourth-, and fifth-grade teachers within both schools in this study. Data were sourced from both semi-structured interviews and classroom observations of the 30 teachers in the sample. Observation data were analyzed utilizing the domains and indicators taken from the Framework of Effective Instruction (FEI; Appendix A) and applied to the M-DCPS Framework of Effective Differentiated Instruction Checklist (FEDIC; Appendix B). The data collection process was supported by the analysis of audio recordings taken during the interview, video recordings taken during observations, and written field notes collected during interviews and teacher observations. Quantitative data were gathered through the FEDIC observation protocol and the analysis of two i-Ready Diagnostic assessments in reading. These assessments are used throughout all the elementary schools within M-DCPS.
to diagnose student needs and monitor student growth in meeting the required standards in reading. This chapter outlines the research design of this study, including its paradigm, methodological approaches, research strategies, research questions, data sources, data collection, and data analyses procedures. Furthermore, detailed information on the population, setting, sample participants, and the ethical procedures followed to ensure the protection of human subjects are provided.

**Research Questions**

The fundamental research questions that guided this study are:

1. How do elementary teachers in high-performing schools conceptualize differentiated instruction?

2. To what extent do third- through fifth-grade reading teachers in high-performing elementary schools in M-DCPS implement differentiated instruction as outlined by the indicators of the District’s FEI?

3. To what extent does the degree of implementation of differentiated instruction in the third- through fifth-grade reading classrooms in high-performing elementary schools correlate with student learning as measured by the i-Ready Diagnostic Assessments?

**Research Methods and Design**

This study drew primarily from the pragmatic paradigm and utilized the exploratory sequential mixed-methods design to investigate teacher conceptualizations and implementation of DI and its correlation with student learning. The purpose of this exploratory sequential study was to allow the opportunity to establish qualitative and
quantitative priorities during the data collection process (Collins, Onwuegbuzie, & Jiao, 2006).

**Exploratory sequential mixed methods.** We used exploratory sequential mixed-methods approach to gather both qualitative data through (a) semi-structured interviews with open-ended questions, (b) classroom observations of teachers, and (c) analysis of written notations collected during the observations and interviews and quantitative data utilizing (a) rubric-style classroom observation protocols with established domains, (b) analysis of video and audio recordings and written documents collected during the teacher observations, and (c) analysis of results from the two i-Ready diagnostic assessments.

The mixed-methods design assumes that the combination of qualitative and quantitative approaches offers an advantage by providing a more complete understanding of the phenomenon or research problem than either approach alone (Creswell, 2014; Creswell & Guetterman, 2019). Furthermore, Pole (2007) stated that “mixed methods approaches can sometimes be superior to single method designs”, as “mixed methods research can answer questions that the other single paradigms cannot” (p. 2). Mixed methods provided the opportunity to collect, analyze, and interpret both qualitative and quantitative data in a single study while examining the same phenomenon of DI (Creswell & Guetterman, 2019; Onwuegbuzie & Leech, 2006; Tashakkori & Teddlie, 2010). Furthermore, the cross-analysis and comparison of both types of data provided different perspectives as generalizations were formed (Creswell & Guetterman, 2019; Denscombe, 2007).
Multiple methods were utilized in this study to determine how teachers in the third, fourth, and fifth grades conceptualize differentiation during reading instruction and to what degree their implementation of DI strategies aligns with those outlined in the M-DCPS FEI. As is the case in exploratory sequential, mixed-method research, qualitative data were gathered first to explore this phenomenon followed by the collection of quantitative data “to explain relationships found in the qualitative data” (Creswell & Guetterman, 2019, p. 554). The utilization of this research design allowed us to “collect qualitative and quantitative data separately in two phases so that data from one source could enhance, elaborate, or complement data from the other source” (Creswell & Guetterman, 2019, p. 548). The qualitative research data gathered through semi-structured interviews to answer Question 1 and observational notes to answer Question 2 provided essential data regarding teacher conceptualizations and implementation of DI strategies. The quantitative data gathered through the rubric-style, observation protocol used to answer Question 2 and through the i-Ready diagnostic assessments to answer Question 3 have the potential to build upon and add to the validity of those findings (Gilbert, 2011).

This research study was conducted in two phases and implemented the qualitative–quantitative model in which priority was given to the qualitative data. The first phase of this study collected preliminary qualitative data through individual teacher interviews with open-ended questions in order to understand teachers’ knowledge and experiences with DI in reading. Individual teacher interviews were audio recorded to ensure interrater reliability amongst the three researchers and to transcribe interviewee responses accurately during the analysis phase of the study. Although the analysis of
teacher conceptualizations was an essential component in this study, additional methods of data analysis were used to support the acquired qualitative data. During the second phase, both additional qualitative data and quantitative data were gathered by utilizing notetaking, video recordings, and observation protocols while conducting classroom observations of DI strategies. The video recordings were used to accurately record the observed DI strategies and frequency of use by the observed teacher. Quantitative data from the i-Ready diagnostic assessments were gathered simultaneously to the observational data during this phase. Data gathered during this phase were integrated with the interview data to strengthen the overall understanding of the research problem. The combination of semi-structured interviews with audio recordings, classroom observations with video recordings, analysis of written documents, and analysis of formative, diagnostic assessment data allowed for the triangulation of the data and helped provide a “rich and comprehensive picture” (Creswell & Guetterman, 2019, p. 546) of the research problem. Creswell (2014) and Creswell and Guetterman (2019) noted that the use of the triangulation process in mixed-method studies, such as this one, can provide researchers with opportunities to increase the accuracy and validity of the research findings. A mixed-method study design was the most appropriate for this study as it allowed (a) the ability to utilize and establish various data collection strategies, (b) the opportunity to prioritize qualitative and quantitative approaches, (c) the control of how and when the data integration occur, and (d) the choice of determining the overall theoretical perspective guiding the research strategies (Creswell, 2013).

**Pragmatism.** Paradigms are worldviews constructed through individual life experiences that can guide educational research and practice (Creswell & Guetterman,
2019; Mertens & Wilson, 2012). “Paradigms are broad metaphysical constructs that include sets of logically related philosophical assumptions” (Mertens & Wilson, 2012, p. 34). Creswell and Guetterman (2019) noted that the philosophical worldview mostly aligned to mixed-methods research is that of pragmatism: “The pragmatists…believe philosophically in using procedures that ‘work’ for a particular research under study and that you should use many methods when understanding a research problem” (p. 547). Pragmatists further believe that the methodology should match the purpose of the study (Mertens & Wilson, 2012). Therefore, we used the paradigm of pragmatism to explore the conceptualization and implementation of DI strategies amongst third- through fifth-grade reading teachers in high-performing, Tier 1 schools in M-DCPS and its correlation to student achievement in reading. Both qualitative and quantitative methods were utilized to best address each of the research questions. The information gleaned from the individual qualitative and quantitative data collection procedures was integrated to support the other. We gathered teachers’ knowledge of DI strategies, the realities of their implementation of these instructional strategies within the context of their own classrooms, and assessment data regarding student learning in reading to help answer the research questions.

**Phenomenology.** Phenomenological research, by definition, “is a design of inquiry…in which the researcher describes the lived experiences of individuals about a phenomenon as described by the participants” (Creswell, 2014, p. 14). Although our research study was not primarily guided by the phenomenological design, it did employ some qualitative methods inherent in phenomenological research that assisted in gaining a deeper understanding of a central phenomenon in a particular social situation, event,
Research Question 1 sought to explore and understand the single phenomenon of the concept of DI by considering the conceptualizations of this phenomenon from each individual third- through fifth-grade teacher at the two schools of study. Creswell and Guetterman (2019) stated that researchers exploring a central phenomenon must consider “all the multiple external forces that shape this phenomenon” (p. 129). Each individual teacher’s conceptualization was one of these external forces that aided in acquiring a deeper understanding of the phenomenon as it relates to the selected Tier 1 schools in M-DCPS.

Qualitative data methodologies of semi-structured interviews and analysis of audio recordings were utilized to answer Research Question 1. These methods allowed for the gathering of rich data and for meaning to be derived from the experiences and input of individual teachers who have all participated in the phenomenon of differentiating instruction in third- through fifth-grade reading classrooms at high-performing, Tier 1 schools.

**Pilot research design.** A pilot study is a “small-scale, preliminary investigation that is conducted to develop and test the measures or procedures that will be used in a research study” (Gall, Gall, & Borg, 2007, p. 648). Gall et al. (2007) further added that a pilot study should be used as part of a research study whenever possible. Therefore, a pilot test was conducted to validate and refine the interview protocol (Appendix C) and observation protocol (Appendix D) in this study. Teachers in Tier 1 elementary schools and Tier 1 K–8 centers that are not part of the two study schools were asked to participate in the pilot testing. Qualitative methods, using semi-structured interviews and classroom
observations, were used in the pilot study to seek feedback and validate the interview and the observation protocols. The intent of the piloting of interview questions was to provide pre-study information regarding the accuracy of questions and to receive feedback regarding question stems. The field test included interviewees separate and apart from the participants selected for the purpose of this study. A convenient, voluntary sample of five teachers were individually interviewed within a semi-structured protocol to ensure the interview protocol’s open-ended questions were clear and appropriately understood by the teachers. Changes were then made to ensure that the information gathered was directly related to the research problem and provided data for use in answering Research Question 1. By analyzing pre-study participant responses, questions and questioning techniques were refined, ensuring that questions were intentionally written to capture the information needed to identify teacher perceptions of DI. Further, each researcher used the established and deliberate protocols for probing and clarification processes during the pre-study interview phase to anticipate the need for additional questions and probes. The pilot teacher participants were specifically asked to offer recommendations, if any, on how to improve the quality of the interview questions or if any other questions could be added to the interview to help gather the anticipated data. This feedback from teachers was critical to establish validity in order to determine whether the research accurately measured what it was intended to measure and how reliable the results were (Golafshani, 2003). This process followed the recommendations made by Gall et al. (2007) that researchers can improve the validity of data-gathering protocols by identifying items or questions that may be “interpreted differently by
different respondents” (p. 253) and can revise these items or questions “until all respondents interpret them similarly” (p. 254).

To validate the use of the observation protocol (Appendix D) and to ensure interrater reliability prior to conducting the classroom observations in the study, we participated in joint calibration observation sessions during the pilot with the same five nonparticipants to develop a keen understanding of the instrument, to ensure consistency in data collection, and to ensure a common instructional lens was utilized when observing. For each calibration session, a collective 90-minute observation in the reading classroom was conducted. Individual two-column notes of teacher behavior and dialogue and a review of the lesson plans provided by the teacher were completed. Upon completion of the observation, each researcher completed a sample observation protocol. Once observation forms were completed, the data were discussed and consensus reached, regarding the observed DI practices. This process was repeated with four additional teachers for a total of five teachers in order to ensure interrater reliability and strengthen the data collected utilizing the observation instrument in the actual study. Calibration guaranteed that the observed and interpreted DI behaviors were being measured similarly with an unbiased assessment. These sessions promoted consistency, control bias, and control sampling errors in the use of the rating scale (Golafshani, 2003; VanTassel-Baska, Quek, & Feng, 2007).

**Role of the Researchers**

We are all veterans of the M-DCPS school district with an average of 25 years of combined service in both teaching and administrative roles. Our personal experiences with DI as classroom teachers and school-site/district administrators provided a strong
background with this approach. Two of us are the principals at the schools in this study, and the third works in the district’s Office of Professional Development and Evaluation, which provides training for teachers in the instructional performance evaluation standards.

Our role was to analyze both quantitative and qualitative data gleaned from participants’ responses to interview questions, the observation of teachers, the analysis of written documents, and the analysis of results from diagnostic assessments. As principals of the schools of study and district administrator who were all trained in the instructional performance evaluation standards used in assessing teacher performance in the classroom, we made an effort to structure this study in ways that minimized the potential for coercion and vulnerability that the participants could face in their roles as subordinates in their daily occupations. Minimizing coercion was accomplished by having each of the principals conduct the classroom observations at each other’s schools. In this manner, the teachers in the study were not observed by their direct supervisors, thus minimizing bias and intimidation and increasing teachers’ receptiveness to the study. The researcher who works as a district administrator observed at both school sites. Additionally, a PowerPoint presentation was developed to ensure equal dissemination of study information to all participants. The information was presented through comprehensive informational meetings at each school site prior to the commencement of the study where all eligible teachers in third through fifth grade were provided with information relevant to their participation in the study and advised of their rights throughout the study, including that their participation was strictly voluntary and that they could remove themselves from the study at any time.
In an effort to ensure valid and reliable results, the three validity strategies of triangulation, member checking, and peer debriefing were incorporated into the study to avoid bias and to maintain accuracy in the research findings (Creswell, 2014). Examining evidence from different sources of data through the triangulation process aided in building coherent justifications for themes found in the data, thus adding to the validity of the study (Creswell, 2014). Through a follow-up interview with the participants, the member checking approach provided teachers with an opportunity to review the major research findings and themes based on the data in order to ensure the accuracy of data analysis (Creswell, 2014). Finally, to ensure that findings resonated with other professionals in the field of education, and more specifically to M-DCPS, we engaged in debriefing protocols with colleague principals who reviewed the findings and provided feedback that could validate the study.

**Population and Sample Participants**

Since the goal of this study was to identify the experiences of teachers currently implementing DI in their reading classrooms, the study participants included teachers from two high-performing, Tier 1 schools, one elementary school and one K–8 center, within the M-DCPS, an urban school district. The Tier 1 schools had similar student achievement data in prior years and could be considered comparable to one another for the purpose of this study.

While the two schools used for the purpose of this study were considered high performing based on the State of Florida’s School Grades Accountability Formula by receiving the letter grade A, both schools have demonstrated a decline in the percent of fourth-grade students scoring at proficiency (Level 3 or higher) on the Florida Standards
English Language Arts Assessment in comparison to their previous year’s performance. A two-year comparative analysis of the Florida Standards English Language Arts Assessment at the elementary school of study demonstrated a decrease of nine percentage points in the number of fourth-grade students scoring at proficiency from 80% in 2017 to 71% in 2018. A two-year comparative analysis of the Florida Standards English Language Arts Assessment at the K–8 center demonstrated a decrease of six percentage points in the number of fourth-grade students scoring at proficiency from 82% in 2017 to 76% in 2018. This decline in proficiency indicated a regression in student mastery of assessed standards.

The demographics of the elementary school being used for the purpose of this study were like that of the overall school district while the K–8 center differed slightly (Table 2).
## Table 2

### District and Participating Schools’ Demographics

<table>
<thead>
<tr>
<th>Category</th>
<th>M-DCPS District</th>
<th>Elementary School</th>
<th>K–8 Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Student Enrollment</td>
<td>350,000</td>
<td>1,108</td>
<td>1,060</td>
</tr>
<tr>
<td>% African American</td>
<td>20.0</td>
<td>3.5</td>
<td>63.0</td>
</tr>
<tr>
<td>% Hispanic</td>
<td>71.6</td>
<td>89.0</td>
<td>27.8</td>
</tr>
<tr>
<td>% White</td>
<td>7.0</td>
<td>5.0</td>
<td>4.0</td>
</tr>
<tr>
<td>% Asian/Multiracial</td>
<td>1.0</td>
<td>2.5</td>
<td>4.0</td>
</tr>
<tr>
<td>% Free/Reduced-Price Lunch</td>
<td>74.3</td>
<td>66.7</td>
<td>68.0</td>
</tr>
<tr>
<td>% ELL Students</td>
<td>19.0</td>
<td>27.0</td>
<td>2.0</td>
</tr>
<tr>
<td>% of SWD (includes Gifted)</td>
<td>23.0</td>
<td>38.0</td>
<td>26.6</td>
</tr>
</tbody>
</table>

*Note. ELL = English Language Learner; SWD = Students with Disabilities; M-DCPS = Miami-Dade County Public Schools*

Within the elementary school, the third, fourth, and fifth grades contained 622 students overall and reflected the demographics of the overall school. For three consecutive years prior to this study, students demonstrated a decline in reading proficiency when moving from third to fourth and from fourth to fifth grade. The largest decline was observed during the 2017–2018 school year, as the percentage of proficient students dropped from 80% in third grade to 71% in fourth grade (M-DCPS, 2018a). Within the K–8 center, the third, fourth, and fifth grades made up 356 students overall and reflected the demographics of the overall school. Reading achievement was slightly higher in the fourth grade of this school than in the school described previously, as 75% of these students scored proficient in this subject. This percentage is lower than that of
third graders during the previous assessment year, 82% of whom tested proficient in reading (M-DCPS, 2018a).

The combined target population contained approximately 972 students. This number reflected an average classroom size of about 18–22 students for each of the third-through fifth-grade classrooms selected from each school. There were 20 Reading/Language Arts teachers at the elementary school and 19 Reading/Language Arts teachers at the K–8 center, representing a total purposive, convenient sample frame of 39 third- through fifth-grade teachers from which to randomly select an equal-sized, nonproportional, stratified sample of participants, representing the total number of teachers who instruct these third- through fifth-grade classes in reading. Thirty teachers, 10 from each grade level in third, fourth, and fifth grade, were randomly chosen from within their stratified groups by grade level. The specific third- through fifth-grade classrooms eligible to be chosen from each school included reading teachers serving gifted, inclusion, and general education classrooms as the purpose of this study was to examine the teachers’ conceptualizations and ability to implement differentiation in methodologies and environments, which is essential to the success of the students within the diverse classrooms throughout M-DCPS.

The sample design for the population selected was single stage because we, serving as school-site and district administrators, had access to the names and teaching assignments of all the participants within the schools where the study was conducted: “A single stage sampling procedure is one in which the researcher has access to names in the population and can sample the people (or other elements) directly” (Creswell, 2014, p. 158). Participants within the two schools of study teach in a district that requires its
teachers to use DI; therefore, the initial chosen nonprobability sampling methods were purposive and convenience sampling. Creswell (2014) described purposive sampling as a means where “researchers select individuals who will best help them understand the research problem and the research questions” (p. 246). Similarly, convenience sampling is a type of nonprobability sampling that involves the sample being drawn from that part of the population that is close to hand (Creswell, 2014). From the identified target population, a probability sampling method was employed where participants were selected randomly from within a stratified sample: “In stratified sampling, researchers divide (stratify) the population on some specific characteristic and then, using simple random sampling, sample from each subgroup (stratum) of the population” (Creswell & Guetterman, 2019, p. 141). Stratification ensures that members from each stratum are represented in the sample. Since the goal of the study was to acquire the perceptions and implementation of DI from teachers in third through fifth grade, the target population was divided by grade level, and 10 teachers from each grade level were randomly chosen to participate. Each eligible participant was assigned a number, and the numbers were drawn randomly until the 10th voluntary participant was drawn from each stratum. The 30 participants formed an equal-sized, nonproportional, stratified sample, ensuring equal participation from each grade level or stratum. During the study, one third-grade teacher participant elected to be removed from the study following continued scheduling conflicts of the two required observations. This resulted in a final sample of 29 participants.
Data Sources

The data sources utilized for this study included a semi-structured interview, classroom observations, i-Ready diagnostic assessment results, member check protocol, and researchers’ journal notes. The semi-structured interview provided relevant information regarding teachers’ knowledge and implementation of DI. The classroom observations were utilized to confirm the actual implementation of differentiation in participant classrooms. The results from the i-Ready diagnostic assessments were utilized to determine if a relationship existed between the implementation of DI strategies in reading achievement. A member check protocol and our journal notes were used to both solicit additional feedback from participating teachers and to improve further the accuracy, applicability, and validity of the study.

Semi-structured interviews. The goal of qualitative research is to “engage in research that probes for deeper understanding rather than examining surface features” (S. D. Johnson, 1995, p. 4). In order to gather meaningful qualitative data to strengthen the study and comprehensively answer the research questions, a teacher interview protocol consisting of eight open-ended questions (Appendix C) was developed. The interview was designed to elicit responses from teachers that genuinely reflect their perceptions and experiences with implementing DI. The interviews were considered semi-structured because it has a set of predetermined questions with additional clarifying questions that allowed probing for deeper understanding to ensure an accurate and thorough response received for each question and from each participant. Patton (2002) suggested that qualitative research use a naturalistic approach that seeks to understand phenomena in context-specific settings, such as “real world setting where the researcher does not
attempt to manipulate the phenomenon of interest” (p. 39). Sample interview questions included the following: “What do you believe is the role of DI in influencing student achievement in reading?”; “Please describe your perceptions and experiences in implementing DI into your diverse classroom”; and “What DI strategies have you found to be effective during reading instruction in your diverse classroom?”

**Classroom observations: M-DCPS framework of effective differentiated instruction checklist.** According to Creswell (2013), observations are a key method of data collection in research involving qualitative measures such as in this study. “Observation is a powerful evaluation tool and can be conducted both formally or informally” (Mertens & Wilson, 2012, p. 378). VanTassel-Baska (2012) further added, “Classroom observation is a seminal part of understanding positive change in education. It affords an opportunity to access the actual instructional experience that is at the heart of teaching and learning” (p. 44). The observational data collected in this study provided additional information regarding the aspects of DI that may not be revealed through the other data-collection methods and allowed for a deeper understanding of the phenomenon being studied (Sizemore, 2015). For the purpose of this study, two observations were scheduled over a five-week time period for each of the participants. The first observation took place approximately five instructional days following the individual semi-structured interviews (Appendix C). The observation process allowed us to gather vital data regarding the implementation of differentiation in the participants’ classrooms. The second observation took place 10-14 instructional days following the first and allowed the information gathered from the previous observation and other collection tools to be confirmed. Each observation lasted 90 minutes and occurred during the reading
instructional block of the selected participants. Each classroom included students with diverse academic needs. We assumed non-participatory, complete observer roles, as we observed and recorded data without becoming directly involved in the lesson activities.

This study sought to identify the current teacher implementation of DI practices with those outlined by M-DCPS within the district’s FEI (M-DCPS, 2015) through its second research question. Each of the six areas of focus within the M-DCPS FEI—(a) Knowledge of Learners, (b) Instructional Planning, (c) Instructional Delivery, (d) Engagement, (e) Assessment, and (f) Learning Environment—contain indicators that specifically address DI strategies required of all M-DCPS teachers.

**FEI and differentiated instruction.** Within each of these domains exist instructional practices and activities that directly relate to DI. For example, in the Knowledge of Learners domain, effective teachers respond to the developmental levels of students, offer a range of differentiated activities, and present concepts at different levels of complexity based on student needs. Instructional Planning should include the use of student data to inform instruction and planning for the needs of all learners. Within the Instructional Delivery domain, effective teachers are expected to use multiple levels of questioning, use technology to differentiate instruction, and provide feedback tailored to the specific needs of each student. Objectives related to DI in the domain of Engagement include engaging learners in diverse activities and using appropriate pacing. Effective assessment includes the use of formative and summative data to inform instruction, using assessment data in general to differentiate instruction and aligning student assessments to their learning. Finally, under the domain of Learning Environment, DI necessitates the development and maintenance of classroom routines and structure, a culture of
inclusivity, and an environment organized in a manner that promotes learning (M-DCPS, 2015).

Classroom observation scale development. Since no current instrument existed to capture the data sought, permission was obtained from the developers at the College of William and Mary (Appendix E) to use and adapt an instrument developed at the college by VanTassel-Baska et al. (2003) titled The Classroom Observation Scale-Revised (COS-R) and, using the framework of the COS-R, adapted the content within the scale to include the six areas of focus of the FEI and the DI indicators within each. The M-DCPS Framework of Effective Differentiated Instruction Checklist (FEDIC; Appendix B) is comprised of 23 statements that represent the expected indicators under each area of focus in the FEI. This data collection protocol follows the same three-point rubric structure as the COS-R. The three-point rubric rating scale from the COS-R was also revised to reflect the operational definitions of the current ratings of the IPEGS observation tool, which is the official observation tool developed by M-DCPS for the summative evaluation of teachers. The IPEGS observation tool combines the two separate domains of instructional delivery and engagement contained in the M-DCPS FEI. This combination is reflected in the FEDIC resulting in five domains of focus.

The M-DCPS FEDIC developed by the researchers was based on the content and rubric structure of the COS-R as a result of the research findings on the COS-R’s validity and reliability. The COS-R instrument focuses on general teaching behaviors and differentiated teaching behaviors, including (a) curriculum planning and delivery, (b) accommodations for individual differences, (c) problem solving, (d) critical thinking strategies, (e) creative thinking strategies, and (f) research strategies (VanTassel-Baska et
These teaching behaviors outlined in the COS-R align with the indicators contained within the five areas of focus in the M-DCPS FEDIC (Appendix B) in relation to DI strategies. The general teaching behavior items under the curriculum and planning section of the COS-R correlate with the indicators on the M-DCPS FEDIC in the areas of (a) learning environment, (b) instructional planning, (c) instructional delivery, and (d) engagement. Likewise, the differentiated teaching behaviors under the accommodations for individual differences, problem solving, critical thinking, and creative thinking strategies sections in the COS-R compare with those indicators on the M-DCPS FEDIC in the areas of (a) knowledge of learners, (b) learning environment, (c) instructional delivery, and (d) engagement.

The COS-R has been found to be a statistically valid and highly reliable observation tool (VanTassel-Baska, 2012; VanTassel-Baska, Quek, & Feng, 2005, 2007). An analysis conducted over three studies concluded that, overall, the scale was highly reliable with Cronbach’s alphas (α) of 0.91 to 0.93, with the subscale reliability for all the clusters averaging above 0.70 (VanTassel-Baska, 2012; VanTassel-Baska et al., 2005, 2007). Interrater reliability, assessed across four studies, resulted in a range of 0.87 to 0.89 across trained raters, further validating the instrument (VanTassel-Baska et al., 2005, 2007). To ensure construct validity and interrater reliability of the developed M-DCPS FEDIC prior to conducting the classroom observations, we participated in joint calibration sessions with nonparticipants in the study. Calibration guaranteed that we observed and interpreted the DI behaviors being measured similarly with an unbiased assessment. These sessions promoted consistency, control bias, and control sampling errors in the use of the rating scale (Golafshani, 2003; VanTassel-Baska et al., 2007).
Content validity was established by the developers of the COS-R instrument through the analysis conducted by four specialists in gifted education. These reviewers were asked to rate the COS-R on two dimensions: (a) the importance of each behavioral item on the scale and (b) the accuracy of the language used to describe the behavior (VanTassel-Baska et al., 2007). Their reviews of the content validity for the scale confirmed an overall intraclass coefficient of 0.98 (VanTassel-Baska, 2012; VanTassel-Baska et al., 2005).

Upon analysis of the reliability and validity measures above and in consideration of the correlation between the items on both the COS-R and the M-DCPS FEDIC, it was concluded that the integration of the rubric and content structure of the COS-R in the development of the M-DCPS FEDIC would be appropriate for this study. It is important to note that the established validity and reliability of the M-DCPS FEDIC tool may vary from that of the original COS-R instrument due to modification of checklist items and operational definitions contained within the rubric rating scale. Furthermore, the indicators contained in the FEI were derived from the same tenets of effective instruction contained in the evaluation protocol, IPEGS, used in M-DCPS to evaluate teachers, therefore the content included in the checklist is valid.

To validate the use of the M-DCPS FEDIC, a careful correlational analysis between the content contained in the protocol and those elements of DI promulgated by Tomlinson (1999a, 2014, 2017) was performed. Tomlinson and Imbeau (2010) stated that “at the core of the classroom practice of differentiation is the modification of four curriculum-related elements—content, process, product, and affect—which are based on three categories of student need and variance—readiness, interest, and learning profile”
Tomlinson and Imbeau (2010) also point out that DI is a principle-guided method implemented within a classroom system consisting of the four interdependent elements of (a) learning environment, (b) curriculum, (c) assessment, and (d) instruction. Effective teachers in differentiated classrooms recognize the range of individual and group student needs and abilities and adjust their curriculum (content); instruction, learning activities, and materials (process); and assessments (product) to ensure that all students in academically diverse classrooms can process knowledge and develop skills in a variety of ways, allowing them to access a high-quality education that meets their needs based on learner readiness, interest, and learning profiles (Stronge, 2018; Tomlinson, 2014, 2015, 2017). Students learn best when the instruction is tailored to their abilities and learning needs and is delivered through a variety of grouping strategies, including flexible grouping and cooperative grouping in whole, small-group, or individualized settings (Bates, 2013; Connor et al., 2013; Stronge 2018; Tomlinson, 2017).

The DI indicators in the M-DCPS FEI included in the checklist under each of the five areas of (a) Knowledge of Learners, (b) Instructional Planning, (c) Instructional Delivery and Engagement, (d) Assessment, and (e) Learning Environment are aligned to the key elements of DI proposed by Tomlinson (1999a, 2014, 2017). The indicators under Knowledge of Learners involve teacher consideration of the varying needs of students based on interest, readiness, and learning profiles. The indicators under Learning Environment support the ideas presented by Tomlinson (1999a, 2014, 2017) regarding the need for a physically appealing classroom environment where students feel safe, stimulated, and challenged, and where high expectations are present for all students while considering their individual differences. The indicators under Instructional
Planning correlate with the ideas presented by Tomlinson (1999a, 2014, 2017) of the ability of effective teachers to understand, evaluate, and modify curriculum content based on the instructional and developmental needs of all learners. The indicators under Instructional Delivery and Engagement measure a teacher’s ability to differentiate process and product based on a student’s readiness, interest, and learning profile.

Tomlinson (2017) states that a teacher can differentiate process and product by matching the complexity of a task, materials, and support to a student’s current level of understanding, readiness, and interests and by encouraging students to make sense of content through preferred modes of learning and providing students with various ways of demonstrating mastery of content through diverse activity structures. Finally, the indicators under Assessment measure the teacher’s ability to use diagnostic, formative, and summative assessment data recommended in Tomlinson’s (2014, 2017) model of differentiation to guide, design, and implement instruction based on students’ needs.

The M-DCPS FEDIC instrument utilizes the IPEGS operational definitions of the rating rubric for each performance standard. IPEGS is designed to promote high quality instruction. More specifically, this teacher evaluation system seeks to improve instruction, ensure accountability for student learning, increase student growth, provide support for instructional improvement strategies, and offer a collaborative process that fosters professional growth and improved job performance among teachers. The IPEGS system of evaluation has been utilized by M-DCPS for all instructional personnel for the past 12 years. The model assumes that effective evaluation fosters growth and development in teachers, relies on objective and observable data, and holds the school accountable to its employees (M-DCPS, 2018b).
The Stronge (2005) teacher evaluation system, upon which IPEGS was developed, is grounded in a broad view of extant research and is considered both valid and reliable. Research studies have been conducted and have provided empirical and statistical evidence of the validity and reliability of the Stronge (2005) evaluation system, including content, construct, and criterion-related validity. The performance standards and indicators of the evaluation system are grounded in research about teaching practice and are aligned to the National Board for Professional Teaching Standards. The writing of Xu, Grant, and Ward (2016) supports the content validity of the evaluation system such as those conducted by the Commonwealth of Virginia and the State of Georgia. Construct validity refers to the extent to which something measures the construct it is meant to measure. Virginia piloted the Stronge Teacher Performance Evaluation system during the 2011–2012 school year. An analysis of the relationship of the ratings on standards to each other was conducted to provide evidence concerning the validity of the interpretations about the summative ratings. The correlations were significant and in the moderate range, indicating that there is commonality between all of the process standards and the rating of student academic growth (Stronge & Associates, 2018). Finally, to establish criterion validity, which refers to the existence of a relationship between the measure and a criterion variable already held to be valid, data were reviewed from the Virginia study. Research indicated that the correlation values between the process standards and student academic progress standard were generally higher than the ones found in other evaluation systems, suggesting that the Stronge system had a stronger criterion-related validity than other systems (Stronge & Associates, 2018). The Stronge system maintains both criterion-related reliability and interrater reliability through its
intensive training and materials designed to develop, monitor, and provide support to evaluators through the train-the-trainer model, and by maintaining continuous collaboration with district leadership that is implementing the evaluation system.

The M-DCPS instructional professional performance standards described in the IPEGS system are aligned with the six areas of the FEI, as well as the two additional areas of Communication and Professionalism. Performance indicators were developed to provide examples of observable, tangible behaviors for IPEGS Performance Standards for Teachers. That is, the performance indicators are examples of the types of performance that may occur if a standard is being successfully met. Although the list of performance indicators is not exhaustive, and teachers are not expected to demonstrate each performance indicator, they offer opportunities for teachers to assess their current status and set goals for improvement (M-DCPS, 2018b).

Each of the eight clearly defined performance standards—including learner progress, knowledge of learners, instructional planning, instructional delivery and engagement, assessment, communication, professionalism, and learning environment—has its own specific rubric and indicators, and the standard is written at the Effective level. For the purpose of this study, the investigation focused on the five observable standards: knowledge of learners, learning environment, instructional planning, and instructional delivery and engagement and the assessment standard. The M-DCPS FEDIC identifies implementation of DI utilizing the established IPEGS rubric descriptions. For knowledge of learners, the standard requires that to be rated at the effective level “the teacher identifies and addresses the needs of learners by demonstrating respect for individual differences, cultures, backgrounds and learning
styles” (M-DCPS, 2018b, p. 43). For the purpose of this study, the titles of the ratings from IPEGS to the M-DCPS FEDIC were adjusted from highly effective, effective, developing/needs improvement, and unsatisfactory to effective, somewhat effective, ineffective, and not observed. This change was implemented to reserve the IPEGS language for the actual summative evaluation process. The rubrics for the remaining three observable standards—learning environment, instructional planning, and instructional delivery and engagement—are aligned to the IPEGS performance standard and a unique rubric as well.

