2021

Differentiated Instruction and Flexible Grouping in Elementary Grades

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This is to certify that the doctoral study by

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Walden University
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Abstract

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MA, Walden University, 2006

BA, University of North Florida, 1996

Project Study Submitted in Partial Fulfillment

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Abstract

At the local site, many students were not achieving necessary learning gains on state assessments. Administrators and teachers were concerned as to why students on the local level were falling short. Current trends emphasized differentiation of instruction in classrooms to meet individual student needs; however, classrooms generally adhere to a more whole group structure. Using flexible grouping to differentiate instruction allows students to be reinforced or challenged at their own skill level. The purpose of this qualitative study was to better understand if and how research-based data analysis practices are being used by third and fourth grade teachers to form flexible groups to differentiate instruction. This study was guided by Marzano's research connecting the importance of instructional methods with student achievement. The research questions examined teacher use of flexible grouping, formative assessment to drive instruction, and Marzano's identified best instructional strategies in lesson planning. Data were collected through a lesson plan checklist and semistructured interviews with teacher/practitioners, based on Marzano's framework. Participants included eight teachers (four third grade and four fourth grade teachers). Research findings suggested that teachers are aware of what differentiated instruction is but often struggle to find adequate time to group their students flexibly using the formative data that are collected in classrooms. Research reflected teachers' difficulty in finding adequate time for planning and preparation. This study may contribute to positive social change by providing district teachers and leaders with professional learning opportunities while expanding their repertoire of strategies. Educators may benefit from expanding their professional knowledge concerning flexible groups as it relates to student's skill levels.

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Dedication

This study is dedicated to my loving husband, Nathan, who has afforded me the opportunity to work on my education in the most relaxing and stress-free conditions. I would also like to dedicate this work to my son Jeremy Lee Mason, who died in 2008 due to cystic fibrosis. Jeremy taught me that living life to the fullest, making the most of each day given, and constantly striving for your dreams assumes greatest importance. I hope that my educational accomplishment brings honor to my son and inspires those around me to keep striving even when the goal seems elusive. As a matter of fact, I am a living proof that everything is possible.

Acknowledgments

I would like to thank my chair, Dr. Paul Kasunich. Throughout my journey, he has always been incredibly supportive and a positive force guiding me forward in this process. He has been a beacon of light and the voice of reason when I felt like giving up. I am so grateful that he encouraged me to meet him on the graduation stage. I also owe a debt of gratitude to Dr. Evelyn Ogden, my second chair, for her encouragement, for dialing me back, for redirecting me when I was floundering, for grounding me, and for making it all seem so easy. I appreciate all the efforts to get me to this point. Undoubtedly, I would not be here without the support of each of these people.

I would like to recognize my family, my mom and dad, and my sisters who have always believed in me and cheered me from the sidelines. I would also like to take this opportunity to thank my friends who have been supportive of my journey. Finally, I must thank God who has given me the strength in the worst of times and the courage when I was very afraid of failure. I am living proof that with God all things are possible (NIV Matthew 19:26).

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Section 1: The Problem

The Local Problem

In 2002, the No Child Left Behind Act mandated that teachers become highly qualified and that all students be on grade level in reading by third grade. The mandate required a higher level of achievement in classroom environments, regardless of the children's varying abilities in the class. These goals are iterated with the passing of Every Child Succeeds Act of 2015. Marzano (2001) posited that teachers live in an era when educational research is at its best. This research included research-based and evidence-backed instructional strategies that improved student outcomes in classrooms. However, according to Boyer (2014), teachers continue to struggle to meet student needs. To tackle diverse challenges within the classroom, teachers began grouping students in various ways to accommodate the different academic needs of the learners within their classrooms (Boyer, 2014).

According to the Florida Department of Education assessment data (FLDOE, 2018a), nearly 70% of students in the local district gain proficiency in reading in the third grade. However, when tested in the fourth grade, less than 50% of these students test proficient in reading, evidenced in an achievement gap of 20 percentage points between third and fourth graders (FLDOE, 2018b). Instructional practices at the local level may contribute to the decline in successful learning outcomes.

In cross-level grade meetings with third and fourth grade teachers in the district, data analysis from the Student Test for Achievement in Reading also showed an achievement gap between grade levels. Fourth graders performed at 56% proficient level

in reading; however, the same students had a proficiency level of 80% at the end of the previous year. The Florida State Department of Education requires the district to develop a school improvement plan to address the gap created by the decline in student performance between the third grade and fourth-grade levels, respectively.

Each school in the district has an instructional coach who serves as classroom support resource for teachers. Position responsibilities include assisting teachers with intervention, planning, and assistance in analyzing assessment data to formulate instructional groups. The coach at the study site for the third and fourth grades had observed that fourth-grade teachers often feel overwhelmed when using formative assessment to form needs-based groups. The instructional coach shared that effective grouping requires teachers to determine which data to use and possess the ability to disaggregate data. According to the coach, the teachers might feel comfortable using their observational skills to place students in static groups but are less confident when it comes to grouping students based on analysis of assessment data. However, the third-grade team meeting notes at the study site from October 2019 revealed that teachers seem to be more comfortable grouping students for reading based on formative data.

The problem at the study site was a lack of understanding of if and how research-based instructional strategies of differentiated instruction, including flexible grouping based on formative assessment, are used by teachers to address the academic needs of third and fourth grade students. According to Bates (2013), differentiation of instruction permits teachers to hone their instructional practices to meet the individual needs of children as recognized through observations. Differentiated instruction provides

customized learning based on the results of all students' formative assessments. Dixon,Yssel, McDonnel, &Hardin (2014) stated that differentiated instruction is effective when educators accommodate the needs and varying abilities of their students. However, according to Marzano (2001), instruction alone is not enough. It must be paired with formative assessment to make the most accurate decisions for instructing students. The value of formative assessment in the differentiation process is the ability to use tools such as developmental checklists and anecdotal records to identify children's strengths and needs (Bates, 2013). That said, despite the well-documented value of differentiated instruction and flexible grouping, teachers often shy away from implementing flexible grouping (Schlag, 2009).

Definition of Terms

Assessment based grouping: Specific grouping based on assessment data collected to inform teacher instruction (Marzano, 2017).

Differentiated instruction: Tailoring instruction to meet individual needs (Tomlinson, 2017).

Flexible grouping: When students are grouped according to their skill levels but move "flexibly" with a change in their skill level (Boyer, 2014).

Formative assessment: Teachers use formative assessment to provide continuous feedback and monitoring that can be used by instructors to improve their instruction (Marzano et al., 2019).

Grouping: The variety of ways in which educators categorize students to provide differentiated instruction (Tomlinson, 2017).

Research-based strategies: Strategies that are practiced and backed up with sound educational research (Marzano, 2001).

Whole group instruction: The entire class is presented with information at the same time and at the same level (Tomlinson, 2017).

Significance of the Study

Florida State Standards for English Language Arts (LAFS, 2016) require all students to demonstrate proficiency in core subjects in the elementary grades. Students performing at or above grade level on the Florida state assessments by or before the third grade are more likely to score at the proficient or even advanced levels on state assessments (FLDOE, 2018a). Being proficient is increasingly essential because Florida public school districts are continually required to perform at higher levels to maintain each school's adequate yearly progress and the district's grade of C or higher (FLDOE, 2018a).

The significance of this study is to provide increased understanding concerning the practice of research-based instructional strategies of differentiated instruction, including flexible grouping, based on formative assessment that are used by teachers to address the academic needs of third and fourth grade students. The research may provide data to support the need for staff development to differentiate between instruction and use of research-based best instructional practices in the elementary classrooms. Administrators in the district may reflect on the results of the study and deepen their knowledge of current practices and educational pedagogy in their efforts to support teachers. This study may contribute to positive social change because the potential for

professional learning could occur if the administration deems the information from the study important enough to incorporate into the professional learning opportunities for district teachers and leaders to help them expand their repertoire of strategies.

Research Questions

Third and fourth grade elementary students are finding it difficult to maintain proficiency on state assessment and local assessments from one grade level to the next. Students performing at or above grade level by third grade are more likely to score at the proficient or even advanced levels on state assessments (FLDOE, 2018b). However, students in the fourth grade are struggling to maintain learning outcomes. According to the FLDOE (2018a), nearly 70% of students in the local district leave the third grade proficient in reading. However, when tested in fourth grade, less than 50% of the same students test as proficient in content areas (FLDOE, 2018a). The literature suggests that although educational research is at its best (Marzano, 2007), teachers are still struggling to find a variety of instructional strategies to meet the diverse needs of students (Boyer, 2014). This research study will provide analysis and results of how or if research-based practices of differentiated instruction and flexible grouping based on formative assessment are used by teachers to address the academic needs of third and fourth grade students. The research questions that best aligned with the problem, the framework, and purpose of the study are as follows:

1. How do teachers use or not use flexible grouping congruent with the research-based Marzano framework of effective instruction?

2. How do teachers who use grouping utilize formative assessment to form flexible groups?

Review of the Literature

Third and fourth grade students struggle to perform proficiently on Florida state assessments of reading. LAFS (2016) requires all students to demonstrate proficiency in core subjects in the elementary grades. Students performing at or above grade level on Florida state assessments by or before the third grade are more likely to score at the proficient or even advanced levels on state assessments (FLDOE, 2018a). However, local students between third and fourth grades struggle to maintain each school's adequate yearly progress and the district's grade of C or higher on the yearly school grade reports (FLDOE, 2018a).

This review of literature demonstrates a need for answering the question of if and how research-based instructional strategies of differentiated instruction, including flexible grouping, based on formative assessments are used by teachers to address the academic needs of third and fourth grade students. This exhaustive review comprised over 100 peer-reviewed journals, books, and articles relating to the topics of differentiation of instruction, flexible grouping, and current research-based instructional strategies such as assessment-based grouping. The search terms and phrases that I used by themselves or in different combinations, with a view to discovering peer-reviewed research conducted in the last 5 years include the following: *differentiated instruction, learner-centered teaching, learner-centered instruction, student-centered instruction, flexible grouping, assessment-based grouping, formative assessment and grouping,*

elementary classrooms, grouping within elementary classrooms, instructional strategies, research-based instructional strategies, and *professional development*.

I used a range of internet-based search engines and databases to pursue the most current resources. Among the search engines and databases are Academic Search Complete, Education Source, Education Resource Information Center (ERIC), ProQuest, Education Research Complete, Education from SAGE, ScienceDirect, Thoreau Multi-Database Search, and EBSCO. I also used Google Scholar to find specific articles referenced within other articles.

Although many sources discussed the necessity of differentiated instruction in classrooms, little research has been conducted over the last 5 years on the use of flexible grouping within classrooms, specifically within elementary classrooms. Schlag (2009) researched 130 fifth graders to identify the relationship between flexible grouping and reading achievement from one school in southern Georgia. According to Schlag, this study could be generalized to other grade levels; however, she suggested that the study would provide an even broader understanding of reading achievement and flexible grouping if it were enlarged to multiple schools or school districts. Additionally, Schlag concluded that there is paucity of research regarding flexible grouping. While there is a plethora of information concerning differentiated instruction, more specific research needs to be created into creating small groups, flexible grouping, and their connection to student reading achievement.

Teacher Evaluation and Anxiety

Performance anxieties faced by teachers and students is one of the many challenges facing education today. According to Wilkins (2017), teachers are evaluated on what some consider their teaching quality; their students are also constantly being evaluated based on their achievement. The conundrum for both teachers and students is that classrooms are flooded with students performing at a variety of levels. Teachers are struggling to meet the diverse needs while still maintaining quality instruction for everyone. The use of grouping increased after the development of standardized tests emerged in the 1990s when teachers discovered that a one-size-fits-all approach would no longer work (Tomlinson, 2014). To manage these new circumstances, teachers began grouping to cope with the diverse needs of learners.

The state of Florida adopted the Marzano teacher evaluation model (Marzano, 2017). Florida Senate Bill 736, passed in 2011, rewrote how teachers are paid and retained across the state (Florida Senate, Every Student Success Act, 2016). To accommodate the diverse needs of students, teachers were supposed to implement Marzano's strategies, as discussed in Marzano's *The New Art and Science of Teaching* (Marzano, 2017; Stover, Sparrow, & Siefert, 2017). Marzano (2017) discussed key instructional strategies for high-yield results. These strategies are used as differentiation models in many classrooms throughout the state (Marzano, 2017; Stover, et el., 2017).

Differentiation of Instruction

Differentiation in the classroom has many names, such as adapting, customizing, tailoring, and accommodating. Adding to this list, some newer terminology used to

address the strengths, needs, and interests of all students is personalized learning and student-centered learning. These forms of learning place emphasis on the individual learner's strengths and needs by allowing students to take ownership in the classroom (Basham, Hall, Carter, & Stahl, 2016). Tobin and Tippett (2014) opined that the implementation of differentiation of instruction can be overwhelming to many teachers because it requires an innovative way of considering how curriculum is used and how instruction is implemented. Educators who consider the many ways in which students learn and attempt to incorporate varying instructional practices are known to improve student learning outcomes (Defrancesco, 2015). For example, using formative assessment to drive instruction and formulate groupings provides more student-centered learning. Flexible grouping allows teachers to embrace different interests and varying levels of readiness within the same classroom (Smets, 2017). It provides scaffolding opportunities and openings to engage students who need to be challenged. Basham et al., (2016) suggested that multiple learning opportunities provide students with more of their own voice or learning choice, thus allowing students to gain mastery in multiple ways.

Assessment Based Grouping

In the age of accountability and high-stakes testing, the demand for individualized instruction is higher than ever. The testing accountability systems, developed under No Child Left Behind (2002) and later under Every Child Succeeds Act (2015), assumed that high-stakes assessments would lead to improved academic performance (Cavendish, Adrian, Roberts, Suarez, &Wesley, 2017). However, teachers still find that effective instructional methods are lacking, which is why they often feel pressured to produce

results when it comes to student learning gains (Cavendish et al., 2017). To help ensure gains, educators must be willing to use research-based techniques to reach all students. Cherasaro, Reale, Haystead, & Marzano (2015), stated that grouping based on formative assessment is a necessity for student achievement.

Pane, Steiner, Baird, & Hamilton (2015), maintained that teachers should use formative data to personalize instruction but may find it difficult to follow through with adapting student grouping. According to Tlhoaele, Hofman, Winnips, & Beetsman (2014), the onus is on the instructor to create a "spark" for each individual learner to create meaningful experiences for them. Nevertheless, teachers are hesitant to implement differentiated instruction due to their perceptions of, lack of understanding, and the time required to plan and implement.

Flexible Grouping

Flexible grouping can be described as grouping that is based on observed performances, instruction built through scaffolding experiences, and assessment that is an ongoing, never-ending process. Deed , Lesko & Lovejoy (2014) described flexible grouping learning tasks as processes intended to meet individual needs. Flexible grouping is a desired method because it allows teachers to connect with students in a variety of meaningful ways (Teare, 2017). Examples of such methods are teachers' connections to students through one-on-one or small group interactions, and teachers understanding areas where their students are functioning academically because they are using formative assessments as placement for flexible grouping. Valentino (2000) observed that by employing a variety of grouping strategies, teachers can work smarter and engage in

more beneficial instruction that, in turn, leads to productive teaching and learning. Flexible grouping allows students to practice in a variety of ways throughout the unit of study based on their interests, collaboratively, or in smaller groups to learn a particular skill.

