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Data Driven Practices: A Phenomenographic Study of Teachers' Perception of Formative Use of Summative Assessment in A Response to Intervention Model

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ABSTRACT

Using qualitative phenomenography, this research highlights the perception of a sample of NYC teachers towards data driven practices, i.e., formative use of summative assessment in an RTI model. Eighteen elementary and middle school teachers participated in the study. From the analysis of the interviews, five categories of differences occurred, i.e., (a) teachers' awareness of RTI; (b) teachers' use of evidence-based assessment strategies; (c) teachers apply universal screening measures and progress monitoring; (d) teachers' self-efficacy towards data driven intervention practices; and (e) support for and training about intervention practices. The results are depicted in an outcome space that describes the relationships among the categories in hierarchical order. Teachers do not seem to know that when various research-based interventions are administered, the results provide a systematic image of students' performances that allow for a more student-centered classroom that meets the needs of all learners.

Keywords: assessment, data, response to intervention, self-efficacy, universal screening

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CHAPTER I

ACTING ON DATA: FRAMEWORK AND RESEARCHER'S INTEREST

The No Child Left Behind (NCLB) Act that was established under the Bush administration came under much unconstructive criticism with respect to high-stakes testing and accountability measures. Riley (2014) argued that critical approaches to NCLB have been unitarily negative because many schools fell short of the criteria of all students meeting reading proficiency levels by 2014. Likewise, Bogin and Nguyen-Hoang (2014) stated that under the No Child Left Behind Act (NCLB) schools receiving Title I funding that failed to meet adequate academic performance targets for two consecutive years were deemed failing.

Politicians assumed that implementing higher content standards was the antidote for the majority of persistently struggling schools. According to Frye (2015) and Hollenbeck and Saternus (2013), using standards alone as a tool for educational reform did not yield change in instructional practice nor could it singlehandedly solve educational mediocrity. Frye (2015) also argued that some states are "Routinely out-educating others . . . this means that students growing up in California or Nevada, for example, cannot expect the same quality of education as their counterparts in Massachusetts or Montana" (p. 501).

To attempt to narrow the achievement gap by providing more equitable educational opportunities, in December 2015, Congress signed the Every Student Succeeds Act (ESSA) into law. This new policy aimed to give federally funded schools more flexibility with regard to utilizing data and allowed their own approach to developing higher student standards that support and promote school reform and career and college readiness acquisition. Even though the U.S. Department of Education continues to support some of the goals that NCLB enacted

with regard to high-stakes testing for grades 3-8, according to the ESSA (2015), the U.S. Department of Education commissioned that federally funded schools should:

- Advance equity by upholding critical protections for America's disadvantaged and high-need students;
- Help to support and grow local innovations—including evidence-based and place-based interventions developed by local leaders and educators—consistent with Investing in Innovation and Promise Neighborhoods;
- Sustain and expand this administration's historic investments in increasing access to high-quality preschool, and
- Maintain an expectation that there will be accountability and action to effect positive change in our lowest-performing schools where groups of students are not making progress and where graduation rates are low over extended periods of time (www.ed.gov).

Purpose of This Dissertation

Diagnosis is fundamental to linking the patient's current needs to the best possible options and outcomes for that patient (Tomlinson & Moon, 2013). In the medical profession, professionals consider patients dead when there is no pulse. Some causes of death are natural, while others are the fault of malpractice by untrained physicians who lack knowledge about what cause of action to take in an emergency. With advanced technology, doctors can run immediate tests, diagnose conditions, and prescribe various treatments and supports with minimal delays. In education, professionals call this action ‘intervention’. Every day, numerous students fall deeper and deeper into the traumatic state of not being able to meet the academic standards that policymakers imposed on them. Without any intervention, some students are unable to meet

content benchmark criteria, which may lead to grade retention. Dunn, Airola, Lo, and Garrison (2013) affirmed that research related to the change process associated with teacher adoption of data driven decision practices is almost nonexistent and that the chain of inferences from teacher use of data systems to teacher data analysis to changed instruction to improved student outcomes is currently weak. While acquiring credible student data information allows educators to determine and adjust their teaching practices, Yoon (2016) pointed out that "Existing research suffers from a lack of insight about teachers' actual data use, and it is not clear to what extent teachers change their practices" (p. 503).

School leaders who understand the gap with regard to schools applying data-driven practices should provide various professional development opportunities to educators at the highest level possible (Danielson, Doolittle, & Bradley, 2007; Delano, Keefe, & Perner, 2008). Data assessment, if adapted and implemented correctly, can improve the quality of overall teaching and learning practices in the classroom. Mandinach (2012), who cited Secretary of Education Duncan, stated:

> Data gives us the roadmap to reform. It tells us where we are, where we need to go, and who is most at risk. Our best teachers today are using real time data in ways that would have been unimaginable just five years ago. They need to know how well their students are performing. They want to know exactly what they need to do to teach and how to teach it. (p. 72)

Teachers must view data collection and analysis as an investment, for the payoff of positively using outcome data presents a natural reinforcement for teachers (Burns et al., 2013). However, Darling-Hammond and Adamson (2013) argued that achieving these goals requires a

transformation in teaching, learning, and assessment, so that all students can develop the deeper learning competencies that are necessary for postsecondary success.

Statement of the Problem

It is apparent that some teachers are resistant to using scientific research methods to diagnose the intellectual limitations that cause deficits in student learning. According to Lingo, Barton-Arwood, and Jolivette (2011) and Datnow and Hubbard (2015) time constraints, teaching interferences, and the complexity of data analysis were the reasons why teachers were hesitant to collect and use data to inform instructional decisions. Wright (2008) stated that stakeholders were seeking scientific data about student achievement and "It is no longer prudent or even possible for educators to ignore this national zeitgeist" (p. 23). Similarly, Mandinach (2012) affirmed that it is no longer acceptable simply to use anecdotes, gut feelings, or opinions as the basis for academic decisions.

It is apparent that some teachers are resistant to using scientific research methods to diagnose the intellectual limitations that cause deficits in student learning. According to Lingo, Barton-Arwood, and Jolivette (2011) and Datnow and Hubbard (2015) time constraints, teaching interferences, and the complexity of data analysis were the reasons why teachers were hesitant to collect and use data to inform instructional decisions. Wright (2008) stated that stakeholders were seeking scientific data about student achievement and "It is no longer prudent or even possible for educators to ignore this national zeitgeist" (p. 23). Similarly, Mandinach (2012) affirmed that it is no longer acceptable simply to use anecdotes, gut feelings, or opinions as the basis for academic decisions. Backlash about school reform policies, such as the NCLB (2002) that mandated public schools to change their practice, caused many people to question what works and what does not. Additionally, school based legislation, such as the IDEA (2004) have

required school policy changes that mandated that federally funded schools move towards a systematic way of acquiring data to authenticate student learning outcomes (Jenkins, 2009). However, research has shown that practitioners in the field of education "has[sic] not fully responded to calls to implement evidence-informed and data-driven practices" (Kelly et al., 2016, p. 17).

Working Definitions for This Study

Accountability

"The accountability of authorities in an organization to higher authorities regarding the use of authority and responsibility; acting in line with criticisms and demands related to accountability; the need to take responsibility in case of failure, incompetence or infraction of rules; the use of authority and resources in organizations in line with the law and in accordance with principles of productivity and efficiency; and the presentation of responsibility related to the achievement of specified goals and targets" (Argon, 2015, p. 926).

Assessment Literacy

"Assessment literacy entails knowing what is being assessed, why it is assessed, how best to assess it, how to make a representative sample of the assessment, what problems can occur within the assessment process, and how to prevent them from occurring" (Ogan-Bekiroglu & Suzuk, 2014, p. 344).

Audit Trail

"A detailed, comprehensive accounting of all data collection and data analysis activities…Changes were documented as they were made, along with [the] rationale for the change" (White, Oelke, & Friesen, 2012, p. 251**).**

Common Core Standards

"The Common Core is a set of high-quality academic standards in mathematics and English language arts/literacy (ELA). These learning goals outline what a student should know and be able to do at the end of each grade" (corestandards.org).

Data Driven Decision Making

"Data-driven decision making (DDDM) pertains to the systematic collection, analysis, examination, and interpretation of data to inform practice and policy in educational settings. It is a generic process that can be applied in classrooms to improve instruction as well as in administrative and policy settings" (Mandinach, 2012, p. 71).

Differentiated Instruction

"Differentiated instruction is an approach to teaching and learning that allows for individual differences when working with groups of students and individualizing the curriculum for those within the group" (Darrow, 2015, p. 29). "Differentiated instruction allows all students to access the same classroom curriculum by providing entry points, learning tasks, and outcomes tailored to students' learning needs" (Watts-Taffe et al., 2012, p. 304).

Epistemological Beliefs

"Epistemological beliefs are subjective theories of the structure and acquisition of knowledge" (Trautwein & Ludtke, 2007, p. 907). "Epistemology is our set of beliefs about the nature of knowledge including the relationship between the knower and the known" (Hansen-Ketchum & Myrick, 2008, p. 206).

Every Student Succeeds Act

"Under ESSA, states and districts will still have to transform their lowest-performing schools, but they will be able to choose their own interventions, as long as the strategies have some evidence to back them up" (Klein, 2016, p. 10).

Evidence-Based Practices

"Refer to practices, well supported by robust, empirical evidence, that can produce consistent and predictable learner outcomes" (Agran , Spooner, & Singer, 2017, p. 4).

Formative Assessment

"Formative assessments are low-stakes assessments for learning (formative) that are typically instructionally embedded in a class activity and are designed to guide instructional decisions" (DiVall et al., 2014, p. 2). "It assists the teacher in forming new lessons in response to students' needs and to improve and aid in students' learning" (Panchbhai, Vagha, & Bhowate, 2014, p. 47).

Individuals with Disabilities Act

"The Individuals with Disabilities Education Act (IDEA) (formerly called P.L. 94-142 or the Education for all Handicapped Children Act of 1975) requires public schools to make available to all eligible children with disabilities a free appropriate public education in the least restrictive environment appropriate to their individual needs. The IDEA requires public school systems to develop appropriate Individualized Education Programs (IEPs) for each child. The specific special education and related services outlined in each IEP reflect the individualized needs of each student" (ada.gov).

Multiple Intelligence

"Gardner defines intelligence as a bio-psychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture" (Blue, 2015, p. 57).

No Child Left Behind

“No Child Left Behind (NCLB) was passed in 2002 under President George W. Bush with the goal of increasing reading and math proficiency for all children in the United States by 2014” (Bland, 2014, p. 59).

Ontology

“Ontology is our understanding of existence, of our being in the world” (Hansen-Ketchum & Myrick, 2008, p. 206). “Ontology frames our understanding of what exists and the relationships between those things that exist” (Welcome, 2004, p. 61).