Several specific objectives described in the IPEGS system relate directly to DI. The expectation of DI is embedded throughout the rubrics and indicators. In order to achieve a rating of Effective, teachers are expected to identify and address the needs of learners by demonstrating respect for their differences in culture and learning styles, to utilize appropriate curriculum to develop their lesson plans and assessments that address the diverse needs of students. It is also expected that teachers are addressing the needs of their students through a variety of instructional strategies and technologies and are implementing a variety of strategies to diagnose student learning to adjust instruction as needed. Teachers must engage their students through a variety of instructional strategies at varying levels of complexity to make learning meaningful and relevant. It is expected that teachers use high-quality questioning to foster critical thinking and can adjust their level of questioning to meet the needs of individual students. Teachers must gather and analyze their students’ data in order to assess student progress, guide their daily instruction, and provide appropriate and timely feedback to students aimed at addressing individual student learning needs. Finally, teachers must establish and maintain a safe
and respectful learning environment in which students feel valued and respected and are not afraid to take risks. Teachers must develop relationships with students in order to create a positive classroom culture that is conducive to the implementation of DI (M-DCPS, 2015).

**i-Ready student performance data.** For the purpose of this study, student performance data from the i-Ready Diagnostic Assessments were collected and analyzed. The i-Ready platform is a research-based individualized computer-based program that is designed to allow each student to work at their own pace. It assesses reading skills in the areas of phonological awareness, phonics and word recognition, vocabulary, and reading comprehension in both literature and informational text. The adaptive i-Ready reading diagnostic offers a variety of scores to provide an understanding of student proficiency levels. The results of the assessment are reported in scale scores utilizing a metric to indicate what skills the student has mastered, placement levels to indicate where students should be receiving instruction, norm scores to identify how a student is performing relative to nationwide peers, and Lexile measures to determine the student’s ability to read complex text (Curriculum Associates, 2015).

This study considered the results of student performance on the i-Ready diagnostic assessments as a data source to establish the existence or lack of growth in student learning. An initial diagnostic assessment is completed by all students within the first 30 days of school from which a personalized learning plan is created. Teachers in M-DCPS utilize the results of the diagnostic and subsequent diagnostic assessments administered each trimester of the school year to customize lessons and assist with the implementation of DI. Once the students have completed the diagnostic, several reports
become available to the teachers. The Class Profile Report provides detailed information regarding the performance level of all students in the class. The Instructional Grouping Profile Report provides teachers with suggested groups of students for DI and intervention purposes. Teachers also receive individualized Student Profile reports for each student that identify levels of phonological awareness and use of phonics. The data provided to teachers from i-Ready assessments offer a better understanding of their students’ needs. The i-Ready program pinpoints students’ strengths and knowledge gaps, delivers personalized learning paths, and assists teachers by grouping students, while suggesting targeted instructional recommendations and can be utilized as a predictor of student performance on standardized assessments.

Studies have been conducted and have concluded that i-Ready is a reliable and valid program. Curriculum Associates, in partnership with the Educational Research Institute of America, conducted a large-scale study on the relationship between the i-Ready Diagnostic and the 2016 Smarter Balanced Assessment Consortium. Data were collected from approximately 37,000 students across 10 school districts in California, Connecticut, and Washington. The research found a strong correlation between the Smarter Balanced Assessment Consortium assessments administered in 2016 and the i-Ready Diagnostic. As a result of this study, a prediction model was developed using logistic regression analysis (Curriculum Associates, 2015). Similar studies have been conducted in North Carolina and Ohio, as well as another large-scale study conducted in Colorado, Maryland, New Jersey, and Illinois, which found a strong correlation between the i-Ready Diagnostic and the Partnership for Assessment of Readiness for College and Careers assessment in 2016 (Curriculum Associates, 2015).
For the purpose of this study, student data were collected from the initial i-Ready Diagnostic assessment and a second, subsequent diagnostic assessment administered 12 weeks after the initial one in accordance with the growth and performance monitoring guidelines set by M-DCPS. Class performance data were compared to determine if there was an increase, stagnation, or a decline in overall performance. The performance data were analyzed to identify trends and to determine if a relationship exists between student learning and the implementation of DI in the classroom.

Data Collection

In an effort to improve the reliability and validity of the instruments utilized in this study, data from the individual teacher interviews, classroom observations, i-Ready diagnostic assessment data, lesson plan artifacts, member check protocol, and review of researchers’ journal notes were collected. Lesson plan artifacts, member check protocol data, and researchers’ journal notes further complimented and supported the primary data sources. The methods used to collect data allowed for triangulation, a convergence of results to support an interpretation (Lauer, 2006). Creswell and Poth (2018) asserted that data from multiple sources provide the researcher the information to make a more informed interpretation of the research problem.

Semi-structured interviews. Individual semi-structured interviews to capture data regarding teacher understanding and implementation of DI were conducted. Lauer (2006) described interviews to be reactive measures whereby interviewees may respond in ways they think may be more desirable to the interviewer, based on the researchers’ verbal and nonverbal cues. Interviewing provides data from a personal perspective of the interviewee. Appendix C demonstrates the interview protocol established to maintain
consistency across researchers. The semi-structured interview protocol included eight predetermined questions and provided the flexibility for the interviewer to ask follow-up questions for clarification and more thorough responses regarding teachers’ experiences with DI.

During the study, individual, face-to-face interviews were conducted prior to the initial observation using the established protocol (Appendix C). The approximately 20-minute interviews were prescheduled and held within the participants’ normal school setting, outside of the instructional time, to elicit the views and opinions of the participants in a familiar environment. The interviews were conducted prior to the classroom observations and during a two-week data collection period. We conducted interviews independently of one another to maximize use of the timeline and to reduce intimidation to the participant. To reduce researcher bias, the school-site administrator did not conduct interviews of the participants within the supervisory school site. Participants were equally distributed among the researchers, and the same researcher conducted both the interview and two subsequent observations of the identified participant.

To provide accurate reporting, written field notes and audio recordings of participant responses during the interview session were maintained to gain consensus of themes from the researchers who did not conduct the interview. We presented neutrally posing questions and listened closely to interviewee responses. Question 8 of the interview protocol was presented to allow participants the opportunity to provide supplementary information regarding the studied phenomenon. The responses gathered
from the individual semi-structured interviews provided qualitative data to afford a deeper understanding of the problem presented in this study.

**Classroom observations.** Creswell and Poth (2018) and Vagle (2018) identified observations to be a key method for data collection within a study. Two scheduled, in-class observations per participant over a 5-week period were conducted to additionally support the data collected from the semi-structured interview. Observations were conducted in the participants’ natural setting to gather a clear picture of the instructional practices employed by the participating teacher. To reduce researcher bias and participant intimidation, the observations were conducted by an individual researcher who was not assigned as the school-site supervisor. We each were assigned an equal number of participants to observe for the entire 90-minute instructional reading block. In each observation, we served as complete observers, observing without participating in the activities and maintaining field notes (Creswell, 2014).

The first of the two observations was conducted following completion of the semi-structured interview with the second observation occurring 10-14 instructional days after the first. During each observation, the researcher was positioned in the back of the classroom, and a video recording device was positioned in the corner of the room to surveil and capture teacher behaviors and dialogue during the observation. The observer maintained descriptive observation data in five-minute intervals utilizing a two-column format (Appendix D), notating teacher behaviors and dialogue. Only observable data were notated, refraining from including opinion or inference. Observation field notes were analyzed utilizing descriptive data analysis. The observer then independently completed the M-DCPS FEDIC (Appendix B) to rate the teacher characteristics and/or
behaviors noted during the observation. The rating scale of the observation tool provided 3-point Likert scale anchors: (a) effective, (b) somewhat effective, (c) ineffective, or (d) not observed.

**The i-Ready assessment data.** Quantitative data through the collection of two reading diagnostic assessment results for each participant in the study were utilized. The initial diagnostic assessment was administered within the first 30 days of school as required by M-DCPS. These data provided an average baseline scale score for each class. Students of the participating classes were administered a second diagnostic assessment approximately 12 weeks following the baseline, allowing for two data points per teacher participant. These assessments were administered in a computer laboratory setting to ensure that all students were assessed within the designated timeframe. We had administrative access to collect these data through available reports by individual class and by grade level grouping. Reports were accessed following each assessment period and securely maintained. Data were transcribed with the students and classroom teachers being assigned numerical identifiers to maintain anonymity of participants when reporting data findings.

**Document artifacts.** The collected document artifacts pertinent to this study were lesson plans related to each observed period. The analyzed artifacts provided additional data to further interpret the studied phenomenon. The lesson plan designed by the teacher participant was collected at the start of the observation period. This artifact provided insight into the teacher’s intended use of DI strategies. These data were used specifically to rate teachers accurately within the Instructional Planning and the Assessment domain portions of the M-DCPS FEDIC.
Data Analysis

“Engaging multiple methods, such as, observation, interviews and recordings, will lead to more valid, reliable and diverse construction of realities” (Golafshani, 2003, p. 604). All data collected to address the research questions of the study were triangulated. Triangulation is defined as “a validity procedure where researchers search for convergences among multiple and different sources of information to form themes or categories in a study” (Creswell & Miller, 2000, p. 126). We took full advantage of the opportunity to collaborate and consider the thoughts and observations of one another as we conducted the study. Researchers may “use investigator triangulation and consider the ideas and explanations generated by additional researchers studying the research participants” (R. B. Johnson, 1997, p. 284). The methods used to analyze the collection of data sets in this study included thematic analysis, descriptive statistics, and inferential statistics and are further clarified in this section. Table 3 provides a succinct reference as to how data for each of the three research questions were collected and analyzed.
Table 3

*Table of Specifications*

<table>
<thead>
<tr>
<th>Evaluation Question</th>
<th>Data Source(s)</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How do elementary teachers in high performing schools conceptualize differentiated instruction?</td>
<td>Semi-structured interview</td>
<td>Thematic analysis</td>
</tr>
<tr>
<td>2. To what extent does the degree of current implementation of differentiated instruction in the third- through fifth-grade reading classrooms in high-performing elementary schools compare with the related differentiated instruction indicators of the M-DCPS Framework of Effective Instruction?</td>
<td>Observation—M-DCPS Framework of Effective Differentiated Instruction Checklist</td>
<td>Descriptive Statistics Thematic Analysis</td>
</tr>
<tr>
<td>3. To what extent does the degree of implementation of differentiated instruction in the third-through fifth-grade reading classrooms in high-performing elementary schools correlate with student learning as measured by the i-Ready Diagnostic and Growth Monitoring Assessments?</td>
<td>i-Ready Diagnostic and Growth Monitoring Assessment</td>
<td>Descriptive Statistics Inferential Statistical Analysis—Correlations</td>
</tr>
</tbody>
</table>

*Note.* M-DCPS = Miami-Dade County Public Schools

**Thematic analysis.** Thematic data analysis “consists of distilling how things work and naming the essential features in these within the cultural setting” (Creswell & Guetterman, 2019, p. 485). Aronson (1994) and Alhojailan (2012) asserted that thematic analysis allows for the ideas that emerge from qualitative data sources to be better understood as there is a focus on identifiable themes and patterns that allow the researcher to determine relationships between concepts. Aronson (1994) described the process of thematic data analysis by completing the following steps: (1) transcribe the conversation and list patterns of experience; (2) identify all data that relate to classified
patterns; (3) create subthemes by cataloging and combining similar patterns; (4) identify justifiable arguments for the choice of themes through a review of the literature; and (5) develop a storyline using the theme statements, weaving together the themes and literature. Alhojailan (2012) contended that “thematic analysis is capable to detect and identify, e.g., factors or variables that influence any issue generated by the participants” (p. 40).

The collection of responses from individual semi-structured interviews were analyzed using thematic analysis. A written narrative of interviewee responses along with a recording of each interview to accurately transcribe the answers given to each question were maintained. All responses were reviewed carefully as “each statement or idea contributes towards understanding the issues, which leads to an appreciation of the whole picture” (Alhojailan, 2012, p. 42). Each response was marked for common themes amongst the 29 interviewees and subthemes were created to further analyze and categorize the themes identified regarding the understanding and implementation of DI. We reached consensus of the common patterns identified amongst all respondents to formulate a rich description of the results. Using thematic analysis, the perceptions, opinions, and feedback provided from the participants was compared with data collected from observations to interpret teachers’ perceptions and use of DI strategies.

The field notes collected during the observation period were analyzed utilizing the same process of thematic analysis to determine observed themes in the teacher’s use of DI strategies. Observed strategies were categorized within the five domains of the protocol instrument. The carefully reviewed observation notes were placed in segments and categorized using coding methods. We reviewed and evaluated each data source by
participant to apply a priori codes of observed strategies (Table 4). The coded data were used to interpret the phenomenon gathered from the observations.

Table 4

*A Priori Codes of Observation Field Notes*

<table>
<thead>
<tr>
<th>Concept/Category</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of Learners</td>
<td>KL</td>
</tr>
<tr>
<td>Learning Environment</td>
<td>LE</td>
</tr>
<tr>
<td>Instructional Planning</td>
<td>IP</td>
</tr>
<tr>
<td>Instructional Delivery and Engagement</td>
<td>IDE</td>
</tr>
<tr>
<td>Assessment</td>
<td>A</td>
</tr>
</tbody>
</table>

**Descriptive statistics.** Descriptive statistics were used to characterize a phenomenon by examining data and identifying patterns to answer research questions (Loeb et al., 2017). Mertler (2017) described descriptive statistics as “simple mathematical procedures that serve to simplify, summarize, and organize relatively large amounts of numerical data” (p. 178). Descriptive statistics analyzes data using measures of central tendency, variability, relative position and relationships; and aims to answer the who, what, were, when, and to what extent (Creswell, 2014; Lauer, 2006; Loeb et al., 2017). A measure of central tendency describes a set of data by identifying the central position within that set of data using a single value presented as the mean, median, and mode (Manikandan, 2011a, 2011b). The mean or average of the set of scores is the most frequently used measure. The median is the central value of distribution, and the mode is the value that is most frequent. Measures of central tendency indicate the similarities or what is typical within the group being studied (Mertler, 2017).
Two in-class observations per participant were conducted while maintaining field notes and video recordings of each observation. The notes from all three researchers were summarized by observed participants, and a representation of what occurred during the observed instructional block was formulated. The 5-minute interval notation focused on the strategies utilized by the teacher to address DI. These categorical data were based on the observed activities and frequency counts. The percentages by the type of activity were analyzed. The strategies employed were categorized and the means calculated to compare the average number of strategies used by the teacher within each of the five domains of the M-DCPS FEDIC.

Additionally, descriptive statistics were used to analyze the data gathered from the i-Ready assessments. A measure of central tendency was used to determine the range of growth in each class and by grade level to determine if a relationship existed between the use of DI strategies and student achievement.

**Inferential statistical analysis.** Inferential statistics “allow a researcher to draw conclusions, inferences, or generalizations from a sample to a population of participants” (Creswell & Guetterman, 2019, p. 623). Rouse (2014) describes a five-step process when utilizing statistical analysis: (1) describe the data to be analyzed, (2) explore the relationship between the population and collected data, (3) summarize the relationship using a model, (4) prove or disprove the validity, and (5) provide recommendations for future actions. Correlational statistics, designed as a measure of relationship, were used to analyze interval data and determine if a statistically significant relationship existed between student learning growth and the average rate of effective use of DI strategies by the teacher during reading instruction. For the purpose of this study, a Pearson
correlation coefficient was conducted as a measure of strength and direction of the two variables.

Following the collection of observational data, the average combined score of the two observations for each of the 29 teachers provided the first set of variable data. These interval data were based on the scale score derived from the M-DCPS FEDIC and ranged from 1 to 3. The achievement data for each class were determined by using the growth measured in scale score gains or losses for each of the observed classes. The gain score for each class from the first i-Ready diagnostic assessment to the second i-Ready diagnostic assessment served as the second set of variable data. These interval data were the difference between the class set data from the September assessment and the December assessment. We ensured that class averages included the exact students’ assessment scores in both diagnostic assessments.

The i-Ready data along with the data collected from the in-class observations were entered into a Microsoft Excel spreadsheet and Statistical Package for Social Science to develop a correlation matrix and determine if a correlation exists between variables. The findings were not used to determine causal relationships.

**Member check protocol.** Member checking allows participants to review data results and confirm the accuracy of the study as presented by the researcher (Creswell & Poth, 2018). Following the collection of data and report of findings, a group of representative participants of this study were asked to volunteer to review the findings and determine if the described phenomenon was accurate based on the descriptions provided. Preliminary findings were sent to the participating parties via email.
Respondents were asked to review the findings reported and provide feedback regarding the accuracy of the described phenomenon.

**Researcher journal notes.** Writing research journal notes is an effective method of analyzing qualitative data and is extremely helpful when drafting the results. For the purpose of this study, research journal notes were taken periodically during the study. Initially journal notes were recorded throughout the interview and classroom observation periods to provide reflection and a basis of the analysis that was ultimately provided in the final report. These notes captured the thoughts and feelings of the researchers as they engaged in the interview and observation processes. These reflections indicated what was seen and, in some cases, not seen during the data-collection process. Notes may also suggest that additional data could be collected to enhance the study. The notes proved to be valuable for analyzing the data collected and interpreting the findings. A template of the Researcher Journal Notes is provided in Appendix F.

**Study Timeline**

It was determined that a 17-week period allowed for adequate time for the study to be conducted. This timeframe included two informational meetings with prospective participants, individual semi-structured interviews, classroom observations, and a member check protocol. Classroom observations and semi-structured interviews were conducted by individual researchers by equally dividing participants to maximize time. Table 5 illustrates the anticipated time allotted for each step of the study.
Table 5

Study Timeline

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Prospective Participant Informational Meeting (1 per school site)</td>
</tr>
<tr>
<td>Weeks 2 and 3</td>
<td>Semi-Structured Interviews and Collection of i-Ready Diagnostic Assessment Data</td>
</tr>
<tr>
<td>Weeks 4-10</td>
<td>In-class Observations</td>
</tr>
<tr>
<td>Weeks 11-14</td>
<td>Collection of i-Ready Diagnostic Assessment and Data Analysis</td>
</tr>
<tr>
<td>Weeks 15-17</td>
<td>Disaggregate, analyze data, Write Chapters 4 and 5 and Member Check Protocol with teacher participants</td>
</tr>
</tbody>
</table>

Delimitations, Limitations, Assumptions

This study focused on the implementation of DI in third- through fifth-grade reading classrooms in two Tier 1 schools in the Miami-Dade County Public Schools district. Several delimitations, limitations, and assumptions exist with respect to this research study. As per course notes from J. H. Stronge’s research seminar course, delimitations refer to the researchers’ purposeful limited scope of the study and are within the control of the researcher, while limitations are not within the researcher’s control and are factors that fall below ideal level. Assumptions are factors that play a role in the study and must be relied upon. Researchers are not able to control assumptions. Additionally, limitations are “potential weaknesses or problems with the study identified by the researcher” (Creswell & Guetterman, 2019, p. 200).

Delimitations. Delimitations are boundaries that are set by the researcher through conscious exclusionary and inclusionary decisions in order to control the range and narrow the scope of the study (Simon & Goes, 2013). Numerous delimitations were
identified that may have affected the outcome of the study. The focus of the study was narrowed to third- through fifth-grade reading teachers at only two high-performing, Tier 1 schools within one geographic region of a school district of more than 300 schools. We purposefully identified the grade levels in which teachers within each participating school would be eligible to volunteer to participate in the study. This further narrowing of the potential participant pool was deemed necessary in order to strategically solicit the data necessary to answer the research questions comprehensively. This selection resulted in a relatively small sample size with respect to the size of the entire district. To account for this delimitation, the number of participants was increased from 15 to 30, the number of observations from one to two, and the minutes per observation from 20 to 90 minutes. While this decision may impact the transferability of study results, we determined that the value of focusing on our own specific schools where there was a decline in reading performance far outweighed that concern. In addition, since the content area selected for this study was specific to reading, analysis of the findings from this study may not generalize to other content areas, such as mathematics or science.

The development of the M-DCPS FEDIC, which was adapted from the COS-R and IPEGS summative evaluation tool, may have compromised the validity and reliability of the original tools. Additionally, despite a genuine attempt to calibrate and maintain objectivity, the independent use of the M-DCPS FEDIC tool may have resulted in inconsistent findings due to researcher bias. It was expected that the newly adapted instrument would prove valid and reliable based on the results of the intended pilot study.

Finally, the limited analysis of observational data of DI strategies posed as another delimitation in this study. This study also focused on the quantity of DI
implemented during the instructional block without consideration being given to the quality of the DI strategies used. This focus on one dimension of frequency did not provide a deeper understanding of other two dimensions of consistency and quality. We were aware that the data collected would capture the quantity rather than the quality of the DI implemented by the teachers.

**Limitations.** Limitations are factors that arise in a study over which the researchers have no control. They limit the extent of the study and affect the results and interpretations that can be drawn from the study (Simon & Goes, 2013). There were certain limitations that may have affected the validity of this study. A primary limitation of the study was the potential for an even smaller sample size as participation from the teachers was voluntary. While the desired number of participants was secured, potential participants who were not randomly selected, or those choosing not to take part in the study, could have proven to be a threat to the validity of the findings. The potential differences in the responses provided by those who participated versus the nonparticipants could have further impacted the results of the study.

A limited perception of DI and candidness by any given participant may also have threatened the internal validity of the study. We were aware that, while participating in the semi-structured interviews, teachers may have felt the need to say what they felt was expected rather than being authentic in their responses. Similarly, during the member check process, participants may have felt compelled to say what they believe was the correct response to the questions and may even have altered their ideas and perspectives later.
At the time of this study, we were all administrators in the district where the study occurred with two of the researchers serving as the school-site administrators at the two schools where the study was conducted. While measures were taken so that the teacher participants were never observed by their direct supervisor, there was still potential for teachers to feel vulnerable and even threatened because of the collegial relationship amongst the three researchers. We have worked within the same geographical region of the district for many years and have shared many aspects of the job with each other, possibly leading to biased views about specific teachers. Personal bias must be considered since the researchers served as raters, instructional leaders, and evaluators within the district (Yarbrough, Shulha, Hopson, & Caruthers, 2011).

Student performance data on the i-Ready Diagnostic assessments were used. Although several large-scale studies have been conducted to validate this diagnostic assessment and instructional program, the source of these studies has been limited to the creators of the program, Curriculum Associates. Despite the limited amount of research regarding this instrument, M-DCPS has selected it as its primary resource for screening, diagnostic assessment, interventions, and growth monitoring. As utilization of this program is a district mandate, it was the most valid and reliable resource for the purpose of this study.

**Assumptions.** In this study, we assumed that all participating teachers had a working knowledge of and the ability to define DI and that they were familiar with and were currently implementing the DI strategies as described in the M-DCPS FEI (M-DCPS, 2015). The use of DI was an expectation of all teachers within M-DCPS to meet the single goal of student achievement (M-DCPS, 2016). We further assumed that the
teachers had a common understanding of DI and the strategies used to meet the needs of all learners. We also trusted the teachers’ comprehension of DI prior to participating in the interview process. The interview questions contained DI terminology, such as “diverse learner,” “scaffolding,” “tiering instruction,” “student interest,” “content,” “process,” and “product,” that required basic understanding of DI to be answered adequately. We assumed that the teachers participating in this study were familiar with these terms and other related terms.

**Ethical Considerations**

Ethical standards were maintained in a variety of ways throughout the implementation of the study. Prior to steps being taken to conduct research and collect data, approval to execute this study involving human subjects was sought from and granted by the Institutional Review Board (IRB) at the College of William and Mary (Appendix G) and by the M-DCPS Research Review Committee (Appendix H). This study recognized and followed the three principles of ethical conduct needed when conducting research with human subjects, which include respect for persons, beneficence, and justice as outlined in *The Belmont Report* drafted by the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (1979). Once approval was received from both review boards, informational meetings and informed teacher participant consent forms (Appendix I) stating the purpose of the study were provided to all third- through fifth-grade reading teachers in the two selected school sites. Through informational sessions conducted at each school site, participants received relevant information about their involvement in the study, including (a) the purpose and nature of the study, (b) the participants’ time commitment, (c) any applicable risks or
benefits involved, (d) the voluntary nature of the study, (e) the participants’ choice to contribute and the ability to withdraw at any point, and (f) the confidentiality of personally identifiable information. At these informational sessions, participants were informed that the purpose of this study was for the professional growth and development of the researchers and did not have any negative consequences for them. Teacher performance evaluations, performance incentives, and future teaching assignments were not impacted by any potential circumstances that may occur during the implementation of the study.

Confidentiality was maintained through anonymity. Participant names and the names of the schools at which they worked remained undisclosed, and pseudonyms were used where applicable. All responses to interview questions, all researcher notes on observational tools, and all recordings of observations and interviews were kept confidential and stored in locked cabinets or on password-protected electronic devices available only to the researchers. When reporting data findings from the i-Ready diagnostic assessments, results were transcribed by assigning numerical identifiers to both students and teachers to maintain anonymity.

Summary

The intent of this study was to examine the conceptualizations and implementation of DI strategies through the lived experiences and observations of third-through fifth-grade reading teachers in high-performing, Tier 1 schools in M-DCPS. This pragmatic, exploratory, sequential mixed-methods study used semi-structured interviews and classroom observation data to identify participants’ understanding and implementation of DI. While wholesale conclusions cannot be made based on the
findings of this study, it is believed that the results of this study will contribute to creating a more thorough and streamlined professional development plan to convey the critical elements of DI and maximize teacher implementation to meet the needs of all students within the M-DCPS system.
CHAPTER 4

FINDINGS

This chapter presents an evaluation of the findings of the mixed-method study in four sections. Each section presents the evidence to address one evaluation question. The first section presents the results based on the thematic analysis of the interview data to address Research Question 1: How do elementary teachers in high-performing schools conceptualize differentiated instruction (DI)? The second section presents the evidence based on the descriptive and inferential statistical analysis of quantitative data to address Research Question 2: To what extent does the degree of current implementation of differentiated instruction in the third- through fifth-grade reading classrooms in high-performing elementary schools compare with the related differentiated instruction indicators of the Miami-Dade County Public School (M-DCPS) District’s Framework of Effective Instruction (FEI)? The third section presents the evidence based on the inferential and descriptive analysis of quantitative data to address Research Question 3: To what extent does the degree of implementation of differentiated instruction in the third- through fifth-grade reading classrooms in high-performing elementary schools correlate with student learning as measured by the i-Ready diagnostic assessments? The final section presents a summary of the findings.
Evaluation of Research Question 1

How do elementary teachers in high-performing schools conceptualize differentiated instruction?

In order to determine teachers’ conceptualization of DI, 30 individual interviews were conducted with teachers using eight open-ended questions. The interview was designed to elicit responses from teachers that genuinely reflect their perceptions and experiences with implementing DI. Subsequent to the interviews being conducted, one participant opted to withdraw from the study. The following findings reflect those responses of the 29 remaining participants.

Identification of themes. The eight open-ended interview questions are listed in Table 6. The interviews were semi-structured because additional probing or prompting questions were asked to elicit more detailed responses. The interview transcripts were imported into a Microsoft Excel worksheet. To ensure that rights to anonymity were not violated, each teacher was coded with an alphanumeric ID, where the number indicated the grade and the letter indicated the teacher (e.g., ID = 3A represented teacher A in Grade 3). The sample size was assumed to be sufficient to reach saturation, meaning that after a certain number of participants have been interviewed, little that is new comes out of the transcripts. Guest, Bunce, and Johnson (2006) suggest that 6-12 interviews were enough to achieve saturation, whereas Creswell (2014) recommends that 5-25 interviews are enough to achieve saturation.
Table 6

*Interview Questions*

<table>
<thead>
<tr>
<th>Q1.</th>
<th>What do you think it means to “differentiate instruction”?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2.</td>
<td>In what ways can instruction be differentiated to meet the diverse needs of your students?</td>
</tr>
<tr>
<td>Q3.</td>
<td>Please describe your perceptions and experiences in implementing DI into your diverse reading classroom.</td>
</tr>
<tr>
<td>Q4.</td>
<td>Who do you believe benefits from DI? How and why do these students benefit from DI?</td>
</tr>
<tr>
<td>Q5.</td>
<td>What do you believe is the role of differentiated instruction in influencing student achievement in reading?</td>
</tr>
<tr>
<td>Q6.</td>
<td>What DI strategies have you found to be effective during reading instruction in your diverse classroom?</td>
</tr>
<tr>
<td>Q7.</td>
<td>What do you believe has influenced your use/non-use of DI strategies?</td>
</tr>
<tr>
<td>Q8.</td>
<td>What additional information would you like to share regarding differentiation or your teaching methods that we have not already covered?</td>
</tr>
</tbody>
</table>

*Note.* DI = differentiated instruction

A thematic analysis was conducted to identify themes amongst the responses to the interview questions that directly addressed Research Question 1. Thematic analysis is a qualitative research method that has been commonly applied across a wide range of academic disciplines and research questions. Thematic analysis involves identifying, analyzing, organizing, describing, and reporting themes found within a given set of text (Creswell, 2014; Merriam, 2014). Each theme consists of a coded unit of meaning, represented by a quotation (i.e., a phrase, sentence, or group of sentences) regarding a specific issue in order to answer a research question. The methods used to extract and code the themes in this study was similar to that described by Maguire and Delahunt (2017). This method was specifically developed for qualitative researchers in teaching and learning based on an original framework designed by Braun and Clarke (2006) for researchers in psychology.
The framework involved implementing the six steps that were accomplished using approaches that are described in the literature for the manual thematic analysis of qualitative data stored in a Microsoft Excel worksheet (Bree & Gallagher, 2016; D. Z. Meyer & Avery, 2009). Irrelevant responses (i.e., information that did not answer Research Question 1 by conceptualizing DI), as well as the researchers’ interventions, were excluded from the thematic analysis. Thematic analysis involved searching, coding, cutting, pasting, and sorting a total of 208 relevant quotations. After a quotation was coded by number and name, it was cut out from the worksheet containing the entire interview transcripts (making sure to maintain some of the context in which it occurred), and it was pasted into another worksheet containing only the results of the thematic analysis. Quotations with the same code were sorted into groups representing the primary themes. The primary themes were reviewed, and secondary themes were identified and coded as quotations representing manifestations or variations within each primary theme. The quotations within each secondary theme were sorted into groups within each primary theme.

Semantic and latent themes were identified. The semantic themes reflected only the surface meaning of what the participants said but were not underpinned by other sources of information and did not answer Research Question 1. The latent themes were identified using a predefined template, based on other sources of information, and driven by Research Question 1. Latent themes were most appropriate for this study because the purpose was to examine how the teachers conceptualized DI in qualitative terms and thereby enrich and expand the quantitative data collected by classroom observations. As the researchers implemented coding cycles, it became apparent that the responses
gathered from the participating teachers aligned to the indicators of the M-DCPS Framework of Effective Differentiated Instruction Checklist (FEDIC). What began as a thematic analysis of emergent codes, resulted in the utilization of priori coding of the quotations to the indicators in the M-DCPS FEDIC. This provided a greater opportunity to analyze the data collected from the interviews to the data collected through the classroom observations. Although this change to the data analysis process was beneficial to providing a clearer picture of the answers to the research questions, there were consequences that resulted.

Because the quantitative data were classified with respect to the DI indicators of the M-DCPS FEI, the thematic analysis was also underpinned by the five domains of DI, specifically Knowledge of Learners, Learning Environment, Instructional Planning, Instructional Delivery and Engagement, and Assessment. The limitation of this method was that some themes might have been missed because they were not linked to the five specified domains of DI. Furthermore, the prior knowledge, understanding, and our experiences regarding DI led to certain quotations being included and others being excluded. Themes did emerge from the interview responses that were not aligned to the M-DCPS FEDIC; as a result, they are not listed specifically in the response to Research Question 1. An example of quotations that could have been classified as a theme is the concern of the lack of planning time and implementation of DI strategies. Respondent 4H stated that "we just don't have enough time for it...I wish we had more time...That's my biggest complaint and my biggest wish." All 29 respondents indicated that this was an obstacle for teachers when attempting to plan for and implement DI in their classrooms.
**Thematic analysis.** The quotations are presented in Appendices J to N. Appendix J refers to the Primary Theme 1: Knowledge of Learners; Appendix K to Primary Theme 2: Learning Environment; Appendix L to Primary Theme 3: Instructional Planning; Appendix M to Primary Theme 4: Instructional Delivery and Engagement; and Appendix N to Primary Theme 5: Assessment. The frequencies (counts and percentages) of the units of information (i.e., quotations) within each of the coded themes were subsequently evaluated. Table 7 summarizes the frequencies of the quotations identified within each of the primary themes.