Although differentiation of instruction is emphasized, teachers often shy away from implementing flexible grouping. It is not unusual for teachers in the elementary setting to employ grouping, but simply meeting with various homogenous groups does not suffice (Smets, 2017). Flexible grouping allows teachers to embrace different interests and varying levels of readiness within the same classroom (Smets, 2017). It provides scaffolding opportunities and openings to engage students who need to be challenged. Basham et al. (2016) suggested that multiple learning opportunities empower students with more of their own voice or learning choice, allowing students the opportunity for mastery in multiple ways. Individuals learn content at varying rates; therefore, flexible groups should change as often as the data determine there is a need to regroup students.

Teachers should provide students with explicit instruction, practice, and support in areas where they are struggling, while ensuring they learn critical academic content and skills. One method for providing such support is through flexible collaborative grouping. Students learn from their peers in a collaborative setting and, as they do so, they begin to learn how to learn on their own. According to Johnsen (2016), teachers should create more flexible learning environments, incorporate multiple instructional approaches, and use data-driven instruction to promote learning gains.

Tomlinson (2015) suggested that teachers should differentiate instruction to provide individualized support for those who are struggling as well as for high achievers. Correspondingly, Johnsen (2016) maintained that teachers should create more flexible learning environments, incorporate multiple instructional approaches, and use data-driven instruction to promote learning gains.

Professional Development

Teachers may have limited understanding of what it means to differentiate and group students. Deason (2014) postulated that teachers may be willing to use differentiated instruction strategies, but many teachers struggle to implement differentiation of instruction due to varying levels of understanding of how and when to differentiate. Instructors may also struggle with inadequate time for planning, training, and gathering resources. Teachers feel the need for more support in the areas of disaggregation of classroom data and lesson planning (Deason, 2014). Stewart (2016) investigated teacher perceptions and discovered that teachers feel ineffective when they are asked to differentiate lessons and group students according to data. According to Frankling, Jarvis & Bell (2017), this is a reminder that ongoing professional development is necessary for teachers to successfully plan and implement instructional practices that are mandated. Therefore, professional development is a necessary component for effective implementation of research-based best practices.

Conceptual Framework

Marzano's (2010) studies of research-based instructional strategies provided the conceptual framework for this study. Marzano is best known for educational research

linking instructional best practices to student achievement. In this regard, Marzano's (2010) Focused Teacher Evaluation Tool pinpointed 23 essential behaviors to determine teacher efficacy within four specific areas of effectiveness. Concordantly, Carbaugh et al. (2010) developed a system for teacher evaluation that "effectively returns time to administrators for the important work of instructional coaching, working with PLCs, advancing their own professional development, and providing feedback to teachers—practices that have a demonstrated positive impact on student achievement" (p. 4). The focused model relies on research-based best practices and understands effective instruction with student evidence as to the decisive factor (Carbaugh et al., 2010). The areas of expertise are designed to "guide teachers from implementation of instructional strategies to awareness of conditions for learning in the classroom, and to their professional responsibilities" (Carbaugh et al., 2010, p. 5). The use of research-based instructional strategies evidenced through student achievement is the most critical piece of the model. Student achievement has been documented with formative and summative assessments, thereby reflecting the educator's effective use of instructional strategies (Carbaugh et al., 2010). According to Klute, Apthorp, Harlacher & Reale (2017), formative assessment brought about greater performance on assessments. However, students enter the classroom with varying levels of knowledge and experiences, and they learn in a variety of ways, making it necessary to provide explicit interventions (Klute et al., 2017). Tomlinson (2017) stated that it is imperative for teachers to deliver instruction in a meaningful way by taking into consideration background knowledge and the myriad

ways in which students learn. Differentiated instruction with flexible grouping allows the teacher to do this.

Differentiation of instruction attempts to close the gap and further assist teachers in meeting the students' individual needs. Marzano's model was developed to measure instructional effectiveness and to drive targeted instruction toward future success (Carbaugh et al., 2010). In chronically low-performing schools, Cherasaro et al., (2015) suggested that teachers be paired with a turnaround partner, that is, a teacher who implements the desired instructional strategies and is adept at recognizing the individual needs of students and formatting grouping that addresses those needs. According to Feldhusen and Moon (1992), sustained academic achievement requires flexibility in grouping and continued reassessment of student progress. Flexible grouping provides needed scaffolding while also allowing enhancement for those with more background knowledge (Deason, 2014). Marzano's (2010) focused model concentrates on all aspects of planning, instruction, conditions for learning, and professional development needs, thereby leading to success for educator and student.

Specific standards from Marzano's evaluation model coincide with learning strategies considered and are as follows: Standard 1: Learner Development, Standard 2: Learning Differences, Standard 3: Learning Environments, Standard 4: Content Knowledge, Standard 5: Application of Content, Standard 6: Assessment, Standard 7: Planning for Instruction, Standard 8: Instructional Strategies, Standard 9: Professional Learning and Ethical Practice, Standard 10: Leadership and Collaboration (Marzano, Focused Evaluation Tool, 2010).

In this subsection, I further elaborate on each of Marzano's standards to deepen the understanding of Marzano's role in differentiated instruction along with the flexible grouping strategy. The standards tie into the Marzano evaluation model with which teachers are evaluated. Each standard specifies ways in which teachers can implement Marzano's strategies successfully in their classrooms (Marzano Teacher Evaluation Model, 2010).

1. Standard 1: Learner Development: Learner development states that the teacher understands how learners develop and recognizes patterns of learning and that development varies individually within and across cognitive, linguistic, social, emotional, and physical areas, also targeting and executing developmentally appropriate or challenging learning experiences for all students (Marzano, Focused Evaluation Tool, 2010).
2. Standard 2: Learning Differences: This states that the teacher uses understanding of individual differences and diverse cultures within the classroom to ensure inclusive learning environments that allows each learner to meet rigorous standards (Marzano, Focused Evaluation Tool, 2010).
3. Standard 3: Learning Environments: Learning environments states that the teacher works to create an environment that promotes personal and cooperative learning environments, thus encouraging communication and active engagement (Marzano Focused Evaluation Tool, 2010).
4. Standard 4: Content Knowledge: Content knowledge states that the teacher understands the standards, central concepts, tools of inquiry, and structures of

their discipline(s) and creates appropriate learning experiences that make the discipline comprehensible and meaningful for students to ensure mastery of the content (Marzano Focused Evaluation Tool, 2010).

5. Standard 5: Application of Content: Application of content states that the instructor understands the principal ideas, instruments of investigation, and structures of the subject(s) they teach and supplies learning experiences that make the discipline understandable and meaningful for learners to ensure mastery of the subject matter (Marzano Focused Evaluation Tool, 2010).
6. Standard 6: Assessment: Assessment states that the teacher uses various methods of assessments to engage learners in their own growth and development, to monitor learner progress, and to guide teacher and learner decision making related to instructions (Marzano Focused Evaluation Tool, 2010).
7. Standard 7: Planning for Instruction: Planning for instruction states that the teacher plans instruction that supports every student in meeting individual learning goals by drawing upon knowledge of content areas, curriculum, and pedagogy, as well as knowledge of individual learning needs (Marzano Focused Evaluation Tool, 2010).
8. Standard 8: Instructional Strategies: Instructional strategies states that the teacher understands and uses a variety of instructional techniques to encourage learners to develop a deeper knowledge of content areas, as well as

to build skills to apply knowledge in more meaningful ways (Marzano Focused Evaluation Tool, 2010).

9. Standard 9: Professional Learning and Ethical Practice: Professional learning and ethical practice states that the teacher/professional participates in ongoing professional development and uses evidence to continually evaluate their own educational practice, in particular the effects of their actions or choices on others (Marzano Focused Evaluation Tool, 2010).
10. Standard 10: Leadership and Collaboration: Leadership and collaboration states that the teacher leader seeks appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals, and community members to ensure learner growth, as well as to advance the teaching profession (Marzano Focused Evaluation Tool, 2010).

Implications

Marzano's model works effectively with flexible grouping since it supports strategies that go hand in hand with research-based best practices. Carbaugh, et al. (2010) stated that the areas of expertise are intended to direct teachers through understanding the conditions for optimal learning and the utilization of best-instructional strategies to fulfil the professional responsibilities. Possible project directions based on anticipated findings are that classrooms which implement a differentiated instructional model with flexible grouping could experience positive learning gains. Student achievement has been documented with formative and summative assessments, thereby reflecting the educator's

effective use of instructional strategies (Carbaugh, et al., 2010). Although there are ten standards on the current Marzano Teacher Evaluation Model (2017), only five specific standards will be addressed, since these are the ones for which information can be gathered through semi-structured interviews:

Standard 2: Learning Differences. Learning differences states that the teacher uses understanding of individual differences and diverse cultures within the classroom to ensure inclusive learning environments that allows each learner to meet rigorous standards (Marzano Focused Evaluation Tool, 2010).

Standard 3: Learning Environments. Learning environments states that the teacher works to create an environment that promotes personal and cooperative learning environments that encourages communication and active engagement (Marzano Focused Evaluation Tool, 2010).

Standard 6: Assessment. Assessment states that the teacher uses various methods of assessments to engage learners in their own growth and development, to monitor learner progress, and to guide teacher and learner decision making concerning instruction (Marzano Focused Evaluation Tool, 2010).

Standard 7: Planning for Instruction. Planning for instruction states that the teacher plans instruction that supports every student in meeting individual learning goals by drawing upon knowledge of content areas, curriculum, and pedagogy, as well as knowledge of individual learning needs (Marzano Focused Evaluation Tool, 2010).

Standard 8: Instructional Strategies. Instructional strategies states that the teacher understands and uses a variety of instructional techniques to encourage learners to

develop a deeper knowledge of content areas, as well as to build skills to apply knowledge in more meaningful ways (Marzano Focused Evaluation Tool, 2010). These standards were chosen to address the specific aspects of the research project. The standards will be applied during the classroom visits in the same way that they would be applied during the teacher evaluation process. By applying the specific standards 2, 3, 6, 7, and 8, the researcher may gain data rich information that is considered both valid and reliable.

Summary

Today's classrooms are populated with students from all backgrounds, learning levels, and interests. Teachers must use all their resources to reach 21st century students. Flexible grouping has proven to be a successful strategy for meeting the needs of diverse populations in elementary classrooms today (Cherasaro, et al., 2015). Teachers must use all their resources to reach 21st century students. Incorporating research-based best practices, as suggested in *The Art and Science of Teaching* by Marzano (2017), allows teachers to provide appropriate accommodations for students. Further, teachers can group students flexibly to differentiate their instruction using data from provided sources. However, many teachers admit to feeling overwhelmed by the data and the number of groups that they are required to conduct daily (Tobin & Tippett, 2014).

In Section 1, I have elucidated the research problem, the foundation for the study presented from a local and nationwide perspective, the significance of the problem, and the research questions guiding the research process. This section also includes a comprehensive review of current literature based on the conceptual framework, and a

review of the broader problem, including Marzano's strategies from *The New Art and Science of Teaching* (2017) and 10 Standards from Marzano's Focused Teacher Evaluation Model (Marzano, 2017). The studies reviewed for this project study focused on elementary students, specifically third and fourth graders and the use of best instructional strategies, and flexible grouping in these settings. However, further associations can be drawn from the literature for more research on flexible grouping within upper elementary and middle grades classrooms. A variety of possible projects can be suggested, because of which the data from the semi-structured interviews will determine the actual focus of the project and how it will be implemented in the Brandon County School District.

In Section 2, I will present the research design, methodology, procedures, and findings of this qualitative bounded case study. Section 3 includes the implementation of the project which comprised Professional Development/ Curriculum and Materials for three full days of training for district faculty and staff with agreement from district upon the completion of project and findings. Section 4 will conclude this study with a descriptive reflection of my academic journey through coursework, conducting research, writing the proposal, reviewing the literature, analyzing the data, developing the project, and finally, fully implementing the project.

Section 2: The Methodology

Qualitative Research Design and Approach

In this study, I used a lesson plan checklist and semistructured teacher interviews to obtain data concerning the use of formative assessments to plan differentiated instructional strategies and flexible grouping. The checklist was considered valid based on the seminal research provided concerning Marzano's teacher evaluation model (Marzano, 2017; Stover et al., 2017). These instructional practices have been practiced across classrooms in the United States. Next, l developed semistructured interview questions based on the Marzano framework for interviews with eight teacher/practitioners, three from elementary and three from intermediate schools, to determine how and if they used research-based grouping and assessment practices. Finally, I used the lesson plan checklist to track teachers' use of formative assessment and flexible grouping in their planning.

Because this was a qualitative case study, the research design derived logically from the problem and guiding research questions. The documentation to obtain information concerning how teachers used grouping in their classrooms was collected through a lesson plan checklist and semistructured interview questions based on Marzano's framework. Teachers' lessons plans detailed the use of formative assessment and flexible grouping during the planning stage. Doing so enabled me to collect important data through a self-created checklist.

Description of the Qualitative Case Study Design

I conducted a bounded case study. Researchers have noted that a bounded case study can be considered the use of only a specific group of people involved in a specific occurrence during a specific period (Creswell, 2012; Merriam & Tisdell, 2016; Yin, 2014). My own study was bounded because it was within a small, rural school district in the southeastern United States with third and fourth grade students and teachers. I interviewed eight teachers, four third grade and four fourth grade.

This choice for research design was justified given that teachers who employ research-based instructional strategies are practitioners and experts of their craft (see Marzano, 2017). Interviews and self-created checklists have been established as appropriate tools. According to Burkholder, Crawford, & Cox (2016), knowledge is produced and created in conjunction with exchanges between the interviewer and the subject.

To determine if a case study was the most viable option for my project study, I considered other forms of research such as action research, phenomenology, and grounded theory; however, each of these approaches were rejected. Creswell (2012) stated that action research requires the researcher to identify a current situation or problem while engaging the participants or stakeholders. It also requires the researcher to implement changes during the research to improve the situation or problem (Glesne, 2011; Merriam & Tisdell, 2016). No changes were implemented during the research process. Instead, it will be left up to the discretion of stakeholders to determine if or whether changes are made to instructional practices. The focus of this research was to

explore and discover how and if research-based data analysis practices were used by third and fourth grade teachers to form flexible groups to differentiate instruction.

Another possible design was phenomenology, which is used by researchers to explore personal experiences (Merriam & Tisdell, 2016). Patton (2015) described phenomenology as studying the essence or essences of a shared experience. However, I rejected this model as well because I was not exploring perceptions. Instead, I sought to determine whether teachers were implementing flexible grouping into their differentiation strategies. I explored how and if research-based strategies were being implemented as opposed to teacher perceptions concerning these strategies. Finally, grounded theory is based on developing a theory from the collected data (Merriam & Tisdell, 2016; Yin, 2014). I rejected grounded theory as I did not foresee using an inductive method to analyze student and teacher perspectives, thus leading to the development of a theory concerning differentiated instruction and flexible grouping.

Participants

School District X (a pseudonym given to safeguard the district) is in the Southeast part of the United States. This small rural district consists of an elementary school, an intermediate school, a middle school, and high school. The participants were comprised of four third and four fourth grade teachers. According to the assistant superintendent of schools, the demographics consisted of 63% White students, 25% African Americans, 8% Asians, 4% other. Teaching staff consisted of 35 females and one male teacher, one guidance counselor, one instructional coach, two administrative leaders, one Title 1

teacher and support, one speech therapist, as well as eight paraprofessionals and support staff.