Outcome Space

“Consisting of a finite set of categories of description which, with their relationships, explain the different ways people experience phenomena in the world” (Smith & Hepworth, 2012 p. 157).

Phenomenology

“Phenomenology is a philosophy that focuses on how one gains knowledge of the essential features of the world as one experiences concrete realities” (Duckham & Schreiber, 2016, p. 59). “…primarily emphasizes the first-order perspective and the similar essences that are derived from various experiences” (Assarroudi & Heydari, 2016, p. 217).

Response to Intervention (RTI)

“Response to Intervention is a multi-tiered approach to providing instruction, services, and intervention at increasing levels of intensity to struggling learners” (Sanger et al., 2012, p. 98). It is also “The practice of providing high quality instruction and intervention matched to student need, monitoring progress frequently to make decisions about changes in instruction, and applying child response data to important educational decisions” (Basham, Israel, Graden, Poth, & Winston, 2010, p. 244).

Self-Efficacy

According to Kartyas (2016), "Self-efficacy means confidence in our ability to influence the outcome of things" (p. 53). "Self- efficacy theory refers to an individual's belief that (*they*) re able to perform a certain task. In essence, self-efficacy is a measure of confidence which is directly tied to motivation" (Van Der Roest, Kleiner, & Kleiner, 2015, p. 18). "To define self-efficacy, the following psychological concepts have to be used: self-esteem, persistence, self-confidence and seeking for success" (Aydogan, 2016, p. 258).

Summative Assessment

"Summative assessments are those assessments given at the end of a semester/program or mid-semester with the sole purpose of grading or evaluating progress" (Costel, Stefan, Mina, & Georgescu, 2015, p. 182). "Summative assessment at the end of instructional periods is the most traditional method of assessment in schools, and it is needed for reporting and certification purposes" (Atjonen, 2014, p. 239). For this research project, I also considered unit exams as summative assessment.

Test Anxiety

Test anxiety is a type or state of anxiety specific to testing situations that impacts a student's performance on the test, thus inhibiting the test score as an accurate reflection of academic knowledge and skill (Wood, Hart, Little, & Phillips, 2016, p. 234).

Zone of Proximal Development

"A child's zone of proximal development is the distance between the level of his actual development, determined with the help of a learning task performed independently, and the level of a child's potential development, determined with the help of learning tasks performed by the

child under the guidance of adults and in collaboration with his smarter classmates" (Bozhovich, 2009, p. 51).

Scope of This Study

There is increasing pressure on teachers to implement and analyze assessment data because of policy and school practices. Moreover, Mandinach (2012) stated that the American Recovery and Reinvestment Act (2009) required that federal education make use of data to inform policy and practice. Therefore, this study aimed to understand and describe the variation of teachers' perceptions of data-driven practice, i.e., formative use of summative assessment in an RTI model using qualitative phenomenographic methodology.

The use of data in the areas of teacher quality, teacher characteristics and motivation, teachers' data literacy and assessment skills, and professional development has an effect on educational practice. Scherer, Jansen, Nilsen, Areepattamannil, and Marsh (2016) stated, "In a number of studies, researchers have described teaching quality as a concept that comprises different teaching practices and aspects of instruction" (p. 3). A variety of teacher characteristics that include core teaching responsibility, educational background, or school levels taught might affect the teachers' motivation to utilize effective summative assessment data in a formative way (Hoover & Abrams, 2013). Additionally, any association discovered between the level of teacher data literacy and the use of assessment data might offer insights into organizational structure or staff development that can improve collaboration among teachers to improve student learning and to further provide students with scientific measurements related to areas of growth and improvement (Schneider & Andrade, 2013; Schneider & Gowan, 2013). Moreover, Harris (2011) stated that where school districts placed emphasis on professional development of assessment literacy and related data analysis skills, teachers' confidence and efficacy increased.

Scholarly Significance

Various authors have made readers aware that data-driven practices are an important factor that supports educational standards in different settings. For example, Moss, Brookhart, and Long (2013) looked at the role of administrators as they assisted teachers when educators utilized data for formative assessment. Another study conducted by Hoover and Abrams (2013) focused on how educators formatively used summative data assessment to guide instruction. In addition, Black, Harrison, Hodgen, Marshall, and Serret's (2011) study centered on the impact of summative assessment on teaching and learning, while Schneider and Gowan's (2013) research concentrated on teachers' and administrators' interpretation and use of evidence of student learning as a means of planning and actualizing teaching. All these studies employed mixed research designs in their investigation of different issues related to data-based decision making as a guide for instructional practices. However, these researchers did not focus on the utilization of the formative use of summative assessment data in a Response to Intervention (RTI) context.

RTI is a three-tiered intervention and data-collection plan that general and special education teachers implement to meet students' educational needs (Sanger et al., 2012). Many educators, read about Response to Intervention (RTI) attended professional development, and attempted to implement the strategies they learned, but they were faced with a wide, confusing variety of options that were difficult to sort out (Jones, Yssel, & Grant, 2012).

One of the components of RTI Tier 1 is the implementation of differentiated instruction (DI) that allows for flexible grouping. Differentiation, according to Brimijoin (2005), "Is a conceptual approach to teaching and learning that involves careful analysis of learning goals, continual assessment of student needs, and instructional modifications in response to data about readiness levels, interests, learning profiles, and affects" (p. 254). However, Jones, Yssel, and

Grant (2012) stated, “The need for professional development, limited resources and a lack of administrative support have been identified as blocking the implementation of DI” (p. 212).

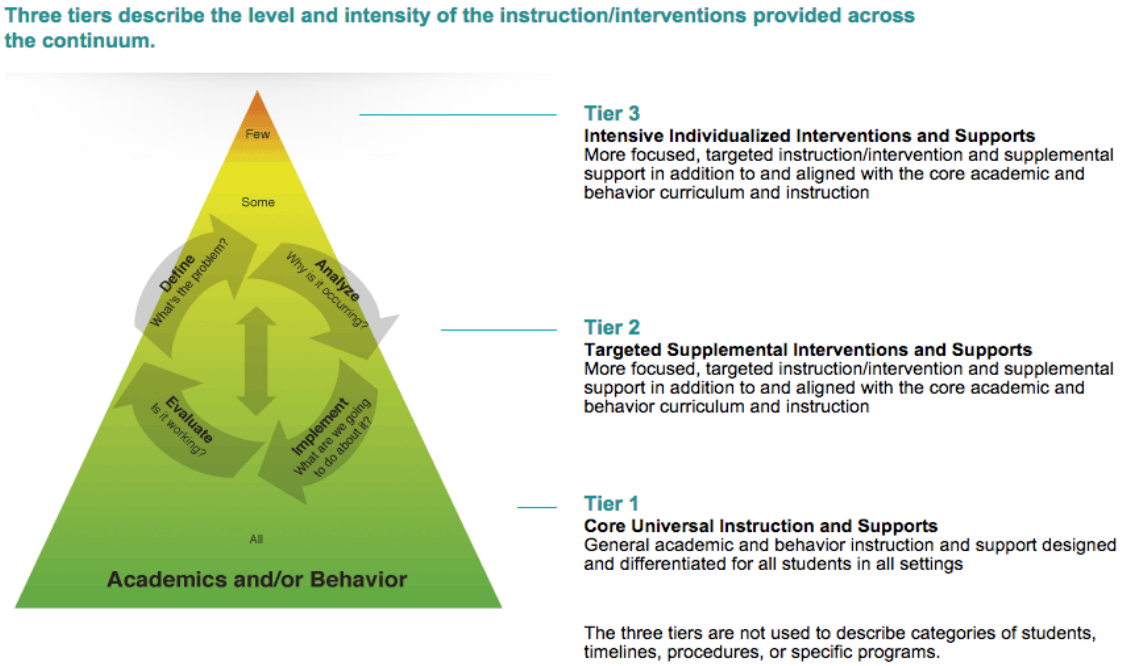

Figure 1.1. Three-tiered framework that uses increasingly more intense instruction and interventions (Florida, MTSS).

Theoretical Perspectives

Various cognitive theorists developed the basis for methods of how learners attained, grasped, and demonstrated ideas and how teachers should present new information. Such methods are taught, however, they are not always implemented in the classroom. For example, Vygotsky’s theory of the zone of proximal development (1978) defined learning as “The distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Yilmaz, 2011, pp. 207-208). In addition, Howard Gardner’s theory of multiple intelligence (1983) affirmed that students gain knowledge and achieve understanding centered on the “premise that there are many different types of talents

or knowledge that could help to enrich one's life and respond effectively to one's environment" (Douglas, Burton, & Reese-Durham, 2008, p. 183). But this does not happen in every classroom.

Moving towards meeting 21st century learning, educators who do incorporate assessment data practices into instructional pedagogy maintain academic standards, while recognizing and teaching according to different student talents and learning styles (Douglas, Burton, & Reese-Durham, 2008; Morgan, 2014). Yilmaz (2011) posited that there should be differentiated methods of teaching. Administrators urge educators to analyze instructional materials, develop proper tasks, and strengthen relevant learner characteristics through demonstration and illustration that enable students to process the information they receive effectively.

Practical Significance

The significance of ensuring that all students have mastery of content and succeed on assessments conducted at the state level underscores the importance of teachers using more assessment data to measure student achievement. According to Ogan-Bekiroglu and Suzuk (2014), teachers' knowledge of assessment literacy was used to gather reliable information to improve student achievement, while low levels of assessment literacy could result in unreliable measures of students' academic accomplishment. According to Mandinach (2012), an examination of data-driven decision-making "Would be used to stimulate and inform continuous improvement, providing a foundation for educators to examine multiple sources of data and align appropriate instructional strategies with the needs of individual students" (p. 72). Therefore, understanding teachers' perception of formative use of summative assessment in an RTI model could increase understanding and improve teachers' pedagogical performance in terms of

grouped, tiered instruction, as well as provide valuable and up-to-date information that teachers need for students' referral for special education or related services.

Importance To the Field

I have experience as an adjunct professor who taught courses such as Introduction to Special Education and Assessment in Education at the undergraduate level and Differentiated Instruction, Positive Behavior Support, Assessment in Education and Teaching Social Studies in an Inclusive Setting at the graduate level. From these experiences, I gained higher education teaching experience and the opportunity to work alongside highly knowledgeable professionals from various content areas and specializations. They created and implemented effective curricula and individual education plans that incorporated strategies that improved my understanding of the importance of assessment data that educators should use in RTI tiered grouping and instruction.