Table 7

*Frequencies of Primary Themes*

<table>
<thead>
<tr>
<th>No.</th>
<th>Theme</th>
<th>Quotations (Total = 208)</th>
<th>Coverage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Knowledge of Learners</td>
<td>38</td>
<td>18.3</td>
</tr>
<tr>
<td>2</td>
<td>Learning Environment</td>
<td>41</td>
<td>19.7</td>
</tr>
<tr>
<td>3</td>
<td>Instructional Planning</td>
<td>25</td>
<td>12.0</td>
</tr>
<tr>
<td>4</td>
<td>Instructional Delivery and Engagement</td>
<td>85</td>
<td>40.9</td>
</tr>
<tr>
<td>5</td>
<td>Assessment</td>
<td>19</td>
<td>9.1</td>
</tr>
</tbody>
</table>

*Note.* Coverage % refers to the overall percent of total quotations collected from the 29 respondents.

Tables 8 to 12 summarize the frequencies of the quotations identified within each of the secondary themes. The frequencies provide a broad indication of which components of DI were mentioned by only a few participants and which components were mentioned by many participants. The frequency analysis thereby established a pattern in the qualitative data (Bazeley, 2009). It was assumed that those themes that contain the highest frequency of quotations reflected the components of DI that the respondents perceived to be probably the most important, while those themes that
contained a lower frequency of quotations reflected the components of DI that the respondents perceived to be probably less important.

Table 8 shows that the secondary theme, *Provides instruction based on students’ learning needs*, was the most important in Primary Theme 1: Knowledge of Learners, represented by over half of the 38 quotations. The subtheme, *Provides a range of differentiated activities*, represented about one quarter of the quotations. The secondary theme containing the fewest number of quotations was *Presents concepts at different levels of complexity*. The indicator *Responds to students’ developmental levels* was not identified as a theme as it was only mentioned in one quotation by one respondent. Explanation examples of quotations illustrating the primary theme of Knowledge of Learners and its secondary themes are as follows. For the secondary theme *Presents concepts at different levels of complexity*, Respondent 4F stated,

> Some of them have never heard of the concept before…. It’s the way that I am able to differentiate,… to teach in those levels where the ones who already know the information kind of give them that boost and extra immersion in it and the ones that don’t know it all be able to teach it.

For the secondary theme *Provides a range of differentiated activities*, respondent 3A stated, “The students that are at a low reading level can do passages that are leveled…and some of the activities can be scaffolded.” For the secondary theme *Provides instruction based on students’ learning needs*, Respondent 3A stated, “You need to take the needs of your students into consideration…. Not every student is the same.”
Table 8

Frequencies of Secondary Themes in Primary Theme 1: Knowledge of Learners

<table>
<thead>
<tr>
<th>Secondary Theme</th>
<th>No. of Respondents</th>
<th>Quotations (Total = 38)</th>
<th>Coverage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Presents concepts at different levels of complexity.</td>
<td>7</td>
<td>7</td>
<td>18.4</td>
</tr>
<tr>
<td>3. Provides a range of differentiated activities.</td>
<td>10</td>
<td>10</td>
<td>26.3</td>
</tr>
<tr>
<td>4. Provides instruction based on students’ learning needs.</td>
<td>20</td>
<td>20</td>
<td>52.6</td>
</tr>
</tbody>
</table>

Note. Coverage % refers to the overall percent of total quotations collected from the respondents.

Table 9 shows that within Primary Theme 2: Learning Environment, two secondary themes, Organizes a safe physical learning environment that is conducive to student learning and collaborative work and Holds high expectations for all students, represented over half of the 41 quotations. The secondary themes containing fewer quotations within Learning Environment were Holds high academic expectations for all students, Encourages students to receive and accept constructive feedback on individual work and behavior, Uses electronic communication tools to challenge and support students, and Creates an environment that is challenging. Explanation examples of quotations illustrating the primary theme of Learning Environment and its secondary themes are as follows. For the secondary theme Creates an environment that is challenging, Respondent 3B stated. “If you have a higher student you might use a more challenging word or text might be more challenging or the passage as opposed to maybe a student that was struggling.” For the secondary theme Organizes a safe physical learning environment that is conducive to student learning and collaborative work, Respondent 3G stated, “You have to have an environment that is safe … for the
students.” For the secondary theme *Holds high academic expectations for all students,* Respondent 5H stated, “If you just go through the whole group instruction and then expect the same thing from everybody, there’s somebody that’s not going to keep up.”

For the secondary theme *Uses electronic communications tools to challenge and support students,* Respondent 5F stated, “Whether it’s through enrichment or whether it’s through the computer program of i-Ready because it is on their level.” For the secondary theme *Encourages students to receive and accept constructive feedback on individual work and behavior,* Respondent 3A stated, “There has to be some kind of feedback from the teacher… some guidance all the time.”

Table 9

**Frequencies of Secondary Themes in Primary Theme 2: Learning Environment**

<table>
<thead>
<tr>
<th>Secondary Theme</th>
<th>No. of Respondents</th>
<th>Quotations (Total = 41)</th>
<th>Coverage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Creates an environment that is challenging.</td>
<td>6</td>
<td>6</td>
<td>14.6</td>
</tr>
<tr>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work.</td>
<td>13</td>
<td>13</td>
<td>31.7</td>
</tr>
<tr>
<td>7. Holds high academic expectations for all students.</td>
<td>7</td>
<td>8</td>
<td>19.5</td>
</tr>
<tr>
<td>8. Uses electronic communications tools to challenge and support students.</td>
<td>6</td>
<td>7</td>
<td>17.1</td>
</tr>
<tr>
<td>9. Encourages students to receive and accept constructive feedback on individual work and behavior.</td>
<td>5</td>
<td>7</td>
<td>17.1</td>
</tr>
</tbody>
</table>

*Note.* Coverage % refers to the overall percent of total quotations collected from the respondents.

Table 10 shows that within Primary Theme 3: Instructional Planning, the secondary theme *Gathers, evaluates, and/or creates appropriate instructional materials*
was the most important, representing over half of the 25 quotations. The secondary theme Plans for the needs of all learners represented about one quarter of the quotations. The secondary theme and least important theme containing only four quotations was Plans instruction for pacing and transitions. Explanation examples of quotations illustrating the primary theme of Instructional Planning and its secondary themes are as follows. For the secondary theme Plans instruction for pacing and transitions, Respondent 3H stated, “Pre-planning, preparing and make sure that you’re prepared,… depending on what’s going on in the lesson,… you might have to change things.” For the secondary theme Plans for the needs of all learners, Respondent 4D stated, “Being cognizant of those different learning styles and making sure that you can tailor the lesson plans and your instructional strategies to cater to the needs of each child.” For the secondary theme Gathers, evaluates, and/or creates appropriate instructional materials, Respondent 4K stated, “You actually try to get as much materials as possible that’s going to actually help with that content,… finding resources to meet the needs of students.”

Table 10

Frequencies of Secondary Themes in Primary Theme 3: Instructional Planning

<table>
<thead>
<tr>
<th>Secondary Theme</th>
<th>No. of Respondents</th>
<th>Quotations (Total = 25)</th>
<th>Coverage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Plans instruction for pacing and transitions.</td>
<td>3</td>
<td>4</td>
<td>16.0</td>
</tr>
<tr>
<td>11. Plans for the needs of all learners.</td>
<td>7</td>
<td>7</td>
<td>28.0</td>
</tr>
<tr>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials.</td>
<td>10</td>
<td>14</td>
<td>56.0</td>
</tr>
</tbody>
</table>

Note. Coverage % refers to the overall percent of total quotations collected from the respondents.

Table 11 shows that within Primary Theme 4: Instructional Delivery and Engagement, the most important secondary themes, collectively representing two-thirds
of the 85 quotations, were *Uses multiple levels of questions and makes necessary adjustments*, *Presents lessons clearly and skillfully using explicit instruction*, and *Uses technology to differentiate instruction and enhance learning*. The four secondary themes identified by lower frequencies of quotations included *Connects students’ knowledge, experiences, and interests to learning goals*; *Uses appropriate pace and maximizes instructional time*; *Engages students in diverse activity structures*; and *Engages students in higher-order learning tasks*. The indicator with the smallest frequency of quotations was *Engages students in authentic learning real-life applications* and was not identified as a theme. Explanation examples of quotations illustrating the primary theme of Instructional Delivery and Engagement and its secondary themes are as follows. For the secondary theme *Uses multiple levels of questions, and makes necessary adjustments*, Respondent 5A stated,

> It depends on the skill, but you can have maybe one child working on a simple graphic organizer the other child is doing open-ended questions the higher level could maybe be summarizing … and obviously getting text tailored to their level.

For the secondary theme *Connects students’ knowledge, experiences, and interests to learning goals*, Respondent 5E stated, “My first goal with them is always to try to break down so that they understand what’s being asked of them… Some students read the question and understand what’s being asked of them and some students don’t.” For the secondary theme *Presents lessons clearly and skillfully and uses explicit instruction*, Respondent 5A stated, “They need the teacher’s explicit instruction for them to produce to their fullest potential.” For the secondary theme *Uses technology to differentiate instruction and enhance learning*, Respondent 3H stated, “I like to help bring in
YouTube videos and things… making learning fun.” For the secondary theme *Engages students in diverse activity structures*, Respondent 4K stated, “Sometimes you actually need the reteaching and sometimes you actually can enrich the child’s specific needs… so it’s diverse: Some kids are stronger in some areas than others…. That’s when a teacher comes in as a facilitator.” For the secondary theme *Engages students in higher-order learning tasks*, Respondent 4A stated, “We could target those different skills, literary, a lot of figurative language, higher order…. I try to also find informational text that is like more complex.” For the secondary theme *Uses appropriate pace and maximizes instructional time*, Respondent 4G stated, “You have to really see what you are planning. You have to provide not only time to teach but also time to supplement that teaching with whatever it is: … extra time… one on one.”

Additionally, it is important to note that this primary theme reflects the combination of the two domains of Instructional Delivery and Engagement. The combination of these two domains resulted in eight indicators (equally representing the two original domains), the most of all five domains, whereby resulting in the increase of frequency of quotations. A further analysis of the 85 responses indicated that 64 responses related to Instructional Delivery and 21 responses related to Engagement. Instructional Delivery resulted in the highest frequency of quotations, while Engagement resulted in the second least number of quotations within the referenced themes.
Table 11

*Frequencies of Secondary Themes in Primary Theme 4: Instructional Delivery and Engagement*

<table>
<thead>
<tr>
<th>Secondary Theme</th>
<th>No. of Respondents</th>
<th>Quotations (Total = 85)</th>
<th>Coverage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Uses multiple levels of questions and makes necessary adjustments.</td>
<td>19</td>
<td>27</td>
<td>31.8</td>
</tr>
<tr>
<td>14. Connects students’ knowledge, experiences, and interests to learning goals.</td>
<td>4</td>
<td>7</td>
<td>8.2</td>
</tr>
<tr>
<td>15. Presents lessons clearly and skillfully, using explicit instruction.</td>
<td>10</td>
<td>15</td>
<td>17.6</td>
</tr>
<tr>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
<td>12</td>
<td>15</td>
<td>17.6</td>
</tr>
<tr>
<td>17. Engages students in diverse activity structures.</td>
<td>7</td>
<td>7</td>
<td>8.2</td>
</tr>
<tr>
<td>18. Engages students in higher-order learning tasks.</td>
<td>4</td>
<td>4</td>
<td>4.7</td>
</tr>
<tr>
<td>20. Uses appropriate pace and maximizes instructional time.</td>
<td>7</td>
<td>8</td>
<td>9.4</td>
</tr>
</tbody>
</table>

*Note.* Coverage % refers to the overall percent of total quotations collected from the respondents.

Table 12 shows that within Primary Theme 5: Assessment, the secondary theme *Uses assessments to inform instruction,* represented over half of the 19 quotations while the remainder of quotations were classified in the secondary theme *Uses assessment to adjust instruction.* Explanation examples of quotations illustrating the primary theme of Assessment and its secondary themes are as follows. For the secondary theme *Uses assessments to inform instruction,* Respondent 4G stated,
You use the data that you have, whether it be i-Ready or whatever program is being used, and that data could more or less provide you with an insight as to what your kids are lacking or what you kids’ strengths are in.

For the secondary theme *Uses assessments to adjust instruction*, Respondent 3D stated, “I am able to differentiate through leveled text, through manipulatives, through online instruction, and I reassess and reteach where I see struggles.”

Table 12

*Frequencies of Secondary Themes in Primary Theme 5: Assessment*

<table>
<thead>
<tr>
<th>Secondary Theme</th>
<th>No. of Respondents</th>
<th>Quotations (Total = 19)</th>
<th>Coverage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. Uses assessments to inform instruction</td>
<td>9</td>
<td>11</td>
<td>57.9</td>
</tr>
<tr>
<td>22. Uses assessments to adjust instruction</td>
<td>8</td>
<td>8</td>
<td>42.1</td>
</tr>
</tbody>
</table>

*Note.* Coverage % refers to the overall percent of total quotations collected from the respondents.

In summary, based on the frequency of quotations, findings indicate that participants conceptualize that Instructional Delivery and Engagement and Learning Environment are the most important domains when implementing DI in the reading classroom. Participants’ frequency of quotations further reveal that Instructional Planning and Assessment are the least important domains when implementing DI in the reading classroom.

**Evaluation of Research Question 2**

To what extent does the degree of current implementation of differentiated instruction in the third- through fifth-grade reading classrooms in high-performing
elementary schools compare with the related differentiated instruction indicators of the M-DCPS FEI?

Tables 13 and 14 summarize the descriptive statistics for the percentage scores and ratings awarded for the two observations of teachers. The indicators were classified by five domains of DI (Knowledge of Learners, Learning Environment, Instructional Planning, Instructional Delivery and Engagement, and Assessment) and grade (3, 4, and 5).

Table 13

*Descriptive Statistics for Indicators Used in Classroom Observations (Percentage Scores)*

<table>
<thead>
<tr>
<th>Domain and Indicators</th>
<th>Grade 3 (n = 18)</th>
<th>Grade 4 (n = 20)</th>
<th>Grade 5 (n = 20)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Knowledge of Learners</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Responds to students’ developmental levels.</td>
<td>76.11</td>
<td>16.65</td>
<td>84.20</td>
</tr>
<tr>
<td>2. Presents concepts at different levels of complexity.</td>
<td>44.41</td>
<td>28.70</td>
<td>33.11</td>
</tr>
<tr>
<td>3. Provides a range of differentiated activities.</td>
<td>65.17</td>
<td>23.54</td>
<td>45.67</td>
</tr>
<tr>
<td>4. Provides instruction based on students’ learning needs.</td>
<td>77.83</td>
<td>18.54</td>
<td>69.42</td>
</tr>
</tbody>
</table>
Table 13 (continued)

<table>
<thead>
<tr>
<th>Domain and Indicators</th>
<th>Grade 3 ((n = 18))</th>
<th>Grade 4 ((n = 20))</th>
<th>Grade 5 ((n = 20))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(M) (SD) (M)</td>
<td>(SD) (M) (SD)</td>
<td>(M) (SD)</td>
</tr>
<tr>
<td>Learning Environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Creates an environment that is stimulating, challenging, and fosters intellectual risk-taking.</td>
<td>47.00 30.97</td>
<td>59.47 37.16</td>
<td>48.11 30.56</td>
</tr>
<tr>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work.</td>
<td>100.00 0.00</td>
<td>93.05 22.31</td>
<td>99.15 3.80</td>
</tr>
<tr>
<td>7. Promotes accountability for learning and holds high academic expectations for all students.</td>
<td>37.17 16.53</td>
<td>25.30 16.09</td>
<td>40.29 12.85</td>
</tr>
<tr>
<td>8. Uses verbal, nonverbal, and electronic communications tools to challenge and support students in a positive and supportive manner.</td>
<td>56.06 25.04</td>
<td>47.45 21.86</td>
<td>52.60 18.04</td>
</tr>
<tr>
<td>9. Encourages students to receive and accept constructive feedback on individual work and behavior.</td>
<td>65.39 17.39</td>
<td>51.55 18.98</td>
<td>56.20 11.03</td>
</tr>
<tr>
<td>Instructional Planning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Plans instruction effectively for content mastery, pacing, and transitions.</td>
<td>80.00 15.09</td>
<td>84.40 19.61</td>
<td>70.35 16.60</td>
</tr>
<tr>
<td>11. Identifies and plans for the instructional and developmental needs of all learners.</td>
<td>61.39 18.37</td>
<td>42.95 19.73</td>
<td>45.50 13.79</td>
</tr>
<tr>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials.</td>
<td>80.44 15.74</td>
<td>82.37 19.66</td>
<td>72.00 16.00</td>
</tr>
<tr>
<td>Instructional Delivery and Engagement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Uses multiple levels of questions, and makes necessary adjustments</td>
<td>43.39 15.64</td>
<td>35.30 15.51</td>
<td>35.85 13.62</td>
</tr>
</tbody>
</table>
Table 13 (continued)

<table>
<thead>
<tr>
<th>Domain and Indicators</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
</tr>
<tr>
<td>14. Connects students’ knowledge, experiences, and interests to learning goals.</td>
<td>36.17</td>
<td>15.68</td>
<td>30.40</td>
</tr>
<tr>
<td>15. Presents lessons clearly and skillfully uses explicit instruction.</td>
<td>47.72</td>
<td>20.41</td>
<td>51.35</td>
</tr>
<tr>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
<td>46.00</td>
<td>25.45</td>
<td>42.56</td>
</tr>
<tr>
<td>17. Engages students in diverse activity structures.</td>
<td>61.83</td>
<td>24.20</td>
<td>41.74</td>
</tr>
<tr>
<td>18. Uses a variety of strategies to engage students in higher-order learning tasks.</td>
<td>33.47</td>
<td>20.94</td>
<td>27.70</td>
</tr>
<tr>
<td>19. Engages students in authentic learning real-life applications, and interdisciplinary connections.</td>
<td>25.50</td>
<td>12.95</td>
<td>33.06</td>
</tr>
<tr>
<td>20. Uses appropriate pace and maximizes instructional time for student learning.</td>
<td>69.22</td>
<td>19.92</td>
<td>60.60</td>
</tr>
<tr>
<td><strong>Assessment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Uses pre-assessment data, formative and summative assessments to inform instruction.</td>
<td>42.28</td>
<td>16.56</td>
<td>38.38</td>
</tr>
<tr>
<td>23. Uses formative assessments to adjust instruction for re-teaching, remediation, and enrichment.</td>
<td>52.22</td>
<td>15.60</td>
<td>47.70</td>
</tr>
<tr>
<td>Domain and Indicators</td>
<td>Grade 3 (n = 18)</td>
<td>Grade 4 (n = 20)</td>
<td>Grade 5 (n = 20)</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------</td>
<td>------------------</td>
<td>------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Knowledge of Learners</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Responds to students’ developmental levels.</td>
<td>2.94 0.24</td>
<td>2.75 0.55</td>
<td>3.00 0.00</td>
</tr>
<tr>
<td>2. Presents concepts at different levels of complexity.</td>
<td>1.88 0.99</td>
<td>1.32 0.58</td>
<td>1.26 0.56</td>
</tr>
<tr>
<td>3. Provides a range of differentiated activities.</td>
<td>2.61 0.70</td>
<td>1.72 0.90</td>
<td>1.70 0.80</td>
</tr>
<tr>
<td>4. Provides instruction based on students’ learning needs.</td>
<td>2.78 0.65</td>
<td>2.32 0.95</td>
<td>2.55 0.76</td>
</tr>
<tr>
<td>Learning Environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Creates an environment that is stimulating, challenging, and fosters intellectual</td>
<td>1.61 0.85</td>
<td>1.89 0.99</td>
<td>1.56 0.86</td>
</tr>
<tr>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work.</td>
<td>3.00 0.00</td>
<td>2.85 0.49</td>
<td>3.00 0.00</td>
</tr>
<tr>
<td>7. Promotes accountability for learning and holds high academic expectations for all students.</td>
<td>1.33 0.59</td>
<td>1.20 0.42</td>
<td>1.47 0.80</td>
</tr>
<tr>
<td>8. Uses verbal, nonverbal, and electronic communications tools to challenge and support students in a positive and supportive manner.</td>
<td>2.28 0.90</td>
<td>1.70 0.87</td>
<td>2.00 0.86</td>
</tr>
<tr>
<td>9. Encourages students to receive and accept constructive feedback on individual work and behavior.</td>
<td>2.61 0.61</td>
<td>2.00 0.92</td>
<td>2.40 0.75</td>
</tr>
<tr>
<td>Instructional Planning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Plans instruction effectively for content mastery, pacing, and transitions.</td>
<td>3.00 0.00</td>
<td>2.85 0.37</td>
<td>2.80 0.41</td>
</tr>
<tr>
<td>Domain and Indicators</td>
<td>Grade 3</td>
<td>Grade 4</td>
<td>Grade 5</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Identifies and plans for the instructional and developmental needs of all learners.</td>
<td>2.39 0.70</td>
<td>1.55 0.89</td>
<td>1.65 0.67</td>
</tr>
<tr>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials.</td>
<td>3.00 0.00</td>
<td>2.85 0.37</td>
<td>2.85 0.37</td>
</tr>
<tr>
<td><strong>Instructional Delivery and Engagement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Uses multiple levels of questions, and makes necessary adjustments</td>
<td>1.56 0.71</td>
<td>1.30 0.66</td>
<td>1.30 0.57</td>
</tr>
<tr>
<td>14. Connects students’ knowledge, experiences, and interests to learning goals.</td>
<td>1.50 0.71</td>
<td>1.35 0.59</td>
<td>1.35 0.49</td>
</tr>
<tr>
<td>15. Presents lessons clearly and skillfully uses explicit instruction.</td>
<td>1.78 0.94</td>
<td>1.90 0.91</td>
<td>1.95 0.76</td>
</tr>
<tr>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
<td>1.89 0.96</td>
<td>1.81 0.91</td>
<td>1.35 0.61</td>
</tr>
<tr>
<td>17. Engages students in diverse activity structures.</td>
<td>2.39 0.92</td>
<td>1.63 0.90</td>
<td>1.80 0.83</td>
</tr>
<tr>
<td>18. Uses a variety of strategies to engage students in higher-order learning tasks.</td>
<td>1.47 0.72</td>
<td>1.15 0.37</td>
<td>1.15 0.37</td>
</tr>
<tr>
<td>19. Engages students in authentic learning real-life applications, and interdisciplinary connections.</td>
<td>1.06 0.25</td>
<td>1.50 0.79</td>
<td>1.61 0.78</td>
</tr>
<tr>
<td>20. Uses appropriate pace and maximizes instructional time for student learning.</td>
<td>2.67 0.69</td>
<td>2.25 0.79</td>
<td>2.65 0.67</td>
</tr>
<tr>
<td><strong>Assessment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Uses pre-assessment data, formative and summative assessments to inform instruction.</td>
<td>1.67 0.77</td>
<td>1.31 0.48</td>
<td>1.13 0.50</td>
</tr>
<tr>
<td>23. Uses formative assessments to adjust instruction for re-teaching, remediation, and enrichment.</td>
<td>2.17 0.71</td>
<td>1.85 0.93</td>
<td>1.75 0.72</td>
</tr>
</tbody>
</table>
The items with consistently the highest percentage mean scores (> 70%) and the highest 3-point ratings (> 2.75) across the three grades were (1) Responds to students developmental levels (in Knowledge of Learners); (6) Organizes a safe physical learning environment that is conducive to student learning and collaborative work (in Learning Environment); (10) Plans instruction effectively for content mastery, pacing, and transitions; and (12) Gathers, evaluates, and/or creates appropriate instructional materials (in Instructional Planning).

The items with the consistently lowest percentage scores (< 45%) and 3-point ratings (< 2) across the three grades were (2) Presents concepts at different levels of complexity (in Knowledge of Learners); (7) Promotes accountability for learning and holds high academic expectations for all students (in Learning Environment); (13) Uses multiple levels of questions and makes necessary adjustments; (14) Connects students’ knowledge, experiences, and interests to learning goals; and (18) Uses a variety of strategies to engage students in higher-order learning tasks, and (19) Engages students in authentic learning, real-life applications, and interdisciplinary connections (in Instructional Delivery and Engagement); and (22) Uses preassessment data and formative and summative assessments to inform instruction (in Assessment).

While the M-DCPS FEDIC observation protocol was created utilizing the domains and indicators of the Framework of Effective Instruction, the scale ratings of the protocol were adopted from the IPEGS system of evaluation (MDCPS, 2018b). The IPEGS system of evaluation includes summative ratings for seven performance standards; Knowledge of Learners, Instructional Planning, Instructional Delivery and Engagement, Learning Environment, Assessment, Communication, and Professionalism.
Thus, the two separate domains of the FEI (Instructional Delivery and Engagement) were combined to apply the operational definition of ratings as described in the IPEGS system of evaluation. The combined domains resulted in eight indicators, four of which represented Instructional Delivery and four of which represented Engagement. When separated, the area of Instructional Delivery was observed on average as follows: Grade 3 mean score of 43.32, Grade 4 mean score of 40.15, and Grade 5 mean score of 40.28. The mean scores in the area of Engagement were as follows: Grade 3 = 47.51, Grade 4 = 40.76, and Grade 5 = 47.97. While Engagement, in isolation, did result in slightly higher mean scores as compared to Instructional Delivery, the results fell within the confidence interval for each grade level. The combination of the two domains did not affect the overall grade level measures for the single domain of Instructional Delivery and Engagement.

The percentage scores and ratings for the items specified in Tables 13 and 14 were averaged to provide overall measures of the five domains of DI (Knowledge of Learners, Learning Environment, Instructional Planning, Instructional Delivery and Engagement, and Assessment). Figure 2 presents an error bar chart to compare the mean percentage scores ± 95% confidence intervals (CI) for each of the five domains of DI classified by Grade 3 ($n = 9$ teachers), Grade 4 ($n = 10$ teachers), and Grade 5 ($n = 10$ teachers). Each mean score was symbolized by a circle. The 95% CI (either side of each mean score) were symbolized by a vertical bar, representing the theoretical range over which the mean score in the population would be captured in 95 out of 100 samples. The error bar chart was interpreted using the visual method described by Cumming and Finch (2005) defined as “inference by eye: confidence intervals and how to read pictures of
data” (p. 170). Specifically, if the vertical bars representing the 95% CI of two mean scores did not overlap, then the two mean scores were significantly different from each other at the .05 level. Visual examination of Figure 2 indicates that the mean percentage scores for the five domains of DI did not appear to be significantly different across the three grades; however, two groups of mean scores within the five domains appeared to be significantly different from each other. The percentage scores for Knowledge of Learners, Learning Environment, and Instructional Planning were equal but significantly higher than the percentage scores for Instructional Delivery and Engagement and Assessment, which were also equal.

![Figure 2. Mean ± 95% CI of percentage scores for five domains across three grades.](image)
Figure 3 presents an error bar chart to compare the mean 3-point rating scale ± 95% CI for each of the five domains of differentiated instruction across the three grades.

Visual examination of Figure 3 indicates that the mean 3-point rating scores for the five domains did not appear to be markedly different across the three grades; however, two groups of mean rating scores within the five domains appeared to be significantly different from each other, indicated by the lack of overlaps between the 95% CI. The ratings for Knowledge of Learners, Learning Environment, and Instructional Planning were equal but significantly higher than the ratings for Instructional Delivery and Engagement and Assessment, which were also equal.

Figure 3. Mean ± 95% CI of 3-point rating scales for five domains across three grades.
The mean percentage and rating scores with respect to the five domains and the three grades were formerly compared using the “General Linear Model … Repeated Measures” procedure in SPSS. A repeated measures analysis of variance was used because multiple measurements (percentage scores and 3-point ratings) were collected using the same participants on multiple occasions over a period of time (Field, 2013). The assumption of sphericity (i.e., the variance of the differences between the repeated measures should be equal) was not violated because Mauchly’s $W$ statistic was not significant ($p > .001$). The results of the repeated measures analysis of variance presented in Tables 15 and 16 confirmed the conclusions based on the visual analysis of the mean scores using 95% CI in Figures 2 and 3.

The mean percentage scores and ratings were significantly different ($p < .001$) between the five domains. The mean percentage scores and ratings were not significantly different ($p > .05$) between the three grades. There was no significant interaction ($p > .05$), implying that the patterns in the mean percentage scores and rating across the five domains were the same for Grades 3, 4, and 5 (as illustrated in Figures 2 and 3). Knowledge of Learners, Learning Environment, and Instructional Planning were equal but significantly higher than Instructional Delivery and Engagement and Assessment, which were also equal.
Table 15

*Analysis of Variance to Compare Mean Percentage Scores for Five Domains Across Three Grades*

<table>
<thead>
<tr>
<th>Effect</th>
<th>df</th>
<th>F</th>
<th>p</th>
<th>Partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain</td>
<td>4</td>
<td>42.06</td>
<td>&lt;.001*</td>
<td>.62 (moderate)</td>
</tr>
<tr>
<td>Domain x Grade (Interaction)</td>
<td>8</td>
<td>0.89</td>
<td>.525</td>
<td>.06 (small)</td>
</tr>
<tr>
<td>Grade</td>
<td>2</td>
<td>0.86</td>
<td>.434</td>
<td>.06 (small)</td>
</tr>
</tbody>
</table>

* $p < .001$

Table 16

*Analysis of Variance to Compare Mean Ratings for Five Domains Across Three Grades*

<table>
<thead>
<tr>
<th>Effect</th>
<th>df</th>
<th>F</th>
<th>p</th>
<th>Partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain</td>
<td>4</td>
<td>29.19</td>
<td>&lt;.001*</td>
<td>.53 (moderate)</td>
</tr>
<tr>
<td>Domain x Grade (Interaction)</td>
<td>8</td>
<td>0.98</td>
<td>.450</td>
<td>.06 (small)</td>
</tr>
<tr>
<td>Grade</td>
<td>2</td>
<td>1.13</td>
<td>.338</td>
<td>.06 (small)</td>
</tr>
</tbody>
</table>

* $p < .001$

With respect to the interpretation of $p$-values, the official guidelines issued by the American Statistical Association (Wasserstein & Lazar, 2016) assert,

Scientific conclusions and business or policy decisions should not be based only on whether a $p$-value passes a specific threshold. … A $p$-value, or statistical significance, does not measure the size of an effect or the importance of the result.

By itself, a $p$-value does not provide a good measure of evidence. (pp. 131–132)

The practical implication of these guidelines is that, $p < .05$ is an arbitrary, fickle, and unreliable criterion that does not reflect the practical significance of the results of statistical test (Wasserstein, Schirm, & Lazar, 2019). Effect sizes (partial $\eta^2$) indicating
the proportion of the variance explained were also needed to interpret the results. Partial \( \eta^2 \) considers the proportion of the variance caused by each independent variable, and the error that is accounted for by that effect. Partial \( \eta^2 \) is the sum of squares (SS) representing the variance of the effect of each independent variable (between subjects) divided by that effect plus the sum of squares associated with the error variance (within subjects; Fritz, Morris, & Richler, 2012). The effect size criteria proposed by Ferguson (2009) indicated that the effect size for the domain was moderate to strong (partial \( \eta^2 \) between .25 and .64), while the effect size for the grade was small (partial \( \eta^2 \) close to .04).

In summary, the mean percentage scores and ratings across the five domains and 23 indicators of the M-DCPS FEI specify that the participants’ implementation of DI strategies was most prevalent in the areas of Knowledge of Learners, Instructional Planning, and Learning Environment. While a significant difference was found across the five domains, no significant difference was found across grade levels, as patterns in the mean percentage scores and ratings across the five domains were the same in Grades 3, 4, and 5.

**Evaluation of Research Question 3**

To what extent does the degree of implementation of differentiated instruction in the third- through fifth-grade reading classrooms in high-performing elementary schools correlate with student learning as measured by the i-Ready diagnostic assessments?

Table 17 presents the Pearson’s correlation coefficients \( (r) \) and effect sizes \( (r^2) \), indicating the proportion of the variance explained) between the i-Ready gain scores versus the percentage scores and ratings for the five domains. Three of the domain
scores—Knowledge of Learners (% and rating), Learning Environment (%), and Instructional Delivery and Engagement (%)—are significantly positively correlated with the i-Ready gain scores ($p < .05$). However, correlation coefficients computed using variables using 3-point ordinal ratings (i.e., 1, 2, and 3) are attenuated (i.e., misleadingly low) due to the inaccurate estimation of the covariance and variance (Agresti, 2010). Because $p < .05$ did not reflect the practical significance of the results (Wasserstein et al., 2019) the criteria proposed by Ferguson (2009) were applied to interpret $r^2$. The effect size between the i-Ready gain scores and Knowledge of Learners, Learning Environment, and Instructional Delivery and Engagement was small ($r^2$ between .05 and .25). The effect size was negligible ($r^2 \leq .04$) between the i-Ready gain scores and Assessment.