Justification for Number of Participants

One way for a researcher to ensure the quality of their research is to attend to the validity and reliability of the research instruments and approaches used (Burkholder et al., 2016, p. 103). Therefore, it is important to act according to the best interest of the participants to ascertain the validity of data collection during the study. Patton (2015) indicated that when selecting participants for a qualitative study, purposeful sampling should be used so that an information rich result can occur. Merriam and Tisdale (2016) described purposeful sampling as the selection of participants from a specific group who can add complexity and insight into understanding a specific case, such as research-based best practices.

Procedures for Choosing Participants

Four third grade and four fourth grade teachers who had at least 3 years of teaching experience were purposely selected to participate in the study. Some teachers did and some did not use differentiated instruction with flexible grouping in their classroom routines. The teachers were willing to participate in an approximately hour long semistructured interview to provide their personal perspective on how or if they use flexible grouping in their classrooms and how or if they use formative assessment to form those groups. Also, their opinion of how Marzano's model fits into teachers' use of flexible grouping and research-based instructional practices assumed importance. Finally, the data provided from teacher -volunteered lesson plans provided discernment

concerning each teacher's personal procedures and practices in their classrooms. It also provided specific interpretive data concerning each student and the classroom, thus allowing me to gain insight into the use of Marzano's Tools and Checklist (2017) for effective classroom instruction.

Methods for Establishing a Working Relationship

I worked in the School District X for 26 years; however, I no longer teach in the district. Thus, when inviting participants, I made them aware of this to prevent any conflict of interest. Therefore, the participants were cognizant that I was familiar with the district and the local schools to an extent but that I held no authority or supervisory role currently (see National Institute of Health, 2011). I received a certificate (#2260320) entitled *Protecting Human Research Participants* (see Appendix B). Burkholder et al. (2016) recognized the need for developing a relationship between researcher and participants for the most valid results in qualitative research. I developed and maintained a professional and trusting relationship both during and after the research process. I ensured participants of confidentiality and guided them through the process. I adhered to all standards by gaining the proper documentation and permissions needed to conduct my research.

Protecting Participant Rights

Before beginning the work on this qualitative study, I completed The National Institute of Health (NIH) Office of Extramural Research Web-based training course on *Protecting Human Research Participants* (NIH, 2011) and received a certificate stating that I had successfully completed the course. The completion of the course assured me

that I could work in adherence with the rules of the NIH and that the risk for participants was exceptionally low. I had no authority over the participants and posed no threat over their jobs.

Merriam and Tisdale (2016) advised that all participants are given pseudonyms to protect their respective identities (I used TP for teacher /Participant 1). Signed consents were also acquired from the district superintendent, participating school principals, and teacher participants. All data collected were secured on my password protected computer and were also regularly backed up on an external hard drive. Any written documentation was locked securely in a safe to ensure that the data were protected during the collection process. At the end of the research and data collection, I met with participants individually to discuss any questions or concerns they may have had. This part of the process was to ensure that no harm was done during the process.

Safety and confidentiality are of utmost concern during this qualitative study. To that end, a list of actual names and their pseudonyms are kept on my password protected computer and on a separate hard disk to ensure the confidentiality of all participants. Efforts for protection before, during, and for 5 years after the completion of the research will be made to protect the identities of the district, schools, and individual participants. At the end of 5years, all electronic and written data will be destroyed per Walden University standard protocol.

Data Collection

According to Drost (2011), data collection methods should be considered both valid and reliable. It is important to note that I collected data and developed data

collection instruments in the most reliable way (see Drost, 2011). I used two methods for data collection, including a lesson plan checklist. The checklist was validated by the seminal research provided by Marzano's (2017) model for best instructional strategies essential for high-yield results. The checklist included items concerning the teachers' use of formative assessment and flexible grouping in their lesson planning. Another source of rich data included semistructured interviews based on the Marzano framework to determine how and if they were using research-based grouping and assessment practices. I used these sources of data to determine if and how research-based practices of differentiated instruction and flexible grouping based on formative assessment were used by teachers to address the academic needs of third and fourth grade students.

Description and Justification of Data Collected

The purpose of this qualitative bounded study was to better understand if and how research-based data analysis practices were used by third and fourth grade teachers to form flexible groups to differentiate instruction. Collecting appropriate data is essential to any successful qualitative study (Glesne, 2011; Merriam & Tisdell, 2016). Semi structured interviews and a self-created checklist provided both reliable and valid data for the qualitative case study.

Checklist Data

The data collected through lesson plans volunteered by the eight teacher participants provided data concerning the implementation of differentiated instruction with flexible grouping. A checklist based on the Marzano framework guided the analysis of the lesson plans volunteered by the teacher/participants and provided important

information concerning whether teachers' use of flexible grouping was congruent with the research-based Marzano model of effective instruction or if they used other methods or instructional strategies. I discovered how teachers who used grouping used formative assessment to form flexible groups.

Data From Interviews

According to Yin (2014), data collected through the interview process can provide more in-depth data. The interviewer must build a rapport with those being interviewed. According to Rubin and Rubin (2012), the interviewer builds rapport through proper introductions within the format of the interview and by making the interviewee aware of the guidelines and the expectation of the interview process. It is important for the research to remain objective and maintain a neutral position during the interview process so as not to avoid any biases (Yin. 2014). The semi-structured interview questions allowed the participants to share their responses without influencing their responses as to avoid any bias on part of the interviewer (Creswell, 2012). The questions focused on the teachers' use of Marzano's (2017) research-based instructional practices and the use of formative assessment data to form flexible grouping if flexible grouping occurs in the classroom. According to Merriam and Tisdale (2016), all interviews should be recorded verbatim for accuracy with the permission of participants. The recording will be transcribed to ensure the accuracy of each interview per research protocols (Creswell, 2012; Merriam & Tisdell, 2016).

Glesne (2011) suggested starting the interviews by asking questions to establish basic demographics such as family, where participants grew up, as well as education and

work. I will begin with a predetermined set of questions to ascertain the teachers' perspectives concerning the use of flexible grouping congruent with the research-based Marzano model of effective instruction. If they do not use Marzano's model, are the participants using other methods or instructional strategies congruent with research-based best practices? The researcher may also discover how teachers who use grouping utilize formative assessment to form flexible groups. Yin (2014) suggested that assessing the information and asking questions for clarification leads to deeper understanding (Glesne, 2011). Merriam and Tisdell (2016) recommended using a variety of querying questions such as hypothetical, playing the devil's advocate, and interpretive questions to deepen understanding when clarification is needed.

Limitations

According to Creswell (2012) a limitation is defined as a problem or a weakness that may surface during the research. The research took place in a small rural district, in an elementary and intermediate school, in a third and fourth grade classrooms in the southeastern part of the United States. One possible limitation was that the sample may not be representative of all elementary schools or all these classrooms. A second shortcoming may be that the School District X has transitions between third and fourth grade years, while most school districts in Florida do not. This may have some bearing on the drop in test scores between the performance of third grade and fourth grade students. Other limitations could be the use of a small sample size. By limiting the participants to those who have taught for no less than three years, the researcher is excluding the perspectives of younger and more enthusiastic educators. Creswell (2012)

also noted that a small sample size such as one school or one small group of participants may limit the data results.

Data Collection Procedures

Qualitative interviewing enables the hidden meanings not deciphered through observations to be addressed and explained through detailed conversations (Hatch, 2002). Data collection for this study consisted primarily of interviews with 8 classroom teachers in grades three and four, and review of lesson plans with a lesson plan checklist. Upon receiving Institutional Review Board (IRB) approval, I began my data collection process. My IRB Approval number is 04-29-20-0016362. To gain access to the participants, I first sought the permission from both the school superintendent and individual school principals. Subsequently, I contacted all potential teacher/participants by email and waited for their responses. I waited one week before sending a second follow-up email to those who had not responded previously. I contacted each respondent by text and then made a phone call to introduce myself. The teacher/participants signaled their consent using the words “I CONSENT” sent in a separate email. I then arranged a convenient time to conduct these interviews. I also requested each teacher/participant to send a sample lesson plan to use the lesson plan checklist to derive data. I collected the interview data from each teacher/participant virtually by using a meeting platform. Each interview lasted approximately 30-45 minutes. To protect the identities of participants, each teacher/participant was assigned a pseudonym.

Qualitative Data Collection

Several types of qualitative data were collected as part of this case study, including teacher interviews and a lesson plan checklist. One of the advantages of using multiple points of data collection is that a variety of experiences were explored to better understand differentiated instruction and flexible grouping, as well as to use formative assessment to organize these groups. The researcher provided the teacher/participants with explicit explanation on how the data would be collected, analyzed, and recorded. District level permission was obtained from the superintendent and administrators, whereas individual consent was obtained from all participants for the interviews and access to lesson plans. I collected detailed and rich descriptions (Merriam, 2016) about how teachers differentiate their instruction, form groups, and interpret data.

There are two research questions that define the breadth of this study:

1. How do teachers use or not use flexible grouping congruent with the research-based Marzano Framework of effective instruction?
2. How do teachers who use grouping utilize formative assessment to form flexible groups?

I interviewed teachers and used a lesson plan checklist that incorporates Marzano's research-based strategies. This instrument is also congruent with the evaluation tool used in the district. I used this information to further answer the overarching research questions. The variety of experiences and voices of the teacher/participants served to provide "rich data" as described by Merriam, (2016). The

perspectives of teachers are important in answering the two research questions, thereby enriching each teacher/participant's unique point of view.

The rationale for using both interviews and the lesson plan checklist is to satisfy the parameters of the study and to provide multiple perspectives relating to the use of research-based strategies, formative assessment, and grouping.

Interviews

According to Patton (2015), interviews are important in qualitative research because they help researchers understand what is on someone else's mind. In this study, semi-structured interviews were used to gain perspective of each teacher/participants viewpoint. This data was gathered through flexibly worded questions that allow the participant to add additional information, when required. This also allows the researcher to respond to the situation at hand (Merriam, 2016).

Participants were interviewed using a semi-structured protocol that was approved by the researchers committee and the IRB for further safeguards. The individual interviews were recorded using the voice recorder on my laptop computer. The semi-structured interview of teacher/participants comprised 12 predetermined questions, including follow-up probes, to elicit more information when necessary. The informal environment allowed me the opportunity to develop rapport with the participants so that I was able to ask follow-up or probing questions based on their responses to pre-constructed questions. According to McNamara (2009), the strength of the general interview guide approach is the ability of the researcher to ask clarifying questions, when necessary, to enhance the overall meaning of the participants' answers. The purpose is to

ensure that the same general areas of information are collected from each interviewee; this in turn provides more focus than a conversational approach, while still providing freedom and adaptability in getting information from the interviewee (McNamara, 2009). The researcher remains in control with this type of interview approach, but flexibility takes precedence based on perceived prompts from the participants (Turner, 2010).

Data Analysis

Data analysis is the process of converting raw interview data into evidence-based interpretations for published reports (Rubin & Rubin, 2005). I collected the interview data from each teacher/participant virtually by using a meeting platform. I made each participant aware that I would be using the voice recorder on my personal computer for complete accuracy. I began the analysis of the data gathered by transcribing each teacher/participant's interview. I personally transcribed each interview using my personal computer by listening to all questions and answers and typing them into a Word document. Subsequently, I checked the transcriptions for accuracy against the recordings. These interview transcripts were shared with the participants to allow for member checking. The participants received their transcripts by email and responded by email with revisions, corrections, and eventual agreements to the content. I revised all the transcripts and could obtain a final approval from all the participants. The transcripts were stored in a password-protected file on my personal computer. The hard copies are stored in a locked filing cabinet in my home office.

Member Checking

Member checking, also known as participant or respondent validation, is a technique for exploring the credibility of results. Data or results are returned to participants to check for accuracy and resonance with their experiences. Member checking is often mentioned as one validation technique (Birt, Campbell, Cavers, Scott & Walter, 2016). The teacher/participants were given the opportunity to change their responses if necessary. Finally, I examined the interviews to see if any trends emerged on the use of differentiation and flexible grouping in classrooms.

Upon transcribing the data, I read and reread the content of the transcripts looking for themes or common ideas that the interviews shared. I went line by line to commence the coding process. I made notes on each transcript of any themes or ideas that I saw. I also noted anything that was unusual about each teacher/participant's answers to the interview questions.

Data Coding

According to Rubin and Rubin (2005), coding is an optimal way to organize and present data. By using evidence-based interpretation, I was able to identify five emerging themes to address the two research questions. As shown in Table 1 below, the themes were *differentiated instruction, flexible grouping, formative assessment, research-based strategies, and professional development*. I coded further based on these five emerging themes and put coded words into subcategories. For example, under *differentiated instruction*, I created the subcategories of *meeting individual needs and individualized instruction.* Under the umbrella of flexible grouping, I placed *classroom grouping and*

assessment-based grouping. Another emerging theme from the interview questions is formative assessment with a subcategory of *desired outcomes* and lastly, professional development with subcategories of *sustainable implementation, research-based, and instructional strategies.* Refer to Table 1 for codes and number of occurrences.

Table 1

Codes and Occurrences

Codes		**Occurrences**
MIN=	Meeting individual needs	8
CG=	Classroom grouping	7
FG=	Flexible grouping	8
FA=	Formative assessment	8
IS=	Instructional strategies	4
DO=	Desired outcomes	8
PD=	Professional development	8
RB=	Research-based	8
SI=	Sustainable implementation	5
DI=	Differentiated instruction	8
II=	Individualized instruction	8
ABG=	Assessment based grouping	6
AOI=	Apprehension of Implementation	4

Table 2

Emerging Themes and Subcategories

Themes	**Subcategories of emerging themes**
Differentiated instruction	Meeting individual needs and individualized instruction
Flexible grouping	Classroom grouping, flexible grouping, and assessment-based grouping
Formative assessment	Desired outcomes
Professional development	Apprehension of implementation, sustainable

	implementation, research-based, and instructional strategies

Findings in Relation to Problem and Research Questions

This project was centered on the problem of the study, that is the lack of understanding if and how research-based instructional strategies of differentiated instruction, including flexible grouping based on formative assessment, are being utilized by teachers to address the academic needs of third and fourth grade students. The data were analyzed and presented in more detail in the subsequent sections. One of the primary outcomes was that teachers must better understand Marzano's model and that teachers need professional development on research-based instructional strategies. The results addressed the research questions, including use of differentiated instruction and flexible grouping, as well as formative assessment and use of research-based instructional strategies. The findings did not reveal that teacher/participants were unaware of how to use formative assessment tools to target students for flexible grouping, but it did reveal a difference in the comfort levels for planning and preparation based on results. It is also noted that teachers' implementation of research-based instructional strategies varied. In the summary of findings, it was observed that teachers had participated in some type of professional learning, either on their own or through the district, but none had specifically

participated in professional learning centered on research-based instructional strategies. All participants agreed that more professional development was necessary for the cohesive implementation of strategies, especially across grade levels.

Although the teachers stated that they enjoy the opportunity to go out of their classrooms to attend a professional development, most of them felt that it created a sense of anxiety having to take time away from their classrooms. Several teacher participants recognized the need for professional development that really works, specifically professional learning that translates to recognizable student outcomes. During the interviews, it was also shared that many times when professional development takes place, it does not provide anything new and therefore, feels like a waste of instructional time. The teacher/participants accentuated the need for sustainable strategies with built-in support from administrators, coaches, and mentors.