In addition, I also worked as a special education teacher in 12:1:1 kindergarten classes and later transitioned to be an independent special education teacher support service provider (SETSS) contractor for the New York City Department of Education. One significant drawback to working as a SETTS specialist was the lack of data collection I received from general content instructors when they referred students for evaluation for special education and related services. General content teachers seemed quick to refer students for special education services without differentiating individual instructional curricula or lesson plans, or scaffolding instructional delivery and assignments. Rarely have I witnessed a comprehensive learning plan or a Response to Intervention system with correlated data collection over time before a student was recommended for special education and related services.

According to Kloser Borko, Martines, Stecher, and Luskin, “Assessments can be rich, educative tools that provide critical insights for teachers and students” (p. 210). This qualitative study contributes to the awareness of the importance of implementing valid classroom assessments that can provide accurate and reliable data that are relevant to student learning goals. When structured, evidence-based assessment tools align closely with various theoretical disciplines on how students learn, educational leaders can design related professional developmentto target how the analysis and interpretation of data is essential to promote student learning to help educators provide research-based intervention. An application of the current study could be school and classroom reform to expand instruction and assessment using different theoretical perspectives, concepts, and ideas from educational psychology so educators can provide learning experiences to students in a meaningful way. According to Tomlinson (2015), “Student learning differences often go unaddressed in mixed-ability classrooms” (p. 204), therefore, it is important that educators understand that students acquire knowledge differently and that they should present assessments in various formats to allow students the best opportunity for learning mastery.

To provide appropriate instruction to students, educators must implement evidence-based practices that are supported by scientifically based research, as mandated by federal legislation (Every Student Succeeds Act, 2015). In a study conducted by Stormont, Reinke, and Herman (2011) the authors stated:

> Participants included 239 general educators from 5 school districts. Overall, most teachers had not heard of 9 out of 10 of the evidence-based programs presented. Teachers were also not sure whether their schools provided specific assessments and interventions to support children. (p. 138).

Because of lack of awareness of this issue, teachers may not understand that using valid assessment practices in their daily teaching routines will help them acquire data as part of universal screening to provide immediate research-based intervention, thus eliminating the time spent on using classroom strategies that are not directed toward each individual student's needs.

Dissertation Overview

This study expanded on the available literature and investigated the variation of teachers' perception of formative use of summative assessment in the RTI model using a qualitative research design to analyze the utilization of data to guide instructional practice and to determine the frequency and types of assessment data utilized.

Chapter I introduced the study by describing the statement of the problem, the purpose of the study, the study's scholarly and practical significance, its theoretical perspective, its definitions, and the scope of the study. Chapter II will focus on a comprehensive review of the literature by discussing extant literature on issues of relevance to the study. Specifically, the literature review focused on the RTI model, practical applications of data-driven decision making in classrooms, identification of specific structures necessary for facilitating and improving the utilization of summative data in a formative manner to influence and monitor students' educational development, evaluation of instructional practices, and a discussion of teachers' knowledge of assessments. Chapter III will present the research questions and the methodology the researcher used to fulfill the purpose of the study. Specifically, this chapter describes qualitative, phenomenographic methodology in terms of the purpose of the study, the research questions, the history of phenomenography**,** the research design, the setting and participants, data collection, data analysis, methodological considerations, ethical issues, and the limitations that are guiding the study. Chapter IV will present the qualitative results of the study.

In Chapter V, the researcher discusses the results of the study in relation to the research questions and the existing literature reviewed in this dissertation. Moreover, this chapter includes concluding remarks about the study and suggested recommendations for practice, policy, and further research.

CHAPTER II

21ST CENTURY LEARNING AND DATA PRACTICES

Chapter I highlighted the absence of teachers' awareness and implementation of summative assessment for formative reasons, and schools' disposition towards the potential use of data results for the advancement of teaching practices and student achievement. The field has evolved and adapted different methods of practice, leading to school personnel being engrossed in a constant debate over how to improve the failing system resulting in low performance on high-stakes testing and a lack of accountability. Schools obligate teachers to find ways to match each student's learning to standards. Teachers should critically assess students' performances and modify their plans and instruction accordingly.

This literature review centers on the merging of policy and pedagogical practices and the consequences and effects they have on schools and students' and teachers' educational performances and experiences regarding formative assessment, summative assessment, Response to Intervention, teacher self-efficacy, and professional development about teaching and learning.

Policy: No Child Left Behind vs. the Every Student Succeeds Act

Drafted and implemented during the President George W. Bush administration, the No Child Left Behind (NCLB) law mandated that federally funded schools have an accountability system based on standards, measurements, and yearly progress (Forte, 2010; Riley, 2014; Wun, 2014). The policy's intent, to close the achievement gap between high-and low-performing students, met with various opinions and pushbacks. Proponents identified real progress in student achievement for those who were not meeting state standards and hailed the policy for bringing national attention to the issue of educational inequalities, while opponents accused schools of employing a teach to the test system to maintain funding (Goodman, 2014; Pinder,

2013; Wun, 2014). For example, according to Elpus (2014), a large number of music education programs became limited because teachers narrowed their pedagogy and curriculum to focus primarily on reading and math in response to NCLB mandates. This decreased instructional time for music.

President Obama expressed his concern about schools' inability to meet the previous high NCLB standards and authorized waivers from certain provisions (Black, 2015; Chopin, 2013; Haskins, 2014). Ending the turmoil many schools faced, in December 2015, the Every Student Succeeds Act (ESSA) passed. It overrode the previous NCLB law (Levitov, 2016; Norton, 2016; Rycik, 2015), returning many educational decisions and more authority to the states, while providing them with increased flexibility and responsibility for developing accountability systems, deciding how schools should weigh federal required tests, selecting additional measures of student and school performance, and implementing teacher evaluation systems (www.ed.gov/ESSA). Furthermore, Norton (2016) emphasized:

> Like the goals of the NCLB, ESSA highlights equal access to education, sets high standards for academic performance, and looks to a rigorous level of accountability from schools and districts. In addition, it authorizes states to implement and administer critical education programs making education a local issue. (p. 8)

Additional Policies: Educational Laws

Learners with disabilities are part of the education system, and improving their academic success is a concern for many educational stakeholders throughout the country. One of the defining turns that brought light to principles of fairness in the educational arena was the Brown v. Board of Education (1954) litigation because it opened doors for equal access to educational competency for all members of society (Brey, 2016; Prager, 2014; Wieselthier, 2013).

Before the civil rights movement, children with disabilities were not accommodated to receive appropriate educational services. During achievement testing, for example, public schools sometimes excluded or rejected them from entering, remaining, or participating alongside their non-disabled peers. To address these concerns, in 1970, the United States Congress developed and enacted the Education for All Handicapped Children Act (EHA). Congress revised the original EHA in 1975, and in 1990, Congress retitled it the Individuals with Disabilities Education Act (IDEA). The new law provided students with disabilities with a free appropriate public education (FAPE) that included special education and related services for learners aged 3-21 years old, so that they could fully participate in the general education curriculum in the least restrictive environment (LRE) (IDEA, 2004; Wasserman, 2009; Weber, 2014). Lusk (2015) and Yell, Conroy, Katsiyannis, and Conroy (2013) described FAPE as:

> Special education and related services that must be provided at public expense, under public supervision and direction, without charge; [services must] meet the standards of the state educational agency; [and] include an appropriate preschool, elementary school, or secondary school education in the state that includes an individualized education program required under section 1414(d) of this title. (p. 295)

Individualized Education Program

The central cornerstone and guiding philosophy of the Individuals with Disabilities Education Act (IDEA, 2004) is the implementation of an Individualized Education Program (IEP) (Diliberto & Brewer, 2014; Yell, Conroy, Katsiyannis, & Conroy, 2013; Yell, Katsiyannis, Ennis, & Losinski, 2013). IEPs are legal documents that give detailed information about special education programs for eligible students under the IDEA (Brey, 2016; Prager, 2014; Wieselthier, 2013). The IEP outlines specific modified criteria for the general education curriculum, lists

how one meets and measures goals, identifies the extent to which one administers progress reports, and identifies how one delivers instruction (Christle & Yell, 2010; Diliberto & Brewer, 2014; Hessler & Konrad, 2008; Lo, 2014; More & Hart Barnett, 2014;Yell, Conroy, Katsiyannis, & Conroy, 2013).

Intelligence Quotient-Discrepancy: Specific Learning Disability (SLD)

During World War I, IQ testing emerged as a means of determining the general intellectual ability of large groups of U.S. military enlistees because the military used one test to determine ranks and roles (Odendahl, 2011). Archerd (2015) and Canivez, Watkins, James, Good, and James (2014) stated that, over the years, schools adapted the IQ assessment to categorize students as having a specific learning disability (SLD) that required services under the IDEA. Al-Oweidi (2015), Archerd (2015), Meteyard and Gilmore (2015), and Thakkar et al., (2016) defined an SLD as a disorder in one or more areas of neurodevelopment that involves receptive or expressive understanding of spoken or written language, resulting in students' having difficulty with the ability to listen, think, speak, read, write, spell, or do mathematical calculations.

Fitzgerald, Gray, and Snowden (2007) and Pavri (2012) stated that IQ-assessment policies recommended that a student exhibit a significant discrepancy of 1-2 standard deviation interval scores on cognitive ability and academic achievement in reading or math, or oral expression and written performance for classification under the IDEA disability category. Many educators who reflected on this type of assessment agreed that the IQ-achievement discrepancy possessed strengths, consistently accounted for meaningful levels of academic achievement, and had an overall rating of fair acceptability among psychologists (Canivez, Watkins, James, Good, & James, 2014; Meteyard & Gilmore, 2015; O'Donnell & Miller, 2011). However, researchers

pointed out many flaws in the IQ assessment and its inability to correctly assess the whole child's cognitive aptitude that led to categorization as having a specific learning disability when she/he did not have one (Kamei-Hannan, Holbrook, & Ricci, 2012). Al-Otaiba, Wagner, and Miller (2014) also argued that there were several other important issues. Researchers, policy makers, and parents said that the IQ-achievement discrepancy-based formulas were a "wait-to-fail" model. According to Spencer et al. (2014), where students attend school determines use of the traditional IQ discrepancy models to identify students" learning disabilities. Pavri (2012) acknowledged that many children may need academic support, but stated:

> There are many inconsistencies in the identification practices across different states...consequently a student may be identified as having a learning disability in one state, but may miraculously be cured and cease to qualify for services when he or she moves to a different state with different eligibility criteria. (p. 6)

Moreover, scholars who researched this method of assessment questioned its reliability and validity and asserted:

> The IDEA addresses the need for assessment and evaluation procedures that are intended to rule out underachievement due to inadequate instruction, modifies the basis for determining specific learning disabilities, and permits the use of data for research-based interventions during the assessment/evaluation process prior to determining eligibility. (National Joint Committee on Learning Disabilities Research, 2011, p. 4)

Historical Perspective on Response to Intervention: A Policy Response

Barrett, Cottrell, Newman, Pierce, and Anderson (2015) found that research data illustrated that 2.4 million children who were eligible for special education under the SLD category were the largest single group of students with disabilities. The IDEA, however, made

significant changes with regard to diverting schools from only using the common IQ-assessment for SLD. Moreover, the IDEA required that states adopt SLD criteria that permitted RTI and other alternative research-based procedures to determine SLD eligibility in the hope of reducing the number of inappropriate referrals for special education services (Archerd, 2015; Brendle, 2015; Johnsen, Parker, & Farah, 2015; Meteyard & Gilmore, 2015; Swindlehurst, Shepherd, Salembier, & Hurley, 2015).