Table 17

*Correlations Between Five Domains of Differentiated Instruction and i-Ready Gain Scores*

<table>
<thead>
<tr>
<th>Domain Score</th>
<th>$r$ ($N = 29$)</th>
<th>$p$</th>
<th>$r^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of Learners (%)</td>
<td>.46</td>
<td>.013*</td>
<td>.21 (small)</td>
</tr>
<tr>
<td>Learning Environment (%)</td>
<td>.45</td>
<td>.013*</td>
<td>.20 (small)</td>
</tr>
<tr>
<td>Instructional Delivery &amp; Engagement (%)</td>
<td>.39</td>
<td>.035*</td>
<td>.15 (small)</td>
</tr>
<tr>
<td>Knowledge of Learners (Rating)</td>
<td>.38</td>
<td>.041*</td>
<td>.14 (small)</td>
</tr>
<tr>
<td>Instructional Planning (%)</td>
<td>.35</td>
<td>.063</td>
<td>.12 (small)</td>
</tr>
<tr>
<td>Instructional Planning (Rating)</td>
<td>.35</td>
<td>.063</td>
<td>.12 (small)</td>
</tr>
<tr>
<td>Learning Environment (Rating)</td>
<td>.35</td>
<td>.064</td>
<td>.12 (small)</td>
</tr>
<tr>
<td>Instructional Delivery &amp; Engagement (Rating)</td>
<td>.29</td>
<td>.143</td>
<td>.08 (small)</td>
</tr>
<tr>
<td>Assessment (%)</td>
<td>.20</td>
<td>.306</td>
<td>.04 (negligible)</td>
</tr>
<tr>
<td>Assessment (Rating)</td>
<td>.04</td>
<td>.854</td>
<td>.00 (negligible)</td>
</tr>
</tbody>
</table>

* $p < .05$
In summary, the findings of the Pearson’s correlation coefficient indicate a significantly positive correlation between the three domains Knowledge of Learners (% and rating), Learning Environment (%), Instructional Delivery and Engagement (%) and i-Ready gain scores (p < .05) between two diagnostic assessments. Further, a small effect size exists in the domains of Knowledge of Learners (.21), Learning Environment (.20), Instructional Delivery and Engagement (.15), and Instructional Planning (.12). The effect size for Assessment (.04) was found to be negligible.

Summary of Findings

The results of a thematic analysis of qualitative data were interpreted to address Research Question 1: How do elementary teachers in high-performing schools conceptualize differentiated instruction? Interviews were conducted with 29 teachers using eight open-ended questions. The thematic analysis of the interview responses was underpinned by the five domains of differentiated instruction, to identify five primary latent themes, specifically, Knowledge of Learners, Learning Environment, Instructional Planning, Instructional Delivery and Engagement, and Assessment. Based on the assumption that the number of quotations used to identify each theme reflected its relative importance, the most important primary theme was Instructional Delivery and Engagement (85 quotations) followed in order of frequency by Learning Environment (41 quotations), Knowledge of Learners (38 quotations), Instructional Planning (25 quotations), and Assessment (19 quotations). The manifestations and variations within each primary theme were revealed by secondary themes. With respect to Instructional Delivery and Engagement, the most important secondary themes were Uses multiple levels of questions and makes necessary adjustments, Presents lessons clearly and
skillfully using explicit instruction, and Uses technology to differentiate instruction and enhance learning. With respect to Learning Environment, the most important secondary themes were Organizes a safe physical learning environment that is conducive to student learning and collaborative work and Holds high expectations for all students. With respect to Knowledge of Learners, the most important secondary theme was Provides instruction based on students’ learning needs. With respect to Instructional Planning, the most important secondary theme was Gathers, evaluates, and/or creates appropriate instructional materials. With respect to Assessment, the most important secondary theme was Uses assessment to inform instruction.

A descriptive and inferential statistical analysis of quantitative data collected in classroom observations of 29 teachers of students in Grades 3, 4, and 5 was conducted to address Research Question 2: To what extent does the degree of current implementation of differentiated instruction in the third- through fifth-grade reading classrooms in high-performing elementary schools compare with the related differentiated instruction indicators of the M-DCPS FEI? All the themes identified in the thematic analysis of the interview data were also identified in the classroom observations of the five domains of differentiated instruction. The indicators of differentiated instruction with the highest consistent percentage mean scores (> 70%) and the highest 3-point average (> 2.75) across the three grades were Responds to students’ developmental levels (in Knowledge of Learners); Organizes a safe physical learning environment that is conducive to students’ learning and collaborative work (in Learning Environment); and Plans instruction effectively for content mastery, pacing, and transitions and Gathers, evaluates, and/or creates appropriate instructional materials (in Instructional Planning).
The mean percentage scores and ratings were significantly different \((p < .001)\) between the five domains of differentiated instruction. Knowledge of Learners, Learning Environment and Instructional Planning were equal, but significantly higher than Instructional Delivery and Engagement and Assessment, which were also equal. The mean percentage scores and ratings were not significantly different \((p > .05)\) among the three grades. There was no significant interaction \((p > .05)\), implying that the patterns in the mean percentage scores and ratings across the five domains were the same for Grades 3, 4, and 5.

Correlation analysis was conducted using quantitative data collected to measure the five domains of differentiated instruction in the classroom observations versus the i-Ready scores in order to address Research Question 3: To what extent does the degree of implementation of differentiated instruction in the third- through fifth-grade reading classrooms in high-performing elementary schools correlate with student learning as measured by the i-Ready diagnostic assessments? Three of the domain scores—Knowledge of Learners (% and rating), Learning Environment (%), and Instructional Delivery and Engagement (%)—were significantly positively correlated with the i-Ready gain scores \((p < .05)\). The effect size between the i-Ready gain scores and Knowledge of Learners, Learning Environment and Instructional Delivery and Engagement was small \((r^2 \text{ between } .05 \text{ and } .25)\). The effect size was negligible \((r^2 \leq .04)\) between the i-Ready gain scores and Assessment.
CHAPTER 5
RECOMMENDATIONS

Discussion of Findings

This pragmatic, exploratory, sequential mixed-methods study was designed to investigate the conceptualizations of teachers at high-performing elementary schools within Miami-Dade County Public Schools (M-DCPS) regarding differentiated instruction (DI), the degree of successful implementation based on these conceptualizations, and the extent to which the degree of implementation correlates with student achievement in reading. The qualitative data were obtained through a collection of teacher understanding shared during individual, face-to-face, semi-structured interviews and through researcher field notes from observations conducted during two instructional reading blocks per participant. Quantitative data were obtained from identifying the frequency of used DI strategies during each 90-minute reading class and from i-Ready diagnostic assessment scale score changes resulting from two test administrations. The findings support the previously referenced research and literature regarding teachers’ conceptualization and implementation of DI and its correlation to student achievement.

Research Question 1

How do elementary teachers in high performing schools conceptualize differentiated instruction?
The findings of this research study indicate that the participating teachers conceptualize that Instructional Delivery and Engagement and Learning Environment are the most important domains within the M-DCPS Framework of Effective Instruction (FEI) related to DI. These findings are based on the frequency of quotations noted during the semi-structured interviews. Specifically, within the domain of Instructional Delivery and Engagement, the secondary theme of *Uses multiple levels of questions and makes necessary adjustments* was deemed most important as the indicator with the highest frequency. It was anticipated that teachers would place such significance on Instructional Delivery and Engagement due to the number of indicators contained within the domain.

The participants’ responses aligned with the research of Heacox (2002), which indicated that the process students use to make sense of content and learn the information that is being taught can be modified by creating assignments that are more complex or abstract, which will give students opportunities to become engaged in critical and creative thinking. The frequency of teacher responses indicated that the primary theme, Learning Environment, was important to the implementation of DI as well. Within Learning Environment, the secondary theme, *Organizing a safe physical learning environment that is conducive to student learning and collaborative work*, had the most quotations.

According to Young (2005), a positive learning environment promotes student autonomy, motivation, and self-regulation. Research further suggests that teachers share the responsibility for learning with their students and should provide solutions to problems with the assurance that they will not be judged (de Anda, 2007; Tomlinson, 1999a). Further, Subban (2006) stated that students who feel devalued or unworthy may struggle to learn, suggesting that DI conveys a student’s unique worth within a classroom of his
peers. The participating teachers in this study identified positive learning as important for successful implementation of DI within their classrooms, which was consistent with the research.

Participants’ frequency of quotations further revealed that Instructional Planning and Assessment were the least referenced domains when implementing DI. Although research supports the importance of and relationship between lesson planning and assessment, effective assessment and planning can at times be challenging for teachers. Teachers of diverse classrooms must have thoughtfully planned lessons and engaging learning experiences to help students achieve learning goals (Tomlinson & Imbeau, 2010). Just as lesson planning is an essential component of effective teaching and learning, so is assessment. Formative and summative assessments should be used continuously to make informed decisions about instruction. All 29 teachers expressed concerns regarding the lack of time for developing lesson plans and/or the time needed to implement DI in their classrooms effectively. This concern aligned with the research of Aftab (2015), Lewis and Batts (2005), and Tomlinson (2005) who suggested that while many teachers do believe that DI would benefit their students, they also believe that it is not feasible for them to implement DI effectively due to time constraints. Several factors, including student behavior, classroom management challenges, and lack of time for differentiation, were identified as the main reasons for teachers’ avoidance of the use of DI in their classrooms (Latz et al., 2009).

Based on the findings for Research Question 1, the participants’ conceptualizations of DI, centered on the frequency of quotations around Instructional Delivery and Engagement, align with the component of DI in the area of instruction and
the element of process within Tomlinson’s (1999a, 2017) model of DI. Similarly, participants’ conceptualizations of DI, based on the frequency of quotations around Learning Environment, align with Tomlinson’s (1999a, 2017) component of DI in the area of learning environment and the element of process. These findings indicate that the participants have a conceptual understanding of the principles outlined by Tomlinson (1999a, 2017) as they pertain to instruction, learning environment, and process.

Consequently, the participants’ conceptualizations of DI, based on the frequency of quotations around the areas of Instructional Planning and Assessment, align with Tomlinson’s (1999a, 2017) components of DI in the areas of curriculum and assessment and the elements of content and product. These lesser number of quotations indicate that the participants’ conceptualizations of DI do not demonstrate a full understanding of the principles outlined by Tomlinson (1999a, 2017) as they pertain to curriculum, assessment, content, and product.

**Research Question 2**

To what extent does the degree of current implementation of differentiated instruction in the third- through fifth-grade reading classrooms in high-performing elementary schools compare with the related differentiated instruction indicators of the M-DCPS FEI?

The research findings in this current study found that teacher implementation of DI strategies related to the indicators contained in the M-DCPS FEI was highest in the areas of Knowledge of Learners, Learning Environment, and Instructional Planning. The two specific indicators within the Knowledge of Learners domain—(1) **Responds to students’ developmental levels** and (4) **Provides instruction based on students’ learning**
needs—were the most observed. Colter and Ulatowski (2017) indicated that by planning for individual developmental levels, building on students’ prior knowledge, and empowering students to accept challenging tasks, educators can apply Vygotsky’s ZPD Theory to lesson design. Planning in this way supports the notion that modifying instruction to meet the needs of the individual students is, in essence, differentiating instruction. The longitudinal, cluster-randomized controlled study conducted by Connor et al. (2013) and the literature readings of Bates (2013), Stronge (2018), and Tomlinson (2017) support that students learn best when their abilities, learning needs, prior knowledge, and experiences are considered. Furthermore, Rock et al. (2008) and Tomlinson (1999a) identified teachers responding to the individual student differences as one of the key principles guiding DI implementation in classrooms. This finding may be a result of the single goal, student achievement, of the M-DCPS system. To attain this single goal, teachers are trained to collect, disaggregate, and analyze data from multiple sources. Teacher performance is partially rated on annual student achievement, which may further influence a teacher’s desire to have a deeper understanding of the needs of their learners.

In the area of Learning Environment, the indicator (6) Organizes a safe physical learning environment that is conducive to student learning and collaborative work was displayed by the participants with the most frequency. Teachers and students working collaboratively and flexibly together is a principle recognized by Rock et al. (2008) and Tomlinson (1999a) as essential in differentiated classrooms. Creating a positive classroom climate that supports both collaborative and independent work and builds trust and respect for students can help attract student interest and help shape student success.
(Tomlinson, 2008, 2017; Tomlinson & Imbeau, 2010). We found that of the 29 participants, 28 maintained peer or group desk arrangements to promote student collaboration and group task assignments. Further, students of the observed classes were encouraged to participate in both whole group instruction activities and with their peers in collaborative work and welcomed feedback from the teacher and other students.

In the area of Instructional Planning the two indicators (10) *Plans instruction effectively for content mastery, pacing, and transitions* and (12) *Gathers, evaluates, and/or creates appropriate instructional materials* were displayed most frequently by the participants across all three grade levels. Tomlinson and Imbeau (2010) indicated that teachers of diverse and differentiated classrooms must have thoughtfully planned lessons and engaging learning experiences to help students achieve learning goals and experience success. Lesson planning is guided by curriculum standards at the district, state, and national levels. Teachers must be flexible in their approach to teaching and adjust the curriculum and the presentation of information based on student need (Dutt-Doner & Grande, 2011). K. D. Moore (2015) and Tomlinson and Allan (2000) further stated that DI begins with the teacher’s intentional and purposeful planning and the implementation of teaching strategies that meet the individual needs of all learners within an academically diverse learning environment. Teachers need to know what the end goal is and how they are going to get there for instruction to be effective and for learning to occur (Tomlinson, 2017). The collection of document artifacts (lesson plans) allowed us to identify the standards of focus for both whole group and small group lessons and the instructional strategies and materials used. Out of the 58 lesson plans collected and reviewed, 45 explicitly stated the written grade level standards along with the activities
(process) and the expected outcomes (products) of the whole group instruction. Additionally, these same lesson plans contained individualized objectives, activities, and expected outcomes for select small groups of students. These small group objectives, activities, and outcomes were based on the identified student needs. Analysis of researcher journal notes from the teacher interviews further supported the teachers’ engagement in collaborative planning and the sharing of resources and best practices. Our notes demonstrated that 20 out of the 29 participants mentioned during the interview process that they engage in weekly collaborative planning and that this collaboration helps them strengthen their understanding of the curriculum, what students are expected to master, and the different practices they can use to get them there.

Conversely, the area of Instructional Delivery and Engagement, specifically the three indicators (14) Connects students’ knowledge, experiences, and interests to learning goals; (18) Uses a variety of strategies to engage students in higher-order learning tasks; and (19) Engages students in authentic learning, real-life applications, and interdisciplinary connections, and the area of Assessment (22) Uses preassessment data, formative and summative assessments to inform instruction showed the least amount of implementation across all participants. The findings in Instructional Delivery and Engagement do not coincide with those of the structured interviews. While teachers emphasized the importance of this domain, we did not observe these behaviors during the classroom visits with the same frequency of quotations provided during the interviews. Participants utilized appropriate pacing during explicit instruction and provided a variety of activities to maximize student learning. However, we identified less frequent use of connecting prior knowledge, offering real-life applications, and higher-order learning
tasks. Dewey (1900/1902/2001) and Nordgren (2013) stated that making learning interesting to students through instruction that incorporates real-life experiences, students are intrinsically motivated and empowered to become lifelong learners.

The finding in the Assessment domain is concerning as Heritage et al. (2009) stated, “Assessment is essential to effective teaching and learning” (p. 24). In differentiated classrooms, assessments are the driving force behind the instruction provided to students and must be consistently and systematically used (Tomlinson, 2017). Assessments can provide teachers with baseline information of student readiness that can assist with the development and modification of instructional strategies to meet varied student needs (Moon, 2005; Tomlinson & Imbeau, 2010). A further indicator in the Assessment domain—(21) Uses local and state summative assessment data to design instruction that meets students’ need— was listed as not observed for each participant by each researcher. Following the member check protocol, participants indicated that, while not observed, local and state assessment data are used regularly to meet the needs of their students.

The implementation findings and non-findings for Research Question 2 can assist M-DCPS and the two schools of study with further direction in the employment of instructional practices that support differentiation in the classroom. For learning to occur, teachers must begin with the knowledge of their students’ academic and emotional needs (readiness), their interests, and their learning profiles (Tomlinson & Imbeau, 2010). Based on the positive findings of the observed implementation behaviors, it is evident that the participants within the two schools of study possess knowledge of their students’ developmental levels and learning needs as determined by weekly assessments, i-Ready
data, and previous year’s state assessments. This foundational knowledge of the needs of the students is pivotal and leads to the responsible and purposeful planning of engaging lessons that take student needs and variances into consideration and connect key content to each learner (Tomlinson, 2017; Tomlinson & Imbeau, 2010). The findings in this area of Instructional Planning also confirm that the teachers in the two schools of study engage in collaborative and intentional planning to address both the grade level content standards and the additional foundational standards students may be deficient in, thus catering instructional planning to their readiness levels. Correspondingly, the area of Learning Environment also demonstrated a positive finding. As Tomlinson and Imbeau (2010) state, “Students learn best when they feel safe, respected, involved, challenged, and supported” (p. 20). The participants in this study provided a warm physical and emotional climate in their classrooms that fostered collaborative group work and respectful and supportive student interactions towards one another as evidenced by observed behaviors. These three positive conclusions can provide insight to the administrative and instructional leaders within M-DCPS and the two schools of study in the areas of DI that teachers are effectively implementing.

Although it is essential to possess a sound knowledge of student needs, to plan lessons based on those needs, and to provide an environment that is conducive to learning, the teacher must have the skills to implement these plans through effective instructional delivery and engagement. Implementation behaviors in this area of Instructional Delivery and Engagement need further attention based on the results of this study. Teachers may need further support in acquiring knowledge and practice of instructional strategies that engage and challenge students in higher order learning tasks,
that connects their knowledge, experiences, and interests to the learning goals, and that provides opportunities for students to apply this learning to situations in their current life. Teachers may also need support in classroom management routines needed in DI classrooms and in the implementation of process (how students understand the content) and the adaptation of the product (how students demonstrate their learning). Professional development support in the forms of trainings, observation of colleagues in model DI classrooms, and collaboration with mentor teachers may all be viable considerations to accomplish advancements in this area. Similarly, a sound knowledge of learner needs begins with assessment. Tomlinson (2017) states that, “Differentiated Instruction is rooted in assessment” (p. 7). While participants indicated during the sharing of the findings through the member check protocol that they consistently use state and district assessments to guide instruction, the indicators within the Assessment domain remained one of the least observed. Assessment includes diagnostic, formative and summative assessments. Formative assessments are ongoing and should be observed most readily in the classrooms, yet that was not the case in this study. Formative assessments can include such strategies as teacher questioning, student responses, and journal entries and allow the teacher to check for understanding. With the emphasis that M-DCPS places on the use of assessment data to guide instruction, this result was surprising. Perhaps more support needs to be provided for teachers on how formative assessments strategies that provide immediate feedback on student learning can be implemented in their daily lessons.
Research Question 3

To what extent does the degree of implementation of differentiated instruction in the third- through fifth-grade reading classrooms in high-performing elementary schools correlate with student learning as measured by the i-Ready diagnostic assessments?

The correlation analysis of the quantitative data collected to measure the frequency of use of the five domains of DI seen during the classroom observations versus the i-Ready diagnostic assessment scale score changes indicated that the three domains of Knowledge of Learners (% and rating), Learning Environment (% and rating), and Instructional Delivery and Engagement (% and rating) were significantly positively correlated with the i-Ready gain scores. The effect size between the i-Ready gain scores and the three domains of Knowledge of Learners, Learning Environment, and Instructional Delivery and Engagement was small, $r^2$ between .05 and .25. Similar to the findings of Reis et al. (2011), this current study found a small improvement in students’ academic achievement following the implementation of DI strategies. Although the use of DI strategies in the current study were not controlled, the findings were similar to those found in the study of Aliakbari and Haghighi (2014). In the latter study, fourth grade students scoring at the elementary and intermediate levels prior to the implementation of intervention strategies demonstrated improvement in reading comprehension following the use of controlled DI practices. In the current study, 7 of the 10 fourth-grade teacher participants’ classes demonstrated a positive scale score change from the first diagnostic assessment to the second. The same holds true for the third-grade (with 9 of 9 positive increases) and fifth-grade (with 10 of 10 positive increases)
participants. Although scale score increases were identified in each grade level, the use of DI strategies differed amongst grade level groups.

Further review of the frequency of observed DI strategies in relationship to student achievement indicated that teachers scoring in the highest percent of frequencies within all five domains resulted in the greater scale score changes than those who demonstrated lower percentages of DI use during the two observation periods. The average percent of use of DI strategies for each of the five domains was greater by third-grade teachers when compared to the teachers in Grades 4 and 5. Additionally, the greatest increase in scale score changes were seen in third-grade classes with an average scale score increase of 16.85 points as compared to 10.04 point increase in fourth grade and a 9.43 point increase in fifth grade. These findings are consistent with the historical data of the two high-performing Tier I schools in this study, whereby students in fourth and fifth grade demonstrated a decline in reading performance as measured by the Florida Standards Assessment English Language Arts for three consecutive years prior to the study. The greater frequency of use of DI strategies may begin to explain the increase in student achievement.

The work of Ankrum et al. (2014) support the use of scaffolding as a DI strategy, although this was not included in participants’ explanations or understandings of DI during the semi-structured interviews. Explicit instruction was observed through the indicator (15) presents lessons clearly and skillfully uses explicit instruction, and they found that the fourth-grade teachers demonstrated this more frequently than teachers in Grades 3 and 5. The four largest scale score increases in fourth grade were seen by teachers who utilized explicit instruction with 70% or more frequency. On the contrary,
in third grade, four of five participants with the greatest scale score changes demonstrated a frequency percentage use of DI less than 60% of the time. The fourth- and fifth-grade teacher participants’ results confirmed similar findings with two of the greatest five scale score changes and four of the greatest five scale score changes, demonstrating a frequency percentage of 70% or below, respectively. While research supports the use of explicit instruction to improve student achievement (Borman, Hewes, Overman, & Brown, 2003; Rupley, Blair, & Nichols, 2009), these findings were not consistent across the three grade levels studied.

Baumgartner et al. (2003) found that flexible grouping, based on student needs and interest, was successful in upper elementary grades. While flexible grouping addressing student needs was demonstrated in 43 of the 58 observations, it was not apparent if student interest was a consideration to the combination of grouped students. Tasks required by teachers during these flexible grouping sessions were consistent with standards-based instruction and content mastery. Third-grade teachers implemented grouped instruction at some point during all of the 18 observations, whereas fourth-grade teachers implemented flexible grouping 16 out of 20 times, and fifth grade only 10 out of 20 times. It is possible that the limited use of flexible grouping within the fourth- and fifth-grade classes may have resulted in the small-scale score changes seen in these grade levels of this study.

While all three grade levels demonstrated incremental improvements in reading achievement as measured by the two i-Ready diagnostic assessments, it must be noted that additional factors outside of the teachers’ implementation of DI strategies may have influenced achievement results. These additional factors may include but not be limited
to outside tutorial services, the quality of whole group explicit instruction, the assessment
day testing conditions, and student interest and focus on the i-Ready assessment. Annual
academic growth is anticipated of all students therefore, it is expected that mid-year
assessment data reflect academic growth.

Implications for Policy and Practice

The current study offers information regarding teachers’ conceptualization and
utilization of DI in reading and the correlation between DI implementation and student
achievement in reading. We have identified important implications of the findings
resulting from this study. Table 18 provides a succinct statement of findings for each
research questions and the related recommendations.
### Findings and Related Recommendations

<table>
<thead>
<tr>
<th>Findings</th>
<th>Related Recommendations</th>
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<tbody>
<tr>
<td><strong>RQ1—Teacher Conceptualization</strong></td>
<td>Identify a common and clear conceptual understanding of DI for the M-DCPS district.</td>
</tr>
<tr>
<td>Based on the frequency of quotations, findings indicate that participants conceptualize that Instructional Delivery and Engagement and Learning Environment are the most important domains when implementing DI in the reading classroom. Participants’ frequency of quotations further reveal that Instructional Planning and Assessment are the least referenced domains when implementing DI in the reading classroom.</td>
<td>Develop explicit professional learning sessions for all teachers that clearly articulate the alignment and expectations for instructional practices with regards to DI.</td>
</tr>
<tr>
<td><strong>RQ2—Teacher Implementation</strong></td>
<td>Deliver training to all elementary reading teachers with fidelity to ensure consistency of understanding and implementation of DI within the district, with specific focus on instructional planning, using assessment to drive instruction, and instructional delivery and engagement.</td>
</tr>
<tr>
<td>The mean percentage scores and ratings across the five domains and 23 indicators of the M-DCPS FEI indicate that the participants’ implementation of DI strategies was most prevalent in the areas of Knowledge of Learners, Instructional Planning, and Learning Environment. While a significant difference was found across the five domains, no significant difference was found across grade levels, as patterns in the mean percentage scores and ratings across the five domains were the same in Grades 3, 4, and 5.</td>
<td>Identify a literacy leader at each school site who will provide support to reading teachers with regards to instructional delivery, student engagement, and the utilization of assessments to adjust instruction for reteaching, remediation, and enrichment.</td>
</tr>
<tr>
<td><strong>RQ3—Correlation to Student Achievement</strong></td>
<td>Provide a professional learning opportunity for educational leaders to reveal the findings of this study which validate the correlation between DI and student achievement, and further stress the influence of instructional leadership in an effort to assist teachers in the implementation of DI strategies.</td>
</tr>
<tr>
<td>The Pearson’s correlation coefficient indicates a significantly positive correlation between the three domains Knowledge of Learners (% and rating), Learning Environment (%), Instructional Delivery and Engagement, and i-Ready gain scores between two diagnostic assessments.</td>
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</table>

**Note.** DI = differentiated instruction; M-DCPS = Miami-Dade County Public Schools; FEI = Framework of Effective Instruction

**Identify a common understanding of differentiated instruction.** A review of the qualitative data in this study suggests a need for a clearly articulated common understanding of DI and expectations for implementation on a district-wide level. While
common primary and secondary themes were identified within the quotations gathered from the 29 semi-structured interviews, it was evident that there was variation in the participating teachers’ conceptualization of the domains and their corresponding indicators. The findings of the semi-structured interviews revealed that while the participants spoke frequently regarding the domains of Instructional Delivery and Engagement and Learning Environment, they did not refer as often to the domains of Instructional Planning and Assessment. Although not referred to as frequently, these same domains were implemented more frequently during the observation period. This would suggest that participants are not aware of the alignment of theory to practice regarding DI. Upon further review, it was noted that although teachers may have stated valid quotations for a particular indicator, which counted towards the frequency, it did not ensure that the respondents shared the same understanding of said indicator. Despite responding to the overall domain, none of the respondents addressed all of the indicators in their totality. For example, many of the respondents indicated that they utilized small group instruction and teacher-led centers; however, their conceptualization of DI appeared to include only student readiness level without consideration of student interest or learner profile. While there was evidence that the respondents had an overall understanding of DI, none expressed the full meaning of DI, which encompasses modifications of content, process, and product (Adams & Pierce, 2006; Gregory & Chapman, 2007; Heacox, 2002; Scigliano & Hipsky, 2010; Tomlinson, 2017).

The quotations recorded from the participants suggested the need for further clarification of the conceptual understanding of DI and the alignment and expectations for implementation. As teachers become more aware of, and familiar with the
components (instruction, learning environment, student characteristics, curriculum, and assessment) and elements (content, process, and product) of Tomlinson’s DI Theory their understanding should translate into more effective instructional practices, stronger delivery and student engagement. If teachers become more comfortable in their practice and modifying instruction for their students, students should learn more effectively (Dixon et al., 2014).

**Conduct and provide ongoing professional development in the area of differentiated instruction.** Professional learning and growth opportunities are essential for improving instructional practice and student achievement. There is significant literature supporting the importance of high-quality professional development for teachers. “Professional development is about teachers learning, learning how to learn, and transforming their knowledge into practice for the benefit of their students’ growth” (Al-Qahtani, 2015 p. 10). Findings of a quantitative, causal-comparative study conducted by Green and Allen (2015) suggested that high-quality professional development designed with elements of professional learning communities contribute to higher student achievement. With the advent of the No Child Left Behind Act in 2002 and its placement of professional development as the cornerstone for improving teacher performance, states and districts became responsible for providing high-quality professional development for teachers.

Ongoing PD is essential for providing skills and dispositions to respond to the needs of diverse students (Hawkins, 2009). Effective professional development inspires a change in teacher instructional practices and increases student achievement over time. Professional learning sessions must be focused on research-based practices, provide
active learning for the participants, and provide teachers with the opportunity to adapt the learning to their specific classrooms (Guskey & Yoon, 2009). As stated by Lee (2010), professional development should be proactive, engaging, and consistent. It must be based on teachers’ individual needs and provide opportunities for collaboration. Professional learning that affects student achievement also requires additional support for implementation to allow teachers to embed the newly acquired strategies into their classroom practice. This support should be provided on-site and continue over time. Constructive feedback and reflection significantly increase the likelihood that teachers will continue to implement the new strategies and not abandon them when confronted with obstacles. “Educators at all levels need just-in-time, job-embedded assistance as they struggle to adapt new curricula and new instructional practices to their unique classroom contexts” (Guskey & Yoon, 2009, p. 497).

Schumm et al. (2000) stated that more pre- and in-service training is needed to familiarize teachers with the concept of DI. Dixon et al. (2014) examined the role of professional development and teacher efficacy in the use of differentiated instruction. According to Dixon et al. (2014), teacher efficacy is a judgment of a teacher’s capabilities to engage unmotivated and difficult students in the learning process and gain his or her goals in the teaching process. Dixon et al. (2014) conducted a two-stage survey. At first, participants’ differentiation strategies, self-efficacy, and teachers’ efficacy were studied with the help of the Teacher Self-Efficacy Scale and the Teacher Efficacy Scale. Three subscales involved questions regarding three subscales instructional strategies, management, and engagement. The second part studied the opportunities teachers had for professional development in differentiating instructions.
The results of the survey proved the positive impact of teacher efficacy on the use of differentiation strategies and greater professional development in differentiation improved teaching efficacy.

The qualitative data collected during the semi-structured interviews indicated that a need exists for district-wide professional development regarding the understanding and implementation of DI for elementary reading teachers. A universal understanding of DI and the alignment to expected implementation practices may result in more frequent and effective use of DI to enhance student achievement. Further, the classroom visitations revealed that although the participants spoke frequently about the domain of Instructional Delivery and Engagement, they did not implement these strategies as frequently during the classroom observations. The least observed indicators included (14) Connects students’ knowledge, experiences, and interest to learning goals, (18) Uses a variety of strategies to engage students in higher-order learning tasks, and (19) Engages students in authentic learning real-life applications. Additionally, while the implementation of Knowledge of Learners was observed frequently, indicator (2) Presents concepts at different levels of complexity, was observed less than 40% of the time across all three grade levels. The absence of these observed indicators imply that students are not regularly challenged and “if tasks are too easy, they become bored and do not learn” (Logan, 2011, p. 6). Effective implementation of these indicators is paramount to student achievement and may be addressed through professional development that strategically engages teachers in learning activities to build their capacity in the area of delivery and engagement through DI.
A recommendation based on the findings of this study is that the M-DCPS district develop explicit professional learning sessions for teachers to clearly articulate the expectations for planning, assessment and instructional delivery and engagement practices with regards to DI. Training should be delivered to all elementary reading teachers with fidelity and continuity to ensure consistency of understanding and implementation within the district. The foundation of this training should rest in Tomlinson’s DI Theory and encompass the elements of content, process, and product. Teachers must be equipped with detailed lesson planning processes, instructional strategies, and the tools to effectively analyzing and utilizing data to guide their instruction decision making.

**Identify a literacy leader/coach per school site.** Qualitative data gathered through researcher journal notes during the semi-structured interviews and observations and from review of lesson plan artifacts indicated that teacher participants engage in collaborative planning and the sharing of best practices with colleagues at the school site to make instructional decisions for their students. Ismail et al. (2018) noted that teacher collaboration is significantly associated with high-quality teaching. Current studies suggest introducing peer coaching/mentoring in schools for improving teacher knowledge and skills in DI and encouraging their use of differentiation for mixed-ability classes. Peer coaching through Literacy Leaders can further assist teachers in effectively sharing ideas, collectively solving problems of practice, receiving feedback from more experienced educators, and developing necessary new skills for successful implementation of DI (Bush, 2009; Latz et al., 2009). According to learning theory, discussion of new information, the sharing of ideas, and receiving feedback from others
allow learners to improve their knowledge and skills (Lockwood, McCombs, & Marsh, 2010). Peer mentoring through Literacy Leaders fits well with this learning theory, as it encourages teachers’ professional development through discussions and reflection on different problems teachers face at the workplace (Lockwood et al., 2010).

Stover, Kissel, Haag, and Shoniker (2011) affirmed the importance of literacy coaches. Literacy coaching is a type of job-embedded approach to professional development focused on teacher-centered learning and reflection between the teacher and the literacy coach (Stover et al., 2011). Literacy coaches provide support to all teachers regardless of their skills, knowledge, and teaching experiences (Stover et al., 2011). Peer mentoring and coaching may help to improve teachers’ practices in DI.