Patterns, Relationships, and Themes Aligned With Research Questions

To best address the aligned problem related to the study, it was important to compare the data collected with the experience of participants as well as with the educational backgrounds of the teachers/participants. The nature of the research questions targeted the depth in which local teachers used differentiated instruction with flexible grouping and formative assessment to form groups. Two of the teachers were from the private sector and were not trained formally as educators. This anomaly affected the level of understanding that these teacher/participants have concerning methods of assessment and using them to form their flexible groupings. The analysis of these interviews also

highlights a comparison to themes from the literature review and conceptual framework for the study.

Overall, teacher/participants felt that they understand the meaning of differentiated instruction and flexible grouping, but the "how to" part was questionable for several participants. Every participant conceded that they could use more explicit learning concerning using formative assessments to form grouping. The most notable finding was that all teacher/participants realized that their understanding of instructional strategies was uncertain, but when prompted with examples, all of them were able to discuss strategies that they used regularly. Most were unsure of whether the strategies that they frequently used would be considered research based. Teacher participant 3 and 6 stated, "I could use some training on that", meaning research-based instructional strategies.

Coding and Theme Development

Merriam (2016) recommends that qualitative analysis begins with a process of category construction, sorting categories and data, and naming the categories. With the data collected from the teacher interviews and lesson plan checklists, the process used for discovering themes included recognizing repeating messages, which were assigned codes (Creswell, 2012; Glesne, 2011; Merriam, 2016). Codes emerged as data were collected and the more common codes fell into thematic groupings and subcategories. Due to the narrow focus of the study, there was some overlap in theme categories. For example, even though codes revealed for differentiated instruction included three distinct subcategories, namely, flexible grouping, assessment-based grouping, and classroom

groupings, these could logically be combined under the larger theme. Refer to Tables 1 summary of codes and to understand how these codes were connected as themes.

Semistructured Interviews

The informal environment of the interviews allowed me the opportunity to develop rapport with the participants, because of which I could ask follow-up or probing questions based on their responses to pre-constructed questions (Turner, 2010). The interviews were conducted using a communication platform allowing participants to be interviewed in the comfort of their homes. This provided a relaxed atmosphere for both the interviewer and the interviewees. The interviewer set up a time based on each interviewee's schedule and sent a reminder email the evening before to verify that the time established was conducive. The interviewer explained the process at the beginning of the interview so that the participants knew exactly what would occur.

Data was also collected by reviewing each teacher/ participant's lesson plans. I used a lesson plan checklist to determine the use of differentiated instruction and flexible grouping congruent with the research-based Marzano model for effective instruction. The checklist included five applicable learning standards. Yin (2009) stressed the importance of reviewing data-rich documents as an important resource in case studies for supporting the interview data.

Lesson Plan Checklist

Table 3 demonstrates the data retrieved from the lesson plan checklist. I used the checklist for each teacher/participant's lesson plans to determine the degree to which each teacher incorporated Marzano's learning standards. There are 10 standards in all, but

only five were applicable to this study. These five standards are concerning lesson preparation, instruction, the use of a variety of assessments, as well as recognizing that classrooms do vary when it comes to different types of learners. Established criteria was also taken from the teacher evaluation tool ranging from *not using* to being *innovative* in one's approach. There were eight teacher/ participants' (TP), and each number illustrates the percentage of teacher/ participants along with their use of the research-based standard. No teacher was in the "not using" or "beginning" phase. Specifically, I calculated each category by dividing the number of teachers who exhibited each standard by the total number of participants. Therefore, if one out of eight teachers displayed understanding of the standard, that would calculate to .125, whereas if two out of eight teachers displayed understanding of the standard, that would equal .25. Similarly, three out of eight equals .375, and four out of eight equals .50 and so on. Therefore, I determined that every participant was actively using the research-based standard, although it varied between developing, applying, and innovating. None of the participants were "not using" or "beginning".

Table 3

Data From Lesson Plan Checklist

Marzano's standards	0 = Not using	1= Beginning	2 = Developing	3 = Applying	4 = Innovating
Standard 2: Learning differences	0	0	.25	.375	.375
Standard 3: Learning environment	0	0	.375	.375	.25

Standard 6: assessment	0	0	.25	.375	.375
Standard 7: Planning for instruction	0	0	.375	.50	.125
Standard 8: Instructional strategies	0	0	.375	.375	.25

All teachers exhibited knowledge of the standards and were in the development phase, the application stage, or the innovating stage for each of the five standards. The table displays that teachers were being most innovative when it comes to Standard 2: learning differences and Standard 6: assessment.

The data also showed that teachers struggled the most in instructional planning. According to teacher/participant 3, she does not feel that there is adequate time for instructional planning for the varying levels of students that are represented in their individual classrooms.

Findings Related to Research Question 1

Overall, TP 1-8 had a good understanding of what it means to differentiate instruction to meet individual students' needs. Each of the eight teachers were able to explicitly state that differentiated instruction is "the ability to meet all students' individual needs". Each teacher/participant defined differentiated instruction verbatim. Teachers recognized the learning differences among their students and are accustomed to using a variety of assessment tools to adjust teaching methods to better reach individual learners.

TP 1,4,5, and 7 stated that they were comfortable with using formative assessments to tailor instruction and to form flexible groups, while TP 2,3,6, and 8 admitted that they struggled with interpreting the overwhelming amount of data and had difficulty making decisions about overall grouping. Each participant used flexible grouping in some way in their classroom and were able to use key words to describe what flexible grouping meant, such as changing groupings frequently and groups that are fluid. TP 1, 4, and 5 were found to be the most innovative in their approach to flexible grouping. It is interesting to note that the teachers who felt most comfortable with differentiation and grouping were also the most experienced in terms of teaching. However, TP 2, 6, and 4 admitted that they are less comfortable with the preparation and planning for instruction to meet individual needs. All teacher/participants pointed out that they did not have enough time for planning and preparation and added that they spent a great deal of their personal time making lesson preparations. All teacher/participants stated that they often feel beleaguered with the amount of work required to feel successful in the classroom. They also reported that time to change groupings when new data is available is always an issue. According to the interview data and the personal observations from the teacher/participants, all participants would benefit from some further professional development concerning instructional strategies to help them feel more secure in interpreting data and planning for grouping.

Findings Related to Research Question 2

All eight teacher/participants used formative assessment for decision making concerning grouping. Teacher/2, 3, and 6 admitted that they struggled when trying to

interpret data to inform grouping. The other six felt comfortable with their ability to use the data from a variety of assessments. All eight participants discussed the need for more time to plan for instruction and for differentiating instruction. They also reported that time to change groupings when new data is available is always an issue. According to the interview data, participants would benefit from some further professional development concerning instructional strategies to help them feel more secure when planning for grouping.

All participants had to seek clarification concerning Marzano's Model for research-based strategies. Only TP 5 was aware of Marzano's educational research concerning using research-based strategies for best results. Each of these eight participants also recognized learning standards 2, 3, 6, 7, and 8 from the teacher evaluation tool, but indicated that they were unaware that they formed part of Marzano's model. Five of the eight participants sought clarification as to the meaning of instructional strategies when asked if they are using a variety of instructional strategies in their classrooms. Upon clarification, it was discovered that all of them were including Marzano's standards in their instruction along with other research-based instructional strategies, although the level of implementation was varied. The ability to implement seemed to naturally coincide with each teacher's years of classroom experience.

Table 4

Role, pseudonym, and years of experience of teacher participants

Role of Participant	Pseudonym Teacher/Participant (TP) #	Years of experience	
3rd grade classroom teacher	TP 1	5 years	
4th grade classroom teacher	TP 2	3 years	
3rd grade classroom teacher	TP 3	3 years	
4th grade classroom teacher	TP 4	6 years	
3rd grade classroom teacher	TP 5	9 years	
4th grade classroom teacher	TP 6	3 years	
3rd grade classroom teacher	TP 7	5 years	
4th grade classroom teacher	TP 8	4 years	

Table 4 illustrates the role, the teacher/participant label as Teacher/Participant (TP) and assigned number to each teacher with a pseudonym plus the number of years they have been teaching. This information is relevant because the data showed that teachers with less experience had more difficulty in the planning and preparation for instruction. They also struggled with interpreting formative assessment data to form their flexible groups. Two of the teachers indicated that their educational background was in secular fields, but they started teaching and loved it so much that they pursued their certification. However, both admitted there were times when it created a difficulty due to the many terms and jargon used in education. TP 6 specifically discussed that she often feels anxious about all the terms she is expected to know along with implementing initiatives and strategies as they are required. Meanwhile, TP 4 and 5 had the most understanding of all the terminology and they also were the most innovative in their

approaches to grouping and using formative assessments to guide their instruction. TP 1 and 7 also had an effective grasp on what differentiated instruction and flexible grouping means and how groups could be implemented based on their most current data.

Summary

In Section 2, I presented the research design, the methodology, procedures, and findings of this qualitative bounded case study. I discussed the specific results obtained from the lesson plan checklists developed from Marzano's Essential Tools and discussed the findings from the one-one-one interviews conducted with the teacher/participants providing rich data concerning grouping practices and use of formative assessment data.

Section 3 includes the implementation of the project which comprised of the full Professional Development Plan with curriculum and materials provided for three full days of training for district faculty and staff with agreement from district upon the completion of project and findings.

Section 3: The Project

Introduction

According to Marzano (2017), educators face continuously increasing requirements from federal and state mandates. The Every Student Succeeds Act (2015) has significantly changed the requirements and expectations for all public schools in the country. One of the many changes is that professional development must be targeted to improve student achievement. Therefore, professional development should involve educators deepening their knowledge of academic content or broadening their understanding of instructional techniques.

One way of meeting individual student's needs is through research-based instructional strategies. Marzano (2017), a leading educational researcher, provides provided teachers with nine high-yield instructional strategies proven to increase student learning outcomes. Marzano et al. (2001) explained each strategy as well as the research behind it and its practical classroom application.

The development of a 3-day professional training titled *Marzano's Research-Based Strategies for High-Yield Results* is intended to provide third and fourth grade district teachers with explicit instruction in Marzano's instructional strategies to be implemented in reading classrooms across three elementary schools in a rural Florida district. The project focused on training based on Marzano's nine high-yield strategies with an expected deliverable classroom implementation of each of the nine strategies.

Rationale for the Project

The principal rationale for a professional development training, based on my research findings, is to improve knowledge and skills to facilitate individual, school-wide, and district-wide improvements for the purpose of increasing student achievement.

A new paradigm for staff development recognizes the power of teacher experiences and encourages teams of teachers planning lessons together, critiquing student work and reviewing curriculum and materials as a group (Guskey, 2000). According to McTighe et al. (2004), students make meaning when they are asked to inquire, think at higher levels, and solve problems. By introducing Marzano's (2016) research-based strategies in a professional setting, teachers are being provided with essential skills to impact learning outcomes across grade levels.

Bates and Morgan (2018) opined that professional development should have a positive impact on both teacher practice and student learning outcomes. However, Bates and Morgan acknowledged that most training falls short of the intended goal. The analysis of data revealed the need for a professional development training that focused on teacher understanding of research-based instructional strategies, as well as the time it takes to fully implement best practices in the classroom. Creswell (2013) described qualitative research as one in which the researcher makes multiple meanings of individuals' experiences. The researcher collects open-ended data in a narrative setting with the intent of developing themes from the data (Creswell, 2013).

From the developed themes discovered in the data collection process, I was able to determine that although teachers understood differentiated instruction with flexible

grouping, they struggled with understanding research-based instructional strategies and with determining specific ways to incorporate them into their daily practice. The two research questions focused on are as follows: How do teachers use or not use flexible grouping congruent with the research-based Marzano framework of effective instruction? Secondly, how do teachers who use grouping utilize formative assessment to form flexible groups?

Although the teacher/participants are adept when it comes to grouping flexibly, there is a lack of congruence with incorporating Marzano's (2017) framework for effective instruction. Teachers were uncertain on how to define research-based strategies. They were also not sure if they had incorporated research-based instructional strategies into their teaching practices. Marzano's nine high-yield strategies has been successful in developing greater student outcomes. Teacher/participants suggested that although they are provided with professional learning opportunities, they are rarely meaningful or have a lasting impact on learning outcomes.

Teacher /participants stated that they are well versed in the use of a variety of formative assessments to form their flexible groups; however, they admitted to struggling with the analysis of a variety of data as well as difficulty with the implementation of grouping. All the participants expressed apprehension concerning the use of the many data points required for grouping students. Despite using a variety of formative assessments, they are still unable to achieve success in learning gains. This ambiguity and ambivalence amongst local teachers led to the belief that a meaningful professional development training would be appropriate. Therefore, a 3-day professional development

training could provide teachers with the needed "know how," thereby filling the gap between understanding and implementation (see Marzano, 2015).

The problem, as stated in Section 1, and the use of Marzano's (2017) research-based instructional strategies as the framework, is addressed throughout the content of the project. For example, each session includes daily learning outcomes based on Marzano's research-based strategies, incorporates hands-on activities to ensure understanding, and integrates the development of mini lessons taught by teachers as a demonstration of improved knowledge and skills. This is followed by peer evaluations and embedded coaching and mentoring. The project's success also depends on the interaction of PLCs.

Review of the Literature

The genre that I selected for the project study was a professional development training. According to Brown and Militello (2016), administrative leaders are often named as the most important influence on teachers and their practices. Professional development is considered the most meaningful tool that principals employ to impact teachers and learning outcomes. Development of a 3-day training best aligned with the initial problem of the study, which was related to the use of research-based instructional strategies and formative assessment data to structure flexible grouping for more dynamic differentiated instruction.

The literature review includes a volume of both current and seminal research concerning professional development. The decision to include seminal research served to provide a connection between professional development of the past and the expectation for a new and improved sort of training. The major difference in the seminal research as

opposed to current research is that there is a new demand for specific results by offering professional development. In the past, teachers participated in professional learning, but there was little or no requirement for a deliverable product that in some way proved that the professional learning had meaning for teacher and student outcomes. Marzano (2001) and Marzano, Pickering, & Pollock (2005) documented factors that positively influence student achievement. Considerations relating to professional development are among the factors identified by the researchers.

Hiebert, Gallimore, & Stigler (2002) confirmed the existence of the gap in today's reform-oriented society: "In spite of the continuing efforts of researchers, archived research knowledge has had little effect on the improvement of practice in the average classroom" (p. 3). Furthermore, Ray (2008) conducted a research study that deeply reflected teacher perception concerning professional development. Teachers and researchers have concurred with the need for a paradigm shift concerning the existing approach for professional learning. Ray suggested that one approach would be to provide explicit training in implementing research-based instructional strategies to shift teacher attitudes.

I conducted the literature search using multiple databases, limiting the search to peer-reviewed journals, and by using Boolean operators and phrases targeting *professional development AND teachers/educators AND methods*. I expanded the search to include *professional development AND research-based instructional strategies*, in turn adding *assessment, sustainable professional development, organizational change,* and *continuous improvement* as keywords. Additionally, I used the term *gap* between

research and practice. The literature review results assisted in the development of the 3-day professional learning experience incorporating Marzano's (2017) nine instructional strategies for high-yield results. These strategies are supported by literature and lead to growth in student outcomes when implemented with fidelity.