Response to Intervention: Tiers and Models

According to Fuchs and Fuchs (2009), Brendle (2015), Archerd (2015), and Pavri (2012), the main aim of RTI is to prevent long-term academic failure by providing instructional intervention to students who are not performing on grade level, and to identify students who may require further assistance through special education. Johnsen, Parker, and Farah (2015) acknowledged:

> The concept of RTI was included in IDEA (2004) in order to allow local education agencies to use a process that determines if the child responds to scientific, research-based interventions as a part of the evaluation procedure specifically for the identification of specific learning disabilities. (p. 1)

Sullivan and Castro-Villarreal (2013) described the core concepts of RTI as a three-tiered model designed to identify students at risk for academic failure or behavioral difficulties who were in need of more varied, leveled instruction in the general education classroom. RTI shifted schools away from the test-driven discrepancy model for diagnosing specific learning disabilities into the direction of more research-based teaching practices

Al-Otaiba, Wagner, and Miller (2014) explained that, in RTI, Tier 1 represents high-quality general education whole class instruction, while Tier 2 is a small group with more

targeted intervention, and Tier 3 is the most intensive intervention or special education services. In addition, Mellard, McKnight, and Jordan (2010) stated that as the intervention level increased, the portion of the population served became generally smaller and instructional intervention intensity became greater.

Response to Intervention Tier Grouping

According to Fuchs, Fuchs, and Compton (2012), Bjorn, Aro, Koponen, Fuchs, and Fuchs (2016), and Mellard, McKnight, and Jordan (2010), in Tier 1, professionals conduct universal screening for all students in the general education classroom, based on grade level benchmark criteria, to identify at- risk children. If a child does not respond to the first level of scientific, empirical, group instructional support and instruction that incorporated a variety of modalities and techniques and was taught by a highly qualified general education teacher, the student moved to Tier 2.

An estimated 15 percent of students participate in the second level of intervention, Tier 2, when the core curriculum is insufficient to ensure their learning progress (Mellard, McKnight, & Jordan, 2010). In the Tier 2 stage, teachers give students supplementary support in specific content areas in small groups of at-risk learners (Bjorn, Aro, Koponen, Fuchs, & Fuchs, 2016; Hooper et al., 2013). During the learning process, teachers utilize and mediate skillful strategies to eliminate any misunderstanding. Additionally, teachers note, analyze, and document responses from the individual student's intervention data. Students who master target goals exit Tier 2 and return to Tier 1 instruction (Pavri, 2012). If the child does not respond adequately to the interventions in Tier 2, Tier 3 becomes an option for continued, more intensive, research-based intervention (Bjorn, Aro, Koponen, Fuchs, & Fuchs, 2016; Wilson, Faggella-Luby, & Yan Wei, 2013).

In phase 3 of RTI, teachers progress monitor more frequently and usually refer students for evaluation for special education services. According to Meteyard and Gilmore (2015), school psychologists who assessed students for SLDs indicated moderate support for both the IQ-achievement discrepancy and the RTI model. Therefore, data and information gathered from both determined whether a student qualified for an IEP under the IDEA disability criteria.

Response to Intervention Models

RTI consists of diverse models that contain distinct characteristics to provide the best possible outcome for student learning needs. Two approaches that aid teachers when they assist students in tiered instruction are the standard protocol model and the problem-solving model (Little et al, 2012; Pavri, 2012). Most schools opted to utilize one approach; however, *Response to Intervention Guidance for New York State School Districts* (2010) and Pavri, (2012) proposed integrating both methods, using a standard-protocol approach in Tier 2 and a more individualized problem-solving approach in Tier 3.

Standard-protocol model. Curriculum Based Measurement (CBM) research in reading skill instruction used the standard protocol base that typically conceptualized a pyramid or triangle with three tiers of intervention (Moors, Weisenburgh, & Robbins, 2010). Faggella-Luby and Wardwell (2011), Lesh (2013), Little et al., (2012), and Sailor (2008) stated that the standard protocol model used evidence-based, multi-component programs with strong research support that focused on specific skills that, when implemented, indicated prescriptive steps to follow. Carney and Stiefel (2008) asserted that the benefits of the standard protocol approach were:

- It was relatively easy to train practitioners to conduct.
- There was no decision-making process concerning what interventions to implement.
- It was relatively easy to assess the accuracy of implementation.

- Large numbers of students were able to participate in the treatment protocol, and
- It lent itself to group analysis where outcomes for students were assessed against "aim-line" criteria (p. 62).

In addition, *Response to Intervention Guidance for New York State School Districts* (2010) stated that the standard protocol model was clear, specific, and relatively easy to check, and that deviations from the standard protocol procedures compromised the integrity of the intervention and may result in less than optimal results (www.p12.nysed.gov).

Problem-solving protocol model. Professionals encouraged the problem-solving model, ingrained in RTI behavior consultation for many years as a method for reducing the quantity of students experiencing special testing (McNamara, Telzrow, & Delamatre, 1999; Telzrow, McNamara, & Hollinge, 2000). To rule out lack of effective instruction as a primary cause of a student's low academic performance, professionals used the problem-solving model approach with students who exhibited academic and behavioral problems (Newton, Horner, Todd, Algozzine, & Algozzine, 2012; Pavri, 2012; Ruby, Cooper, & Vanderwood, 2011).

The key feature that differentiated the standard protocol model from the problem-solving model was that the standard protocol applied equal attention to learners and used the same empirically validated treatment for all students with similar problems (Carney & Stiefel, 2008). No student characteristic dictated the intervention. Teachers dealt with individual student's present level. Academic needs, and the model, were more consistent with the goal of discovering and documenting those effective intervention methods that worked (Carney & Stiefel, 2008; Turse & Albrecht, 2015). On the other hand, Brendle (2015) and Rinaldi, Averill, and Stuart (2011) affirmed that the problem-solving approach defined students' instructional problems, suggested interventions, and utilized progress-monitoring data that differed from child

to child depending on individual responsiveness. Moreover, McNamara, Telzrow, and Delamatre (1999) noted that what was common to most problem-solving models was a process that systematically employed:

1. Behavioral descriptions of the problem, including baseline data.
2. Behavioral statements of desired goal outcomes.
3. Hypotheses accounting for problem behavior.
4. Potential interventions.
5. Selection of interventions for implementation.
6. Intervention plans (with an objective, an action plan, a monitoring procedure, and a timeline).
7. Implementation of interventions (provisions for intervention acceptability and integrity), and
8. Evaluation of intervention effectiveness (a comparison of baseline to progress monitoring results) (p. 344).

State Implementation of Response to Intervention

Greulich et al. (2014) and Zirkel and Thomas (2010) argued that RTI varied by states and districts and stated that there was no single paradigm established for the right way to implement RTI. They claimed that schools needed a current, comprehensive, and differentiated tabulation of state laws. Many advocates brought this to the attention of policy makers with an array of research evidence that confirmed the confusion and frustration of schools that attempted to employ RTI due to a lack of a consistent policy and a comprehensive framework (Werts, Carpenter, & Fewell, 2014).

Realizing the need for and significance of RTI, many states implemented RTI at a statewide level, to some degree; however, several states maintained the use of the discrepancy formula, or combined RTI and the comprehensive evaluation approach (Johnson, Semmelroth, Mellard, & Hopper, 2012). Hoover and Love (2011) posited that most states were in the process of implementing some form of RTI to meet the educational needs of struggling learners. Also, Greulich et al. (2014) stated that many states were indecisive about the legal ramification of RTI implementation. Only Delaware had explicit criteria for when students should move in and out of Tier 3, and only six states had explicit guidelines for referral to special education services through the RTI process.

In Elementary, Middle and Secondary School

Mitchell, Deshler, and Lenz (2012) stated that many school districts implemented, or will adopt, an RTI framework as part of their school's operation when making improvements in special education services. Many educators believed that when a student reached middle school, the extent of any academic deficiency was too wide. Furthermore, according to Ciullo et al. (2016) and Faggella and Wardwell (2011), early literacy research in elementary were the roots of RTI and presented practical challenges when educator's applied the model in middle school settings. In a study on middle schools adopting RTI, Prewett et al. (2012), "Reported logistical challenges when providing individualized small group instruction and reorganizing the existing schedule to accommodate multilevel instructional periods" (p. 136).

According to Regan, Berkeley, Hughes, and Brady (2015), teachers reported significant challenges that came with new added responsibilities needed to implement RTI at the secondary level. Fisher and Frey (2013) stated, "There are a number of reports and recommendations focused on what high schools could do with RTI but little evidence for its effectiveness or how it

can be implemented" (p. 100). Researchers stated that some of the issues associated with not correctly implementing, or avoiding the use of RTI entirely, in middle and high schools were scheduling problems and compliance issues that occurred when working with adolescents (Fuchs, Fuchs, & Compton, 2010). In addition, it was difficult to implement a single and consistent intervention procedure and group students with similar academic difficulty characteristics. Even though middle and secondary educators embraced the idea of intervention, Johnson and Smith (2008) stated that, "One challenge for successful implementation of RTI at the middle school level was that much of the literature on the RTI process tended to support the use of standard protocol approaches" (p. 47).

In the United States, 1.3 million students failed to graduate, dropping the high school graduation rate to 69%, yet researchers did not clearly define nor support with empirical data questions regarding the function and most efficient means to deliver systematic multi-tier frameworks, such as RTI, in Grades 6 to 12 (Denton, 2012; Petrick, 2014) that would improve graduation rates.