Several studies have proven the positive effect of coaching programs on teacher performance. In one study, researchers found that peer mentoring encouraged elementary and secondary teachers to practice new skills more often (Lockwood et al., 2010). The study conducted by Kohler, Ezell, and Paluselli (1999) showed that coaching helped teachers improve their skills to plan and organize proper learning environments and to provide clear instructions for students with disabilities. Ramsey and Seas (2007) claimed that peer mentoring was very important for the professional development of teachers. Teachers feel themselves isolated and dissatisfied with their actions without peer mentoring (Ramsey & Seas, 2007). A survey of 44 graduate instructors showed that only 50% of them felt they were well-prepared for work in the classroom (Ramsey & Seas, 2007). Assistance from fellow instructors was sought by 84% of respondents, and 90% relied on the communication with friends and peers (Ramsey & Seas, 2007).
Consequently, the participants of the survey required mentoring for improvement of their skills.

Langelotz’s (2013) study involving the experience of Swedish teachers united in various professional groups found that mentoring processes enhance teachers’ professional development and collective learning thus supporting the positive effects inherent in peer mentoring. A group mentoring process improves the development of teachers’ professional skills through “collective reflections on their practice” (Langelotz, 2013, p. 375). The teachers stated that mentoring sessions helped them discuss educational and instructional issues and encouraged them to seek peer support from their teaching team in the case problems in their practice arose (Langelotz, 2013).

Coaching can provide an increased sense of confidence and efficacy in participants involved in the process (Latz et al., 2009). Teachers express that receiving advice from mentors helps them improve their grouping and time management skills and assists them with finding the necessary resources for additional activities, books, and sample lessons (Latz et al., 2009). Therefore, mentors provide teachers with practical advice on how to introduce DI in the classroom and enhance their feelings of self-efficacy.

This research highlights the power and importance of Literacy Leaders in the professional development of teachers and in the improvement of instructional practices. Although M-DCPS currently provides formal reading coaches for low-performing, Tier 3 schools, Tier 1, high-performing schools like those in this study do not receive this support. We recommend that the district review and assess the possibility of providing all schools with a trained Literacy Leader/Coach. This recommendation was supported
through feedback provided by the teacher participants in this study during the member check protocol sessions. Although not all of the 29 participants chose to participate in the member check protocol sessions, all 21 teachers across both schools who participated in these sessions stated that a literacy leader/coach whose primary responsibility is one that provides daily support, modeling, guidance, and feedback on the instructional practices for DI in the classroom, would benefit and improve their own teaching. They further indicated that this would be a form of “true professional development,” as they would have the opportunity to experience, firsthand, how the theory received in traditional professional development is applied in a real-life setting. They affirmed that it would bring theory to life and would assist with the implementation of these practices that at times seems daunting given the diversity of student needs in their classrooms.

Additionally, one of the participants spoke of her experiences as a reading coach at her previous M-DCPS, Tier 3 elementary school for five years and stressed the value her teachers found in the support she provided on a daily basis in the classroom. She saw positive improvement in her teachers’ classroom instruction through their involvement in the process of a structured coaching cycle involving: (a) collaborative conversations regarding data and lesson planning; (b) cyclical classroom observations; and (c) continuous supportive practices through job-embedded professional development. A separate member check protocol conducted with 10 colleague principals (five from Tier 1 elementary schools like those in this study and five from Tier 3 elementary schools) where the results and recommendations for this study were shared, further supported the benefits of literacy leaders/coaches. Principals from the Tier 3 elementary schools described how the reading coaches have assisted in improving the instructional practices
of their teachers and resulted in the significant increases in learning gains for students at all levels. Principals from the Tier 1 schools stressed the challenges they face with improving overall instructional practices without the daily consistent support from a literacy leader/coach who could be released from all other classroom duties and solely focus on assisting teachers in the improvement of instructional practices to meet student needs.

Literacy leaders/coaches would need their roles specifically defined by the district. Shanklin (2006) recommended that it is important not only to define the qualifications and roles of literacy coaches but to focus on defining what effective literacy coaching is. Shanklin (2006) goes on to highlight six characteristics that define effective literacy coaching suggested by the Advisory Board of the Literacy Coaching Clearinghouse. These include (a) collaborative dialogue for teachers at all levels; (b) developing a school vision through the analysis of research-based instructional practices and concerns; (c) guidance on data analysis, interpretation, and use to guide instructional design and practices; (d) ongoing, job-embedded professional development that increases teacher capacity; (e) cyclical classroom observations; and (f) continuous supportive practices. Providing qualified Literacy Leaders/Coaches and ensuring that the characteristics of effective literacy coaching are defined and understood by all could enhance implementation of DI in the reading classroom.

Grounded on the identified areas of need in this study, a well-trained Literacy Leader could provide support to the teachers in this study. By following the six characteristics of effective literacy coaching, as defined by Shanklin (2006), the Literacy Leader can begin, by clearly establishing a common understanding of all the components
of DI and what these components look like in the elementary reading classroom. A Literacy Leader could provide professional development in the form of trainings at faculty, grade level, and reading department meetings to create this common understanding. This leader can assist teachers with the application of this pedagogical knowledge through cyclical coaching including classroom observations of teacher practices and modeling of the DI components as necessary.

The findings in Research Question 1 indicated that teachers may not have a full understanding of the role that Instructional Planning and Assessment have in DI, based on the low frequency of responses to the interview questions. Additionally, findings in Research Question 2 indicted that teacher implementation behaviors of DI were lowest in the areas of Instructional Delivery and Engagement and in Assessment. Since Assessment was an identified need in both Research Questions 1 and 2, the Literacy Leader could provide support through school-based professional development at faculty meetings, grade level meetings, and/or reading department meetings. Additionally, the Literacy Leader should build in time for collaborative conversations at these meetings, and with individual teachers, that revolve around the various forms of assessment available to teachers, and how those can be modified, to allow students at various levels of readiness, interest, and learning styles to effectively demonstrate content mastery. The Literacy Leader can further facilitate continuous analysis of data through guided data-driven conversations based on ongoing progress monitoring assessments that can further focus teacher practices in the area of Instructional Delivery and Engagement.

**Provide a professional learning opportunity for educational leaders.** The findings of research question three suggest that a correlation exists between the domains
of Knowledge of Learners, Learning Environment, and Instructional Delivery and Engagement and the i-Ready gain scores of the two diagnostic assessments. We recommend that professional learning opportunities be provided to educational leaders to reveal the findings of this study which validate the correlation between DI and student achievement, and further stress the influence of instructional leadership on classroom instruction in an effort to assist teachers in the implementation of DI strategies. Sharing the data is imperative as educators are reluctant to alter their practice without evidence. There must be enough legitimacy to be heard and accepted, and enough distance to bring something new to light (Puzio, Newcomer, & Goff, 2015). In order to successfully encourage teachers to utilize DI, school leaders need concrete policies and activities to inform their practice. The role of the instructional leader has changed dramatically as the focus has shifted from inputs to outcomes, and from intentions to results. Teachers need leadership now more than ever, however, that leadership should be focused on promoting student and teacher learning (DuFour, 2002). These professional learning sessions must expose leaders to specific instructional strategies and provide examples of interactions that should occur during the implementation of DI strategies. They must be equipped with the knowledge to identify these strategies, and the skills to provide timely and relevant feedback that encourages teachers to continue to improve their practice. Effective professional development builds the capacity of both the instructional leaders and teachers (DuFour, 2002).

**Recommendations for Future Research**

Teacher training and implementation of differentiated instruction strategies in reading. In the diverse classroom setting of today, teachers are expected to
differentiate instruction to meet the needs of all learners. While teachers are aware of
the expectation, they are often reluctant to implement strategies of differentiation for a
variety of factors. DiPirro (2017) suggested that teacher understanding of DI serves as a
predicting factor toward regular, effective implementation. The studies conducted by
Logan (2011) and Robinson (2017) identified that pre-service teachers were ill-prepared
for the diverse classroom settings and were not encouraged to differentiate by education
professors. Robinson (2017) found that novice teachers implemented DI based on
operational definitions and lacked integration of DI in daily routines. Further, the study
of Logan (2011) discussed the shortcoming of the public school system, in assuming the
responsibility in training teachers to understand and implement DI. Of the 29
respondents of the current study, all participants indicated that they have participated in
school site training and/or collaborative conversations regarding DI. None of the
participants indicated being trained in DI by district personnel or experts in the practice
of DI. School site training does not provide a universal understanding of the
components of DI, nor does it provide district-wide expectations of DI. Dixon et al.
(2014), found that increased time spent on professional development in the area of DI
resulted in improved teacher efficacy and implementation of DI strategies. The authors
discussed the recommendation of school districts providing PD regarding the philosophy
of DI and increasing teachers’ learning and practice of how to implement DI strategies
(Dixon et al., 2014). A recommendation for future research which identifies the
frequency and quality of professional development focused on DI and the potential
correlation of the implementation of DI based on district provided professional
development may further enhance the findings of this study. The results of such study
would allow for school districts to identify the type of professional development that teachers found most beneficial in their understanding and implementation of DI in the reading classroom.

**Student perception and attitudes toward implementation of differentiated instruction strategies in reading.** In a differentiated classroom, the learning environment is structured around learner needs and high expectations for all learners. Classrooms must be flexible and attentive to student variances in the areas of student readiness, interests, and learning profiles (Tomlinson et al., 2003). These three dimensions guide planning for differentiation (Tomlinson, 2017). To gain insight into the students’ readiness to learn, their interests, and their learning styles, it is beneficial to understand their perceptions and attitudes regarding DI practices currently in place in their classrooms. When students are provided with learning activities that addresses their interests they become more engaged in their learning. Engagement is associated with positive academic outcomes, including achievement and persistence in school; supportive teachers and peers also contribute to classroom culture and behavioral engagement. Engagement is particularly high in classrooms where teachers provide challenging and authentic tasks and opportunities for student choice (Fredricks, Blumenfeld, & Paris, 2004). Increased student engagement will positively influence student achievement as it is vital to student success and is positively related with many desired academic and social learning outcomes (Christenson, Reschly, & Wylie, 2012; Reyes, Brackett, Rivers, White, & Slovey, 2012).

Koeze (2007) conducted a study analyzing the components of DI implementation as reported by fourth- and fifth-grade students. The study, including seven classes of
students, found that teachers who implemented DI based on choice and student interest played a significant role in student satisfaction and increased student achievement. Students who reported their teachers’ use of DI seemed to have a better learning experience and were more excited about learning than students who did not. By implementing learning style inventories and surveying students on their perceptions and feelings toward classroom practices, teachers are better able to understand and meet the needs of learners and affect student achievement (Koeze, 2007). The findings in Research Question 2 revealed that indicators (14) Connects students’ knowledge, experiences, and interests to learning goals and (19) Engages students in authentic learning, real-life applications, and interdisciplinary connections under the domain of Instructional Delivery and Engagement were the least implemented during the observations. These two indicators address taking student interests into consideration and engaging students in authentic learning based on student interests. These low percentage scores indicate a need for improvement. Further research exploring student perceptions toward the implementation of DI processes in reading may yield better insight and understanding for teachers on how to differentiate instruction to meet the needs of students in academically diverse classrooms and may further enhance the results of this study.

**Expanded research across various school settings on a larger scale.** This mixed-methods study focused on 29 teachers within two high-performing schools in M-DCPS. This limited sample size may have affected the overall external validity of the current study. Smit and Humpert (2012) suggested that expanding a study to include a larger sample over a greater region and inclusive of various school types could lead to a
higher external validity. Davis (2013) asserted that by conducting a study over a greater number of schools within multiple school districts may help determine if variances in school demographics affect the amount or quality of DI implemented in schools. A further recommendation for future research involving the perceptions of teachers, their implementation practices, and their correlation to student achievement would be to replicate the methods outlined in the current study to include schools at the elementary, middle, and senior high school levels and across the various Tiered levels of schools found within M-DCPS.

**Action research aligned to the components of differentiated instruction.** A review of the literature supports the benefits of DI and the ways in which educators may implement a variety of approaches to modify content, process, and product (Algozzine & Anderson, 2007; Lewis & Batts, 2005; Tomlinson, 2000a, 2000b; Williams, 2012; Wormeli, 2005, 2011). Tomlinson (2017) emphasized the need to differentiate instruction based on what students need to learn (content), how students learn (process), and how they demonstrate their learning (product). While Tomlinson (2017) stressed that all three elements are equally important, exploring each of these elements individually could provide researchers with valuable information that can lead to finding which components of the DI process yield more positive effects on learning. Koeze (2007) suggested simplifying the framework of DI to narrow the focus for the researcher and determine which methods are most effective for different diversity of students.

Conducting further action research that explores the three elements of content, process, and product as the individual independent variables could provide insight into which of the three elements most positively correlates with the dependent variable of
student achievement. Unlike traditional research, action research is constructivist, situational, and cyclical. In this style of research, the educator is a generator of knowledge who works to understand the unique contexts of study and the involved participants. Using a systematic, intentional approach, the researchers can apply gained knowledge to formulate new questions (Efron & Ravid, 2019).

**Summary**

This study explored the conceptualization of differentiated instruction of third-, fourth-, and fifth-grade teachers in two high-performing M-DCPS schools; the extent to which these teachers implement DI as outlined by the M-DCPS FEI; and the extent to which the degree of implementation correlated with student achievement as measured by the i-Ready Reading diagnostic assessment. This exploratory sequential mixed-methods study resulted in the collection of qualitative data through teacher interviews and classroom observations and quantitative data through classroom observations and i-Ready scale score results.

The qualitative findings from teacher interviews indicated that participants conceptualize that Instructional Delivery and Engagement and Learning Environment are the most important domains when implementing DI in the reading classroom. Participants’ frequency of quotations further revealed that Instructional Planning and Assessment are the least important domains when implementing DI in the reading classroom. Qualitative observation notes contributed to the quantitative findings of the observed implementation of DI.

The quantitative findings from the observation protocol utilized in this study yield mean percentage scores and ratings across the five domains and 23 indicators of the M-
DCPS FEI. These results indicated that the participants’ implementation of DI strategies was most prevalent in the areas of Knowledge of Learners, Instructional Planning, and Learning Environment. While a significant difference was found across the five domains, no significant difference was found across grade levels, as patterns in the mean percentage scores and ratings across the five domains were the same in Grades 3, 4, and 5.

Additional quantitative findings indicate a significantly positive correlation between the three domains Knowledge of Learners (% and rating), Learning Environment (%), Instructional Delivery and Engagement (%), and i-Ready gain scores (p < .05) between two diagnostic assessments. Further, a small effect size exists in the domains of Knowledge of Learners (.21), Learning Environment (.20), Instructional Delivery and Engagement (.15), and Instructional Planning (.12). The effect size for Assessment (.04) was found to be negligible.

Overall, this study further adds to the body of knowledge regarding differentiated instruction. The teachers’ conceptualization of DI is not currently aligned with the observed implementation of strategies in the two high-performing, Tier 1 schools within M-DCPS. While Instructional Delivery and Engagement and Learning Environment were referred to most frequently during semi-structured, face-to-face interviews, we identified a greater frequency of implementation in the domains of Knowledge of Learners and Instructional Planning during the classroom observations. These findings suggest the need for a unified understanding and conceptualization of the research-based principles, components, and elements of DI. A deeper understanding of DI may increase
teacher implementation of instructional practices whereby increasing student growth in reading and further attaining the M-DCPS single goal of student achievement.
CHAPTER 6

PROFESSIONAL REFLECTIONS

This dissertation has been created through the collaborative efforts of three group members. This chapter aims to provide professional and personal reflections of the experiences of each team member throughout the dissertation process. The reflections have been presented in alphabetical order by last name of each team member.

Kimberly Davis

**Leadership transformation.** Being selected to participate in the College of William and Mary’s Executive EdD program has had a resounding effect on both my personal and professional perspectives. This journey has plunged me into profound self-reflection and challenged me to embrace new ideas, philosophies, and points of view. Specifically, the dissertation experience has provided me with an expanded frame of reference encompassing habits of mind. Costa and Kallick (2000) identify 16 habits of mind that detail the dispositions believed to be displayed by intelligent and efficacious people when confronted with problems or situations where the answer is not immediately known. I believe that I as a researcher and educational leader unconsciously employed the habits of mind in my daily job responsibilities; however, as I became even more aware and cognizant of those habits, I streamlined my focus and was able to identify specific habits that I employed as we conducted our study.

As I conducted teacher interviews, I listened to each teacher with understanding and empathy as they shared their perceptions of DI, their actual classroom experience.
implementation of DI, and their concerns and apprehensions about DI as well. This process required me to listen actively, empathize with the teachers, and understand their points of view. It was also essential that I was attentive to them as they responded to the questions and maintained my thoughts and judgements at a distance in order to demonstrate respect for their thoughts and views. Once the interviews were complete and I began the coding process as outlined by Creswell and Guetterman (2019), it was critical that I accurately expressed the teachers’ responses and paraphrased their ideas to be able to identify common themes and patterns amongst all of the participating teachers. The habit of mind of listening with understanding and empathy was essential to the teacher interview process.

Thinking about our thinking, or metacognition, is acknowledging the things that we do know and recognizing those things that we do not know. According to Costa and Kallick (2000), it is the ability to developing a plan of action, implementing the plan over time, and then reflecting back on the plan to determine its effectiveness. As a researcher, this habit of mind was demonstrated as our team developed our research topic, research questions, methodology, and timeline. This continuous cycle of improvement was implemented numerous times throughout the development and implementation of the study. As milestones were reached, I allowed myself time to reflect and analyze the necessity and relevance of the proposed next steps to ensure that the team was effectively and continuously working towards the common goal of accurately answering the research questions.

The habit of striving for accuracy and precision was implemented during the collection and analysis of the data. As a research team, we all took pride in our work and
were adamant that the data were collected and analyzed according to our proposed methodology. Significant time was invested to ensure that the data collected through the teacher interviews was meticulously transcribed verbatim prior to conducting the coding process. Every effort was made to safeguard that the classroom observations were conducted as outlined in the methodology and were scored using the M-DCPS FEDIC with fidelity, and all resources were employed at the participating schools to guarantee that the students were tested in the proper environment and within the specified timeline. I, along with my fellow team members, demonstrated a genuine desire for accuracy in collecting and reporting the data and findings in the dissertation study.

As a researcher I have enhanced my awareness of the habits of mind and implemented them by listening with understanding as I conducted teacher interviews, striving for accuracy with data collection and analysis, thinking and communicating with clarity and precision when explaining our methodology and reporting our data findings, and thinking flexibly as we collaboratively developed and implemented our study. This new awareness of the habits of mind has inspired me to be more intentional with regards to them as I perform my daily professional responsibilities, and as I work to develop innovative and motivational professional learning opportunities for teachers and administrators moving forward.

Throughout our coursework of the doctoral program, our professors have consistently stressed the importance of recognizing the validity and reliability of research studies. As a result, I have developed a critical view of research studies and become a more cautious consumer of research. This study, as well as coursework throughout the program, awakened that critical eye that does not simply take research at face value.
Researchers must be critical thinkers and educated consumers of research. Lauer (2006) identifies the importance of judging the validity of research and provides steps to ensure that researchers identify the research question of the study, confirm that the research design matches the research question, examine the research method, and consider rival explanations for the results found in the study. Considering the source of the research, the size of the population and sample, and its relevance to further research were critical to our study. I implemented these steps as I selected journals and doctoral dissertations that could be utilized as appropriate references for our study. In doing so, I became far more aware of the specifics of the prospective resources and selected those that I considered to be most relevant and valid for our dissertation.

Northouse (2016) defines leadership as “a process whereby an individual influences a group of individuals to achieve a common goal” (p. 6). I have always envisioned myself as a leader who motivates, encourages, and develops other leaders. Throughout the years, former vice-principals, assistant principals and teachers have expressed their gratitude to me for having the opportunity to be empowered in their various capacities and to grow and develop professionally. As an aspiring educational leader, I was provided with the tools I needed to be successful by my supervisors, principals, mentors and colleagues. I was allowed to take risks and was encouraged not to fear making mistakes but to learn from them. I believe that I genuinely internalized that philosophy and applied it to my teams as I assumed more leadership and supervisory roles. I have allowed them to take ownership of their projects and make decisions as necessary without significant interference from me. This process has allowed me to be more self-reflective and open-minded about my own leadership style. Leadership styles
change as situations arise. As leaders, we must be flexible and invested enough to know how to adjust our behaviors to address various situations that arise adequately. I no longer feel defined by a specific leadership style and am liberated by the idea that I can continue to grow and adapt as a life-long learner.

Working through this dissertation study challenged my view of my personal leadership style in the sense that I was not leading a school-site staff but collaborating with colleagues with similar leadership responsibilities and experiences to achieve a common goal. My role in this situation was clearly going to be very different. As a principal, actively listening to and valuing the ideas of my staff was essential to building a strong and unified leadership team who were part of the decision-making process. During the dissertation development, however, the research team was a true example of shared leadership. All decisions were made together after much discussion and deliberation, as team members we were all equal in our authority. This type of collaboration takes a significant amount of time and patience but proved to be necessary and ultimately worthwhile.

As I reflect on my previous and current leadership roles, I must acknowledge that as a school principal my leadership style was aligned to the Transformational Leadership style as described by Northouse (2016). Once I transitioned to my current role as an administrator at the district, I remained true to the Transformational Leadership style, however, I have come to embrace many of the qualities of Servant Leadership. The characteristics of stewardship, commitment to the growth and development of others, and building community resonate more with me now. As I strive to build a community of school leaders that are thoughtful and intentional instructional leaders, these
characteristics have become more relevant and useful. Although I genuinely believe that leadership styles change as circumstances require, I can certainly identify with the leadership qualities as described by Northouse (2016).

**Collaborative scholarship.** The rewards of working as a group far outweigh all of the challenges we faced during the development and implementation of our study. I was extremely fortunate to have the opportunity to work with two of the most passionate, intelligent, and driven educational leaders I have had the privilege to know. Identifying a problem of practice with two outstanding principals allowed me to consider the current needs and challenges at the school-site level. A deeper understanding of the challenges faced by principals, particularly in our Tier 1 schools, was desperately needed in our district. As teacher evaluation is paramount in my role, this study allowed me to realize a professional goal of researching actual classroom practice and observing first-hand the implementation of DI and its relationship to student achievement. A clear objective of the program was to select a problem of practice that was directly related to the M-DCPS FEI, which our team honored by focusing our study on teachers’ conceptualization and implementation of DI in the reading classroom. Once the problem of practice was identified, we worked collaboratively to identify the methodology that would most effectively answer our research questions. As researchers, we agreed about nearly every decision as we went through the process. We spent a significant amount of time developing the research questions, interview questions, and the M-DCPS FEDIC, which allowed for many eye-opening discussions about teacher perceptions, implementation, and actual classroom practice. Even more enlightening has been the conversations regarding the data analysis and findings. The depth of collegial conversations that have
resulted from this study have impacted me professionally far more than I could have imagined.

As mentioned, we did experience several challenges throughout the process, the greatest of which was the change to our original proposal. We initially proposed a study that focused on student engagement. Through several discussions with our professors, our focus of study gradually evolved to DI and student achievement. The process of changing our focus was frustrating; however, as researchers, we agreed about nearly every decision as we went through the process. Once we were finally approved for our topic, we spent a significant amount of time developing the research questions, the interview questions, and the M-DCPS FEDIC. We shared ideas and suggestions and ultimately came to consensus as we intentionally made decisions that were best for the study. The collection of the teacher interview and classroom observation data presented challenges with time and scheduling with teachers in order to meet the timelines identified in the study successfully. However, the team went to great lengths to ensure that all were conducted appropriately. The analysis of the observational data proved to be more difficult than we initially perceived. We worked diligently to ensure that the behaviors we observed were scored appropriately on the observation checklist. Open and honest communication, and support for each team member, were essential to overcoming the numerous challenges we faced during the process.

The transition from individual members of a cohort to a research team was relatively smooth for me. Although there is an added pressure when your work has a direct impact on the success or failure of others, I felt empowered to be working with such outstanding leaders. Often, however, researchers are far more comfortable working
as individuals. Having sole control over the content, timeline, and all aspects of the project is very appealing. Transitioning to a research team forces each member to relinquish some of that control and be more vulnerable and reliant on others. As colleagues for many years, and teammates in other courses throughout the program, our team had experience working collaboratively prior to this study. Fortunately, we are compatible, open, and receptive to the ideas and expertise of each member and genuinely respect one another. As we worked through the study, we agreed on responsibilities and timelines and provided support and encouragement to one another as we worked toward each milestone.

Successful collaborative projects must begin with establishing professional relationships between colleagues through open and honest communication. They must develop trust and believe in the strengths and abilities of each other and utilize them to their advantage. Each member of the team must be committed to the project and demonstrate this commitment by investing the time and resources necessary to complete each task throughout the process. Members must be willing to devote their time and energy to the project at a level that is comparable to that of their colleagues. Researchers must be open-minded and be willing to genuinely listen to the ideas and professional experiences of others and, at times, consider opposing points of view. All researchers must agree that all decisions will be driven by the common goal, which is what is in the best interest of the project. Each researcher must ensure that their contributions to the work are meaningful and relevant and meet or exceed the expectations of their fellow researchers. When working collaboratively, it is also important to be kind and respectful of one another. True teamwork requires understanding the ideas, opinions,
circumstances, and abilities of others. Great teams, like ours, identify those talents and strengths and channel them appropriately to enhance and maximize their abilities. I am eternally grateful to have been given the amazing opportunity to participate in the Executive Ed EdD program at the prestigious College of William and Mary. The lessons learned have catapulted my professional growth and have inspired me to continue working to build capacity in others.

Felicia Joseph

**Leadership transformation.** The experience of completing the doctoral program at the College of William and Mary has truly aided me in adopting new habits of mind as a school leader within M-DCPS. As instructional leaders, we undoubtedly encounter issues that affect teaching and learning on a daily basis. Rather than seeing the problem on the surface, I have adopted a system of inquiry that allows me to work to identify causes of the issue and devise plans of solution alongside the valued stakeholders of my school community. Costa and Kallick (2008) identified 16 habits of mind that aim to move a leader’s thinking from individual to systems based. Through this journey I have developed and refined my leadership skills in several of these areas, namely, listening with understanding and empathy; thinking flexibly; gathering data through all senses; creating, imagining, innovating; and thinking interdependently. Through the practice of these habits, I have changed and become more closely aligned with leading as a systems thinker. As Goodman (1997) and Senge (2006) suggest, systems thinking provides for a more thorough analysis of an event, an awareness of the choices garnered to resolve the issue, and implementing solutions based in knowledge, that while not perfect, yield the best results. Systems thinking has allowed me to recognize the interconnectedness of
events at the school site, to identify the historical patterns, and to recognize how I may have personally contributed to the outcomes. I am not as quick to act to resolve an issue on the surface, but rather, I have learned to become curious, to clarify, and to be compassionate and courageous about the choices that are made.

To listen and understand others with empathy means to set aside judgement, prejudice, and personal stories in order to attend fully to another individual (Costa & Kallick, 2008). Listening is not enough if it is not done with empathy to understand the point of view of others better, accepting different perspectives and being able to identify and label the emotions and feelings of those we lead. In building the skill of listening with empathy, I have been afforded the opportunity to establish meaningful relationships further with others within my school site. Wheatley (2006) asserted that there is importance in building relationships to influence positively the work that is done. Relationships are built from deliberate actions that are witnessed by others. Valuing the input of team members and establishing open and honest communication is essential to building relationships where people feel a sense of belonging (Northouse, 2016). Further, learning with and alongside others can only begin when communication moves from talking to each other and to listening to one another (Senge, 2006). I have always established rapport with others; however, listening openly has often been abandoned in an effort simply to tackle the task at hand. In working with the members of the M-DCPS cohort and the members of my dissertation team, I have come to respect and accept the habit of maintaining an open mind when listening by placing my personal beliefs and ideas at a distance. Listening empathetically requires full attention to another’s words, feelings, emotions, and body language (Costa & Kallick, 2000). I am better able to
understand another’s point of view and identify how and where their ideas fit into the broader picture that has strengthened my abilities as an instructional leader and researcher. This empathetic listening has led to the second acquired habit of mind—thinking flexibly.

A leader cannot be inflexible and quick to accept a single solution. This is especially true when serving as a school leader of a diverse population of faculty, staff, and students where change is inevitable and everyone has an opinion. Flexibility in thinking offers the opportunity to identify broader relationships and generation of many ideas (Costa & Kallick, 2008). When we think flexibly, we open ourselves to accept the ideas and views of others so that we are able to weigh the options that are available in solving the issues. Leaders who think flexibly move from an egocentric mind-set to one of allocentrism and become systems thinkers, moving away from the need to be correct. There is a sense of power in recognizing that as leader, I do not have to be right. Naisbitt (2009) stated that authority figures have been “culturally conditioned to have to be right” (p. 39), overshadowing what is right for who is right. By establishing flexibility in my thinking, I have dispelled the need to be right, accepting the ideas and perspectives of others and the willingness to change for the betterment of the establishment. At times, we must trust our intuition, allowing for ambiguity and confusion so that productivity may happen (Costa & Kallick, 2000). In large part to be flexible in thinking, requires a leader to gather data through all senses. Throughout the process of this research study, I have learned that to remain flexible, it is necessary to be a connoisseur of written research, a reader of people, and listener of ideas. Learning occurs when we are able to take in from the environment, remain acutely in tune with the things and people around
us, and absorb that information so that decisions are informed (Costa & Kallick, 2000, 2008). It is imperative that all sources of information be considered when making decisions that will affect change.

There is constant change in the field of education, yet things often remain the same. As a member of the M-DCPS cohort of learners, I recognize that actionable change begins with me. It is incumbent upon a leader that the creativity of others is developed by bringing others along on the journey of decision-making. Senge (2006) emphasizes that successful organizations often tap into the workers to identify compelling new ideas that have the ability to reshape the actions and results yielded within the organization. While some matters will require immediate action to take place, Naisbitt (2009) declared that results and change are produced when we choose to exploit opportunities rather than simply provide solutions to yesterday’s problems. The habit of creating, imagining, and innovating flows naturally from accessing all forms of data as individuals who master this habit are those who prepare their minds with knowledge of the subject at hand (Costa & Kallick, 2008). As Costa and Kallick (2000) described, I relate to this habit as I find myself to be intrinsically motivated and welcome the challenge and rewards of learning from the process. Feedback and acceptance of constructive criticism is critical to homing in on the habit of creating, imagining, and innovating. Meadows (2008) found that to establish an effective organization of systems thinking, a sense of resiliency that welcomes meaningful feedback policies is necessary. I have taken to the acceptance of meaningful feedback throughout the course of the doctoral program and into my professional setting. Through effectively listening to the needs, ideas, and thoughts of others, I have adopted the habits of thinking
interdependently. Just as Costa and Kallick (2000) suggested, I am a social being who finds it therapeutic to listen and be listened to, to work together as opposed to doing so in isolation, and to recognize that we are stronger intellectually when working as a team. Starting in a cohort of my colleagues and participating in the collective efforts to see one another through has strengthened this habit of mind. I have applied this not only to the program but also in my professional work. I have widened the team of individuals who work collectively at my school site to solve problems and create innovative programs for our students. I have learned to lean on others and allow them to lean on me for insight, ideas, and understanding. While I am able to relate to all 16 habits of mind, these are the five that I have found to be most prevalent and most enhanced throughout this process. I have used these habits to listen with purpose, build genuine relationships, and gather input and information from all sources, which have made the collective and collaborative work that much more meaningful and productive.

At the onset of the doctoral program, I prided myself in being a servant leader, willing to place the needs of others above my own. I recognized quite naturally that as a leader, it is imperative that those we lead feel our support and willingness to assist whenever necessary. Similar to the 16 habits of mind, servant leaders listen, are empathetic, are stewards, and build community (Northouse, 2016). While I have not abandoned my qualities as a servant leader, this experience has allowed me to encompass additional qualities of a transformational leader. The opportunity to work with and learn from my colleagues has offered me the insight and importance of leading myself and others through change. Northouse (2016) describes a transformational leader as one who maintains charisma, motivates others to accept ownership, stimulates others to be
creative, and considers individuals so that they may actualize their full potential. Senge (2006) asserted that systems thinking requires a leader to identify the patterns and complexity of the work being done, as opposed to those who simply identify the events and forces that cause reactions. I have learned that there is value in chaos, in allowing complexities to grow, and in taking reservation to immediate action, so that the input of others can be heard and truly considered: “A system is more than the sum of its parts. It may exhibit adaptive, dynamic, goal-seeking, self-preserving, and sometimes evolutionary behavior” (Meadows, 2008, p. 12).

My participation in the doctoral studies at the College of William and Mary has undeniably offered me invaluable lessons that will only strengthen my practice as an instructional leader and develop my ability to establish a mind-set destined for success alongside a team of individuals who are set on a single goal.