The movement to differentiate instruction in the general education classroom in response to the diversity of population has gained increasing momentum both in the United States and internationally, with Tomlinson's (1999, 2014) model of differentiated instruction, or differentiation, being the most widely cited and visible approach. However, teachers still report a feeling of helplessness and hopelessness in finding the answer to bring true success to their teaching. Although support for differentiation and use of research-based strategies is widespread, this approach to teaching and learning has not been implemented with fidelity in most K to 12 settings, where a one-size-fits-all instruction style remains common (Brighton, Hertberg, Moon 2005; Callahan, 2017; Tomlinson, 2016). One possible explanation is that teachers abandon the idea of differentiating instruction and implementing new strategies when the task becomes too time consuming and overwhelming (Sherman, 2009).

Gap Between Research and Practice

The research-to-practice gap is a long-standing issue and concern in education that has been extensively researched. Bondy and Brownell (2004) suggested that the research-to-practice gap still exists because there is a fundamental separation between research-based knowledge and practical-based knowledge. This may be because teachers fail to see the connection between the research and the relevance to their classroom

practice. Darling-Hammond, Hyler, Gardner, & Espinoza (2017) suggested that professional development is often not sustainable because teachers are not given the necessary time that it takes to thoroughly learn and implement new strategies in the classroom. Their research highlighted the importance of creating professional development opportunities that "frequently provide built-in time for teachers to think about, receive input on, and make change to their practice" (Darling-Hammond et al., 2017, p. 14). Overall, many teachers continue to report unmet development needs. There is a mismatch between the development activities that teachers themselves feel that they need, typically involving active and collaborative learning, and those that they have access to in their professional lives, which involve passive dissemination of information (McElearney, Murphy, & Radcliffe, 2019). Teachers long for the type of active professional development that has long-lasting results. According to Antoniou (2013) current professional development is perceived by teachers as ineffective and lacking relevance to teacher and student needs. Antoniou concluded with a similar message from a two-year longitudinal study of primary teachers linking effective professional development with supportive environments for teaching and learning (Antoniou, 2013).

Teacher-Centered Mentorship

One way to provide a bridge between the gap in research and the gap in practice is through teacher-centered mentorship. Providing teachers with a powerful mentorship may help ease the anxieties experienced through reflecting on their own pedagogy in the classroom (Saylor, McKenzie, & Sacco, 2018). However, Gardiner and Weisling (2018) found that even mentors feel that there is a lack of preparation for the complexity of the

diverseness of each individual classroom. Specifically, mentors struggled to manage relationships between administrators, teachers, and students (Gardiner & Weisling, 2018). Regardless of these impediments, teacher-centered mentoring is considered an effective tool. Kolman, Roegman, and Goodwin (2017) stated that the role of teachers as mentors is a necessity for innovation in schools. Mentorship is a powerful and appropriate strategy when used effectively. Kolman, Roegman, and Goodwin (2017) also suggested that this shift places a great deal of responsibility on the mentor and the administration to choose teacher practitioners who are considered highly effective in implementing research-based strategies.

Research Engaged Schools

Dack (2018) argues that another way to close the gap is for schools to become research engaged. He suggested that three responses are necessary for this to occur: 1) research engagement on the part of all teachers and leaders; 2) creating schools and school networks as professional learning communities; and 3) adopting a workable methodology (namely, research–design–development**)** for teachers and leaders to put research into practice and tailor innovations to specific school contexts (Dack, 2018).

Another effective method for research engaged schools is through action research. Specifically, action research and collaborative action research are two methods for research engagement among colleagues. Martell (2016) suggested that as teachers make progress toward becoming researchers concerning their own classrooms and data, they begin to feel a sense of empowerment in development of their own schema.

Collaborative research is also an effective method for teachers to become researchers, but it also gives them the opportunity to work in collaboration with another educator who shares an interest or is experiencing the same challenges in their classroom.

Professional Learning Communities

PLCs have become popular over the past ten years in education as an alternative for attending off-site professional development trainings. In the local districts, many schools have implemented PLCs as school funding was cut and there was less money in the budget for professional development training. The idea that teachers' collaboration can improve their practice is almost a truism in the school change literature. In general, authors on school reform do not often "argue in favor of isolated practices" (Riveros, 2012, p. 605). Today, PLCs are "one of the most prominent features of teacher organization in schools," and they have "become nearly ubiquitous in the K-12 environment" (Kruse & Johnson, 2017, p. 589). According to Spencer-Johnson (2018), PLCs endeavor to build collaboration, share experiences, and support each other in their classroom practices. Yet teachers report that while this may be the intention, often groups become gripe sessions and are not positive experiences at all, thus wasting valuable planning and preparation time. Teachers also report that they feel anxious because PLCs are directly tied to the teacher evaluation process (Spencer-Johnson, 2018).

According to Spencer-Johnson (2018), it is important for the teaching profession to have a more comprehensive understanding of how PLCs work in schools. According to Riveros (2012), the benefit of PLC initiatives is that they clearly articulate "what it means to be a professional, what professional learning is, and why communities are the best

scenarios for professional learning beyond romantic and trivial claims about group learning and community life" (p. 610). PLCs with well-defined parameters provide the foundation for the type of growth that occurs in the highest functioning of teacher collaboration with student improvement at the core (Spencer-Johnson, 2018).

Coaching and Mentoring

Coaching and mentoring is an important step in providing the needed supports for teachers during the professional learning process. Coaching and mentoring was often mentioned as an important professional design element in study findings. For example, Snyder, Algina, Hemmeter, McLaughlin, McLean, Sandall (2018) found that professional learning is much more impactful when paired with coaching and mentoring. Kretlow and Bartholemew's (2010) study over the course of twenty years discovered best practices for professional learning. They found that one of the key ingredients to meaningful and long-lasting results involves embedded coaching and mentoring after the conclusion of professional learning.

Feelings of Apprehension Concerning Implementation

According to Tomlinson (2017), schools should cultivate a sound professional development strategy to build teacher efficacy concerning differentiated instruction. Oftentimes, teachers hesitate to differentiate their instruction because they do not feel confident in their abilities to do so (Deason, 2014). In this regard, Stewart (2016) investigated teacher perceptions and discovered that teachers question their abilities to interpret data and develop lesson plans with confidence. Research has suggested that pre-service teachers may not be adequately prepared for the complexity of teaching reading

to students in the university setting. This leaves the teacher with feelings of apprehension concerning the implementation of research-based instructional strategies in the classroom (Hindman, Connor, Connor, & Morrison, 2020). Current teachers are unlikely to have been exposed to differentiated instruction and research-based instructional strategies during their K-12 education and need continuous professional development to provide the necessary role models to build new practices.

Tomlinson (2016) suggested that expecting teachers to differentiate instruction without adequate professional development is setting them up for eventual failure. In a very recent research study, teachers acknowledged the need for professional development more than ever (Rivero, 2020). Rivero (2020) concluded that teachers need relevant, content-focused, and actionable professional development that is both teacher and student-centered.

Richards and Skolits (2009) studied the ways in which sustained instructional change may transpire. They discovered that teachers adopted a new instructional strategy with greater fidelity when they were given on-site support following the professional development training. Teachers who received in classroom modeling and other supports successfully were found to adopt a new strategy more than those who did not receive any interventions.

Professional Development That Works

As teacher/practitioners, we are constantly searching for professional development that really works. In my own teaching experience, I would sit in trainings and feel that it was a waste of my time for the most part. I would rather be in my own

classroom instructing than sitting in another training that seemed irrelevant to my teaching experience. All eight teacher/participants stated that while they felt the need for more training concerning research-based instructional strategies, each one of them echoed the need for professional development that is sustainable over time. Able, Boyd, Bell-Hughes, Eaker-Rich, Galzier, & Mallous (2018) proposed that a critical issue for novice teachers is the ongoing need for support as along with sustainable professional development. Teachers shared their teaching dilemmas with colleagues in a PLC set up with a problem/solution model as a framework. Teachers discussed ongoing classroom difficulties ranging from struggles with curriculum and instruction to the need for professional development that was "doable." Ellis (2019) noted that professional development must go beyond the need for information. The study's findings reflected the need for more guidance in research- based learning strategies and differentiated instruction. In addition, participants noted the need for imbedded mentoring and coaching, as well as critical feedback concerning their own practices.

While there are several key components for sustainable professional development, one important factor is the time to reflect upon the new learning. Darling-Hammond et al. (2017) describe reflective practice as the time set aside to think about learning and to make connections with one's own practice. The focus is on an important instrument of change in the context of teacher's professional learning practices (Darling-Hammond et al., 2017).

Project Description

Based on the findings of the study and the review of literature concerning professional learning, the project best suited to address the findings from the research is a three-day professional development training aimed at instructing third and fourth grade teachers with acquiring and implementing research-based instructional strategies. Marzano's strategies for High-Yield results are designed to enhance student achievement and classroom learning outcomes. Information obtained from the study seems to suggest that teachers would benefit from ongoing support with incorporating strategies even after the training days are through. Cohorts will be established with teams and there will be a mentor or coach assigned to assure that the strategies are being used in the classroom with fidelity. Opportunities for peer observations and embedded feedback among teachers is essential as well. The overall design calls for the infusion of the research-based strategies to be incorporated over a nine-month period where teachers will first receive instruction concerning each of the nine instructional strategies in a three-day training. The training session will take place during pre-planning of the school year. This will allow teachers to freely attend the sessions without needing substitutes for their classrooms. Thereafter, three strategies will be implemented and practiced over the course of three months.

A new strategy will be introduced at the beginning of the month and practiced regularly throughout the month. The teaching and incorporation of the strategy must be included in the teacher's lesson plans for leadership. Coaches and peers will do observations on a rotation with written feedback left for each teacher so that they may be

aware of strengths and weaknesses in the implementation. School leaders will also do an observation during each of the three-month spans to observe the strategy being practiced in the classrooms. This is not a punitive observation, but rather a learning experience for teachers and leadership. All observations are purposed to stimulate self-reflection on professional learning and action planning for future professional learning. Mentoring and coaching will be embedded along with two required peer observations and one observation by an administrator or leader. The teacher participants will be grouped into grade level cohorts and small learning communities will be the vehicle for observations and peer mentoring. Each teacher will be responsible for creating a lesson plan that will contribute to the cohort to form a mini unit that may then be shared throughout the other cohorts. Cross grade-level meetings may occur throughout the process. (See Appendix A for project large-group session agenda, supporting tools and worksheets, additional resources list, self-reflection tool, and formative evaluation tool).

Resources

The resources needed include the two workshop leaders for the large group sessions, including the three-day professional learning with a partial day for teams to meet and plan in their cohort. Four previously selected Instructional Coaches will be available to assist with questions or any other needs potentially occurring throughout the training. Also, Robert Marzano will open the session with a recorded video to introduce his nine High-Yield Instructional Strategies. Each of the coaches will work with two grade level teams and each cohort will have approximately four-to-six participants. It is most ideal to keep the number small to increase the feasibility of peer observations. Each

coach will work with the two teams meeting with them monthly and conducting at least one classroom observation during the three-month span of introducing a new instructional strategy. The school will serve as the facility for the three-day training and each individual school will serve as the place for observations, cohort meetings, and support.

Administration support will be solicited to provide substitutes for teachers to conduct peer observations and for peers to observe in their classrooms during each of the three months. The substitute will rotate between classes to minimize the need for substitutes in classrooms. Administrative support will also be needed to form cohorts and small learning communities consisting of four-to-six grade level teachers. The teachers will be given access to Google Docs to share their lesson and unit plans amongst the other cohorts of teachers.

Existing Supports

Administration has already given their support for the professional learning plan and has agreed to the terms of the follow-up activities. They are willing to provide the resources necessary to ensure the success of the plan during the nine- month span.

Coaches have also given their support and remain committed to providing the teachers with the necessary support during this new learning process. The goal is for teachers to be successful in not only learning research-based instructional strategies, but also in incorporating these strategies into their classroom practice.

Each individual school has also pledged to provide the resources such as coaches, rooms for cohort meetings, and the connectivity needed to allow teachers to support each other online among the other cohorts.

Potential Barriers

There is a possibility that the administration would not allow the whole third or fourth grade levels to participate due to limited resources for substitutes. Curtailing the scope of participants would also limit the number of participants for the grade level cohorts, therefore interfering with teachers' ability to do peer observations and mentoring within their cohorts. Also, instructional coaches have other responsibilities and may have limited time to provide teachers with the observations and frequent feedback. If the training is made mandatory amongst third and fourth grade teachers, it could potentially interfere with the overall success of the plan. If full support and buy-in is not achieved, then the need for systematic organizational change may not occur, thus hindering the required improvement in student learning outcomes.

Another possible barrier is not having the funding for substitutes as and when they are needed. There may also be a lack of funding for the two guest presenters. In the absence of adequate finding, the professional development plan may not be as effective as it could be. I will have received authorization from leadership and will have met with coaches and mentors so that they understand their role in the process.

Potential Solutions to Barriers

The best possible solution for all teachers participating is to obtain buy-in from administration at the beginning so that there is no question concerning the expectation for

all third and fourth grade teachers to participate. Besides receiving authorization from leadership, I will have met with coaches and mentors so that they understand their role in the process. This meeting will help all parties to understand what the expectations are and allow for brainstorming and problem solving at the front rather than waiting for issues to occur and then trying to address it. Coaches must have a workable schedule, so that they can still attend to their other responsibilities. The cohorts are split among the four coaches and should understand that observation days are designated on the calendar in advance and cannot be changed regardless of the circumstance. Additionally, teacher observation days are scheduled ahead of time and may not be tampered with. This will reduce the possibility of teachers not being given the resources needed to fulfil their role as support for their peers.

A possible solution for funding would be to write a grant to receive special funding for the initiative. Schools may also apply for foundational scholarships that are available to sites for special projects or initiatives. Although this process could take time, if necessary, it can be added into the timeline to accommodate the need.

Proposal for Implementation of Timeline

The proposed plan will be presented to the district and local school site administrators by July 2021. I will contact the coaches/mentors after approval is received from district and individual sites. Coaches will meet by the end of July, after approval is received and the implementation plan will be laid out in detail so that the coaches fully understand the responsibility of the mentorship. At the beginning of August, during pre-planning, teachers and coaches will be involved in a three-day professional development

training. This training session will be the beginning of an ongoing strategy for improving student learning outcomes that, in turn, may lead to organizational change for the entire system.

Cohorts will be assigned by mid-September. Ideally, these will be self-created groups but must be approved by leadership. The administrators will be tasked with assigning coaches to two cohorts. After the full group training, one strategy will be taught a month. Teachers will observe each other and reflect on the successes and challenges of implementation. Over the course of three months, three instructional strategies will be put into practice, and coaches will observe at least once during the three-month period (September, October, or November), also an administrator will observe over the three-month period. The leaders may not observe every classroom but may pick and choose who to observe as their time allows.

By May of 2021, all research-based instructional strategies should have been taught and those that were already taught should have been continually practiced. Teachers and coaches will collect formative assessment data to indicate whether improvements in students are occurring. Data will be shared in cohorts and administrators regularly to monitor success and to also understand challenges within the groups. A culminating session will take place in late May to reflect, share, and discuss next steps for the following school year. The hope is that the plan will lead to a systems' change that will have lasting effects for the district.