Misconception About Response to Intervention

According to Archerd (2015), Greenwood et al. (2013) and Zirkel (2011), one of the key conflicts for identifying students having a learning disability through RTI under the IDEA protocol was that it delayed the process for evaluating students to receive appropriate special education services in a timely manner. According to Zirkel (2011):

> The confusion likely extends to school districts who put old wine in new bottles by relabeling their general education interventions as RTI without clearly incorporating the defining core characteristics, such as, scientific, research-based intervention, continuous progress monitoring, and multiple tiers. (p. 246)

Zirkel (2012) pointed out that there were distinct differences in interventions. If students got extra help during a general education intervention (GEI) with material that was not scientific, research-based educational material that had validity and reliability, with tiered methods and procedures, teachers were not using RTI, under the IDEA. Therefore, evaluators could not use the data as part of the process for identifying students with learning disabilities. Zirkel (2012) distinguished general education intervention (GEI) from RTI and asserted:

> GEI variations do not necessarily provide for research-based instruction and continuous progress monitoring, particularly at the first tier—which is all children; nor does GEI use a multi-tiered process with at least a third tier, which is the minimum in both the law and the literature for RTI. (p.72)

If a student did not grasp direct instruction, the school district must immediately request permission for an evaluation if the child had not made sufficient progress after a period of allotted general education instruction. Likewise, Archerd (2015), Fuchs and Fuchs (2009), and Zirkel (2012) emphasized that RTI was not meant to be used with students who already had an identified learning disability, but, rather, with students who fell short of that standard, but still had difficulty learning key concepts.

Differentiated Instructional Practices

Some psychologists believe that during learning a student's brain responds by releasing noradrenaline. If students felt that they were not able to grasp a concept, they experienced an over-production of noradrenaline; however, if academics did not challenge a student, a child's brain produced less noradrenaline (Kapusnick & Hauslein, 2001). Furthermore, Kapusnick and Hauslein (2001) and Morgan (2014) stared that, if teachers were not intellectually challenging

students in their educational setting, this lack of challenge may lead to academic and behavioral issues.

Since educators acknowledged and accepted that all learners are different and grasp learning in contrasting ways, differentiated instruction, "aims at revaluating each student's potential, starting from each one's training level, learning profile, interests and skills" (Marghitan, Tulbure, & Gavrila, 2016, p. 179). Two main cognitive theorists who supported this type of instruction, differentiated instruction, are Howard Gardner and Lev Vygotsky. Howard Gardner's theory of multiple intelligence (MI) stated that students learned through multiple modalities during teaching and learning when educators provide means to allow students the opportunity to apply their strongest intelligence to achieve mastery on a specific task. Lev Vygotsky's zone of proximal development (ZPD) focused on the level at which a student performed a task with the guidance of an adult or a more capable peer (Kapusnick & Hauslein, 2001; Morgan, 2014; Tobin & McInnes, 2008). Teachers who were oblivious to these teaching theories were more than likely to instruct in a manner that impeded students from performing to their fullest potential.

In addition, a number of researchers agreed that some learning disabilities were not because of cognitive disorder, but occurred due to experiential deficits, i.e., poor instruction. A study conducted by Faggella-Luby and Wardwell (2011) suggested that inadequate exposure to reading material and poor instruction caused instructional deficits in the comprehension ability of primary school students, rather than an underlying processing disorder. The authors continued to explain that some children might have a problem remembering new words that directly affected their ability to read and comprehend. Therefore, the essential problem was not their inability to read, but the lack of emphasis on word memorization. Marton and Booth (1997) stated, "If one

way of doing something can be judged to be better than another way, then some people must have been better at learning to do it-or have learned to do it better than others" (p. 1).

Differentiated instruction is not a single strategy, but an instructional practice that allows teachers to identify and teach according to varied student talents and learning styles (Morgan, 2014; Watts-Taffe et al., 2012). According to Kapusnick and Hauslein (2001), Konstantinou-Katzi, Tsolaki, Meletiou-Mavrotheris, and Koutselini (2013), Tobin and McInnes (2008), and Watts-Taffe et al., (2012), even though differentiated instruction became an important fundamental part of school instructional culture, teachers and administrators struggled with its complexities regarding how to meet the needs of mixed-ability classrooms.

Differentiated Instruction and RTI

RTI and differentiated instructional practices merged in many teaching situations as a method for identifying students who needed remedial academic support or intervention (Fuchs & Fuchs, 2009; Walker et al., 2009). Basham, Israel, Graden, Poth, and Winston (2010) and Hosp (2012) suggested that some of the common features that aligned RTI with differentiated instruction were:

> First, they both provide a comprehensive system that focused on research-based practices aimed at providing meaningful educational outcomes for all students. Second, they share an ecological approach focused on creating an effective system for instruction and intervention, which uses both evidence-based strategies and modern technology to support learning. Third, they both make specific use of a problem-solving process that is premised on data-based decision making. (p. 244)

Accountability and School Assessment

William (2010) stated “To be accountable can mean to be responsible, to be answerable, to be blame- worthy, or even to be liable” (p. 108). One expected that a person rendered an account of his actions. Accountability reforms in education placed emphasis on social transparency, standardization, and efficiency as a way of holding teachers and students accountable for learning outcomes (Piro & Mullen, 2013). Advocates believed that the implementation of school accountability provided the means that could transform the public school system into a more beneficial model for all students (Gawlik, 2012). Argon (2015) and Main, Pendergast, and Virtue (2015) asserted that accountability became one of the most important tools to lead the system of education to improve student learning, based on the realization of student expectation, the acquisition of school goals, and teacher quality as important factors for improving outcomes for students.

Assessment referred to making judgments about the quality of students’ performances that allowed individual students the opportunity to demonstrate their mastery of specific content knowledge (Ali & Khan, 2016; Alkharusi, Aldhafri, Alnabhani, & Alkalbani, 2014) and was a method for collecting, recording, interpreting, and analyzing students’ data (their performance) regarding teaching and student learning (Hahn, Mentz, & Meyer, 2009). Weurlander, Soderberg, Schejac, Hult, and Wernerson (2012) considered assessment an integral part of the learning process that centered on student participation that led to communication between the teacher and students about what counted as mastery of learned knowledge. In addition, assessment allowed for continuous improvement of instruction, provided necessary data for teacher accountability purposes, and supported a reflective and proactive approach to pedagogical practices (Datnow & Hubbard, 2015; Vonderwell & Boboc, 2013).

Researchers based the application of formative and summative assessments on two closely associated themes, namely, assessment *for* learning (A*f*L) and assessment *of* learning (A*o*L) (Atjonen, 2014; Clark, 2011). Cornelius (2014) stated that even though the distinction between formative and summative assessment differed in purpose and use, educators tended to use the term "formative assessment" in a confused way to describe discussion outcomes associated with summative assessment (Gavriel, 2013; Hernandez, 2012; Hoover & Abrams, 2013). However, Hernandez (2012) argued that educators should not focus on the terminology differences between these two types of assessments, but, rather, on the purpose and effect the assessment practice had on students' academic growth and achievement. Moreover, Bennett (2011) and Datnow and Hubbard (2015) argued that assessment, i.e., formative and summative, should not be limited to separate definitions because the use of both types of assessments supported learning that contributed to student achievement.

Formative Assessment

Assessment *for* learning provided students with opportunities to understand clearly what they had to learn and inspired them to set higher standards for themselves (Ali & Khan, 2016). An assessment was formative when the teacher and students continuously and systematically gathered evidence of learning with the express goal of improving student achievement and to guide instruction (Atjonen, 2014; Clark, 2012; Moss, Brookhart, & Long, 2013; Riggan & Olah, 2011; Young & Kim, 2010). In addition, the effect of formative assessment highly diminished if teachers failed to utilize evidence of student learning to determine subsequent instructional steps and to assist the student's progress (Schneider & Andrade, 2013). Despite the importance of formative assessments, researchers conducted little empirical research on how well and how often teachers utilized formative assessments in their classrooms (Schneider & Andrade, 2013).

This was particularly worrisome given that certain educational frameworks, such as RTI, integrated evaluation and intervention in a multi-tiered system to maximize student attainment (VanDerHeyden, Witt, & Gilbertson, 2007).

Student learning and feedback. Weurlander, Soderberg, Schejac, Hult, and Wernerson (2012) stated that although teachers could design formative assessment in many different ways to accommodate different aims, its main function was to generate feedback on students' performance in order to improve learning. Researchers insisted that feedback during formative assessment was the most powerful enhancement tool for learning (Wakefield, Adie, Pitt, & Owens, 2014). Researchers proposed this form of teacher and student communication, after the collection of different kinds of evidence of a student's learning, to give a learner time to utilize the information to make necessary changes (Costel, Simon, Ana, & Stefan, 2015; Evans, Zeun, & Stanier, 2014; Schneider & Andrade, 2013; Srivastava, Waghmare, & Vagha, 2015). However, some researchers warned against written feedback as a way to produce favorable student outcomes or performance and stated that even though teachers carefully constructed feedback comments on assignments, students often did not read them or students often did not seem to act on the feedback provided (Nicol, 2010; Orsmond, Maw, Park, Gomez, & Crook, 2013).

Summative Assessment

Hahn, Mentz, and Meyer (2009) and Hoover and Abrams (2013) interpreted this term as assessment *as* or *of* learning for students that teachers usually administered to students at the end of a teaching experience. It aided in assessing what and how much students learned, i.e., a grade or a result (Yorke, 2011). Atjonen (2014) pointed out the benefits of summative assessment and stated "It may improve motivation, give guidance to pupils, teachers, and parents, and lead to

improved performance because scores and grades seem to be unambiguous" (p. 239). Moreover, lawmakers can use summative results from high-stakes testing to make decisions to add or amend important educational policy or practices (Graham, Hebert, & Harris, 2011). Reed (2015) stated:

> In spite of the benefits of information collected by annual state assessments, the assessments may not be suited for improving teaching and learning within an academic term because they tended to be summative and are usually administered once during the school year. (p. 1)

Hoover and Abrams (2013) asserted that despite the fact that teachers administered and acquired vast numbers of summative assessments and amounts of summative data, teachers did not frequently report analyzed data at the same rate, leaving information to support student learning and inform instructional practice untapped. Furthermore, research studies supported lack of awareness among teachers about collaborative instructional planning that could be beneficial for student success. In addition, researchers found that teachers concentrated their time more on how to improve test scores than on student conceptual academic understanding (Blanc et al., 2010; Datnow & Hubbard, 2015; Olah, Lawrence, & Riggan, 2010).

Integrating Formative and Summative Assessment

Marchand and Furrer (2014) stated that research data on formative assessment programs, such as curriculum-based measurement for reading (CBM-R) in the general education classroom, found a positive correlation among predicted and standardized summative assessment reading scores. According to Atjonen (2014) and Bennett (2011), summative assessments primarily served as assessment *of* learning, but could fulfill formative purposes to support assessment *for* learning. In addition, Atjonen (2014), Black and William (2003) and Brookhart (2010) posited

for mixing summative and formative assessments because both assessment types clearly related to instructional goals and data could be further analyzed in ways that provided teachers with information to change their instructional practice to enhance student learning.