**Collaborative scholarship.** Through commitment to oneself and to each other our group was able to reach agreement easily regarding the problem of practice, the methodology to be used, and the division of all work required in meeting the expectations of this dissertation. The single goal of the M-DCPS is student achievement. Our team immediately recognized the need to center our problem of practice around this single goal. With two members serving as school principals and the third as an administrative director in the Office of Professional Development and Evaluation, it was easy to agree that our research should center around the practices of the teacher. As principals we would benefit from identifying both the areas of strength and areas of improvement in the teachers within our schools of study and be able to use these findings towards building the capacity of others within our schools. As the administrative director over
professional development, my team member would be able to affect change through identifying areas in which her department could better support the development and training of teachers. Practices in reading instruction were identified as a significant area based on current data trends within both schools, as well as knowing that reading is the foundation of all learning. As a team we did deliberate regarding what area of reading instruction would be studied. Initially as a group we identified student engagement as the area of study. However, after working through the process of creating questions and several conference calls with Dr. James Stronge, our professor of Research Seminar 1 and Research Seminar 2 at the College of William and Mary, we determined that there was more benefit to all three team members in identifying instructional practices of the teacher and came to the agreement that differentiated instruction would be the focus of our study. Through the participation of collegial meetings, setting short-term goals, having frequent check-ins with one another, and oftentimes serving as each other’s cheerleaders, our group was able to complete the dissertation process successfully.

At the onset of this process, our team recognized that we would need frequent meetings to collaborate and to work together to identify and implement the methods to be used within this study. Scheduling both collaboration time as well as observation time perhaps served as one of the greater challenges of this process. Working in three separate locations, commitments to our work responsibilities and student functions, and consideration of our independent families made it difficult at times to devise a schedule that was amenable to the group. This did not deter our collaboration, and instead we found creative ways to meet with one another through not only face-to-face meetings, but also using the Zoom platform, conference calls, and perhaps hundreds of text messages.
If one team member was not available and meetings could not be rescheduled, the other two members would meet and ensure that the information was provided. At the close of each of our meetings, our team would establish not only the next meeting date but also divide tasks that would be completed prior to our next meeting date. Once we began the process of collecting data, the scheduling of 30 teacher interviews and 58 observations also proved challenging. The need to reschedule teacher observations due to scheduling conflicts, such as teacher absences and professional obligations, did delay our initial timeline. We did not waiver from the data collection process and eventually were able to gather observational data from all of the participants.

I have always found myself to be more comfortable working alone than with a group of peers. By working alone, I have been able to manage my own timelines and depend on myself for completion of tasks. Even in my professional work I have often found it difficult to delegate in fear that the results would not be to my liking. In moving from an individual member of a cohort to a research team, I have learned that perhaps my proclivity to working alone had more to do with my fear of identifying my own weaknesses and uncertainty in how my work would be received. In working with my teammates, I learned to accept feedback, come to agreement often, and build on the strength of my team members. Being a member of a team requires patience and consideration. As a team we worked together naturally and cohesively. I learned to be more considerate of the time and work invested by my team and hold true to the timelines and expectations that we had of one another.

When the process began, completing this dissertation was our group’s number one goal. While we have completed the goal as intended, perhaps the most rewarding part of
this process has been the opportunity to work with professional colleagues who have undoubtedly become lifelong friends. To work with others collaboratively on complex projects, team members must first establish a common goal, they must recognize that each member adds value to the team, and they must be willing to both give and take constructive feedback for the betterment of all. This research team set and maintained high expectations of self and of one another. We were able to voice our opinions and concerns without consequence, which resulted in a successful study of practice.

Concepcion Santana

Leadership transformation. Participation in the College of William and Mary’s Executive EdD program has provided me with an expanded frame of reference and enhanced my habits of mind. Throughout my journey in this program, I have been able to improve my professional thought processes through extensive reading and exposure to new and diverse ideas regarding educational policy, planning, leadership, human resource development, and the importance of collaborative structures within organizations, further enriching my previous professional and educational experiences. This program has also helped me refine my skills in the reading and analyzing of information. Through the exposure of readings and research aligned with the habits of mind, I have enhanced my professional skills particularly as they pertain to listening with understanding and empathy, persisting, thinking flexibly, striving for accuracy, taking responsible risks, thinking interdependently, and remaining open to continuous learning (Costa & Kallick, 2008).

A prevalent theme across many of the readings to which we were exposed in this program is the importance of human relationships in life and in the workplace. While all
of the habits of mind are somewhat interrelated, the ones that I mostly identify with that have assisted me in this area of human relationships are those of listening with understanding and empathy and thinking interdependently. Wheatley (2006) highlighted the importance of human relationships and stated that relationships are “the key determiner of everything” (p. 11). Relationships are what matter in any workplace and are the very fabric of the team (Wheatley, 2006). The views of Peters and Waterman (2004) further support those of Wheatley’s, as they emphasized the two qualities of “close to the customer” (p. 156) and “productivity through people” (p. 235) as key to having productive and successful companies. These qualities hold true in both my school and within my work with the members of my dissertation team. In order to foster and nurture healthy relationships, I have learned to involve and listen to my staff and colleagues, my customers, with more understanding and empathy towards their opinions and perspectives. I have accomplished this by adjusting my behaviors and becoming more open to others’ input and by learning from others. Weekly leadership team meetings have provided the opportunity for me, my administrative team, and curriculum chairs to draw on each other’s strengths and to make informed decisions together centered around teaching and learning and proffering the vision of our school and district.

Wheatley (2006) noted that the way people behave in the workplace, both through their actions and their words, has a direct impact on the relationships that are built. It is vital for me to listen to and understand the needs and expectations of my staff, thus empowering them to become partners who think interdependently (Northouse, 2016).

Along with the habits of listening with understanding and empathy, thinking interdependently, thinking flexibly, taking responsible risks, and remaining open to
continuous learning are all habits of mind that are supported by the four elements that Fullan and Quinn (2016) identified as key in cultivating collaborative cultures: the culture of growth, learning leadership, capacity building, and collaborative work. “Leaders who possess a growth-mindset build capacity in others and help them achieve more than they expected of themselves” (Fullan & Quinn, 2016, p. 49). Creating a school culture that empowers all stakeholders is critical to the success of the leader and the organization. As a leader, I have sharpened my ability to be inclusive of all teachers, parents, community, and staff members and to foster growth and capacity of my school by building relationships and capacity in others. My attention to building the capacity of my teachers and staff has been demonstrated through my daily interactions with them. I became a learning leader right alongside my staff and demonstrated to them that I was not afraid to take responsible risks, not afraid of making mistakes that would allow us to learn together in our journey of continuous improvement and learning. The leadership courses at the College of William and Mary were instrumental in this transformation for me, for I went from a mind-set of thinking I had to know everything and tell others what to do to a mind-set that we are all in this together and that the strength is in our collaborative work (Fullan & Quinn, 2016).

Finally, the habits of mind of striving for accuracy and persisting have defined me since I was a child. Striving for accuracy and persisting have been an asset and continue to assist me in incessantly challenging myself and my staff to become better at our craft on our goal of increasing student learning. These habits have undoubtedly been honed and served me well as a result of my doctoral journey because the rigorous and challenging work would not have been completed otherwise. While the tenacity to
persevere and the attention to detail to maintain accuracy through the doctoral and dissertation process are strengths, they may serve as a hinderance if one perseverates, which I found myself doing at times. My professors and my husband would advise me to “let it go” or that “done is better than perfect,” and I found that to be true many times throughout this process. In the end, I learned that if things were not perfect, the purpose was to continue learning and growing. Nevertheless, these two habits became our driving force as a dissertation team as we met challenges and refocused to finalize our journey without giving up!

Throughout my doctoral adventure, I have learned that leadership style and, most importantly, how others view you as a leader matters a great deal. Northouse (2016) stated, “Leadership will continue to have a different meaning for different people” (p. 5). Effective leaders can envision a future for their organizations and set goals for attaining that vision. While there are many models and approaches to leadership, Keedy (1993) reported that a range of leadership styles was most effective and that no single leadership approach worked in every situation. While at the beginning of this program I considered myself more of a servant leader, as I identified with the characteristics inherent in this type of leadership such as listening with empathy, commitment to the growth of others, and building community, through the various readings and discussions across courses I began to realize that several characteristics inherent in servant leadership were also seen in transformational, authentic, and situational leaders with which I now identify. I recognized that highly effective leaders tend to represent many of the characteristics found within the different leadership theories in their daily work (Leithwood, Jantzi, & Steinbach, 1999). Transformational leaders create and articulate a clear vision, set goals,
and empower followers to meet high expectations (Northouse, 2016). Both transformational and authentic leadership have an explicit moral dimension (Northouse, 2016). Ethics, morality, and integrity are a large part of transformational and authentic leadership. Authentic, transformational leaders lead from the heart, understand their own values, and model those beliefs and values they want their followers to adopt (Northouse, 2016). They place followers’ needs above their own and mobilize people to the common good. In order to contribute to the common good, transformational leaders honestly care about and consider the wants, needs, and skills of people and ensure that all key stakeholders and their diverse thoughts are represented in any decisions that are made. In addition to the importance of relationships built between the leaders and followers through caring for others and listening to others’ needs and empowering them for the good of the school, it is important to remember that a good leader has the ability to adapt and be flexible based on the situation (Hersey & Blanchard, 1969).

In my role as educational leader, I apply the principles of transformational, authentic, and situational leadership daily. In the quest for continuous improvement, I work with teams of teachers and staff to examine our vision continually, evaluate programs and achievement of objectives, recognize areas of strength and needed improvement, and realign goals to achieve success. The key to the successes at the school come in my ability as a leader to model the moral and ethical values of honesty, integrity, fairness, and kindness in my relationships with my colleagues. Through consistent meetings and interactions with all stakeholders at all levels, including faculty, staff, students, and parents, where individual input is sought as part of the decision-making process, a sense of community and team is fostered. Through their inclusion in
the decision-making process, individuals are empowered and challenged to perform at
their highest potential. As the leader, support and mentorship are adjusted and applied
along the way at various levels and through various situations in order to meet the needs
of all individuals and, ultimately, of the whole organization.

Participation in this doctoral program has invaluably influenced my perspectives
and role as an instructional leader. Along with the importance of building relationships,
fostering a clear and common vision, and empowering others through collaborative work,
I came to adopt the instrumental practice of self-reflection that I had not fully practiced
before. Self-reflection forced me to become more conscious of my own current practices
and behaviors and to think critically about my future plans. Becoming more self-
reflective allowed me to examine my strengths and weaknesses and taught me to be
flexible in adapting my leadership style according to the circumstances and needs of my
school and staff. While self-reflection felt uncomfortable at times, it is a non-negotiable
skill for my own health, as well as that of the people I lead and my school. My growth as
a leader is an ever-evolving, continuous journey. I will remain open and adapt flexibly to
the perceptions, feelings and needs of others; to reflect on my actions and behaviors to
ensure they exude integrity and honesty; and to appreciate the power of engaging in
collaborative work for true success to unfold in my school, my region, and my district.

**Collaborative scholarship.** There are both rewards and challenges in completing
a doctoral dissertation as a group; however, the ongoing mutual support and
encouragement and the engaging collaborative conversations surrounding our problem of
practice proved to be very rewarding and made this dissertation journey as a group one of
great personal growth for me. Our decision to engage collectively in our research study
as a group was not difficult, since we all knew each other from serving as assistant principals and principals within the same region in our county for several years. My participation in this process through William and Mary’s Executive EdD program allowed my relationship with the members of my dissertation team to develop from primarily collegial and professional to personal, lifelong friendships that I will treasure.

As we began identifying a problem of practice, we had to overcome some obstacles in the beginning. At the onset, our conversations and discussions guided us into identifying a problem of practice that would tie into the district’s vision of building teacher and leader capacity in our schools and that could lead to the district’s singular goal of increasing student achievement. With two of the members of our group being principals at high-performing schools within M-DCPS and one a district administrator in the Office of Professional Development and Evaluation whose work focuses on building teacher and leader capacity, we decided to focus on a topic that would directly impact our daily practice as principals at the school sites and the professional development of teachers. It was always our goal to focus on instructional strategies utilized by teachers in the classroom that would influence student learning. This focus stemmed from our analysis of student performance data at our two schools of study where the majority of students perform at mid to high levels of proficiency on state and district standardized assessments, although the levels of learning gains among these students do not prove the same. It was our intent to gain a deeper understanding of how teachers at two high-performing schools within M-DCPS implement instruction in the classroom to meet the individual needs of their students and increase student learning and how we can assist
them and build on their capacity as teachers to deliver an instructional program that supports our district’s mission.

While our focus remained the same, after much consideration and discussion among the members of our dissertation team and guidance from our professor and dissertation committee chairperson at the College of William and Mary, Dr. Christopher R. Gareis, and our professor and dissertation committee member at the College of William and Mary, Dr. Steven M. Constantino, we refined our focus from instructional strategies for increasing student engagement to understanding teacher conceptualization and implementation of differentiated instructional strategies and their effect on student achievement. With this shift, we were tasked with re-writing another precis, which set us back a bit in our journey, but we were able to narrow our focus and research questions with the initial support and guidance of Dr. Stronge. Through further guidance from our committee chair, Dr. Gareis, and committee member, Dr. Constantino, we added a third question that changed our methodology from a purely qualitative study to an exploratory, sequential, mixed-methods design. With this renewed charge, our journey into extensive research began.

From the onset, the structure of William and Mary’s Executive EdD program provided me with the necessary experiences to build strong relationships among my cohort colleagues that led to the success of our group dissertation study. The coursework allowed for rich conversations and exchange of ideas through our discussion board posts, zoom sessions, and group assignments. Throughout the various courses, I was challenged, but fortunate, to have been paired with various members of our cohort with whom I had never met or interacted, and I was able to build relationships and learn from
the experiences and perspectives of others within our large school system that I would not have otherwise done had I not had the opportunity to participate in this program. As a result of these early experiences, the ability to work collectively and collaboratively with my dissertation group was facilitated and resulted in a symbiotic relationship amongst the team members.

Challenges encountered as a group were overcome through extensive communication, cooperation, empathy, and problem-solving. Once we overcame our first obstacle of redefining our problem of practice mentioned previously, the major challenges focused around our individual work schedules and commitments, our individual family and personal responsibilities, and the time management needed to complete this major research study. I also encountered some personal health struggles along the way, but these only helped to strengthen our relationship and bond of commitment towards each other. Throughout this process we pulled together through each challenge to help one another stay strong and focused to reach our goal as a team. Although we did experience challenges in the coordination of meetings around our work and personal commitments, we used several methods to overcome these challenges by participating in zoom sessions after work, using continuous text messages and emails, and having weekly Saturday meetings that turned into several additional weekday meetings as the study progressed. Our meetings and communications always included a working agenda, timelines, and individual group member responsibilities that guaranteed individual accountability towards the targeted group goals. We also experienced the challenge of scheduling the 60 observations (20 per researcher) due to both the researcher and participant schedules and the amount of observations required by the study, which
entailed much preparation and planning. Finally, the collection and analysis of data posed a challenge since it required three different sets of data, reaching consensus under common lenses of what we were observing, and countless hours of disaggregation and analysis of results. Nonetheless, all these challenges were overcome through the team’s thought-provoking conversations at each stage of the study and the support from all our professors at the College of William and Mary. These conversations proved invaluable and provided insight and evidence of each team member’s professionalism and commitment toward student learning and the fulfillment of our work within our schools and our district.

As mentioned previously, the structure of William and Mary’s Executive EdD program allowed for an effortless transition from an individual member in a cohort of educational professionals to a collaborative member of a research study team. Throughout our coursework, we were challenged to provide our input as individual problem solvers and reflective thinkers within our own practices and how that could enhance the overall growth for ourselves and others. As an individual who has always been inclined to take control over all situations, I was challenged to see and accept the strength in collaboration to reach a common goal, as I engaged in the many group activities throughout the program. These opportunities allowed for meaningful discussions to occur and refined my ability to accept and understand others’ perspectives, thus laying the groundwork for our journey as a dissertation team.

I feel honored, privileged, and forever grateful to M-DCPS for having provided me with the opportunity to participate in the prestigious College of William and Mary’s Executive EdD program. It has been a journey of remarkable personal and professional
growth for me. I have learned many lessons throughout this journey, both personally and professionally. I learned about the importance and power of self-reflection. I learned to accept the ideas and feedback from my professors and fellow cohort and dissertation team members not as criticism but as an avenue to reflect on my current educational perspectives and practices that have strengthened my leadership capacities over the past three years since the commencement of this program. I learned to trust others outside of my immediate inner circle and learned about the power of collaboration as I engaged in continuous, collegial conversations, offering my perspective on various educational topics without reservation and considering those of others. Ultimately, the most impactful lesson for me was in discovering the power of the group. This journey was much more meaningful and significant because of the relationships built as we worked through challenges and triumphs along the way. Each member of the team brought individual qualities that positively contributed to the dissertation process. According to Fullan and Quinn (2016), developing strong relationships through capacity building and engaging in deep collaborative work leads to sustained and systemic growth.

This doctoral program afforded me with the opportunity to engage in stimulating, collaborative work that allowed me to fulfill my lifelong dream of earning a doctoral degree at the College of William and Mary, the college in my childhood home state of Virginia. I will never forget the lessons learned, both personally and professionally, and will continue to apply this knowledge in all my future endeavors as a lifelong learner and hope to share them with those I am charged to lead and mentor. It is my hope that opportunities for programs such as these continue to be offered here and across our great nation, for the power of a nation falls on an educated populace.
FRAMEWORK OF EFFECTIVE INSTRUCTION

INSTRUCTIONAL DELIVERY
Effective teachers...
- Demonstrate current knowledge of content in a sequential manner
- Explain directions, concepts, and content in a logical and sequential manner
- Use multiple levels of questions, and make necessary adjustments
- Connect students' knowledge, experiences, and interests to learning goals
- Present lessons clearly and skillfully using explicit instruction
- Use appropriate literacy strategies to build academic vocabulary
- Use technology to differentiate instruction and enhance learning
- Provide ongoing, timely, and specific feedback to students

ENGAGEMENT
Effective teachers...
- Engage students in diverse activity structures
- Use a variety of strategies to engage students in higher-order learning tasks
- Engage students in authentic learning, real-life applications, and interdisciplinary connections
- Use appropriate pace and maximizes instructional time for student learning
- Reinforce learning goals throughout the lesson

INSTRUCTIONAL PLANNING
Effective teachers...
- Use both formative and summative student learning data to guide planning
- Develop plans that are clear, logical, sequential, and aligned to standards-based learning
- Plan instruction effectively for content mastery, pacing, and transitions
- Identify and plan for the instructional and developmental needs of all learners
- Gather, evaluate, and/or create appropriate instructional materials

ASSESSMENT
Effective teachers...
- Use local and state summative assessment data to design instruction that meets students' needs
- Use pre-assessment data, formative, and summative assessments to inform instruction
- Use formative assessments to adjust instruction for re-teaching, remediation, and enrichment
- Help students understand assessment criteria, monitor, and reflect on their work
- Maintain sufficient assessment data to support accurate reporting of student progress
- Align student assessments to learning goals and standards
- Provide timely, and specific feedback to students, parents, and stakeholders

KNOWLEDGE OF LEARNERS
Effective teachers...
- Respond to students' developmental levels
- Present concepts at different levels of complexity
- Provide a range of differentiated activities
- Provide instruction based on students' learning needs

LEARNING ENVIRONMENT
Effective teachers...
- Establish and maintain effective classroom rules and procedures
- Create an environment that is stimulating, challenging, and fosters intellectual risk-taking
- Organize a safe physical environment that is conducive to student learning and collaborative work
- Maintain an environment that reflects a culture of inclusivity, equity, and respect
- Promote accountability for learning and holds high academic expectations for all students
- Use verbal, nonverbal, and electronic communication tools to challenge and support students in a positive and supportive manner
- Encourage students to receive and accept constructive feedback on individual work and behavior

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Appendix B

M-DCPS Framework of Effective Differentiated Instruction Checklist

<table>
<thead>
<tr>
<th>Observer</th>
<th>Date</th>
<th># of minutes observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>Grade</td>
<td></td>
</tr>
<tr>
<td>Teacher</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Student Information:
- Total #
- Observed Gender: #Boys #Girls
- Observed Ethnicity:
  - #White #African–American
  - #Hispanic #Asian–American
  - #Other
- Gifted: #Identified Gifted

Classroom Desk Arrangement:
- Desks in rows and columns
- Desks in groups
- Desks in circle
- Other (specify)

Service Delivery Model: (as designated by the coordinator)
- Self-Contained
- Inclusion
- Cluster group
- Pullout
- Other

Please outline what you have observed in the classroom with respect to curriculum and instruction-related activities. Describe the specific lesson, its organization, instructional methods used, characteristics of the learning experience and environment, texts and materials used, questions asked by the teacher, and any other relevant observations and impressions that may influence your completion of the attached checklist.
### Knowledge of Learners

<table>
<thead>
<tr>
<th>3=Effective</th>
<th>2=Somewhat Effective</th>
<th>1=Ineffective</th>
<th>N/O = Not Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>The teacher identifies and addresses the needs of learners by demonstrating respect for individual differences, cultures, backgrounds, and learning styles.</td>
<td>The teacher attempts but is often ineffective in demonstrating knowledge and understanding of the needs of the target learning community.</td>
<td>The teacher consistently demonstrates a lack of awareness of the needs of the target learning community or fails consistently to make appropriate accommodations to meet those needs.</td>
<td>The listed behavior was not demonstrated during the time of the observation. (NOTE: There must be an obvious attempt made for the certain behavior to be rated “ineffective” instead of “not observed.”)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The teacher ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. responds to students’ developmental levels.</td>
</tr>
<tr>
<td>2. presents concepts at different levels of complexity,</td>
</tr>
<tr>
<td>3. provides a range of differentiated activities.</td>
</tr>
<tr>
<td>4. provides instruction based on students’ learning needs.</td>
</tr>
</tbody>
</table>

### Learning Environment

<table>
<thead>
<tr>
<th>3=Effective</th>
<th>2=Somewhat Effective</th>
<th>1=Ineffective</th>
<th>N/O = Not Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>The teacher creates and maintains a safe learning environment while encouraging fairness, respect, and enthusiasm.</td>
<td>The teacher attempts to address student behavior and needs required for a safe, positive, social, and academic environment but is often ineffective.</td>
<td>The teacher consistently addresses student behavior in an ineffective manner and/or fails to maintain a safe, equitable learning environment.</td>
<td>The listed behavior was not demonstrated during the time of the observation. (NOTE: There must be an obvious attempt made for the certain behavior to be rated “ineffective” instead of “not observed.”)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The teacher ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. creates an environment that is stimulating, challenging, and fosters intellectual risk-taking.</td>
</tr>
<tr>
<td>6. organizes a safe physical learning environment that is conducive to student learning and collaborative work.</td>
</tr>
<tr>
<td>7. promotes accountability for learning and holds high academic expectations for all students.</td>
</tr>
<tr>
<td>8. uses verbal, nonverbal, and electronic communications tools to challenge and support students in a positive and supportive manner.</td>
</tr>
<tr>
<td>9. encourages students to receive and accept constructive feedback on individual work and behavior.</td>
</tr>
</tbody>
</table>
**Instructional Planning**

<table>
<thead>
<tr>
<th>3=Effective</th>
<th>2=Somewhat Effective</th>
<th>1=Ineffective</th>
<th>N/O = Not Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>The teacher uses appropriate curricula (including state reading requirements, if applicable), instructional strategies, and resources to develop lesson plans that include goals and/or objectives, learning activities, assessment of student learning, and home learning in order to address the diverse needs of students.</td>
<td>The teacher attempts to use appropriate curricula, instructional strategies, and/or resources to address the diverse needs of students during the planning process but is often ineffective, and/or the teacher attempts to develop lesson plans but lacks one or more of the four basic components.</td>
<td>The teacher consistently demonstrates a lack of planning or fails to address the curriculum properly in meeting the diverse needs of all learners.</td>
<td>The listed behavior was not demonstrated during the time of the observation. (NOTE: There must be an obvious attempt made for the certain behavior to be rated &quot;ineffective&quot; instead of &quot;not observed.&quot;)</td>
</tr>
</tbody>
</table>

The teacher ...

10. plans instruction effectively for content mastery, pacing, and transitions. | 3 | 2 | 1 | N/O |
11. identifies and plans for the instructional and developmental needs of all learners. | 3 | 2 | 1 | N/O |
12. gathers, evaluates, and/or creates appropriate instructional materials. | 3 | 2 | 1 | N/O |

**Comments:**

**Instructional Delivery and Engagement**

<table>
<thead>
<tr>
<th>3=Effective</th>
<th>2=Somewhat Effective</th>
<th>1=Ineffective</th>
<th>N/O = Not Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>The teacher promotes learning by demonstrating accurate content knowledge and by addressing academic needs through a variety of appropriate instructional strategies and technologies that engage learners.</td>
<td>The teacher attempts to use instructional strategies or technology to engage students but is often ineffective or needs additional content knowledge.</td>
<td>The teacher lacks content knowledge or fails consistently to implement instructional strategies to engage learners academically.</td>
<td>The listed behavior was not demonstrated during the time of the observation. (NOTE: There must be an obvious attempt made for the certain behavior to be rated &quot;ineffective&quot; instead of &quot;not observed.&quot;)</td>
</tr>
</tbody>
</table>

The teacher ...

13. uses multiple levels of questions and makes necessary adjustments. | 3 | 2 | 1 | N/O |
14. connects students’ knowledge, experiences, and interests to learning goals. | 3 | 2 | 1 | N/O |
15. presents lessons clearly and skillfully uses explicit instruction. | 3 | 2 | 1 | N/O |
16. uses technology to differentiate instruction and enhance learning. | 3 | 2 | 1 | N/O |
17. engages students in diverse activity structures. | 3 | 2 | 1 | N/O |
18. uses a variety of strategies to engage students in higher-order learning tasks. | 3 | 2 | 1 | N/O |
19. engages students in authentic learning, real-life applications, and interdisciplinary connections. | 3 | 2 | 1 | N/O |
20. uses appropriate pace and maximizes instructional time for student learning. | 3 | 2 | 1 | N/O |
The teacher gathers, analyzes, and uses data (including required assessment data, if applicable) to measure learner progress, guide instruction, and provide timely feedback.

The teacher attempts to use a selection of assessment strategies to link assessment to learning outcomes or uses assessment to plan/modify instruction but is often ineffective.

The teacher consistently fails to use baseline data to make instructional decisions and/or fails to provide feedback on learner progress in a timely manner.

The listed behavior was not demonstrated during the time of the observation. (NOTE: There must be an obvious attempt made for the certain behavior to be rated “ineffective” instead of “not observed.”)

| 21. uses local and state summative assessment data to design instruction that meets students’ needs. | 3 | 2 | 1 | N/O |
| 22. uses preassessment data and formative and summative assessments to inform instruction. | 3 | 2 | 1 | N/O |
| 23. uses formative assessments to adjust instruction for reteaching, remediation, and enrichment. | 3 | 2 | 1 | N/O |
Appendix C

Semi-structured Interview Questions Protocol

Interviewer __________________________ Date __________________________

Start Time of Interview ________________ End Time of Interview ________________

Location of Interview: __________________________

Teacher: __________________________ Grade _______ Class Type ________________

INSTRUCTION TO THE INTERVIEWER:
Good morning (afternoon). I am _____. It is nice meeting with you today. Thank you for agreeing to participate in our study on differentiated instruction. This interview involves collecting information regarding your regular implementation of differentiated instruction in the Reading classroom. The purpose is to get your perceptions of your experiences inside and outside of the classroom. There are no right or wrong or desirable or undesirable answers. I would like you to feel comfortable with saying what you really think and how you really feel. The responses you provide will be anonymous and your name will not be reported within the study being conducted.

TAPE RECORDER INSTRUCTIONS
You may remember that I will be recording our conversation today along with taking written notation. The purpose of this is so that I can get all the details but at the same time be able to carry on an attentive conversation with you. I assure you that all your comments will remain confidential. I will be compiling a report which will contain all participant comments without any reference to individuals.

PREAMBLE/CONSENT FORM INSTRUCTIONS
Before we get started, please take a few minutes to review the Consent Form previously completed by you. At the time of consent you agreed to the recorded interview process. Please indicate if you are still in agreement to participating in this part of the study. (Once verbal agreement is given, turn on the recorder).

This is a semi-structured interview. As you respond to my prepared interview questions, I may ask clarifying questions to probe and ensure that I have a thorough understanding of your responses.

ICE BREAKER
Tell me a little about yourself and your experiences with teaching.
1. What do you think it means to “differentiate instruction”?

   Recommended probing question as necessary:
   • What is your personal definition of DI?

2. In what ways can instruction be differentiated to meet the diverse needs of your students?

   Recommended probing questions as necessary:
   • What do you know about differentiating instruction based on content?
   • What do you know about differentiating instruction based on process?
   • What do you know about differentiating instruction based on product?
   • What do you know about differentiating instruction based on environment?

3. Please describe your perceptions and experiences in implementing DI into your diverse reading classroom.

4. Who do you believe benefits from DI? How and why do these students benefit from DI?

5. What do you believe is the role of differentiated instruction in influencing student achievement in reading?

   Recommended probing questions as necessary:
   • Does it improve student learning?

6. What DI strategies have you found to be effective during reading instruction in your diverse classroom?

7. What do you believe has influenced your use/nonuse of DI strategies?

   Recommended probing questions as necessary:
   • Have you received training in DI? Explain.
   • Do you collaborate with your colleagues? Explain

8. What additional information would you like to share regarding differentiation or your teaching methods that we have not already covered?
Appendix D

Classroom Observation Protocol

Directions to the Observer:

• The purpose of this observation is to identify teacher characteristics and behaviors pertaining to differentiated instruction in the reading classroom.
• Observation must be conducted for the duration of the 90-minute Instructional Reading Block.
• Observer must serve as a Complete Observer (nonparticipant), sitting in the back of the classroom to minimize distraction.
• The observation period must be video recorded to allow for later review by and consensus rating with absent researchers.
• Complete the demographic section of the protocol sheet prior to the start of instruction.
• Two-column field notes must be maintained through the entire observation period to capture observed behaviors and dialogue between teacher and students. Notes must reflect activities observed at 5-minute intervals.
• Notation must be reflective of OBSERVED behaviors only.
• The researcher shall refrain from including opinion or making inferences regarding the lesson or actions being observed.

Observer __________________________ Date __________ # of minutes observed __________
School ___________________________ Grade __________________________
Teacher __________________________ Course/lesson Observed __________________________

Student Information: Total # _______
Observed Gender: #Boys ________ #Girls ________
Observed Ethnicity: #White ________ #African–American ________
#Hispanic ________ #Asian–American ________
#Other ________
Gifted: #Identified Gifted ________

Classroom Desk Arrangement:
Desks in rows and columns ________ Desks in groups ________ Desks in circle ________
Other (specify) __________________________

Service Delivery Model: (as designated by the coordinator)
Self-Contained Gifted ________ Inclusion ESE ________
Inclusion ESOL ________ General Education ________
Other __________________________
<table>
<thead>
<tr>
<th>Time Interval</th>
<th>Teacher Behaviors</th>
<th>Teacher Dialogue</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 min</td>
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<td>10 min</td>
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<td>85 min</td>
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<tr>
<td>90 min</td>
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</tbody>
</table>
Appendix E

Permission to Use the Classroom Observation Scales, Revised

Concepcion Santana <ccsantana@email.wm.edu>
To: tlcross@wm.edu
Cc: Felicia Joseph <fkjoseph@email.wm.edu>,

Good morning, Dr. Cross,

We are current doctoral students at the College of William and Mary and are working as school site or district administrators for Miami-Dade County Public Schools. We are conducting a study titled TEACHER CONCEPTUALIZATION AND IMPLEMENTATION OF DIFFERENTIATED INSTRUCTION IN THE ELEMENTARY READING CLASSROOM and found the Classroom Observation Scales, Revised (COS-R) Observation Protocol through our review of literature and research. We believe this protocol will be very helpful in acquiring the necessary data to answer question #2 of our study and are requesting your permission to use the applicable portion of the COS-R (attached for you to reference) in our study. We are also requesting permission to adapt/modify the survey to fit our specific context in Miami-Dade County Public Schools as referenced in question #3. I have also attached this modified version for your reference.

Research Questions

1. How do elementary teachers in high performing schools conceptualize differentiated instruction?

2. To what degree do elementary teachers currently implement differentiated instruction in the third through fifth grade reading classrooms?

We seek permission to use the COS-R here as stated above.

3. To what extent does the degree of implementation of differentiated instruction in the third through fifth grade reading classrooms in high performing elementary schools compare with the indicators of the Miami-Dade County Public School District’s Framework of Effective Instruction that relate to differentiated instruction?

We seek to use the modified version of the COS-R to fit our context in our schools here.

We are currently working with our professor, Dr. James Stronge, that advised us to reach out to you. If we need to reach out to anyone further, please let us know. We thank you in advance for your assistance and consideration and look forward to hearing from you.