Roles and Responsibilities

I will present the professional development plan to administrators from each of the three school sites. I will be available for clarification of any questions posed by leadership. The leaders will be responsible for selecting a planner to implement the proposal, selecting the coaches, and overseeing the assignment of substitutes to allow teachers to participate in observations as needed. The administrators will support coaches and teachers in their efforts by providing them with the necessary resources. Finally, they will be responsible for observing at least one class over the three-month implementation of the new strategy. Coaches will organize the teacher cohorts, made up of four-to-six grade-level teachers, and will be accountable for overseeing the meetings, and being available for questions and discussions during monthly cohort meetings. The coaches will conduct classroom observations and provide feedback to teachers. The coaches will upload lesson and unit plans onto Google Drive to provide access to all cohorts. Lastly, they will participate in cohort meetings providing feedback and discuss the reflection by coaches and teachers alike. Participants will partake in two peer observations, to give and receive feedback to colleagues, and to reflect on the process. Teachers will also consent to coach and administration observations with written feedback. These observations are not punitive in any way but are aimed at learning new strategies.

Table 5

Timeline for Planning, Implementing, and Evaluating Project

Task	Owner	Year	2021									
		Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Planning Phase												
Present plan to admin and receive approval and support for plan	Coordinator											
Select coaches	Planner and administrators											
Coaches meet two times prior to training session	Coaches and administrators											
Select member for PLC's (4-6) teachers	Coaches											
Assign coaches to 2 PLC's	Administrators											
Implementation Phase	Administrators											
	Coordinator, Coaches, Teachers											
3 Day Professional Development Training												
Coaches Meet with PLC's	Coaches											
Coaches observe teachers	Coaches											
Teachers participate in peer observations	Teachers											
Evaluation Phase												
Reflect on learning in PLC's	Teachers											
PLC's develop action plan	Coaches and Teachers											
Final Reflection and Evaluation	Coaches, teachers, and Administrators											
Coordinator Final Reflection and Evaluation	Coordinator and Administrators											

Table 6

Project Members Roles and Responsibilities

	Number of persons responsible	Responsibilities
Workshop Leaders	2	Workshop leaders will present the three-day professional development training to administrators, coaches, and teachers.
Coordinator	1	Develop the plan to present to the administrators. Be available to give guidance during the planning phase for administrators. Give advice concerning selection of coaches and to provide support for selection of Professional learning communities (PLC).
Administration-Principals and Assistant Principals	6	Administrators, both principals and assistant principals will support the complete professional learning plan for coaches and teachers. Select and support coaches and teachers in their efforts; support and encourage teachers in their participation and implementation of the professional learning plan. Schedule time for meetings, coach, and peer observations, attend and participate in the three-day training sessions.
Coaches	6	Coaches will be responsible for the contributing to the planning phase prior to the teaching learning. The coaches will help to organize professional learning communities and will be responsible for observations during the three-month instructional period. Coaches will attend PLC meetings and support teachers in their efforts throughout the project. Coaches will attend the three-day professional development training and assist workshop presenters and teachers during the training. Coaches may assist with lesson plan development. They will also be responsible for adding content to the Google Drive as needed.
Teachers	75	Work closely with administrators during the implementation; form cohorts with four-to-six other colleagues; participate in peer observations and in being observed by peers. Being present during debriefing sessions and applying constructive feedback to individual practice. Participate in three-day training and contribute lesson plan to cohort unit plan. Participate in evaluations to help fine tune the plan for the next year.

Project Evaluation Plan

Type of Evaluation

The type of evaluation that seems most appropriate for this professional development project is formative evaluation. The professional development plan involves embedded coaching, observations, and self-reflection. The formative evaluation would provide information concerning participants' knowledge and use of Marzano's research-based instructional strategies. It would also shed light on perceptions of how effective the professional learning project was overall. A questionnaire with a 1 to 10 scale will be used to determine whether teachers felt that the project went beyond a series of workshops, instead providing a more lasting change in their pedagogy. The hope is that with observations, embedded coaching and mentoring and active PLCs involving self-reflection, there may be a lasting change in the culture for future professional development trainings.

Justification for Type of Evaluation

The professional learning initiative is a dynamic and fluid learning situation. There are some important components such as active PLCs, observations of classrooms by coaches and peers, as well as ongoing reflection of practices. Formative evaluation allows for the establishment of knowledge at the front of the initiative and assesses the knowledge acquired after the training and implementation have taken place. Similarly, goal-based evaluation and outcomes-based evaluation would be unable to recognize the dynamic and transformative stages each teacher learner must experience. The ultimate

goal for the professional learning initiative is to improve student learning outcomes by improving teacher practices in research-based instructional strategies, however, outcomes may not be clearly delineated through teaching practices alone. The results of classroom assessments may not always be representative of student success. The true test would be whether the instructional strategies continued to be utilized in classrooms and if the collaboration continued past the initiative itself. These results are outside the scope of the project resulting from the study.

Overall Evaluation Goals

The formative and summative evaluations have two goals. First, the formative evaluation provides a baseline for what teachers understand about research-based instructional strategies. The goal of formative evaluation is to monitor learning and to provide ongoing feedback. Self-reflection is an important component for individuals and for the PLCs. This plan spans a nine-month period and teachers are taking part in a variety of activities to gauge the learning being acquired by them. The summative evaluation also plays an important role because it determines each individual participant's knowledge after the Professional training and participation in PLC's, observations, and self-reflection.

Key Stakeholders

Key stakeholders for this professional learning initiative are administrators, coaches, and teachers. The teachers would receive the most direct benefit in that they would learn and develop new instructional practices to be applied to their unique classroom setting. Coaches would benefit from the initiative in two ways: the

collaboration with other coaches during the process and the dynamic interactions with teachers through observation. This interaction could build trust between coaches and teachers and take the stigma away that coaches are somehow "spies" for the administration. By participating in the PLC groups, a rapport may be established between coaches and teachers, thus leading to a lasting professional relationship. The project has a positive outcome for administrators since the goal is to improve teacher practices by implementing instructional strategies that have lasting effects in learning outcomes. Overall, the initiative may result in building bonds that will strengthen school culture while also promising to increase student performance. Administrators have an opportunity to enhance teacher performance and student performance at the same time.

Project Implications

Implications for Social Change

First and foremost, the project aims to support teachers with incorporating research-based instructional strategies into their teaching practices to enhance student engagement and performance. The study may contribute to positive social change because the potential for professional learning could occur if administration deems the information from the study important enough to incorporate into the professional learning opportunities for district teachers and leaders. The project has the potential to be a change agent for the district and could bring about significant results in teachers overall learning outcomes as well as expand their repertoire of strategies. If teachers feel confident in their abilities to effectively reach students, it could change classroom culture from one of

uncertainty to one of confidence in their abilities to produce results. This change would affect overall school culture resulting in more confident teachers and students.

Importance of the Project

The project was the result of a research study concerning the need to differentiate instruction to meet the needs of the growing diverse populations in schools today. The study results reflected the need for professional learning specifically targeted for third and fourth grade teachers concerning instructional strategies that worked. The project was designed to provide teachers with research-based instructional strategies that would give teachers the confidence in their abilities to improve student learning outcomes. It is not implausible to think that the collaborative culture established during the professional development initiative might continue long after the project is through, thereby demonstrating lasting results.

Section 4: Presentation of the Data and Findings

Project Strengths and Limitations

The project design was developed from both the findings from my research and a thorough review of seminal as well as current literature concerning meaningful professional development. A strength of the project is that it directly addresses the needs of local teachers, beginning with third and fourth grades, as this was the target group of this research. However, the project extends past this specific group and can be broadened to address the professional learning needs of all staff. As indicated in the research, local teachers need to reinforce their knowledge of research-based instructional strategies. The project plan explicitly integrates evidence from the findings in the research and is also supported by the literature concerning consequential professional development. Kretlow et al. (2012) indicated that professional development can provide educators additional knowledge and skills to use research-based practices. However, many teachers have limited access to meaningful professional development opportunities on research-based instructional strategies to meet the diverse needs of students in the classroom. The input from teacher/participants aligned with the information gathered in the literature review, which further strengthened the project design.

In Section 1, the problem was identified as third and fourth grade teachers struggling to integrate research-based instructional strategies into their differentiated instructional model with flexible grouping. The project I developed contains the needed components to advance skills needed to improve the use of research-based instructional strategies in classrooms. Marzano's(2017) research-based instructional strategies formed

a foundation and provided a framework that resonates with the data collected from the research. Marzano's (2017) strategies from *The New Art and Science of Teaching* and 10 standards from Marzano's (2017) focused teacher evaluation model served as the cornerstone for the project. The literature review further broadened the scope to include literature concerning meaningful professional development but also incorporated literature concerning the need for organizational change. The literature denoted that the most successful type of professional development is that which scaffolds learning in increments for teachers (Antoniou, 2013; Campbell, 2017; Chen et al., 2015; Festas et al., 2015; Mangope & Mukhopadhyay, 2015; Snyder et al., 2018). Without identifying the elements of scaffolded learning and a corresponding organizational shift, the professional development plan would be limited to workshops alone and prevent the ongoing professional learning needed for true organizational change.

Another theme that reoccurred in the literature concerning professional learning was that of collaboration. The literature suggested that collaboration is a necessary entity for successful professional growth (Balta et al., 2017; Nolan & Molla, 2017; Stewart, 2014; Vangrieken et al., 2017). Therefore, the project incorporated PLCs as a key component for project success. Studies also revealed that professional development becomes more profound and brings the opportunity to be more meaningful when coaching and mentoring is embedded into the professional learning model. Coaches and mentors provide feedback and ongoing support for teachers during the learning process (Koster et al., 2017; Kretlow et al., 2010; Mitchell et al., 2017; Snyder et al., 2018).

I incorporated Marzano's nine high-yield strategies into the project and allowed for learning, practice, and feedback into the plan, permitting time for coaching and peer mentoring throughout the 9-month project. This allowed for the plan to go beyond workshops and become meaningful learning to close the gap between research and practice (see Bondy & Brownell, 2004). The project was designed to focus on learning that transforms teaching for individuals and incorporated an aspect that focuses on the collective group's shared learning through collaborative PLCs with coaching and peer mentoring.

The limitations were engrained in the assumption that all participants would have complete buy-in and that coaches and mentors would work affectively with others. Another limitation was rooted in the notion that teachers would receive and apply corrective feedback from both their peers and their coaches/mentors. For the project to succeed, participants must be engaged and understand the value of the project. While administrators may encourage teachers to actively participate and to approach the process with eagerness, it is impossible to assume that all teachers will be enthusiastic for the considerable commitment it takes for tangible change to take place. Although the project is supported by the administration, buy-in from teachers cannot be assumed or forced. Instead, participants must have intrinsic motivation.

Recommendations for Alternative Approaches

The problem identified for the project was the lack of understanding concerning how to differentiate instruction for third and fourth grade students who are struggling to meet the demands for student performance placed on teachers and students on high stakes

testing. The motivation for the project was to improve student performance through differentiated instruction, specifically with flexible grouping. The targeted group was third and fourth graders because they struggle to meet state standard benchmarks. Although my research data indicated that teachers would benefit from professional development regarding research-based instructional strategies, there may also be other considerations for addressing their needs in diversely populated classrooms. The literature review concerning professional development and its structural context (see Antoniou, 2013; Deschesnes et al., 2015; Hung & Yeh, 2013; Jones-Schenk, 2017; Spratt & Florian, 2015; Waitoller & Artiles, 2013) provides insight into an important aspect for the success of the professional development plan. That is, whether the school culture is receptive to general change.

Another important aspect to changing school culture may lie inside the problem that teachers do not feel aptly prepared for the challenges facing them in their classrooms today. Beyond the professional learning efforts of the teachers, perhaps the problem of not feeling prepared might have something to do with how the adoption of research-based instructional strategies fits in the overall context and culture of the school and the expectations of teachers. If teachers view instructional strategies as foreign, then they may be apprehensive when adopting this new method of teaching students. However, if the research-based instructional strategies become the expectation, and teachers are given the time to learn, practice, and model the new strategies, they may then feel less apprehensive and more willing to take on the challenge of incorporating something new. Teachers should be allowed the time to adapt to the changes demanded, so that the

research-based instructional strategies become part of normal teaching approaches instead of something new that they are expected to do.

In conducting the literature reviews and creating the conceptual framework, I was able to gain a more enlightened view of the problem and possible solutions. I initially approached the problem as a need based on standardized test scores, but then realized that the issue was bigger than that. It had much more to do with teacher preparedness and a feeling that although professional development is provided it is not meaningful professional learning that is sustainable in the classroom setting. The problem has a broader scope and should be considered as a need for a paradigm shift within the local and national setting. The need expands beyond a skill-based workshop or even another professional development day for teachers. Therefore, an alternative solution to the problem would require special consideration of organizational context, culture, and change rather than the narrow view of developing teaching strategies for diverse classrooms. Teaching does not happen in isolation; instead, it should be considered in the context of the organization. Therefore, it is necessary to seek a change within the system. Anderson (1993) stated that it is possible to better assess where one's district needs to go by analyzing where one's school is on the continuum for change. An alternative approach is more comprehensive than merely addressing the need for instructional strategies. We must consider structural changes for both teachers and students to produce a new perspective throughout the entire system.

Scholarship, Project Development and Evaluation, and Leadership and Change

Both the literature review and the conceptual framework provided guidance for the direction of the project. Without this as a basis, the project would have looked different. I changed the project itself as I became more immersed in the literature. The literature changed the direction of the project to include coaching and mentoring because the literature consistently pointed to these two elements as an important component for meaningful professional development that sticks with educators long after the training is over. The findings of the case study pointed me in the direction of professional development as the most natural choice of genre. The findings from the case study and the review of literature informed the project itself since they both pointed to teachers needing professional development, as opposed to just another workshop. In fact, the literature and case study indicated that the gap from research to practice must be bridged for the training to be meaningful and permanent. The findings from Section 2 indicated that teachers do not want to be pulled from their classrooms for workshops that leave them feeling as though they have seen it all before. They expressed a need for coaching and mentoring, practice, and collaboration in the form of PLCs where they feel comfortable to admit when they are struggling. Although this takes more time and resources, the literature expressed that these components are necessary to see a change within the system itself.

The literature review was the most surprising since it continuously referred to the gap between research and practice, meaningful professional development, mentoring and the need for systemic change (Bondy et al., 2004, Darling-Hammond et al., 2017, Hill et

al., 2013). The literature review also indicated that teachers learn best in stages with built-in scaffolding and collaboration, thus denoting the importance of PLCs as a part of the learning design (Riveros, 2012, Spencer-Johnson, 2018). Other findings denoted that teachers may feel apprehensive when putting new learning in place (Tomlinson, 2017,Deason, 2014, Stewart, 2016, Hindman et al., 2020, Rivero, 2020). Thus, the literature suggested that teacher-centered mentorship is one way to reduce these feelings of anxiety. One researcher suggested providing teachers with a mentor as a team member. This person can share in peer observations, making suggestions, and giving guidance to teachers who are implementing a new program (Saylor et al., 2018). Kolman et al. (2017) determined that even the savviest teacher can benefit from teacher-centered mentoring and that this tool is necessary for innovative learning. Additionally, research directed me to observe the importance of schools being engaged in research. According to Dack (2018), research-engaged schools produce teachers and leaders who are more in sync with classroom data and are more aware of what is working and what it not in individual classrooms, on teams, and through grade levels. Dimmock also advocated for creating networks of support throughout the school through PLCs, coaching and mentoring, and observation and direct feedback. Finally, Martell (2016) concluded that schools must have a workable methodology or else the program will fail. Teachers must believe that the professional learning can translate to classroom culture.