Educational Standards and Testing

The use of standardized tests is one of the core methods to measure schools' and teachers' performances in the United States (Morgan, 2016). The educational accountability movement in the United States greatly increased the importance testing had on the educational and occupational outcomes of children (Segool, Carlson, Goforth, Von Der Embse, & Barterian, 2013), and was one of the greatest challenges that schools experienced since legislators instituted the prior No Child Left Behind policy (Von Der Embse & Hasson, 2012). Many federally funded educational institutions employed high-stakes tests to ensure that schools delivered content knowledge, with the hope that students and teachers would work harder to accomplish better results. In addition, the federal government hoped that teachers would strive to implement their best teaching knowledge in order to receive rewards and to avoid penalty (Lobascher, 2011). Moreover, William (2010) inferred that the United States and various other national systems suggested that high-stakes accountability systems had a positive impact on what students learned.

Test Anxiety and School Curriculum

According to Wood, Hart, Little, and Phillips (2016), "In the United States, elementary students were found to experience more test anxiety for state standardized tests than for classroom tests" (p. 235). DeCuir (2014) distinguished high-stakes testing as a matter that had consequences for performance to incentivize teacher effectiveness and student achievement. Researchers found that 355 students participating in grades 3 through 5 assessments had test

anxiety in relation to high-stakes testing versus classroom testing (Segool, Carlson, Goforth, Von Der Embse, & Barterian, 2013). In addition, Bennett and Brady (2014) and DeCuir (2014) claimed that many key criticisms of high-stakes testing were that it forced educators to narrow their curriculum and it imposed drill and kill methods on classroom practices. William quoted Rapple (1994) who elaborated on the damage caused by high-stakes accountability and stated:

> True accountability in education should not be facilely linked to mechanical examination results, for there is a very distinct danger that the pedagogical methods employed to attain those results will themselves be mechanical and the education of children will be so much the worse. (William, 2010, p. 108)

School Diversity and Test Validity

Sireci and Faulkner-Bond (2014) stressed that testing cannot be considered inherently valid or invalid because what was validated was not the test itself, but rather the use of the test. In addition, the American Psychological Association (2014) claimed that tests represented an adequate means to measure student performance only if test developers correctly built the exam. However, they warned that one should not use tests as the sole means to make decisions on whether a student advanced or not.

Over the years, schools gained an influx of diverse students that led educators to become more culturally responsive. Best practices for teaching diverse students, such as, utilizing the latest knowledge, technology, and procedures, gave way, however, to all students sharing and partaking in equal learning because of standardized testing. In addition, many test measurements were not valid for all students, such as, English Language Learners, because tests were usually in English. Students' limited English proficiency potentially caused construct-irrelevant variance

(Sireci, Han, & Wells, 2008). *The Standards for Educational and Psychological Testing* (2014) outlined parameters for test developers and suggested:

> Standard 7.1: Describing Purpose, Population, and Construct. Obtain or develop documentation concerning the intended purposes of the test, the populations to be served, and the constructs to be measured. Developers should know what the test is intended to measure, the characteristics of the intended test takers, and how the test is intended to be used. For some programs, the information about the intended purposes, populations, and constructs has been collected and need not be recreated. For other programs, obtaining the information may be part of the developers' task. If the information has to be obtained, work collaboratively with clients, subject-matter experts, and others as appropriate. (p. 29).

Data-Driven and Instructional Practices

According to Datnow and Hubbard (2015) and Klossner, Corlett, Agel, and Marshall (2009), data practices were the methodical gathering and maintenance of authentic information to develop policy and evaluate outcomes. In education, statistical data results played an important part in society because they led to positive or negative outcomes, depending on data use, and by whom (Datnow & Hubbard, 2015). Dunn, Airola, Lo, and Garrison (2013) posited that data obtained and employed for various purposes produced positive results for instructional design in both general and special education classroom settings. Moreover, Mandinach (2012) asserted, "Understanding data use and interpretations differed for different people and only acquired meaning through context by transforming the data into usable knowledge" (p.71)

Integrating Data in Schools and Classrooms

Employing data in schools complied with state and federal laws with respect to accountability measures and classification for specific learning disabilities under the IDEA (Kressler, 2014). Vaughn and Swanson (2015) stated the following about the use of data for the purpose of implementing RTI:

> The idea is much like medicine in that very aggressive and expensive treatments are not provided if milder, less aggressive, and less expensive treatments are effective; however, one must also move quickly to provide more aggressive and intensive interventions as soon as it becomes clear they are required. (p. 12)

Schools use universal screening instruments as a forecasting tool to determine who is an at- risk student in an attempt to prevent academic failure (VanDerHeyden & Burns, 2013). According to Regan, Berkeley, Hughes, and Brady (2015), universal screening systematically assessed students' intellectual and/or behavioral performance and identified who was at risk for learning challenges. However, researchers warned against overanalyzing universal screening data for students in the early childhood grades, such as kindergarten, because it led to false positive or false negative classification (Fuchs & Vaughn, 2012; Jenkins, Schiller, Blackorby, Thayer, & Tily, 2013; McAlenney & Coyne, 2015; McKenzie, 2010). McAlenney and Coyne (2015) defined a false positive risk classification as students whose universal screening data results showed potential risk for academic deficiencies, yet students never developed serious difficulty over a period of time that hindered their learning progress. In contrast, false negative results were data that failed to identify on a screening measure students at risk for academic failure who later performed poorly on criterion measures (McKenzie, 2010). Instruments that produced numerous false positive and false negative classifications jeopardized the integrity of RTI because they created an unenthusiastic implication for schools with regard to time and

funds, and further delayed assistance to those who needed academic intervention (McAlenney & Coyne 2015; VanDerHeyden & Burns 2013).

Data and an individual educational plan. Data are an important aspect of the development of an IEP that contributes significantly to the foundation of annual goals, objectives, and progress monitoring (Hessler & Konrad, 2008; Peterson et al., 2013). However, according to Capizzi (2008), some assessment data provided to develop IEPs was inadequate for instructional decisions and program planning. In addition, even though assessment instruments must be valid, reliable, and administered by trained and knowledgeable personnel to yield accurate information, "very little, if any, research on how school psychologists are trained to engage in SLD decision making exists" (Barrett, Cottrell, Newman, Pierce, & Anderson, 2015, p. 273). Capizzi (2008) further pointed out that training institutions needed to adjust their conventional assessment courses to be consistent with contemporary approaches to theory-based interpretations of cognitive measures (Cottrell, Anderson, Pierce, Barrett, & Newman, 2015; Decker, Hale, & Flanagan, 2013).

Issues and challenges with using data. Federal and state government guidelines state that schools are accountable for student's achievement and must rely on evidence (student and school data) to inform decision-making and program development (Young & Kaffenberger, 2015). However, Sun, Johnson, and Przbyiski (2016) stated "There is a lack of consensus regarding how school leaders should promote teachers' use of student data, both in theory among scholars and in practice among practitioners" (p. 94). Even though there are benefits to a systematic and regular application of data use and documentation to promote teachers' performance and students' learning, schools found it difficult to achieve consistent use in practice (Brown & Zhang, 2016).

Over the years, researchers promoted data-driven use as an antidote for lack of instructional improvement. This mantra received great attention. However, the understanding of how teachers actually used assessment data to inform instruction lacked significant details (Datnow & Hubbard, 2015; Hoover & Abrams, 2013; Kerr, Ikemoto, Darilek, & Barney, 2006), and educators demonstrated insufficient skills regarding how to use the data for student and school improvement (Murray, 2014). In addition, although many school districts invested in advanced technology systems to gain, retrieve, and assess data more conveniently, empirical research from previous validation studies showed that the use of data-based evidence for improving education continued to be an embedded assumption (Coburn & Turner, 2012; Ercikan, 2013; Kerr, Ikemoto, Darilek, & Barney, 2006).

Data-driven instruction and teaching practices demanded that both teachers and other school resource personnel collect adequate student data that they should then compare, quantify, analyze, and integrate into schools and classroom curriculum (Ercikan, 2013; Mandinach, 2012). If teachers had difficulty understanding how to address students' academic deficiencies as characterized by data results and teacher were reluctant to modify their instruction, then the information gathered from the assessment was of little use (Datnow & Hubbard, 2015; Heritage, Kim, Vendlinski, & Herman, 2009).

Teacher Self-Efficacy: Student Achievement and Instructional Practices

Self-efficacy is the product of one's ability to perform using specific skills, not a function produced by one's skills (Yildirim, 2015). In addition, "self-efficacy or self-confidence refers to an individual's belief in his or her ability to perform certain physical tasks or meet specific situational demands" (Al-Obaidi, Wall, Mulekar, & Al-Mutairie, 2012, p.110). According to

Scherer, Jansen, Nilsen, Areepattamannil, and Marsh (2016), teachers' self-efficacy was the focal point of many studies because it linked with many factors, such as:

- Researchers felt that teachers' self-efficacy was an essential teacher characteristic that related to their effective behavior in classroom settings.
- Teachers' self-efficacy affected students' educational outcomes, such as, achievement and motivation
- Teachers with high self-efficacy showed higher job satisfaction and were less likely to be affected by burnout, and
- Teachers' levels of self-efficacy changed with their work experience over time and indicated changes in their professional competences, job satisfaction, and well-being (p. 3).

Isbell and Szabo (2015) cited Rotter (1948) who believed that "Locus-of-control was one of four dimensions of self-evaluation, which leads to the development of either high or low self-esteem or self-efficacy" (p. 43). Furthermore, Bandura's 1993 social learning theory stated that a person's self-efficacy was necessary for and linked to a person's thinking that he or she possessed the required skills to successfully accomplish any given task (Dunn, Airola, Lo, & Garrison, 2013; Isbell & Szabo, 2015; Konakli, 2015). Academically, successfully, and adequately supporting learners who encountered content challenges depended on educators' self-efficacy towards assisting students to acquire skills to meet their learning targets.

Scholars proposed positive links between perceptions of teacher's self-efficacy and student achievement, motivation, positive teaching behavior, and teaching competency (Boz & Boz, 2010; Olayiwola, 2011; Tanel, 2013; Yildirim, 2015). Likewise, when a teacher believed that he or she will successfully complete an activity, the probability of undertaking the activity

was high and the teacher was more likely to utilize teaching strategies that were student centered (Bruce, Esmonde, Ross, Dookie, & Beatty, 2010; Eroglu & Unlu, 2015; Tschannen-Moran & Hoy, 2007).