With sincerest regards,

Concepcion Santana, Felicia Joseph, and Kimberly Davis

---------- Forwarded message ---------
From: Cross, Jennifer R <jrcross@wm.edu>
Date: Mon, Mar 11, 2019 at 12:05 PM
Subject: Re: Permission to use the Classroom Observation Scales, Revised (COS-R) Observation Protocol
To: Concepcion Santana <ccsantana@email.wm.edu>, Cross, Tracy L <tlcross@wm.edu>
Cc: Ruffer, Diana <dyruffer@wm.edu>

Dear Concepcion,

The COS-R is a publicly available document, so it is fine for you to use it for your research. I do think, however, that you should include a reference to the original 2003 source on the document you are adapting.

Best of luck with your research project! – Dr. Cross

Jennifer Riedl Cross, Ph.D.

William & Mary Center for Gifted Education and the Institute for Research on the Suicide of Gifted Students

(757) 221-2414

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Appendix F

Researcher Journal Notes

Each researcher will record journal notes periodically throughout the study, utilizing this protocol.

<table>
<thead>
<tr>
<th>Date</th>
<th>Data Source (ex: interview or observation)</th>
<th>Journal Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Appendix G

College of William and Mary IRB Approval Letter

STATUS OF PROTOCOL EDIRC-2019-09-17-13813-crgare set to active

This is to notify you on behalf of the Education Internal Review Committee (EDIRC) that protocol EDIRC-2019-09-17-13813-crgare titled TEACHER CONCEPTUALIZATION AND IMPLEMENTATION OF DIFFERENTIATED INSTRUCTION IN THE ELEMENTARY READING CLASSROOM has been EXEMPTED from formal review because it falls under the following category(ies) defined by DHHS Federal Regulations: 45CFR46.104.d.1, 45CFR46.104.d.2.

Work on this protocol may begin on 2019-09-28.

This protocol must be submitted for annual renewal on 2020-09-28, at which time the PI will be asked to indicate whether the protocol will continue as active, will continue with changes, or should be set to inactive.

Should there be any changes to this protocol, please submit these changes to the committee for determination of continuing exemption using the Protocol and Compliance Management application (https://compliance.wm.edu).

Please add the following statement to the footer of all consent forms, cover letters, etc.:

THIS PROJECT WAS FOUND TO COMPLY WITH APPROPRIATE ETHICAL STANDARDS AND WAS EXEMPTED FROM THE NEED FOR FORMAL REVIEW BY THE COLLEGE OF WILLIAM AND MARY PROTECTION OF HUMAN SUBJECTS COMMITTEE (Phone 757-221-3966) ON 2019-09-28 AND EXPIRES ON 2020-09-28.

You are required to notify Dr. Ward, chair of the EDIRC, at 757-221-2358 (EDIRC-L@wm.edu) and Dr. Jennifer Stevens, Chair of the PHSC at 757-221-3862 (jastev@wm.edu) if any issues arise during this study.

Good luck with your study.
Appendix H

Miami-Dade County Public Schools IRB Approval Letter

Superintendent of Schools
Alberto M. Carvalho
 Assessment, Research, and Data Analysis

September 25, 2019

Kimberly Davis; Felicia Joseph; Concepcion Santana
C/O 9878 SW 133 Terrace
Miami, FL 33186

District and School Support

Dear Davis, Joseph, and Santana:

I am pleased to inform you that the Research Review Committee (RRC) of the Miami-Dade County Public Schools (M-DCPS) has granted approval for your request to ask the voluntary cooperation of select M-DCPS schools in your study “Teacher Conceptualization and Implementation of Differentiated Instruction in the Elementary Reading Classroom” in order to fulfill the requirements of your doctoral dissertation at the College of William and Mary.

The approval is granted with the following conditions:

1. Participation is at the discretion of the principal and/or administrator of the targeted school and/or office. Please note that even with the approval of the RRC, it is still the responsibility of the Principal as the gatekeeper of the school to decide whether or not to participate or not. As stated in Board rule 2605, “...the principal of the individual school has the privilege of deciding if RRC-approved research will be conducted within his/her school.” A copy of this approval letter must be presented/shared with the administrator of the targeted site.

2. The purpose of this approval is simply to ask the voluntary cooperation of select teachers in two elementary schools within M-DCPS to participate in the study - Teacher Conceptualization and Implementation of Differentiated Instruction in the Elementary Reading Classroom.

3. The purpose of this study is to investigate the conceptualized perceptions of teachers at high performing elementary schools within M-DCPS regarding Differentiated Instruction (DI), and the degree of successful implementation of the program, and the correlation to student achievement in reading.

4. The study will involve approximately 30 teachers at two elementary high performing schools, namely: Norma Butler-Bossard ES And Frank C. Martin K-B Center.

5. All necessary teacher consent forms must be obtained from each targeted participant before he or she can participate in the study.

6. Every effort should be made to minimize the disruption of the regular operation of the schools and the regular teaching and learning occurring at these schools.

School Board Administration Building • 1450 N.E. 2nd Avenue • Miami, Florida 33132
305-995-1000 • www.dadeschools.net
It should be emphasized that the approval of the Research Review Committee does not constitute an endorsement of the study. It is simply a permission to request the voluntary cooperation in the study of individuals associated with M-DCPS.

It is your responsibility to ensure that appropriate procedures are followed in requesting an individual’s cooperation, and that all aspects of the study are conducted in a professional manner. With regard to the latter, make certain that all documents and instruments distributed within M-DCPS as a part of the study are carefully edited.

The approval number for your study is 2369. This number should be used in all communications to clearly identify the study as approved by the RRC. The approval expires on 09/28/2020. During the approval period, the study must adhere to the design, procedures and instruments which were submitted to the Committee.

Please note that since this study is longitudinal in design, extensions will be granted upon receipt of a request with an updated IRB approval. Finally, please submit to the RRC an abstract of the research findings and/or preliminary findings as they become available.

If there are any changes in the study as it relates to M-DCPS, the RRC must be notified in writing. Substantial changes may necessitate resubmission of the request. Failure to notify me of such a change may result in the cancellation of the approval.

If you have any questions, please call me at 305-995-7091. On behalf of the Research Review Committee, I want to wish you every success with your study.

Sincerely,

Tarek Chebli, Ed. D.
Chairperson, Research Review Committee

| APPROVAL NUMBER: 2369 | APPROVAL EXPIRES: 09/28/2020 (*) |


Note: The researcher named in this letter of approval will be solely responsible and strictly accountable for any failure to follow the research study as approved by the RRC. M-DCPS will NOT be held responsible for any damage resulting from this study. The researcher and his/her institution must protect the rights, safety, and welfare of subjects involved in the above-named study.
Appendix I

Teacher Participant Consent Form

Dear Participant,

You have been selected to participate in a research study titled, Teacher Conceptualization and Implementation of Differentiated Instruction in the Elementary Reading Classroom. The purpose of this study is to investigate the understanding and use of differentiated instruction by third, fourth, and fifth grade teachers in Tier I schools within Miami-Dade County Public Schools. The results from this study will provide information for educators that can help improve instruction in the classroom by meeting the needs of all learners. The research is being conducted as a part of a university course of study by Kimberly Davis, Administrative Director of the Office of Professional Development, Felicia Joseph, Principal of Frank C. Martin K-8 Center, and Concepcion Santana, Principal of Norma Butler Bossard Elementary.

As part of the research, participants are being asked to participate in a three-part investigation. Participants will be expected to participate in a recorded semi-structured face-to-face interview and be a part of two video-recorded classroom observations. All parts of this study will be conducted by the three researchers for the purpose of gathering information on the conceptualization and implementation of differentiated instruction in the reading classroom.

Only the researchers named above will have access to research results associated with your and your students’ identity. Participants’ names will not be directly linked to the classroom observations or interview findings nor will they be included in any written or verbal report of this research study. There are no anticipated risks associated with participating in this study. At the end of this study, information arising from this research will be shared with you upon your request.

Your participation is entirely voluntary, and you can refuse to participate without any penalty or loss of benefits to you. If you decide to participate, you are free to withdraw your participation at any time during the study without adverse consequences from The College of William and Mary, Miami-Dade County Public Schools, or your supervisor. The purpose and procedures of the study have been presented to you in the school site informational meeting. If you would like additional information regarding the study you may contact Kimberly Davis, Administrative Director of the Office of Professional Development and Evaluation, at (305) 253-9020 or kdavis2@zadaschools.net; Felicia Joseph, Principal of Frank C. Martin K-8 Center, at (305) 238-3688 or fjoepb@zadaschools.net, and Concepcion Santana, Principal of Norma Butler Bossard Elementary, at (305) 254-5200 or csantana@zadaschools.net; or Christopher R. Garreis, Ed. D., Professor at The College of William and Mary, at (757) 221-2319 or crgareis@wm.edu.

Your signature below indicates that you have read the information provided above and have decided to participate in the study. If you later decide that you wish to withdraw from participating in the study, simply inform the researchers. A copy of this signed consent form will be provided to you and will remain on file with the researchers.

Participant Name: __________________________ Email: __________________________

Signature: __________________________

Date: __________________________

Phone: __________________________ Email: __________________________

Signature: __________________________

Date: __________________________

Signature: __________________________

Date: __________________________

Signature: __________________________

Date: __________________________

THIS PROJECT WAS FOUND TO COMPLY WITH APPROPRIATE ETHICAL STANDARDS AND WAS EXEMPTED FROM THE NEED FOR FORMAL REVIEW BY THE COLLEGE OF WILLIAM AND MARY PROTECTION OF HUMAN SUBJECTS COMMITTEE (Phone 757-221-3966) ON 2019-09-28 AND EXPIRES ON 2020-09-28.
**Appendix J**

**Primary Theme 1: Knowledge of Learners**

<table>
<thead>
<tr>
<th>ID</th>
<th>Q</th>
<th>Quotation</th>
<th>Secondary Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>4H</td>
<td>2</td>
<td>“They come in and very few of them know how to write. But they need to be able to understand the sources that in my opinion is too much for their age. They’re not developmentally ready for this. When I taught fourth grade previous to the FSA, the children at this age which I believe is still true are great narrative writers. They love to tell stories and to write stories. They’re always writing in their journals. They’re developmentally ready for that, but not when they’re reading informative sources.”</td>
<td>1. Responds to students’ developmental levels.</td>
</tr>
<tr>
<td>4J</td>
<td>2</td>
<td>“DI is based on what the child is needing from past years or past concepts, maybe from the beginning of the year, from a couple of months ago it doesn’t matter... Ok you do have to scaffold. If there is a concept that the student doesn’t know, the reason is why don’t they know that particular concept?”</td>
<td>2. Presents concepts at different levels of complexity.</td>
</tr>
<tr>
<td>3B</td>
<td>2</td>
<td>“OK, so in my classroom I do full group whenever I’m teaching a concept and then when we move on to differentiate instruction I try to work on the skills that those children are lacking, um, it could be a skill that was already learned or maybe something that might be coming up and then again just elaborating a little bit more on”</td>
<td>2. Presents concepts at different levels of complexity.</td>
</tr>
<tr>
<td>3C</td>
<td>2</td>
<td>“The content is basically what needs to be presented to them so if I’m going to differentiate the content, I don’t know I feel like it’s just kind of natural so I can’t really explain it they’re getting the concept but it’s a variety of materials. I would think that it’s like proximity, repeating directions, or the layout of the classroom”</td>
<td>2. Presents concepts at different levels of complexity.</td>
</tr>
<tr>
<td>3D</td>
<td>2</td>
<td>“The way that I am going to encourage the student will be somewhat different because of how they are able to conceptualize the learning. So, although they are learning the same information the process of how to do it is going to be different”</td>
<td>2. Presents concepts at different levels of complexity.</td>
</tr>
<tr>
<td>4F</td>
<td>2</td>
<td>“Some students in my class I notice that when I’m teaching something...some of them have never heard of the concept before... It’s the way that I’m able to differentiate and be able to teach in those levels where the ones who already know the information kind of give them that boost and extra immersion in it and the ones that don’t know it at all be able to teach it and the ones that seem to be familiar with it be able to give them more so that they are more familiar.”</td>
<td>2. Presents concepts at different levels of complexity.</td>
</tr>
<tr>
<td>4D</td>
<td>4</td>
<td>“They feel like you really do care and motivate them to push a little harder and when they grab that concept, they walk away strong with it.”</td>
<td>2. Presents concepts at different levels of complexity.</td>
</tr>
<tr>
<td>ID</td>
<td>Q</td>
<td>Quotation</td>
<td>Secondary Theme</td>
</tr>
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</tr>
<tr>
<td>3J</td>
<td>7</td>
<td>“We constantly talk about how we’re going to approach a certain concept and there may be, you know, a foldable or an interaction among students performing a play, or you know, the product that they’ve created, and we talk about how equal work with vocabulary and the sciences.”</td>
<td>2. Presents concepts at different levels of complexity</td>
</tr>
<tr>
<td>3A</td>
<td>2</td>
<td>“I can differentiate, for example in reading, the students that are at a low reading level, we can do passages that are at their level, so we can also use level readers, and some of the activities can be scaffolded and probably some students may need a little bit of assistance in the beginning or modeling.”</td>
<td>3. Provides a range of differentiated activities</td>
</tr>
<tr>
<td>3F</td>
<td>8</td>
<td>“We found ways to break things down by strands like main idea sequence chronological order cause and effect and then within each of those brackets we came up with activities for high medium and low”</td>
<td>3. Provides a range of differentiated activities</td>
</tr>
<tr>
<td>3J</td>
<td>4</td>
<td>“I believe students benefit from DI if they understand the concept of the rotations, of changing from one group to another or reading levels. That if they constantly see one child reading at high level doesn’t mean that they can’t get there or if they’re reading independently, that one child who’s better at a high level or a lower child can do so as well. I believe that students can benefit from the DI but if they understand what the purpose is”</td>
<td>3. Provides a range of differentiated activities</td>
</tr>
<tr>
<td>4A</td>
<td>1</td>
<td>“I tried the different standards with different activities”</td>
<td>3. Provides a range of differentiated activities</td>
</tr>
<tr>
<td>5A</td>
<td>4</td>
<td>“I feel that the higher-level kids can also benefit from certain enrichment activities”</td>
<td>3. Provides a range of differentiated activities</td>
</tr>
<tr>
<td>5D</td>
<td>2</td>
<td>“I have main idea activities or packages or whatever that are literature based and that are more of a higher level and then I have main idea that it’s easier to read it”</td>
<td>3. Provides a range of differentiated activities</td>
</tr>
<tr>
<td>5E</td>
<td>2</td>
<td>“To differentiate instruction to me means to provide material in a variety of ways, whether it be visual, oral, or kinesthetic, I believe that the touch hands on activities, to build background which is usually something that all students regardless of ability lack in regardless of the subject areas, to provide some sort of real world connection so that they can relate to the topic and that will engage them which in turn will help you with any lesson that you have”</td>
<td>3. Provides a range of differentiated activities</td>
</tr>
<tr>
<td>5F</td>
<td>1</td>
<td>“I also have enrichment activities for those kids that don’t need closing in the gaps but instead reteaching skills or enriching curriculum depending on what those groups are.”</td>
<td>3. Provides a range of differentiated activities</td>
</tr>
<tr>
<td>ID</td>
<td>Q</td>
<td>Quotation</td>
<td>Secondary Theme</td>
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<tr>
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<tr>
<td>5J</td>
<td>3</td>
<td>“It’s hard to give them work with lots of different activities.”</td>
<td>3. Provides a range of differentiated activities</td>
</tr>
<tr>
<td>5K</td>
<td>6</td>
<td>“A lot of active activities. Being active, working in groups”</td>
<td>3. Provides a range of differentiated activities</td>
</tr>
<tr>
<td>3A</td>
<td>1</td>
<td>“Differentiating means that you need to take the needs of your students into consideration, not every student is the same.”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>3B</td>
<td>1</td>
<td>“I think DI is tailoring it to the needs of the students on their level.”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>3C</td>
<td>1</td>
<td>“When you differentiate instruction, you’re meeting the needs of the learner”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>3D</td>
<td>1</td>
<td>“To me differentiated instruction means customized instruction. So customizing it so that I can tailor to the students’ needs.”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>3E</td>
<td>1</td>
<td>“I would say that that means to take your learners into consideration. Think about what their specific needs are not all you know, not all of us learn the same way.”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>3F</td>
<td>1</td>
<td>“Differentiating instruction means to meet the needs of your individual learners”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>3G</td>
<td>1</td>
<td>“To meet the needs of the students I mean according to their abilities what they need”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>3H</td>
<td>1</td>
<td>“I need to sit and work with the kids in the small group in order to be able to meet their needs”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>4A</td>
<td>1</td>
<td>“It’s pretty much, I think is trying to meet the individual needs of the students, the instructional needs”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>ID</td>
<td>Q</td>
<td>Quotation</td>
<td>Secondary Theme</td>
</tr>
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<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4B</td>
<td>1</td>
<td>“Really getting to know the kids and giving them exactly what they need”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>4D</td>
<td>1</td>
<td>“My personal definition of DI is first knowing your learners, who’s in your class, being cognizant of those different learning styles and making sure that you can tailor the lesson plans and your instructional strategies to cater to the needs of each child in your classroom because not all kids run at the same level”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>4E</td>
<td>1</td>
<td>“I think that it’s just kind of a meeting them where they are and either remediating or enriching the curriculum to meet their needs”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>4J</td>
<td>1</td>
<td>“Teaching to the students’ individual needs”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>4K</td>
<td>1</td>
<td>“It is actually adapting to each child’s needs, a child’s individual needs when it comes to any particular subject”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>5B</td>
<td>1</td>
<td>“DI means to tailor your content, your teaching to the individual needs of your children as much as you can considering you have twenty of them, that all might have different needs”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>5C</td>
<td>1</td>
<td>“Whatever each student needs based on data that we collected about them”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>5D</td>
<td>1</td>
<td>“Deliberate planned instruction, um that is geared towards the need of the students”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>5H</td>
<td>1</td>
<td>“There’s so many different aspects of the individual child that sometimes one individual child is not like any other in your class so are you really meeting their needs”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>5J</td>
<td>1</td>
<td>“You use different things to meet different kids’ needs”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
<tr>
<td>5K</td>
<td>1</td>
<td>“To find what each kid needs and to be able to teach them exactly what their needs are”</td>
<td>4. Provides instruction based on students’ learning needs</td>
</tr>
</tbody>
</table>
## Appendix K

### Primary Theme 2: Learning Environment

<table>
<thead>
<tr>
<th>ID</th>
<th>Q</th>
<th>Quotation</th>
<th>Secondary Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>3B</td>
<td>2</td>
<td>“If you have a higher student you might use a more challenging word or the text might be more challenging or the passage, as opposed to maybe a student that was struggling with, you know, vocabulary and you’re not going to use such challenging work”</td>
<td>5. Creates an environment that is challenging</td>
</tr>
<tr>
<td>3H</td>
<td>2</td>
<td>“The process as far as well it just depends where the kids are you know the higher students you know just more enrichment looking for things that challenge the kids”</td>
<td>5. Creates an environment that is challenging</td>
</tr>
<tr>
<td>4K</td>
<td>2</td>
<td>“You’ll have some kids working or maybe on a project, you know, especially those that are very higher order and have critical higher order thinking skills, you want them to do something that’s challenging”</td>
<td>5. Creates an environment that is challenging</td>
</tr>
<tr>
<td>5A</td>
<td>2</td>
<td>“The environment can be a challenge because kids that are not necessarily in the teacher-led center sometimes have difficulty completing the task”</td>
<td>5. Creates an environment that is challenging</td>
</tr>
<tr>
<td>5E</td>
<td>6</td>
<td>“The questioning in 5th grade is very hard and even the text sometimes, they’re very challenging, so you know I try to work on the context clues but try to also help them understand so it helps him with the writing also”</td>
<td>5. Creates an environment that is challenging</td>
</tr>
<tr>
<td>5C</td>
<td>7</td>
<td>“Well we have to teach all subjects: reading, mathematics, science and they are all tested at the end of the year and are important, and so one of the things that is challenging is being able to fit all of the content into the day and then the DI as well”</td>
<td>5. Creates an environment that is challenging</td>
</tr>
<tr>
<td>3A</td>
<td>4</td>
<td>“So, you have to let go, and you have to allow them the opportunity to talk, collaborate, have one-to-one or group conversations, so you can see, really, what they are capable of doing”</td>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work</td>
</tr>
<tr>
<td>3D</td>
<td>2</td>
<td>“Deficiencies in what language will sometime impede the learning environment itself so when I take into account where they come from their cultural background, their diverse needs, and what’s going currently in our school system or maybe even via media it does impede the pace on how to do it, but I do take than into account”</td>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work</td>
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<td>ID</td>
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<td>Quotation</td>
<td>Secondary Theme</td>
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<tr>
<td>3E</td>
<td>2</td>
<td>“The environment I feel that as a teacher you should try to create like once you’re like you know like for example if you’re about to start your sentence like make sure that everybody already has like a little routine and something that they should be working on in order to be able to be successful those are those minutes that you’re working on”</td>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work</td>
</tr>
<tr>
<td>3G</td>
<td>2</td>
<td>“Well you have to have an environment that is safe and for the students and that its resources and you have everything that you need according to you know what you’re going to do with your students”</td>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work</td>
</tr>
<tr>
<td>4D</td>
<td>2</td>
<td>“You have to first make it a safe environment for the kids because what I notice if the kids don’t feel there in a safe environment a lot of times they will shut down”</td>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work</td>
</tr>
<tr>
<td>4J</td>
<td>2</td>
<td>“We do a whole group environment where we teach in whole group, but that small group is key and sometimes that individual one on one is key. So, the environment and the size of the environment changes depending on the needs of the students”</td>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work</td>
</tr>
<tr>
<td>4K</td>
<td>2</td>
<td>“I’ve actually facilitated the environment in such a way where the kids can move around in about a minute or two and change and I’ll have all my 4th graders in one setting and in the 5th graders are in another setting and I teach and I teach my 4th graders whatever I need to teach or my 5th graders when I need to teach them, and then everybody just switch it back”</td>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work</td>
</tr>
<tr>
<td>5C</td>
<td>2</td>
<td>“If they need to stand, I let them stand, if they want to sit on the floor, I let them sit on the floor. And a lot of times if they’re having a hard time with the person sitting next to them I let them get up and move around and pick it up and stuff for the day; just kind of getting a little bit of freedom when it comes to what makes them feel comfortable so they can learn that day”</td>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work</td>
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<td>Secondary Theme</td>
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</tr>
<tr>
<td>5H</td>
<td>2</td>
<td>“That’s a way that you can differentiate the environment. I allow them to move wherever they need to in the room where they feel like they’re able to concentrate better”</td>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work</td>
</tr>
<tr>
<td>4F</td>
<td>8</td>
<td>“The actual physical environment when I am working with groups how it makes a difference depending on the learning style of the children. Whether we’re in the back of the room or in the front of the room or we have to go outside or whatever that I notice that that kind a plays a puzzle too because I do have certain students that get more distracted than others so there’s certain areas that I would have to be in or not be in that works for them”</td>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work</td>
</tr>
<tr>
<td>5F</td>
<td>2</td>
<td>“In terms of the environment when I’ve done it in the past, I model for 2 weeks what it should look like and what the ground rules are because my biggest pet peeve is when I’m working with my kids to be interrupted 50,000,000 times. It should be fluid and they should be independent and know exactly what they should be doing”</td>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work</td>
</tr>
<tr>
<td>3H</td>
<td>2</td>
<td>“I always felt it’s important to meet with the kids in the environment. All the teachers have their own ways to do it. I mean I had my rotations where I have you know I have my group and I have you know the kids I go to the computers for to do their I ready reading and then I have maybe a comprehension center and a grammar section to maybe reinforce skills being taught”</td>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work</td>
</tr>
<tr>
<td>5G</td>
<td>2</td>
<td>“Especially if we’re doing like a partner activity or group activity a lot of the times like at least me the only thing I’m able to manipulate is my physical environment so sometimes if I’m teaching something and I need them to pay attention I’ll be like “come over here” and I’ll sit them right on the floor right by this Smart Board”</td>
<td>6. Organizes a safe physical learning environment that is conducive to student learning and collaborative work</td>
</tr>
<tr>
<td>3A</td>
<td>6</td>
<td>“We have to set expectations. We have to work depending on the age”</td>
<td>7. Holds high academic expectations for all students</td>
</tr>
<tr>
<td>3H</td>
<td>4</td>
<td>“At the end of the day you know we’re trying to push these kids to do their best.”</td>
<td>7. Holds high academic expectations for all students</td>
</tr>
<tr>
<td>ID</td>
<td>Q</td>
<td>Quotation</td>
<td>Secondary Theme</td>
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</tr>
<tr>
<td>4D</td>
<td>2</td>
<td>“For the me I start with the indicator space to what you’re expected to learn at that grade level”</td>
<td>7. Holds high academic expectations for all students</td>
</tr>
<tr>
<td>4J</td>
<td>2</td>
<td>“That’s where the most important part is... is that sometimes we expect that they are going to get it and that they are going to get it immediately”</td>
<td>7. Holds high academic expectations for all students</td>
</tr>
<tr>
<td>5A</td>
<td>2</td>
<td>“They should be able to produce what is expected of them at their level with minimal guidance because it’s on their level”</td>
<td>7. Holds high academic expectations for all students</td>
</tr>
<tr>
<td>5H</td>
<td>2</td>
<td>“So it really depends on what it is that you’re instructing but it’s kind of differentiating what you’re expecting them to do but still keeping it at grade level”</td>
<td>7. Holds high academic expectations for all students</td>
</tr>
<tr>
<td>3B</td>
<td>5</td>
<td>“We want them to read fluently since the test is timed and, at the end of the day, you know we don’t want to say we’re teaching to the test, but at the end they need to perform well on the test, so that was something that we were working on and I modeled how to be a fluent reader, you know, what I expect and we went over things like that today in my little DI group”</td>
<td>7. Holds high academic expectations for all students</td>
</tr>
<tr>
<td>5H</td>
<td>5</td>
<td>“Well I think if you just go through whole group instruction and just expect the same thing from everybody there’s somebody that’s not going to be able to keep up or do it at that level”</td>
<td>7. Holds high academic expectations for all students</td>
</tr>
<tr>
<td>4C</td>
<td>6</td>
<td>“I’m talking to my partner and hopefully we’re going to be doing like little engagement through the video so the kids can you know one introduce themselves and then maybe just give an exit question you know maybe of a benchmark maybe they didn’t get or something maybe this way they can explain it to us and we can actually see it live. We’re going to work on that”</td>
<td>8. Uses electronic communications tools to challenge and support students</td>
</tr>
<tr>
<td>5K</td>
<td>6</td>
<td>“Using resources that builds on different modalities and their interests. Yeah, I mean I try to open it up like with the products to like what if this person is in interested in computers, or, you know, they can do a discovery board or PowerPoint”</td>
<td>8. Uses electronic communications tools to challenge and support students</td>
</tr>
<tr>
<td>4C</td>
<td>7</td>
<td>“The kids like to also be independent when they’re working like on the computer”</td>
<td>8. Uses electronic communications tools to challenge and support students</td>
</tr>
<tr>
<td>5F</td>
<td>8</td>
<td>“The kids that are not with the teachers... they are working on things that are moving them personally along. Whether it’s enrichment or whether it’s through the computer program of iRready because it is on their level”</td>
<td>8. Uses electronic communications tools to challenge and support students</td>
</tr>
<tr>
<td>ID</td>
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<td>Quotation</td>
<td>Secondary Theme</td>
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</tr>
<tr>
<td>4B</td>
<td>2</td>
<td>“Well you can do centers during DI and I do a lot of centers. I do centers on the computer and I give specific assignments for those kids like because if they need phonics then I assign phonics. The kids that need vocabulary, I assign vocabulary too. I do it through the computer a lot”</td>
<td>8. Uses electronic communications tools to challenge and support students</td>
</tr>
<tr>
<td>5E</td>
<td>2</td>
<td>“I believe that the touch hands on activities, to build background which is usually something that all students regardless of ability lack in regardless of the subject areas, to provide some sort of real world connection so that they can relate to the topic and that will engage them which in turn will help you with any lesson that you have. So usually we can do that through videos”</td>
<td>8. Uses electronic communications tools to challenge and support students</td>
</tr>
<tr>
<td>5J</td>
<td>2</td>
<td>“We will watch a video or read a book. We’re gonna be doing weather soon so we will be making clouds and I will try to do some creative stuff to get them to participate.”</td>
<td>8. Uses electronic communications tools to challenge and support students</td>
</tr>
<tr>
<td>3A</td>
<td>5</td>
<td>“There has to be some kind of feedback from the teacher, some guidance all the time because these are children”</td>
<td>9. Encourages students to receive and accept constructive feedback on individual work and behavior</td>
</tr>
<tr>
<td>3B</td>
<td>3</td>
<td>“I think that it is important also for them to have that immediate feedback”</td>
<td>9. Encourages students to receive and accept constructive feedback on individual work and behavior</td>
</tr>
<tr>
<td>4B</td>
<td>5</td>
<td>“I have to constantly be fixing it for them, to see it, and to understand it. It’s like a scaffolding and it has to be constant and if I’m not giving them feedback. They have no idea what they’re doing wrong or what’s not working. So, it’s big. It’s the conferencing, the DI and like even when I sit them down and I go over their scores, their i-Ready scores and I explained to them”</td>
<td>9. Encourages students to receive and accept constructive feedback on individual work and behavior</td>
</tr>
<tr>
<td>4F</td>
<td>5</td>
<td>“I think that the more time you spend with them closing that gap or giving them that extra time especially when it’s either individual or in a smaller group. I definitely think that it improves because you have more time for feedback”</td>
<td>9. Encourages students to receive and accept constructive feedback on individual work and behavior</td>
</tr>
<tr>
<td>ID</td>
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<td>Quotation</td>
<td>Secondary Theme</td>
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</tr>
<tr>
<td>4B</td>
<td>6</td>
<td>“I can give them feedback”</td>
<td>9. Encourages students to receive and accept constructive feedback on individual work and behavior</td>
</tr>
<tr>
<td>5F</td>
<td>5</td>
<td>“Those kids that are working with you, to close the gaps and ending with standard driven and them understanding and mastering whatever standards it is in a smaller group setting. Feedback, for me again that feedback. I think it increases their results for comprehension in smaller group. It’s instant feedback from the teacher, it’s more personal.”</td>
<td>9. Encourages students to receive and accept constructive feedback on individual work and behavior</td>
</tr>
<tr>
<td>4F</td>
<td>6</td>
<td>“Well the ones that I find more productive or that I feel like I got something more out of it is when we are in the smaller groups. The feedback with the writing because I get to individually look at their work”</td>
<td>9. Encourages students to receive and accept constructive feedback on individual work and behavior</td>
</tr>
</tbody>
</table>
## Appendix L