Other factors were revealed in the literature and the case study. For example, to create a professional learning program that is sustainable, considerable supports must be embedded. In this regard, coaching and mentoring is thought to be one way to ensure the

suitability of a professional learning program (Able et al., 2018). Able et al. (2018) believed that ongoing support is crucial to the success of a program. Ellis (2019) also concluded that professional learning programs must go beyond the need for information.

The case study data and literature review coincide in the belief that teachers do not need another workshop that is not meaningful and does not bring in the desired results. Darling-Hammond et al. (2017) emphasized that professional learning without reflective practice is ineffective. This caused the realization that time to practice new learning, reflect on the new learning, and receive feedback on the implementation must be a critical part of the professional development plan. Based on the literature review on professional development and the findings of my research, I determined the need to expand the professional development plan to incorporate these elements.

From start to finish, the professional development plan lasts most of the school year with only the last month of school left for end of year activities. While this program requires a huge commitment, the hope is that it would bring about a systemic change. The endeavor is to begin with three elementary schools and to expand to the entire district. Although, there is no way to be certain that an organizational shift will occur, shared professional learning among colleagues of a school organization with shared collaboration and support in the process may have a larger impact than the restricted view of the learning itself (see Adoniou, 2013; Deschesnes et al., 2015). Building in the elements discussed in the professional learning literature review may have effects of an eventual organizational shift; however, to determine that is beyond the capacity of the researcher.

The former parts of the research study, the literature review on differentiated instruction, and the use of the Marzano's instructional strategies as a basis for the conceptual framework in Section 1, ultimately aligned with the study findings and the final design of the project. Marzano's nine strategies for High-Yield results aligned with the project and provided the content for the professional learning for the project. Marzano's (2017) strategies have been proven to provide significant results in classrooms that put these research-based strategies into practice. These strategies allow teachers to see actual results in learning outcomes. Marzano's research-based strategies have been the topic for many professional development trainings. However, it is not just another workshop, and is the catalyst for an increase in classroom data collected. The conceptual framework ties into the professional learning project because Marzano's research-based strategies provide the source of the training.

Personal Learning

In my coursework during my master's studies, I had done literature reviews, but that had been years ago. When I began my doctoral learning, it was almost as if I was beginning new. I was required to do several literature reviews in my course work, but I had never reviewed the literature so exhaustively for a single topic. I was required to carry out two extensive literature reviews drawing from both seminal and current research of a topic. While doing the literature reviews, I ascertained that the literature guides the process from start to finish. Beginning with the first review on differentiated instruction, I had a solid foundation for the local project. The review on differentiated instruction led to the discovery of teacher's feelings of anxiety and being ill prepared to

differentiate instruction in their individual classrooms. This realization steered me to the topic of the need for meaningful professional learning. The research conducted in the local district also highlighted the need for professional development that closes the gap in research and practice. Teachers consistently echoed that although they had opportunities to participate in professional learning, they never felt like it brought about true change in their teaching techniques. Each teacher voiced the need for something that really worked in their classroom. This insight led to the development of the professional learning project incorporating strategies that are proven to work and bring results to their classrooms.

While developing the project itself, I was not fully aware of the direction that the literature would take since I began developing the project before conducting a full review of the literature. However, once I realized the direction that the literature was taking, I understood that the project had to entail more than just a three-day presentation with breakout sessions. Instead, I had to return to the project, adjust the project to include training, coaching, and mentoring, with consequential feedback. This required more time for planning, implementation, and completion than I had anticipated. It evolved from a three-day training to a nine-month program. Despite the drastic change in implementation, I was certain that the review of literature provided a firm foundation for the development of the project.

First and foremost, I have learned that as an educator in any role, research should be at the forefront of everything that I do. Without that solid foundation, I would flounder to plan and implement, but rarely see any yield. At the heart of my role as a practitioner is

professional development, coaching and mentoring novice teachers, as well as evaluation and feedback. I discovered that I cannot be effective in my personal practice without looking to the literature for guidance. I cannot bring about lasting change unless I become a catalyst for that change by doing something different than has always been done before. Moving forward, I want to be more immersed in literature to guide my actions rather than just planning and trying to implement a program that does not bring about lasting results.

Reflection on Importance of the Work

This work was targeted to one small district including three elementary schools, concerning differentiated instruction with flexible grouping. When I began this study, I had no idea that the literature would take so many twists and turns. By following the literature, I have seen how important the research and development of the aligned project was. I feel confident that the project that I developed is in line with local findings and the literature. This process has made me more self-assured that I followed the data on the local level, and that the project is grounded in research-based best practices for professional development, research in differentiated instruction, and a conceptual framework provided by one of the leading educational researchers of our day. For this reason, I now have a greater appreciation for the research process as a basis and framework for learning. In addition, I have a greater appreciation for listening to what professional learners are saying. They are quite articulate in expressing what their learning needs are, if only we take the time to listen. Educators are opinionated when it comes to expressing what their learning needs are. If one puts what professional learners

are saying into a larger context, it is possible to see a path that facilitates a more advantageous professional development experience.

Implications, Applications, and Directions for Future Research

Implications for Social Change

As the elementary teachers become stronger in their research-based practices, the implications for a change in classroom, school, and even district culture could occur. Social change is conceivable if elementary teachers embrace the project, reflect on their own pedagogy, and make the research-based strategies a part of common language throughout the school. The implementation of research-based instructional strategies may influence student outcomes that could catapult district growth to new levels.

Implications for Methodology

If I were to repeat this study, I would still use the qualitative approach. I believe that this approach would yield the better results since teacher interviews and surveys were at the heart of the study. However, I would opt for more face-to-face encounters such as a focus group, classroom observations or small group interviews. I feel that this would be a more personal approach and establish a greater rapport with participants. Upon reflection, and considering my research, I think this would have provided richer data. The results would likely be the same since the project was greatly informed by seminal and current literature. However, the components of the plan would be more appropriate for the overall development of the project. This could prove to be a more effective approach for the elaboration of the project overtime.

Implications for Future Research

The most natural direction for the research to take would be the expansion to other grade levels and schools. This study focused solely on elementary teachers of third and fourth grades. It is imperative for administrators and teachers to buy-in. If the other schools in the district see the value of the project on the elementary levels, it would make them more enthusiastic concerning adoption. The attitudes of administrators are key for the acceptance of the project since school culture is largely determined by leadership. I can also see the possibility for further research to address organizational change that will lead to lasting results, especially addressing the research to practice gap applied to professional development. More consideration may be given to what approaches are most effective for bringing a paradigm shift for the entire system.

Conclusion

In most school settings, differentiated instruction is expected to occur. Classroom populations are more diverse than ever, and teachers are required to meet those needs on an individual basis. Despite the rising need and continuous challenge to do so, teachers are often at a loss when trying to juggle the many responsibilities placed on them. They feel ill-equipped to help all students to reach their fullest potential. Professional development demands are changing, and teachers are expected to apply the learning into their classroom curricula immediately. An appeal for professional development that really works is heard across local districts everywhere. Despite this, many systems continue to provide the same kinds of workshops that have been offered for years. As a result, no lasting effect occurs.

Teachers feel that to bring lasting change, professional development must offer to fill the gap in research and practice through coaching and mentoring, peer observations, and professional learning communities that strive to enhance the overall learning climate for educators. The leadership must recognize the learning stages that should occur for teachers to adopt new instructional strategies as a long-term solution.

Ultimately, the school and the organizational context must shift to support the most effective professional development for research-based instructional strategies by providing support and encouragement for teachers to assist them in welcoming a differentiated approach.

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Appendix A: Project Study

Purpose: The purpose of professional development is to improve knowledge and skills to facilitate individual, school-wide, and district-wide improvements for the purpose of increasing student achievement.

According to Marzano, (2016) educators face continuously increasing requirements from federal and state mandates. Every Student Succeeds Act (2015) significantly changed the requirements and expectations for all public schools in the country. One of the many changes is that all professional development must be targeted to improve student achievement. Therefore, professional development usually involves educators deepening their knowledge of academic content or broadening their understanding of instructional techniques.

One way to meet individual student's needs is through research-based instructional strategies. Marzano (2016), a leading educational researcher, provides teachers with nine High-Yield instructional strategies proven to increase student learning outcomes. These strategies are explained in Marzano, Pickering and Pollocks book titled *Classroom Instruction That Works* explains each strategy as well as the research behind it and its practical classroom application.

Goals: Setting training and professional development goals are important to retain high-performing staff and keep them engaged. Setting SMART goals that are:

- Specific,
- Measurable,
- Achievable,

- Relevant and
- Time bound

This will assist participants in clarifying their ideas, focusing their efforts, keeping them motivated, and using and managing their time well to achieve their professional aspirations.

A new paradigm for staff development recognizes the power of teacher experiences and encourages teams of teachers planning lessons together, critiquing student work and reviewing curriculum and materials as a group (Guskey, 2000). According to McTighe, Seif, and Wiggins (2004), students make meaning when they are asked to inquire, think at high levels, and solve problems.

Learning Goals:

- Day 1- Participants will broaden their understanding of research-based strategies by participating in activities as instructed by the professional trainers.
- Day 2- Participants will continue to broaden their understanding of research-based strategies by brainstorming ideas with their team for the topic of a unit plan in which each teacher will create a lesson plan incorporating at least one of the high-yield strategies.
- Day 3- Participants will work with their teams to create lessons to contribute to a unit plan. Each teacher will contribute a lesson plan in which they will use one of the 9 strategies. The unit will have at least 4 lessons with a different high-yield strategy.

Learning Outcomes: A major goal of professional development is to improve teacher performance in the classroom. Learning outcomes from a professional development training are complex and quite often difficult to gauge. Usually, teachers complete an

evaluation at the end of the training that is meant to provide valuable feedback to the presenters on how to improve content and practice. However, quite often teachers fill them out hurriedly and do not leave any helpful reactions.

Target Audience and Justification: The target audience is third and fourth grade teachers. Justification for the selection of this group is based upon the need to bridge the gap third and fourth grade achievement. According to school assessment data, third grade students perform at or above grade level on state assessments however, in fourth grade students show a significant drop in that performance. These students transition from one school to the next. Therefore, one must question the difference in achievement outcomes of students. One possible explanation is the difference in how teachers teach, whether they use or do not use research-based instructional strategies in their delivery. Marzano (2001) and his colleagues identify nine high-yield instructional strategies through a meta-analytic study of over 100 independent studies. Marzano and his colleagues found that these nine strategies have the greatest positive effect on student achievement for all students, in all subject areas, at all grade levels, especially when strategically matched to the specific type of knowledge being sought. Therefore, presenting targeted elementary teachers with a three-day professional development program would improve classroom learning outcomes.

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Title: Marzano's Research-based Strategies for High-Yield Results

Professional Development Plan for Elementary Teachers (third and fourth grades)

Day 1: Begin promptly at 9:00 a.m.

Teachers are given table assignments so that each table will have 2 representatives from each grade level.

Materials provided on the tables for each activity: Paper, pens, pencils, post-its, scissors, markers, colored pencils.

Introduce presenters: Professionally trained presenters from Marzano's Research Center- each presenter will introduce themselves providing their background (10 minutes).
A power point presentation will be used to display the daily schedule, learning goal, strategies, and activities for the day.

❖ Learning Goal for Day 1: Participants will broaden their understanding of research-based strategies. Teachers will demonstrate understanding by participating in creating a mini lesson contributing to their team's unit plan.

- Table Introductions: Teachers participate in "getting to know you" activity. Make a T-Shirt with 3 things that represent you as a teacher. Share T-shirt with table partners. Have participants hang their T-shirts on "clothesline" in the classroom (20 minutes).

- Materials needed: paper in the shape of a T-Shirt, markers, pencils, pens, colored pencils).

❖ Opening- Robert Marzano (via video conference) gives the introduction providing the science behind the strategies (50 minutes).

- BREAK- restroom and snack break (10 minutes).

❖ High-Yield Instructional Strategy 1: Identifying similarities and differences (Yields a 45- percentile gain).

- The presenters will use a Power point presentation to introduce each strategy. The power point slides will be provided in teacher resource binder for each strategy (pg. 5).
- What the research says: Students should compare, classify, and create metaphors, analogies and non-linguistic or graphic representations.
- What It Looks Like in the Classroom: Thinking Maps, T-charts, Venn diagrams, classifying, analogies, cause, and effect links, compare and contrast organizers QAR (Question/Answer/Relationship), sketch to stretch, affinity diagrams, Frayer model (see below).
- Presenters will teach the strategy and then discuss the research behind the strategy. They will also give examples of what it can look like in the classroom. (30 minutes)

- Watch a YouTube video for each strategy after the strategy is presented. https://youtu.be/9lQFbu8h8k4 (5 minutes per video clip)

❖ LUNCH BREAK (1 hour) lunch provided by the SAC Committee and cafeteria staff.

- Menu: Spaghetti and meat sauce, Salad, Garlic Bread, Dessert- cake or pie, Drink- Iced Tea, Water, Soft drinks.

❖ Quick Review of Strategy 1- volunteer from participants will quickly summarize what it means to Identify similarities and differences (10 minutes).

- Activity 1- Each table will be assigned one of the example strategies to "teach" to the others. Each group is responsible for deciding how they will present the strategy to the other participants (50 minutes- 25 minutes for preparation and 25 minutes for presentations).

- Materials- chart paper, markers, crayons, glue, sequins, yarn, pom poms, stickers, and other embellishments.

❖ High-Yield Instructional Strategy 2: Summarizing and note taking (Yields a 34-percentile gain).

- Handout will be provided in teacher binder for each strategy. (pg. 7).
- What the research says: Students should learn to eliminate unnecessary information, substitute some information, keep important information, write / rewrite, and analyze information. Students should be encouraged to put some information into own words.
- What It Looks Like in the Classroom: Teacher models summarization techniques, identify key concepts, bullets, outlines, clusters, narrative organizers, journal summaries, break down assignments, create simple reports, quick writes, graphic organizers, column notes, affinity diagrams, etc.

- Presenters will teach the strategy and then discuss the research behind the strategy. They will also give examples of what it can look like in the classroom (30 minutes).
- Watch a YouTube video for each strategy after the strategy is presented. https://youtu.be/9lQFbu8h8k4 (5 minutes per video clip).
- Activity 2- Carousel: Each group will write something that they learned about summarizing and note-taking. Music plays and each table chooses a marker color and goes around the room and adds a new thought or idea to each groups chart until each table has been to every chart (40 minutes).
- Materials- chart paper and different color markers
    - ❖ Each teacher will produce a mini lesson incorporating one of the strategies learned during Day 1. Teachers will be given the last hour of today's session to

begin brainstorming ideas with their teams for a unit topic and planning ideas for mini lessons to go in the unit plan. Each of the four teachers on the team will plan a mini lesson to contribute to the whole unit plan incorporating four of the nine High-Yield strategies for their team.