Bruce, Esmonde, Ross, Dookie, and Beatty (2010) found that teachers' levels of self-efficacy directly affected their adoption of new teaching approaches and their level of motivation to encourage students. Moreover, Dunn, Airola, Lo, and Garrison (2013) affirmed that teachers with a high sense of efficacy had a strong conviction that they influenced and improved student learning and were affirmative and constructive about instructional design and teaching practices. On the contrary, teachers with low levels of self-efficacy were reluctant towards innovative approaches and technology adoption as they were uncertain about their ability to properly implement the new approaches (Shoulders & Krei, 2015), all of which further engendered burnout, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment (Oakes, Lane, Jenkins, & Booker, 2013). In two different studies, scholars found that teachers with lower self-efficacy opted to refer students for evaluation and those with higher personal self-efficacy were more willing to successfully implement classroom interventions to aid students who may need remediation (Donnell & Gettinger, 2015; Gotshall & Stefanou, 2011).

RTI's successful implementation relies heavily on teachers' self-efficacy and their beliefs about themselves (Myers, Simonsen, & Sugai, 2011). RTI is a growing practice in the general education classroom to assess and provide high quality instruction to students at risk for academic failure (Isbell & Szabo, 2015). A study on the impact of Response to Intervention Involvement (Rtl-INV) and Response to Intervention- Implementation (Rtl-IMP) in connection

with teacher self-efficacy beliefs revealed higher self-efficacy beliefs and behaviors associated with higher levels of Rtl-INV and Rtl-IMP (Nunn, Jantz, & Butikofer, 2009).

Professional Development

Professional development training is an ongoing means to improve content knowledge and pedagogical skills, and a way to adjust teaching attitudes that positively affects and influences the improvement of professional practice (Yim & Ebbeck, 2011). Researchers define professional development as "the improvement process of an individual in terms of skills, knowledge or learning in order to maintain their profession or job, it can be considered as a key concept for a continuous career in a rapidly changing and modern world" (Babanoglu & Yardimci, 2017, p.790), ultimately enhancing student performance (Khan & Chishti, 2012). According to Murza, Ehren, Nippold, and Hoffman (2015), professional learning was "Specialized learning that encourages and supports comprehensive, sustained, and intensive in-service education" (p. 182). A study on the effects of staff training and development found:

- Staff training and development programs provided opportunity to refresh prior knowledge.
- Staff training and development programs introduced new concepts in the field.
- Staff training and development programs helped teachers understand content knowledge in a broader sense and enabled them to interrelate the concepts imparted.
- In staff training and development programs, teachers learned new pedagogical skills for effective teaching.
- Staff training and development programs enabled teachers to inculcate new and emerging trends in the material, and

- Staff training and development programs guided teachers to new methods of updating reading material (Khan & Chishti, 2012, p. 93).

In addition, in a study teachers completed 84 hours of professional development over a course of 13 months. The study focused on exploring how a mathematics professional development program influenced elementary school teachers' knowledge, beliefs, and practices. The researcher found that professional development assisted teachers to make significant gain in their mathematical knowledge related to teaching and learning of mathematics (Polly, Neale, & Pugalee, 2014).

Increasing a teacher's confidence through professional development and associated instructional support enhanced an educator's self-efficacy. Administrators developed and maintained teacher skills by means of properly designed training programs that were either vicarious or mastery experiences (Tschannen-Moran & McMaster, 2009). Moreover, Valdmann, Rannikmae, and Holbrook (2016) stated, "To address teacher needs and to develop their self-efficacy in the classroom, teaching support is needed through the development of an effective professional development provision" (p. 285).

However, one key challenge that many schools faced in carrying out educational reform was not enough professional development on data use to improve instructional practice. As a result, states, districts, and schools began devoting increasing amounts of time and money to data driven decision-making professional development (Dunn, Airola, Lo, & Garrison, 2013). In addition, in order for schools to provide teachers with pedagogical skill, the U.S. Department of Education, Institute of Education Sciences (2009) suggested that facilities should determine their needs and tailor professional development to equip all educational staff to increase their help to students to meet defined learning goals across all content areas.

Summary

The Chapter II literature review focused on theoretical and pedagogical data driven practices, how assessment and intervention practices can support student achievement, teacher's self–efficacy towards the profession, and professional development for enhancing pedagogical practices. Inclusion practices mandated by the IDEA required teachers to expand their methods and use of those best practices that offered credible outcomes to guide student centered learning. Moreover, the IDEA included the model of the RTI framework that determined if students responded to scientific research-based interventions for the identification of specific learning disabilities. Creswell's (2013) views on when to employ qualitative research stated:

> We conduct qualitative research because we need a *complex,* detailed understanding of the issue. This detail can only be established by talking directly with people, going to their homes or place of work, and allowing them to tell their stories unencumbered by what we expect to find or what we have read in the literature. (p. 48).

Chapter three will detail a qualitative, phenomenographical method that aims to understand and describe the variation of teachers' perceptions of data-driven practice, i.e., formative use of summative assessment in an RTI model.

CHAPTER III

METHODOLOGY AND RESEARCH DESIGN

Researchers developed phenomenography within the framework of educational research that explores participants' experiences. Researchers designed phenomenography to examine different ways in which people conceptualize a particular phenomenon (Marton, 1981). In addition, Chen, Partington, and Qiang (2009), Kettunen, Vuorinen, and Sampson (2015), and Sin (2010) noted, "Phenomenography focuses on the internal relation between a person and the world, rather than focusing on either the person or their world separately" (p. 4). Therefore, this method lends itself to the study of teachers' perceptions of data-driven practice, i.e., formative use of summative assessment in an RTI model.

Purpose of the Study

Mbabazi, Fejes, and Dahlgren (2013) asserted that it is important that we understand the different educational concepts that can influence stakeholders' decision-making. In higher education, phenomenography contributed to the knowledge of learning by making apparent the different ways learners perceive their learning (Marton & Booth, 1997). According to Lin (2011), "If different ways of experiencing learning can be obtained, it will facilitate educators to improve students' learning outcomes, and provide a foundation for developing more appropriate curricula or instructional approaches in their class" (p. 2). Although data driven decision-making (DDDM) is not a new paradigm, there was little research on variables of teachers' adoption of it to facilitate instruction (Dunn, Airola, Lo, & Garrison, 2013). According to Akerlind (2008):

> Researchers suggested that the most effective way of approaching teaching development for academics is to focus on developing their conceptual understanding of the nature of teaching and learning, as opposed to the more traditional focus on developing their

> teaching methods and skills. This is not to deny the value of developing teaching methods and skills, but to argue that one should not address them in isolation from the ways of thinking about teaching and learning that underlie them. (p. 633)

Research Questions

The following research questions (RQ) guided the current study:

- RQ 1: To what extent do teachers utilize RTI in their pedagogical practices?
- RQ 2: To what extent do teachers collect assessment data to make research-based instructional decisions?
- RQ 3: To what extent does teachers' self-efficacy affect the use of application of data results to support research-based intervention practices?
- RQ 4: To what extent is professional development available to support teachers with regard to implementing research-based practices?

Qualitative Research

Malterud (2001) stated, "Qualitative research methods involve the systematic collection, organization, and interpretation of textual material derived from talk or observation" (p. 483). Qualitative research practices are appropriate when the researcher wishes to explore a phenomenon that cannot be reduced to a single data point (Creswell, 2013), to allow the researcher the ability to understand the nature of educational problems, and to add to awareness of teaching and learning in a number of contexts (Anderson, 2010). Phenomenographic qualitative research is appropriate for this study because it adopts a naturalistic, explorative approach that seeks to understand phenomena in a real world setting. In addition, this method of study offers researchers the liberty to choose topics of interest because other research methods are likely to be constrained by the inability to establish the necessary research conditions (as in

an experiment) and the unavailability of sufficient data series or lack of coverage of sufficient variables (as in an economic study). Moreover, Yin (2011) stated, employing another method, the researcher may encounter difficulty in drawing an adequate sample of respondents (as in a survey), and other limitations could be devotion to studying the past, but not ongoing events (as in a history).

Philosophical Assumptions in Phenomenographic Research

Researchers incorporated various philosophical assumptions into their research studies. Qualitative researchers recognized the significance of theoretical frameworks that informed and guided their research. Creswell (2013) outlined four major philosophical assumptions in qualitative research:

- Ontological research relates to the nature of reality and its characteristics. Researchers embrace the idea of multiple realities and report on these multiple realities by exploring multiple forms of evidence from different individuals' perspectives and experiences.
- Epistemological researchers try to get as close as possible to the participants they study. Researchers assemble subjective evidence based on individual views from research conducted in the field.
- Axiological researchers make their values known in the study and actively report their values and biases, as well as the value-laden nature of information gathered from the field, and
- Methodology is inductive, emerging, and shaped by the researcher's experience in collecting and analyzing the data.

According to Richardson (1999), some researchers disparaged phenomenographyas a standard of psychological research as a fundamentally descriptive enterprise. Richardson stated that, “It lacked the explicit epistemological foundation that other approaches possessed” (p. 57). However, Andersson, Willman, Sjostrom-Strand, and Borglin (2015) and Sjostrom and Dahlgren (2002) elaborated on ontological and epistemological phenomenographical assumptions and stated that ontologicality is non-dualistic and human beings can only communicate about a particular phenomenon through experience. In epistemology, individuals differ in terms of how they experience the surrounding world. Moreover, Ornek (2008) stated that people’s perspectives and phenomenon were not separate. For example, Ornek (2008) expressed:

> When children are asked how the number 7 can be obtained, one might sense it as 5+2, but another one may say 6+1 or 4+3. Their conclusions may be the result of an experience of the number 7, the result of reflection or some other possibilities. In all cases, 7 is seen as a sum of two pairs, 5 and 2, 6 and 1, or 4 and 3. Therefore, we simply cannot deal with an object without experiencing or conceptualizing it in some way. In this sense, the subject (children) and object (numbers) are not independent. (p. 3)

History of Phenomenography

Phenomenography originated with Ference Marton and his colleagues from studies conducted at the University of Gtteborg in Sweden in the early 1980s that investigated the qualitative differences between how individual students learn (Aflague & Ferszt, 2010; Ashworth & Lucas, 2000; Richardson, 1999; Sharma, Stewart, & Prosser 2004). Phenomenography etymologically developed from the Greek words “phainomenon” or appearance and “graphein” or description. Therefore, “the basic assumptions of phenomenography are that different people do not experience a phenomenon in a same way, and

instead, people have a wide variety of perceptions and understandings about phenomena" (Assarroudi & Heydari, 2016, p. 218).