### Primary Theme 3: Instructional Planning

<table>
<thead>
<tr>
<th>ID</th>
<th>Q</th>
<th>Quotation</th>
<th>Secondary Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>4G</td>
<td>1</td>
<td>“You have to really have to see when you’re planning you have to provide not only time to teach, but also time to supplement that teaching with whatever it is extra time one on one let me pull you over you’re struggling with this so that way every child is you know you do the best in targeting every single child that that is for me”</td>
<td>10. Plans instruction for pacing and transitions</td>
</tr>
<tr>
<td>3H</td>
<td>2</td>
<td>“You know pre planning preparing and making sure that you’re prepared so basically it’s just a matter of how and the lessons like depending on what’s going on in the lesson you know you might have to change things a little bit”</td>
<td>10. Plans instruction for pacing and transitions</td>
</tr>
<tr>
<td>5A</td>
<td>3</td>
<td>“It’s very difficult to implement DI daily and sometimes it is very difficult to plan for it accordingly because some kids work faster than others”</td>
<td>10. Plans instruction for pacing and transitions</td>
</tr>
<tr>
<td>3H</td>
<td>8</td>
<td>“We plan for so many things and I don’t want to say that they think that’s more important but in a way it’s like I gotta teach my curriculum right and then if they don’t have time that’s where maybe some people don’t ever try to do it”</td>
<td>10. Plans instruction for pacing and transitions</td>
</tr>
<tr>
<td>3D</td>
<td>1</td>
<td>“Customized instruction, tailoring to the students’ needs because I know kids are different and they learn differently therefore I need to teach in a way that I can reach their different interest and intelligences”</td>
<td>11. Plans for the needs of all learners</td>
</tr>
<tr>
<td>5D</td>
<td>1</td>
<td>“Deliberate planned instruction...geared towards the needs of students. I mean it’s planned; it is not haphazard if not OK let me do this you know I planned things down”</td>
<td>11. Plans for the needs of all learners</td>
</tr>
<tr>
<td>4D</td>
<td>1</td>
<td>“My personal definition of DI is first knowing your learners, who’s in your class, being cognizant of those different learning styles and making sure that you can tailor the lesson plans and your instructional strategies to cater to the needs of each child in your classroom”</td>
<td>11. Plans for the needs of all learners</td>
</tr>
<tr>
<td>4G</td>
<td>2</td>
<td>“You know the that they did whatever nothing that they know, you also have to engage it based on how they’re doing in the classroom and monitor their progress in that, through their tests, through the quizzes, through the classwork assignments and then based on that you have an idea of what your groups are. These are the kids that tend to struggle, these are the kids that are kind of in the middle, these are the ones that really excel in math and then based on that that’s how you plan.”</td>
<td>11. Plans for the needs of all learners</td>
</tr>
<tr>
<td>4K</td>
<td>2</td>
<td>“There’s a lot of planning. There’s a lot of, uh, collecting data; re-evaluating data and instruction; collecting data again, and so on and so forth and adapting whatever it is that you’re doing in the classroom to the needs of that child”</td>
<td>11. Plans for the needs of all learners</td>
</tr>
<tr>
<td>ID</td>
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<td>Quotation</td>
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</tr>
<tr>
<td>5K</td>
<td>3</td>
<td>“I make little notes on my plans so I know okay I need to pull these kids to make sure that they understand it”</td>
<td>11. Plans for the needs of all learners</td>
</tr>
<tr>
<td>3F</td>
<td>3</td>
<td>“So ideally I can have something individual for every student and I have the materials to be able to pull something that’s great and wonderful for all of them and each of them and their individual needs”</td>
<td>11. Plans for the needs of all learners</td>
</tr>
<tr>
<td>3H</td>
<td>7</td>
<td>“We’ve had meetings like we’ve collaborate every week on planning we’re together and planning for lessons but we’ve had conversations and we’ve shared what we do. I’ve shared that I do rotations and my rotations basically I have like I have 4 groups and one class the other group I have 3”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials.</td>
</tr>
<tr>
<td>4F</td>
<td>7</td>
<td>“We meet basically twice a week to hang out, talk and plan and bounce ideas off of each other and things that work and don’t work. So that we can kind of help each other definitely”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials.</td>
</tr>
<tr>
<td>4K</td>
<td>7</td>
<td>“Department chair and team leader for 4th grade. OK so, yeah, we sit down and we discuss plans. We discuss what we’re going to do.”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials.</td>
</tr>
<tr>
<td>5F</td>
<td>7</td>
<td>“We had a schedule and we constantly were collaborating on what is working and what wasn’t working for us regarding DI”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials.</td>
</tr>
<tr>
<td>5G</td>
<td>7</td>
<td>“Yeah, we collaborate in terms of planning and you know 2 times a week and we even you know do things like, OK, so if everything goes well this is what I’m going to be able to use in DI”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials.</td>
</tr>
<tr>
<td>5H</td>
<td>7</td>
<td>“Of you want to do like a really good DI it takes a long time and then we have common planning and we have different things that we have to use our planning for.”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials.</td>
</tr>
<tr>
<td>ID</td>
<td>Q</td>
<td>Quotation</td>
<td>Secondary Theme</td>
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</tr>
<tr>
<td>4K</td>
<td>2</td>
<td>“You actually try to get as much materials as possible that’s going to actually help with that content. So, finding materials; this is exactly finding materials, finding resources, to meet the needs of students”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials</td>
</tr>
<tr>
<td>3F</td>
<td>3</td>
<td>“We have lots of instructional materials we can look from but finding things that are meaningful and bound to actually help students in their deficit is I think a very difficult task”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials</td>
</tr>
<tr>
<td>5D</td>
<td>3</td>
<td>“Yeah, I spend a lot of time looking up for materials”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials</td>
</tr>
<tr>
<td>3A</td>
<td>7</td>
<td>“We go over the Powerpoint and share photocopies of the materials. We meet in my classroom and we share, take pictures, we try it. We do a lot of collaboration.”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials</td>
</tr>
<tr>
<td>3B</td>
<td>7</td>
<td>“We share best practices and materials.”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials</td>
</tr>
<tr>
<td>5D</td>
<td>7</td>
<td>“Finding the right materials is an issue. Finding materials and resources and the time influence me”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials</td>
</tr>
<tr>
<td>3H</td>
<td>1</td>
<td>“Different things that we would try to relate it to the skills or themes that we were doing in class, if it lent itself to finding materials”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials</td>
</tr>
<tr>
<td>3H</td>
<td>2</td>
<td>“Now if you’re talking about cultural diversity, maybe using materials towards their ethnicity or maybe using like at our school, where we are a predominantly African American, maybe incorporating African American authors into reading”</td>
<td>12. Gathers, evaluates, and/or creates appropriate instructional materials</td>
</tr>
</tbody>
</table>
### Appendix M

**Primary Theme 4: Instructional Delivery & Engagement**

<table>
<thead>
<tr>
<th>ID</th>
<th>Q</th>
<th>Quotation</th>
<th>Secondary Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>3J</td>
<td>4</td>
<td>“If a child is you know an aural learner or verbal learner then you know asking the questions verbally and you can still assess them, but with a different type of assessment”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>4A</td>
<td>4</td>
<td>“They are exposed to so many higher order thinking questions, you know, that I can relate to, which is what I do with whatever it is that I’m teaching in class”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>4F</td>
<td>4</td>
<td>“I’ll ask whatever questions or strategies it is that we’re working on that week just to kind of review and make sure we’re all on the same page”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>5B</td>
<td>4</td>
<td>“Let’s say we have we were doing difficult, difficult questions; how does the author’s point of view affect what the reader learns from this text?”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>5E</td>
<td>4</td>
<td>“They’re not bored because they can actually think outside the box or get more higher-level thinking questions. Like it actually stimulates their mind a little bit more”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>3B</td>
<td>5</td>
<td>“When we do open-ended questions, you know, are they applying the strategies that we’re teaching them?”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>4K</td>
<td>5</td>
<td>“You’re going to go to the content area where they are deficient in and by that I mean even if they missed one question, you know, you don’t want them to miss one question, you want them to shoot for 100%, so you find resources to help them with that because there’s always going to be something that they’re going to need help on”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>5G</td>
<td>5</td>
<td>“One of the things that I repeat is “look at what type of question you keep getting wrong” is it always vocabulary? so that when you see a vocabulary (question) it’s like a red flag that you need to be more careful.”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>ID</td>
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<tr>
<td>3C</td>
<td>6</td>
<td>“You’re a facilitator you just conduct the questions but you don’t say whether the answer is right or wrong you kind of get them to bounce off of each other. And that student may say well I see something different uh from what you see and so they walk each other through that process so the strategy is the shared inquiry”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>4C</td>
<td>6</td>
<td>“Like a very high order question sometimes they just don’t understand the question so it’s kind of like paraphrasing it with them and helping them see that how we do it together and we kind of like let’s put this in our own words what does this mean and kind of breaking the question down they eventually learn to do that on their own so in whole group that’s mainly what I do”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>5E</td>
<td>6</td>
<td>“Breaking down the question, definitely that’s something I worked on last year. The questioning in 5th grade is very hard”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>3E</td>
<td>7</td>
<td>“I feel that some of the lessons for example may take a little bit longer and the kids take a little bit longer to you know just to be kind of brought up to speed added to complete like the comprehension questions that come with it”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>3F</td>
<td>8</td>
<td>“Sometimes they have basic comprehension but they don’t get the questions right or what hinders them and then it’s kind of hard to say how do you fix that how do you help that”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>4G</td>
<td>8</td>
<td>“For the question that they are answering, you know, especially when they have these multi step problems right. That for me is great, and then you can use that same tactic for reading you know go back in the passage make your marginal notes, underline, circle you know same thing”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>4A</td>
<td>1</td>
<td>“We can get to do like a lot of author’s point of view, theme, those higher order questions that you really have to infer a lot and get answers from different places to draw conclusions”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>4G</td>
<td>1</td>
<td>“You make sure the way you deliver the question, presented and one on one for those who don’t get it can get it and the ones that get it easier, maybe the ones that know move them up to like a different challenge”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>3F</td>
<td>2</td>
<td>“You need to understand that where the student is at, ways they learn best, and give them the open-ended opportunities to express themselves. Sometimes that may be phrasing the question differently, maybe sitting with them and presenting things through different ways open-ended multiple choice uhm and scaffolding. The level of what they see maybe at a time”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
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<tr>
<td>4A</td>
<td>2</td>
<td>“It’s mostly a lot of questioning, a lot of conversations to see if the kids are keeping up with me...So, I never thought of DI in that way other than questioning and making sure that you know we’re monitoring and facilitating”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>4B</td>
<td>2</td>
<td>“I walk around and I am constantly like asking them questions and seeing how and what they are understanding with the content that I did give them”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>4C</td>
<td>2</td>
<td>“I just don’t give him the answer they have to help you know I kind of like prompt a whole bunch of times and kind of repeat ‘cause sometimes they may not get the correct understanding of the question so give them that opportunity”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>4E</td>
<td>2</td>
<td>“How I allow them to answer questions may change. I may have them do like a turn in talk or a group discussion so I think that’s a form of differentiating as well”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>4H</td>
<td>2</td>
<td>“If they can’t understand it, they can’t do their best work. They can’t answer the questions properly and it’s hard for them. Just now I left my class doing...we had gone through a few pages in the social studies...we had discussed it. I’m big on social studies and I love to throw in extra stuff because the books we have they’re just not up to par. And we discussed, discussed, discussed, read, read, read, yesterday and today, I left them to answer the review questions”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>5A</td>
<td>2</td>
<td>“It depends on the skill but you can have maybe one child working on a simple graphic organizer the other child is doing open-ended questions the higher level could maybe be summarizing. It depends on what it is we’re working on and obviously getting text tailored to their level so we can either close the gap or enrich the student”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>5E</td>
<td>2</td>
<td>“If I’m differentiating the process one thing that I work on a lot of my classroom is breaking down the standard or breaking down the question or in my case breaking down the writing prompt”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>5H</td>
<td>2</td>
<td>“If you’re doing a whole group instruction you might ask a certain set of students to write a paragraph where a certain set of students might just have to write like a sentence that responds to a question and you know that these kids are still working on the evidence portion of it. So, you don’t require them to do that at that point until you’re able to like mediate that area”</td>
<td>13. Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
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<tr>
<td>5K</td>
<td>2</td>
<td>“Like if I am asking author’s point of view, I cannot expect them to immediately to be able to answer those kinds of questions. We are looking first at the mini lessons and at the end of the week after looking at vocabulary, context clues, main idea, and the text structures then they are able to find and get to the point of view”</td>
<td>13.Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>5K</td>
<td>2</td>
<td>“If I talk to them and I ask them they are totally capable of telling me in speaking to me out loud they are able to tell me. Other kids are totally fine doing projects and hands on activities and answering questions. So this is about finding different ways and the best ways for students so that they also don’t get bored and finding out what the students know.”</td>
<td>13.Uses multiple levels of questions and makes necessary adjustments</td>
</tr>
<tr>
<td>3D</td>
<td>1</td>
<td>“I want my goals to be realistic because sometimes as a teacher I feel that I over planned or I go home thinking did not reach what was intended, therefore, we use a lot of reach all learners. I want to reach as many students as possible”</td>
<td>14.Connects students’ knowledge, experiences, and interests to learning goals.</td>
</tr>
<tr>
<td>5K</td>
<td>2</td>
<td>“I may give them only a separate part or a smaller part to help them to understand like a paragraph that has the same goals and the same standard but the amount is different.”</td>
<td>14.Connects students’ knowledge, experiences, and interests to learning goals.</td>
</tr>
<tr>
<td>4J</td>
<td>5</td>
<td>“Your end goal as a teacher is to successfully teach every student to the best of your ability to the best of their academic level. If you’re not doing DI, how are you doing that?”</td>
<td>14.Connects students’ knowledge, experiences, and interests to learning goals.</td>
</tr>
<tr>
<td>5E</td>
<td>5</td>
<td>“I’m assuming that the goal is to meet them where they’re at and move them up. If they’re maybe not at grade level but at least get them closer and closer to being where they need to be”</td>
<td>14.Connects students’ knowledge, experiences, and interests to learning goals.</td>
</tr>
<tr>
<td>4J</td>
<td>2</td>
<td>“The end goal is super important but it doesn’t always happen right away. That product can come in many different forms. Sometimes the first thing is the verbal ok can they explain to me how they are coming to that process and then having them actually write it down and maybe write it in picture form or diagram form or chart form then make it extended into the writing.”</td>
<td>14.Connects students’ knowledge, experiences, and interests to learning goals.</td>
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<tr>
<td>5E</td>
<td>2</td>
<td>“My first goal with them always to try to break down so that they understand what’s being asked of them. Some students have an ability to read the question and understand what’s being asked of them and some students don’t”</td>
<td>14. Connects students’ knowledge, experiences, and interests to learning goals.</td>
</tr>
<tr>
<td>5E</td>
<td>2</td>
<td>“Depending on if the student has any sort of accommodation I can either break it up into separate parts; so if it’s a paragraph I might focus on having them work on like an opening statement, like a main idea or topic sentence, and then we’ll work on the supporting evidence details. I’ll use that if they have any sort of accommodation. Sometimes if the student is very low if my goal for them is just for them to be able to pull out the evidence then I’ll use that instead of a complete paragraph”</td>
<td>14. Connects students’ knowledge, experiences, and interests to learning goals.</td>
</tr>
<tr>
<td>3H</td>
<td>2</td>
<td>“I try to make it clear, so it’s a comfortable time for them and they’re still learning”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction.</td>
</tr>
<tr>
<td>5E</td>
<td>2</td>
<td>“In ELA the questions are complex and they’re open-ended so they might not have a clear understanding of what the question is asking so we’ll spend time doing that”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction.</td>
</tr>
<tr>
<td>4A</td>
<td>3</td>
<td>“I had a clear vision of what I need to do in reading; until now I find that the kids like it, they like that individual or that small group attention”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction.</td>
</tr>
<tr>
<td>5A</td>
<td>5</td>
<td>“They need the teacher’s explicit instruction for them to produce to their fullest potential”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction.</td>
</tr>
<tr>
<td>3A</td>
<td>6</td>
<td>“They need examples…very explicit. We can’t let go; very explicit, very explicit and then we can start letting go a little bit for them to become more independent. So, it will be effective. We have to persist and observe what we’re doing because there is always room for improvement.”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction.</td>
</tr>
<tr>
<td>5A</td>
<td>7</td>
<td>“So, they require a lot of scaffolding a lot of explicit instruction, a lot of guidance throughout the process.”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction.</td>
</tr>
<tr>
<td>5A</td>
<td>1</td>
<td>“Differentiate to me is when you target a skill or a specific lesson catered to their level of ability. To cater instruction to all kids at their level of achievement.”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction.</td>
</tr>
<tr>
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<tr>
<td>4E</td>
<td>1</td>
<td>“It means to kind of meet my students where they are whether they are below grade level then providing the scaffold or the instruction needed on their level in order to bring them up to where they need to be”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction</td>
</tr>
<tr>
<td>5E</td>
<td>1</td>
<td>“To differentiate means to meet the students at their independent level, to provide instruction that is geared towards filling in the gaps, and helping them achieve mastery at grade level through a variety of resources and strategies and instructional tools”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction</td>
</tr>
<tr>
<td>5H</td>
<td>1</td>
<td>“To differentiate instruction for me it’s like making the curriculum accessible to all students. In whatever way it needs to be done mostly so that the students could access learning maybe at their level or even if it’s on grade level being able to scaffold for them so that they’re able to get something out of the lesson”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction</td>
</tr>
<tr>
<td>3F</td>
<td>2</td>
<td>“So the process of differentiating instructions allowing the students to I would say go step by step and show what they understand about each section of it so if we’re talking specifically about reading I’m trying to switch back and forth they do both reading and math but they’re reading specifically so breaking down what they know is it that when a child presents problems within reading we want to understand where is it”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction</td>
</tr>
<tr>
<td>3E</td>
<td>2</td>
<td>“I’d like some kids for example that maybe they run the phonics skills and then you have some that are a little bit low on comprehension so you kind of have to in order to gear like the instructions you have to figure out what are the areas that you need some target necessary in order to be able to successfully execute here differentiated instruction”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction</td>
</tr>
<tr>
<td>3A</td>
<td>2</td>
<td>“So, there’s many different things we can do to make sure that the student is successful. We have a ten-day format in our lesson, so we’re able to cover a lot with those two weeks. We try follow some kind of routine, so the students learn”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction</td>
</tr>
<tr>
<td>3G</td>
<td>2</td>
<td>“Well there’s different ways I can meet with them...I introduce my lesson as a whole class and depending on how they do in that, how they’re getting it, then I’ll decide to, you know, go into a small group or maybe one-on-one with a student”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction</td>
</tr>
<tr>
<td>5K</td>
<td>3</td>
<td>“So, it’s that whole balance of like literally looking almost of everyday of how it went today’s lesson and what we need tomorrow and what needs to be finished so that they can do it”</td>
<td>15. Presents lessons clearly and skillfully uses explicit instruction</td>
</tr>
<tr>
<td>4B</td>
<td>6</td>
<td>“The computer helps a lot, there’s a lot of good programs out there that you can send them to”</td>
<td>16. Uses technology to differentiate instruction and enhance learning</td>
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<tr>
<td>ID</td>
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<tr>
<td>4C</td>
<td>2</td>
<td>“We provide them you know um ample opportunities through like computer, work, worksheets, one on one with the teachers ‘cause they do come to me one on one.”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
</tr>
<tr>
<td>4H</td>
<td>2</td>
<td>“When I do my DI for reading, I’ve got different stations. I’ve got computers, they can write. So, they are at a rotation for computer work, they have an option. I have a folder where they’ve got different options that they can do using the laptop.”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
</tr>
<tr>
<td>5J</td>
<td>3</td>
<td>“I don’t have enough computers for everybody so it couldn’t be anything; you know what I mean. I have them answer questions or sometimes I’ll have them do group work”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
</tr>
<tr>
<td>3J</td>
<td>5</td>
<td>“You have audio tapes you have the audio on the computer for our curriculum that we have, and I feel like it doesn’t always have to be textbooks”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
</tr>
<tr>
<td>3H</td>
<td>2</td>
<td>“I like to help bring in YouTube videos and things like that and you know also making learning fun”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
</tr>
<tr>
<td>5C</td>
<td>2</td>
<td>“We have to kind of give some background knowledge on it; really show them some videos of what it looks like, of what other kids like”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
</tr>
<tr>
<td>3G</td>
<td>2</td>
<td>“When you’re teaching the lesson, I mean the different ways that you can present the information for the students if you’re doing something, a video, visuals, or read aloud so the students can work with the story themselves”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
</tr>
<tr>
<td>3J</td>
<td>4</td>
<td>“I think that a child can benefit from the different types of DI such as if they love technology then if you have technology instruments such as the laptops; that would hone in on their strength”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
</tr>
<tr>
<td>4H</td>
<td>2</td>
<td>“We’re gonna use technology and we’re looking at the data that we have and so they are always changing so you’re not gonna be doing the same thing in technology this week that you might be doing next week”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
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<tr>
<td>4J</td>
<td>2</td>
<td>“Some kids learn better through technology”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
</tr>
<tr>
<td>5E</td>
<td>7</td>
<td>“I’m usually the one that like puts it all together in the technology aspect of it. We have a class notebook from OneNote so we’ll throw things in there that we can see, that we can pull whatever”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
</tr>
<tr>
<td>4F</td>
<td>8</td>
<td>“Kids are very different now than they were 20 years ago technology having a lot to do with it. So you know we have to kind of evolve with them and how they are. If we stay stagnant then definitely it’s not gonna be a benefit to them or to us”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
</tr>
<tr>
<td>3A</td>
<td>2</td>
<td>“So, it is a combination I would say right now with technology. You know, there’s a lot of things we can do technology wise”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
</tr>
<tr>
<td>4F</td>
<td>2</td>
<td>“A lot of the kids now with the technology they like to present information. Last year when I had fifth-grade they would do Powerpoint presentations because they are very techy. So I would say that the way they process information of course they have different learning styles. I try to make sure to touch upon that.”</td>
<td>16. Uses technology to differentiate instruction and enhance learning.</td>
</tr>
<tr>
<td>4K</td>
<td>2</td>
<td>“Sometimes you actually need the re-teaching and sometimes you actually can enrich the child’s specific needs. So, it’s diverse; some kids are stronger in some areas than others and, um, that’s when a teacher comes in as a facilitator and actually decides to. “OK, I’m going to enrich this skill or am I going to have to reteach it”</td>
<td>17. Engages students in diverse activity structures.</td>
</tr>
<tr>
<td>3B</td>
<td>2</td>
<td>“Diversity could be interpreted in many different ways but if we’re talking from an educational point of view it would be like on a reading level. If a child is a little bit below level and you’re trying to teach that they compare and contrast, you might want to use you know a little bit below the grade level for them to understand the concept.”</td>
<td>17. Engages students in diverse activity structures.</td>
</tr>
<tr>
<td>4B</td>
<td>2</td>
<td>“If I’m doing sequence that week and they didn’t do sequence very well, I’ll do a sequence activity. And, it changes, it could be different, you know, it’s different depending on the group that I’m seeing”</td>
<td>17. Engages students in diverse activity structures.</td>
</tr>
<tr>
<td>4F</td>
<td>2</td>
<td>“We do a lot of other hands on activity type of things, grouping, pairing, working with each other…so I try to make sure that not everything is you know just the paper pencil”</td>
<td>17. Engages students in diverse activity structures.</td>
</tr>
<tr>
<td>5F</td>
<td>2</td>
<td>“They should be able to know what to do and move from one activity to another, if that’s the case, without my assistance”</td>
<td>17. Engages students in diverse activity structures.</td>
</tr>
<tr>
<td>ID</td>
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<td>Quotation</td>
<td>Secondary Theme</td>
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</tr>
<tr>
<td>5J</td>
<td>7</td>
<td>“We definitely collaborate three times per week. You know we’ll talk about when how I found this is great activity for this or that or whatever somebody will come up with, you know, now I have the screen chart for math or they have something different to share, you know, like we all pretty much help each other”</td>
<td>17. Engages students in diverse activity structures.</td>
</tr>
<tr>
<td>4A</td>
<td>1</td>
<td>“I would teach my whole group instruction and once I finished with my reading and do my grammar or language arts then, I would be able to give them independent work and some of them would have their independent work whether on the computer doing iReady and back then it was Reading Plus work. And, I would have a group and the other group would pretty much have independent work but that could also be something like an ongoing activity that maybe we did yesterday”</td>
<td>17. Engages students in diverse activity structures.</td>
</tr>
<tr>
<td>4A</td>
<td>1</td>
<td>“We could target those different skills; literary, a lot of figurative language, higher order. I tried to also find informational text that is like more complex in science or social studies related and that I just try to find maybe sometimes magazines even from old highlights magazines that I have”</td>
<td>18. Engages students in higher-order learning tasks.</td>
</tr>
<tr>
<td>5J</td>
<td>1</td>
<td>“I try to do coordinate graphs and things like that and I teach them higher order processing things”</td>
<td>18. Engages students in higher-order learning tasks.</td>
</tr>
<tr>
<td>3F</td>
<td>2</td>
<td>“The way the information is presented and the steps you may take to get to those higher order type questions or thinking”</td>
<td>18. Engages students in higher-order learning tasks.</td>
</tr>
<tr>
<td>5K</td>
<td>2</td>
<td>“They would do projects and book reports that way and it was very with higher order thinking skills and I would allow them to do that”</td>
<td>18. Engages students in higher-order learning tasks.</td>
</tr>
<tr>
<td>5B</td>
<td>4</td>
<td>“I talked... him through a given real world examples”</td>
<td>19. Engages students in authentic learning real-life applications.</td>
</tr>
<tr>
<td>5E</td>
<td>2</td>
<td>“I believe that the touch hands on activities, to build background which is usually something that all students regardless of ability lack in regardless of the subject areas, to provide some sort of real world connection so that they can relate to the topic.”</td>
<td>19. Engages students in authentic learning real-life applications.</td>
</tr>
<tr>
<td>4H</td>
<td>1</td>
<td>“Not every child learns at the same pace...Every student has their own pace. If they’re not understanding something one way, I need to teach it to them another way”</td>
<td>20. Uses appropriate pace and maximizes instructional time.</td>
</tr>
<tr>
<td>ID</td>
<td>Q</td>
<td>Quotation</td>
<td>Secondary Theme</td>
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<tr>
<td>4C</td>
<td>1</td>
<td>“I’m working with special education and I see that the students are in different levels. Some students come to us already either at a higher level or extremely low level or they’re like In between so um so just being able to give to them just being able to give them the opportunity of learning at their pace.”</td>
<td>20. Uses appropriate pace and maximizes instructional time.</td>
</tr>
<tr>
<td>5B</td>
<td>2</td>
<td>“Your lower ones get an extra hand, get an extra crunch of higher ones or pushed ahead of what you’re doing in a little bit of an accelerated pace”</td>
<td>20. Uses appropriate pace and maximizes instructional time.</td>
</tr>
<tr>
<td>4G</td>
<td>1</td>
<td>“You have to really have to see when you’re planning you have to provide not only time to teach, but also time to supplement that teaching with whatever it is extra time one on one”</td>
<td>20. Uses appropriate pace and maximizes instructional time.</td>
</tr>
<tr>
<td>5K</td>
<td>1</td>
<td>“Some kids need a little extra time they may need a little more re-enforcement, they need...So it’s just addressing each kid and teaching them specifically what they need in order for them to be successful in everything that they need to learn”</td>
<td>20. Uses appropriate pace and maximizes instructional time.</td>
</tr>
<tr>
<td>3C</td>
<td>2</td>
<td>“So, you differentiate the product, you can differentiate the presentation, how they have to turn it in, you can also differentiate the amount of time that they have”</td>
<td>20. Uses appropriate pace and maximizes instructional time.</td>
</tr>
<tr>
<td>5B</td>
<td>2</td>
<td>“Process is the hardest because you always crunch the time and you know this would be good for them and need to get to them but the time crunch and getting to everybody when you know they need or they need that makes it hard”</td>
<td>20. Uses appropriate pace and maximizes instructional time.</td>
</tr>
<tr>
<td>3D</td>
<td>2</td>
<td>“Sometimes the environment will kind of impede me from moving with the pace that I wanna move”</td>
<td>20. Uses appropriate pace and maximizes instructional time.</td>
</tr>
</tbody>
</table>
# Appendix N

## Primary Theme 5: Assessment

<table>
<thead>
<tr>
<th>ID</th>
<th>Q</th>
<th>Quotation</th>
<th>Secondary Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>3A</td>
<td>2</td>
<td>“I go to the meetings once a month for the reading leaders, to make sure that I’m on top of what we need to be doing for the students, and rewrite the data, correlate it with my assessments, and my grade level of assessments. And also, we have. the component of i-Ready, so these are the things that we need to take into consideration to help support and implement the program”</td>
<td>22. Uses assessments to inform instruction.</td>
</tr>
<tr>
<td>3D</td>
<td>2</td>
<td>“If it is either a formative assessment or a summative assessment, sometimes at the end of the unit, I need to assess what they were able to learn for that particular lesson”</td>
<td>22. Uses assessments to inform instruction.</td>
</tr>
<tr>
<td>4B</td>
<td>5</td>
<td>“I have to constantly be fixing it for them, to see it, and to understand it. It’s like a scaffolding and it has to be constant and if I’m not giving them feedback they have no idea what they’re doing wrong or what’s not working. So, it’s big. It’s the conferencing, the DI and like even when I sit them down and I go over their scores, their i-Ready scores and I explained to them.”</td>
<td>22. Uses assessments to inform instruction.</td>
</tr>
<tr>
<td>4E</td>
<td>2</td>
<td>“I use again my own observations plus my i-Ready data to gear me towards exactly what do they mean like i said is it a deficiency in vocabulary or do they have a high vocabulary and it’s just comprehension is it literary text or informational. what is it that they need so it’s my small group instruction is very tied to data not just one form but multiple including even their weekly assessments with me and just even class discussions and overall performance...”</td>
<td>22. Uses assessments to inform instruction.</td>
</tr>
<tr>
<td>4G</td>
<td>2</td>
<td>“You use the data that you have, whether it be I-Ready or whatever program is being used and that data could more or less provide you with an insight as to what your kids are lacking or what your kids’ strengths are in”</td>
<td>22. Uses assessments to inform instruction.</td>
</tr>
<tr>
<td>4J</td>
<td>2</td>
<td>“Where in the background was there a gap and what do I need to do to fill that gap. I-Ready helps a lot with that. I’m a data-driven individual”</td>
<td>22. Uses assessments to inform instruction.</td>
</tr>
<tr>
<td>4K</td>
<td>3</td>
<td>“When you assess you have to really evaluate. It’s not just assessing enough in grading a paper. I mean it’s actually looking to see where it is. OK, you know, which question was the one that is most kids got wrong and you know you revisit that. You gotta analyze the data.”</td>
<td>22. Uses assessments to inform instruction.</td>
</tr>
<tr>
<td>ID</td>
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<td>Quotation</td>
<td>Secondary Theme</td>
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<tr>
<td>5C</td>
<td>1</td>
<td>“When I talk about data I mean data from the FSA, data from i-Ready, data from tests, from noticing if they’re having trouble with a specific math skills during that instruction. If you’re noticing during small group instructions something, but not just testing, but also noticing through teacher perception in the class.”</td>
<td>22. Uses assessments to inform instruction.</td>
</tr>
<tr>
<td>5F</td>
<td>2</td>
<td>“Once I’m done with the DI for the week like I said I try to use a small assessment. I have used in the past iReady lessons. Those are short, to the point and very specific to the standard and they do have a follow up where they’re on their own. My goal is to see the in terms of the product, if it’s working. I use the data of their biweekly assessment again if it’s standard driven.”</td>
<td>22. Uses assessments to inform instruction.</td>
</tr>
<tr>
<td>5G</td>
<td>3</td>
<td>“Also when like my kids take an assessment I don’t call them in a group I pull them individually; so all the other kids are working on something else I’ll be like OK what happened here?”</td>
<td>22. Uses assessments to inform instruction.</td>
</tr>
<tr>
<td>4K</td>
<td>2</td>
<td>“You look over their work and actually assess it and see what is it that they need; if they’ve met the implemented standards”</td>
<td>22. Uses assessments to inform instruction.</td>
</tr>
<tr>
<td>3D</td>
<td>2</td>
<td>“I am able to differentiate through levelled text, through manipulatives, through online instruction, and I reassess and reteach where I see struggles”</td>
<td>23. Uses assessments to adjust instruction.</td>
</tr>
<tr>
<td>3G</td>
<td>1</td>
<td>“I use i-Ready to begin with because that’s the only data that I had for my students available. But now that I’m starting cold reads and stuff and I mean I know more my students a lot better so I can get more information. And I know you know more about them so I know what is it that they are lacking or what they need, so it all depends”</td>
<td>23. Uses assessments to adjust instruction.</td>
</tr>
<tr>
<td>4A</td>
<td>1</td>
<td>“Once they do their i-Ready they are getting their instructional lessons on their level, which they can do on their own, and once their done with that then they can do their ongoing assignment from DI that we have started working on because I usually do little units that are ongoing for about a week or two, depending on what I’m teaching”</td>
<td>23. Uses assessments to adjust instruction.</td>
</tr>
<tr>
<td>4B</td>
<td>2</td>
<td>“I do assess using cold reads, but I also assess using like story like tests that I make myself and questions that I make myself using response mechanisms that I adapt based on what I see the students aren’t getting”</td>
<td>23. Uses assessments to adjust instruction.</td>
</tr>
<tr>
<td>4G</td>
<td>1</td>
<td>“I stay with kids depending on how their doing during the week. It could be a map skill or a reading skill and then I have a few small groups of 5 that stay with me after school so with the parent’s permission they work in my classroom and we target whatever it is that they’re having a hard time with. The same thing with the classroom like every Tuesday I go to the library so they can do I-Ready and then I’m sitting at a table. I’m also pulling small groups to work with me”</td>
<td>23. Uses assessments to adjust instruction.</td>
</tr>
<tr>
<td>ID</td>
<td>Q</td>
<td>Quotation</td>
<td>Secondary Theme</td>
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<tr>
<td>4K</td>
<td>2</td>
<td>“Obviously if they actually got the standard or if they didn’t get the standard and then from there you take it further. You either enrich or you actually have to reteach it again based on what they turn into you; the product they turn into you.”</td>
<td>23. Uses assessments to adjust instruction.</td>
</tr>
<tr>
<td>5B</td>
<td>3</td>
<td>“So I start from the beginning you were looking if you say scores you look at it and I-Ready assessment I throw a healthy portion of my own judgment in there also, because I have one kid right now where you came out horrible, horrible and he’s actually performing fine, he just needs to handle the shoulder right the problem. So I use the data I have available in my personal judgment.”</td>
<td>23. Uses assessments to adjust instruction.</td>
</tr>
<tr>
<td>5E</td>
<td>2</td>
<td>“I’m trying to assess what I’m trying to get them to understand will depend on the type of product that I asked for them to do. If the student is able to read it independently, I will ask them to do the complete paragraph or writing prompt”</td>
<td>23. Uses assessments to adjust instruction.</td>
</tr>
</tbody>
</table>
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2007 M-DCPS District Assistant Principal of the Year Runner-Up
2007 M-DCPS Regional Center VI Assistant Principal of the Year Award