Wrap- Up: Teachers will place post-it notes of their AH-HA in the "parking lot". Presenters will begin by reading some of the post-its tomorrow morning (10 minutes).

Housekeeping Items:

- Make sure all participants have signed in so that they may receive credit for the PD.
- Participants must attend all three days and do the follow-up activity to receive in-service credit (5 minutes).
- Return tomorrow at 8:30 a.m. for coffee and donuts. PD will begin promptly at 9:00 a.m.

Finish promptly at 3:00 p.m.

END OF DAY 1

Title: Marzano's Research-based Strategies for High-Yield Results

Professional Development Plan for Elementary Teachers (third and fourth grades)

Day 2: Teachers arrive at 8:30 for coffee and donuts. Begin promptly at 9:00 a.m. Presenters give a quick overview of Day 1 and share Power point for Day 2 schedule so that teachers are aware of what is taking place before moving on to the new material (5 minutes).

A Power point presentation will be used to display the daily schedule, learning goal, strategies, and activities for the day.

Materials provided on the tables for each activity: Paper, pens, pencils, post-its, scissors, markers, colored pencils.

❖ Learning Goal for Day 2: Participants will continue to broaden their understanding of research-based strategies. Teachers will demonstrate understanding by participating in creating a mini lesson contributing to their team's unit plan.

- Begin by reading A-HA's from the day before as a refresher (10 minutes).

❖ High-Yield Instructional Strategy 3: Reinforcing effort and providing recognition (Yields a 29- percentile gain)

- Handout will be provided in teacher binder for each strategy. (pg. 9).

- What the research says: Teachers should reward based on standards of performance; use symbolic recognition rather than just tangible rewards.
- What it Looks Like in the Classroom: Hold high expectations, display finished products, praise students' effort, encourage students to share ideas and express their thoughts, honor individual learning styles, conference individually with students, authentic portfolios, stress-free environment, high-fives, Spelling Bee, Constitution Day, School Newspaper, etc.

❖ Presenters will teach the strategy and then discuss the research behind the strategy. They will also give examples of what it can look like in the classroom (30 minutes).

- Watch a YouTube video for each strategy after the strategy is presented. https://youtu.be/9lQFbu8h8k4 (5 minutes per video clip).

- Activity 3: Think-Pair-Share- Teachers brainstorm with their colleagues and decide on 3 strategies that they could easily use in their own classrooms this year. Write them down on post-its' to share with their shoulder buddy (10 minutes).

- Materials- post-it notes, pens.

❖ BREAK- restroom and snack break (10 minutes).

❖ High-Yield Strategy 4: Homework and practice (Yields a 28-percentile gain).

- Handout will be provided in teacher binder for each strategy. (pg. 12).
- What the research says: Teachers should vary the amount of homework based on student grade level (less at the elementary level, more at the secondary level), keep parent involvement in homework to a minimum, state purpose, and, if assigned, should be debriefed.
- What it looks like in the classroom: Retell, recite, and review learning for the day at home, reflective journals, parents are informed of the goals and objectives, grade level teams plan together for homework distribution, teacher email, newsletters.

❖ Presenters will teach the strategy and then discuss the research behind the strategy. They will also give examples of what it can look like in the classroom (30 minutes).

- Watch a YouTube video for each strategy after the strategy is presented. https://youtu.be/9lQFbu8h8k4 (5 minutes per video clip).

❖ BRAIN BREAK- Yoga Fun!! https://youtu.be/9wOquKBBXV8 (10 minutes). This can, of course, be used in your classroom with your students for a bit of fun and a break from learning when students get antsy.

❖ High-Yield Strategy 5: Nonlinguistic representations (Yields a 27-percentile gain)

- Handout will be provided in teacher binder for each strategy. (pg. 16)
- What the research says: Students should create graphic representations, models, mental pictures, drawings, pictographs, and participate in kinesthetic (hands-on) activities to assimilate knowledge.
- What it looks like in the classroom: Visual tools and manipulatives, problem-solution organizers, spider webs, diagrams, concept maps, drawings, charts, thinking maps, graphic organizers, sketch to stretch, storyboards, foldables, act out content, make physical models, etc.

❖ Presenters will teach the strategy and then discuss the research behind the strategy. They will also give examples of what it can look like in the classroom (30 minutes).

- Watch a YouTube video for each strategy after the strategy is presented. https://youtu.be/9lQFbu8h8k4 (5 minutes per video clip).

- Activity 5: Create a 3-column foldable with the three High-Yield strategies learned today. In column 1 list the strategy, column 2 add what the research says, and column 3 types of activities that you can do to reinforce the strategy in your classroom. Each table goes to the next to share until all tables have shared with a different group of participants (30 minutes).

- Materials- Plain white paper to fold into 3 columns, assortment of markers.

❖ LUNCH BREAK (1 hour) lunch provided by the SAC Committee and cafeteria. Menu: Subway sandwiches, chips, pickle, and cookies for dessert. Drink- Iced Tea, Water, Soft drinks.

❖ High-Yield Strategy 6: Cooperative learning (Yields a 23-percentile gain).

- Handout will be provided in teacher binder for each strategy. (pg. 16)
- What the research says: Teachers should limit use of ability groups, keep groups small, apply strategy consistently and systematically but not overuse. Assign roles and responsibilities in groups.
- What it looks like in the classroom: Integrate content and language through group engagement, reader's theatre, pass the pencil, circle of friends, cube it, radio reading, shared reading, and writing, plays, science projects, debates, jigsaw, group reports, choral reading, affinity diagrams, Students tackle TAKS word problems in groups and explain their answers, etc.

❖ Presenters will teach the strategy and then discuss the research behind the strategy. They will also give examples of what it can look like in the classroom (30 minutes).

- Watch a YouTube video for each strategy after the strategy is presented. https://youtu.be/9lQFbu8h8k4 (5 minutes per video clip).

- Activity 6: Jigsaw- divide participants into groups and have them read a section of a larger article that they will "teach" to the whole group. Each group has a leader and other assigned roles (40 minutes).
- Materials- Tags for role assignments, section of assigned article, hi-liters, post-it notes, pencils.

❖ Each teacher will produce a mini lesson incorporating one of the strategies learned during Day 2. Teachers will be given the last hour of today's session to begin brainstorming ideas with their teams for a unit topic and planning ideas for mini lessons to go in the unit plan. Each of the four teachers on the team will plan a mini lesson to contribute to the whole unit plan incorporating four of the nine High-Yield strategies for their team (60 minutes).

❖ Wrap- Up: Teachers will create a tweet using a # to share their biggest take away today in the "parking lot". Presenters will begin by reading some of the "tweets" tomorrow morning (10 minutes).

Housekeeping Items:

- Make sure all participants have signed in so that they may receive credit for the PD.
- Participants must attend all three days and do the follow-up activity to receive in-service credit (5 minutes).
- Return tomorrow at 8:30 a.m. for coffee and donuts. PD will begin promptly at 9:00 a.m.

Finish promptly at 3:00 p.m.

END OF DAY 2

Title: Marzano's Research-based Strategies for High-Yield Results

Professional Development Plan for Elementary Teachers (third and fourth grades)

Day 3: Teachers arrive at 8:30 for coffee and muffins. Begin promptly at 9:00 a.m. Presenters give a quick overview of Day 1 and share Power point for Day 3 schedule so that teachers are aware of what is taking place before moving on to the new material (5 minutes).

A Power point presentation will be used to display the daily schedule, learning goal, strategies, and activities for the day.

Materials provided on the tables for each activity: Paper, pens, pencils, post-its, scissors, markers, colored pencils.

❖ Learning Goal for Day 3: Participants will continue to broaden their understanding of research-based strategies. Teachers will demonstrate understanding by participating in creating a mini lesson contributing to their team's unit plan.

- Begin by reading tweets from the day before as a refresher (10 minutes).

❖ High-Yield Instructional Strategy 7: Setting objectives and providing feedback (Yields a 23- percentile gain.

- Handout will be provided in teacher binder for each strategy (pg. 18).

- What the research says: Teachers should create specific but flexible goals, allowing some student choice. Teacher feedback should be corrective, timely, and specific to a criterion.
- What it Looks Like in the Classroom: Articulating and displaying learning goals, KWL, contract learning goals, etc. Teacher can display objectives on the in-focus projector and follow-up on the mastery of the objective at the end of the lesson.

❖ Presenters will teach the strategy and then discuss the research behind the strategy. They will also give examples of what it can look like in the classroom (30 minutes).

- Watch a YouTube video for each strategy after the strategy is presented. https://youtu.be/9lQFbu8h8k4 (5 minutes per video clip).

- Activity 7: Creating learning goals- participants will create a learning goal for their mini-lesson using SMART as a guide. Share created learning goals and check against criteria (50 minutes).

Setting SMART goals that are:

- Specific, Measurable, Achievable, Relevant and Timebound
- Materials- A template for creating learning goals, chart paper, markers.

❖ BREAK- restroom and snack break (10 minutes).

❖ High-Yield Strategy 8: Generating and testing hypothesis (Yields a 23-percentile gain).

- Handout will be provided in teacher binder for each strategy. (pg. 16)
- What the research says: Students should generate, explain, test, and defend hypotheses using both inductive and deductive strategies through problem solving, history investigation, invention, experimental inquiry, and decision making.
- What it looks like in the classroom: Thinking processes, constructivist practices, investigate, explore, social construction of knowledge, use of inductive and deductive reasoning, questioning the author of a book, finding other ways to solve same math problem, etc.

❖ Presenters will teach the strategy and then discuss the research behind the strategy. They will also give examples of what it can look like in the classroom (30 minutes).

- Watch a YouTube video for each strategy after the strategy is presented. https://youtu.be/9lQFbu8h8k4 (5 minutes per video clip).

- Activity 8: Complete the picture- each teacher gets a sample of the start of a picture. The picture will say, complete the picture…. It is not a snowflake. Teachers will draw what ELSE it could be. Participants share in their groups what they drew. This is a

demonstration of an activity that could be done with their own students to build critical thinking (35 minutes).

- Materials- paper, pencils, markers, colored pencils.

❖ LUNCH BREAK- Teachers will have lunch on their own (1 hour 15 minutes).

- High-Yield Strategy 9: Questions, cues, and advance organizers (Yields a 22-percentile gain).
- Handout will be provided in teacher binder for each strategy. (pg. 20)
- What the research says: Teachers should use cues and questions that focus on what is important (rather than unusual), use ample wait time before accepting responses, eliciting inference and analysis. Advance organizers should focus on what is important and are more useful with information that is not well organized.
- What it looks like in the classroom: Graphic organizers, provide guiding questions before each lesson, think alouds, inferencing, predicting, drawing conclusions, skim chapters to identify key vocabulary, concepts, and skills, foldables, annotating the text, etc.

❖ Presenters will teach the strategy and then discuss the research behind the strategy. They will also give examples of what it can look like in the classroom (30 minutes).

- Watch a YouTube video for each strategy after the strategy is presented. https://youtu.be/9lQFbu8h8k4 (5 minutes per video clip).

❖ Activity 9: Each teacher will produce a mini lesson incorporating one of the strategies learned during the training. Teachers will be given the last part of today's session to work on the mini lesson with their teams. Each of the four teachers on the team will plan a mini lesson to contribute to the whole unit plan incorporating four of the nine High-Yield strategies for their team (50 minutes).

- Materials- Lesson plan template (pg. 21).

❖ Wrap- Up: Teachers will complete an evaluation for the trainers and the professional development learning (5 minutes).

Housekeeping Items:

- Make sure all participants have signed in so that they may receive credit for the PD.
- Participants must attend all three days and do the follow-up activity to receive in-service credit.

Finish promptly at 3:00 p.m.

END OF DAY

Project Continuation and Follow-up Activities:

The project will continue after the Professional Development Training is finished for the remainder of the school year. The project has built-in coaching and mentoring, as well as peer observations and feedback with weekly Professional Learning Communities (PLC's) to share in a small group setting successes and weaknesses,

Below is a table that displays the timeline for the project from start to finish. It displays the task, who is responsible for the task and the timeframe in which the task must be completed.

SELF-REFLECTION AND GOAL SETTING TOOL

Name _____ Date _____

1. On a scale of 1 to 5, with 5 being the highest, rate your current knowledge and skills with differentiated instruction: 1 2 3 4 5
2. On a scale of 1 to 5, with 5 being the highest, rate your learning as a result of the sessions and activities to-date: 1 2 3 4 5
3. Personal Learning Goal for this Session:
4. What is (are) your professional learning goal(s) between now and next workshop or coaching session?

FORMATIVE SELF-ASSESSMENT TOOL

Name: _____ Date: _____

Circle your understanding of the following terms. Use the rating 1-5. 1 meaning the least amount of understanding and 5 meaning you have the greatest amount of understanding.

1. Knowledge of flexible grouping. 1 2 3 4 5 2.
2. Differentiation Strategies for Instruction 1 2 3 4 5 4.
3. Planning and preparation 1 2 3 4 5
4. Learning Differences 1 2 3 4 5
5. Instructional Strategies 1 2 3 4 5
6. Learning Environments 1 2 3 4 5
7. Co-Teaching Skills 1 2 3 4 5
8. Assessment 1 2 3 4 5

Overall average _____

Appendix B: The National Institute of Health (NIH) Office of Extramural Research Web-Based Training Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that Nancy N Mason successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 01/22/2017.

Certification Number: 2260320

Appendix C: Teacher Questionnaire

Name of Teacher Participant_____ Year's teaching _____

Grade Level Taught _____

Number of students_____

1. How would you define differentiated instruction?

   _____

   _____.

2. Do you differentiate your instruction to meet individual needs? Y or N
3. Do you use a form of grouping in your classroom? Y or N
4. Do you use flexible grouping? Y or N
5. How do you define Flexible Grouping?

   _____

   _____.

6. Do you focus on any or all of Marzano's 10 standards for effective classroom instruction? Y or N
7. Do you use other methods or strategies in your classroom? Y or N
8. If you use grouping, do you utilize formative assessment to form groups? Y or N
9. What forms of assessment do you use to differentiate your instruction?

   _____.

10. Are your instructional strategies producing desired learning outcomes? Y or N

Appendix D: Marzano's Standards for Effective Teaching

Standard 2: Learning Differences Lesson plans show evidence that the teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.

0 Not Using	1Beginning	2 Developing	3 Applying	4 Innovating

Standard 3: Learning Environments Lesson plans show evidence that the teacher works together to create an environment that promotes personal and collaborative learning, and that encourages social communication and active engagement and self-motivated learning

0 Not Using	1Beginning	2 Developing	3 Applying	4 Innovating

Standard 6: Assessment Lesson plans show evidence that the teacher understands and uses various methods of assessments to engage learners in their own growth and development, to monitor learner progress, and to guide teacher and learner decision making.

0 Not Using	1Beginning	2 Developing	3 Applying	4 Innovating

Standard 7: Planning for Instruction Lesson plans show evidence that the teacher plans instruction that supports every student in meeting individual learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of individual learning needs.

0 Not Using	1Beginning	2 Developing	3 Applying	4 Innovating

Standard 8: Instructional Strategies Lesson plans show evidence that the teacher understands and uses a variety of instructional techniques to encourage learners to develop a deeper understanding of content areas and their connections, and to build skills to apply knowledge in more meaningful ways.

0 Not Using	1Beginning	2 Developing	3 Applying	4 Innovating