Phenomenography vs. Phenomenology

Phenomenography as a research approach is obscure and a new approach to educational research in contrast to phenomenology, which is a more well- known, qualitative approach, used by many researchers (Akerlind, 2007; Larsson & Holmstrom, 2007). However, phenomenography was not a spawn of phenomenology (Aflague & Ferszt, 2010; Marton, 1986). Phenomenography is the qualitative study of various ways in which people conceptualize, comprehend, or identify a particular phenomenon and the distinctive qualitative ways in which people perceive the world around them (Gustafsson, Asp, & Fagerberg, 2009; Sjostrom & Dahlgren, 2002; Stenfors-Hayes, Hult, & Dahlgren, 2013). In contrast, "phenomenology is a school of thought that gives a direct description of our experience as it is" (Ash & Simpson, 2016, p. 48).

Phenomenological researchers take the first-order perspective. This perspective involves facts and how the people describe the world as it is by investigating a small number of individual experiences (Andersson, Lundberg, Jonsson, Tingstrom, & Dahlgren, 2015; Marton, 1981). However, phenomenography takes the second-order perspective in which people describe the phenomenon as it is understood. Richardson (1999) argued:

> Marton (1978) took the first steps in constructing a more convincing and principled rationale for his approach. He suggested that conventional research on student learning adopted a "first-order" or "from-the-outside" perspective that sought to describe the learner and the learner's world in broadly the same terms. He characterized his own

> approach as adopting instead a "second-order" or "from-the-inside" perspective that sought to describe the world as the learner experienced it. (p. 57)

Hultsjo and Blomqvist (2013) stated, “While the phenomenological methodology or philosophy searches for the lowest common denominator in individuals’ experiences, phenomenography is a qualitative approach that searches for variations in the conceptions among a group of people” (p. 666). Larsson and Holmstrom (2007) detailed the contrast between phenomenology and phenomenography and defined the difference as:

> Phenomenography, with the suffix *-graph*, denotes a research approach aiming at describing the different ways a group of people understand a phenomenon (Marton, 1981), whereas phenomenology, with the suffix *-logos,* aims to clarify the structure and meaning of a phenomenon. (p. 1)

Moreover, phenomenography and phenomenology differ because each method has its own technique of data collection and selection of analysis tools (Sharma, Stewart, & Prosser 2004; Ornek, 2008). Edmund Husserl, the father of phenomenology, advocated “Bracketing” (Cartwright, Mountain, Lindo, & Bore, 2018, p. 79), where the researcher withholds judgment as a major aspect of the research method, while in phenomenography the researcher’s focus is on understanding and reflecting on the subjects or participants.

Research Design

According to Forster (2013), if education were a motive for a given study and the researcher used findings as a source for educational interventions, then a methodology would be required in which:

- Researchers investigate experiences subjectively: One does not treat the individual and experience as wholly separate phenomena.

- Researchers investigate experiences in a way that is sensitive to the variation in the contexts in which the phenomenon is experienced, and
- Researchers investigate experiences in a way that is sensitive to the variation in how different individuals experience the phenomenon in any one context (p. 31).

This study adopted the phenomenography method because it employed all of the above criteria, compared to the phenomenology method that unsuccessfully meets some or all of the constraints because it does not differentiate between individual experiences or analyze the variations between them (Forster, 2013).

Participants and Setting

According to Creswell (2013) and Holland, Middleton, and Uys (2013), researchers select individual participants through purposeful and convenience sampling so that the researcher can best enhance and understand the phenomenon under study and because participants are accessible to the proximity of the researcher. Moreover, Sargeant (2012) expressed in "Qualitative research, the sample size is not generally predetermined and the number of participants depends upon the number required to fully inform all important elements of the phenomenon being studied" (p. 1). For this study, the researcher employed eighteen New York City elementary and middle school teachers who provide reading instruction because previous phenomenographic studies suggested that ten to fifteen participants can strategically capture variation (Akerlind, 2008; Larsson, Bergman, Fridlund, & Arvidsson, 2010; Pihl, Fridlund, & Martensson, 2011). This allowed the researcher to become intensely involved in the data and, therefore, the phenomenon (Motlhabane, 2016). The sampling technique involved calling and emailing teachers and asking for written permission to participate in the study.

Instrument and Data Collection

This study aimed to identify and characterize variations of teachers' perceptions of formative use of summative assessment in an RTI model through data collection interviews. According to Creswell (2013), there are necessary steps that a researcher should follow when conducting this type of interview.

Table 3.1

Steps for Qualitative Interviewing and Associated Procedures

Steps for Qualitative Interviewing	Procedure
Research Questions	Interviewees will answer open-ended questions that will focus on understanding the central phenomenon in the study.
Identification of Interviewees	The researcher selected them through purposeful sampling.
Type of Interview	For one-on-one interviews, Creswell suggested that researchers need individuals who are not hesitant to speak and share ideas.
Recording Procedures	When conducting a one-on-one interview, Creswell recommended equipment, such as a microphone, for both the interviewer and the interviewee.
Interview Protocol	The researcher will develop an interview guide with enough space to write the responses.
Place	The researcher will find a quiet location free from distractions.
Consent Form	The researcher will have the interviewee complete a consent form to participate in the study and will go over the purpose of the study, the amount of time needed to complete the interview, and plans for using the results from the interview.
Interview Procedures	The interviewer will complete the interview within the time specified, be respectful and courteous, and be a good listener, rather than a frequent speaker during an interview.

Note. Qualitative Inquiry and Research Design (Creswell, 2013).

In a qualitative research study, the researcher functions as the main data collection instrument (Creswell, 2013). In order to gather variation of teachers' perceptions, the researcher

conducted the data collection and clarified the aim of the study. The process involved scheduling face-to-face, in-depth, prepared, semi- structured interviews consisting of ten open-ended questions to be conducted with selected participants in a quiet room (Aflague & Ferszt, 2010; Larsson, Bergman, Fridlund, & Arvidsson, 2010; Sjostrom and Dahlgren, 2002). According to Johansson, Nyirenda, Johansson, and Lorefalt (2011) and Sjostrom and Dahlgren (2002), the researcher allowed participants to think aloud and pause if necessary during their responses. The entire interview process lasted up to one hour per participant. The researcher used a digital recorder and an iPhone to record the interview. She synchronized the information into NVivo11 (NVivo, 2015) for Mac qualitative software, so the program transcribed the content verbatim.

Data Analysis

In qualitative research, data analysis consists of constructing, organizing, and minimizing data into themes through a process of coding, and, finally, representing the data in various formats. In phenomenographic data analysis strategies, the literature indicated that the analysis studies could be carried out in multiple ways (Grundberg, Ebbeskog, Dahlgren, & Religa, 2012; Forster, 2013). According to Sjostrom and Dahlgren (2002), the "Analysis phase is a matter of reading and re-reading whole interviews before ending up with certain sections or excerpts that convey the most significant information" (p. 341). Forster (2013) stated that Bowden's method used the entire transcript, or large sections of each transcript, to increase accuracy in interpreting the answers, while Kettunen, Vuorinen, and Sampson (2015) stated that Marton's method, "Utilized segments from transcripts and preferred to explore smaller section analysis" (p. 47). Cited in much research, Dahlgren and Fallsberg's analysis method consists of seven specific stages (Hammar & Hakansson, 2012; Johansson, Nyirenda, Johansson, & Lorefalt, 2011;

Larsson & Holmstrom, 2007). For this study, the researcher chose to utilize the Dahlgren and Fallsberg's seven-step stages of data analysis, rather than Marton's system. The seven step stages follow:

Table 3.2

Seven Steps of Phenomenographic Qualitative Analysis

Seven Stages	Definition
Familiarization	Reading the interview transcripts to get a fresh impression of how the interview proceeded. In this initial phase, the researcher gives all data in the entire pool equal consideration.
Condensation	Identifying meaning units in the dialogue and marking or saving these for the purpose of further scrutiny. The size of the meaning units identified in this step varies: some researchers claim that these chunks can be fairly small, whereas others emphasize the importance of keeping the whole transcript more or less together.
Comparison	Comparing the units with regard to similarities and differences.
Grouping	Allocating answers expressing similar ways of understanding the phenomenon in the same category.
Articulating	Capturing the essential meaning of a certain category.
Labeling	The researcher repeats Steps 3–6 in an iterative procedure to make sure that the researcher discerns the similarities within and the differences between categories and formulates labels in a distinct way.
Contrasting	Comparing the categories through a contrastive procedure whereby the researcher describes the categories in terms of their individual meanings, as well as in terms of what they do not comprise.

Note. A Phenomenographic Approach to Research in Medical Education (Stenfors-Hayes, Hult, & Dahlgren, 2013).

Phenomenographical methods utilize categories of descriptions as the focal element of data to identify and describe the qualitative variation of the experience of a given phenomenon. Berg, Arestedt, and Kjellgren (2013) stated that in performing a phenomenographic analysis one manages the data as one set to attain descriptions related to the group of respondent individuals. In this study, the categories of description are variations of experiences in teaching practices, i.e., assessment and RTI practices. Outcome space represents the data analysis results, which are descriptive categories of the different ways in which the phenomenon is understood (Heiwe & Tollin, 2012; Marton & Booth, 1997). The researcher characterized the outcome space in a hierarchical order, demonstrating the relationship between the similarities and the differences of the participants' experiences.

Phenomenography: Trustworthiness

No research method, whether quantitative or qualitative, is without criticism with regard to the study's reliability and validity. However, phenomenographical research framework holds the same common, underlying expectation as many other qualitative systems because it involves descriptive categories (Berg, Arestedt, & Kjellgren, 2013). Anderson (2010) stated that unlike quantitative methods, "Qualitative research is often criticized as biased, small scale, anecdotal, and/or lacking rigor" (p. 2). Qualitative studies do not adhere to the same measures of reliability and validity as quantitative studies; however, when a researcher carries them out properly, they can be unbiased, in depth, valid, reliable, credible, and rigorous. The use of rigorous data collection and analysis methods is essential for the trustworthiness of the results of a phenomenographic research study and one should analyze the results by those criteria (Larsson, Bergman, Fridlund, & Arvidsson, 2010). Qualitative researchers suggested that authors align validity and reliability with that of quantitative studies, but qualitative studies are naturalistic and

instead of the terms *reliability and validity*, they use the overall terms *trustworthiness, credibility, dependability, confirmability, and transferability* to establish validity and reliability (Creswell, 2013; Lincoln & Guba, 1985).

Credibility

Creswell (2013), who cited Eisner (1991), proposed that instead of using the term *validation,* the researcher should assign other alternative terms that can provide practical and realistic standards for judging the credibility of qualitative research. According to Holland, Middleton, and Uys (2013), in phenomenographical research, employing purposeful sampling can enhance the credibility and frame the nature of the study. In addition, Stenfors-Hayes, Hult and Dahlgren (2013) stated that researchers obtain creditability through the relationships among the categories and the data, strengthened by quotations about the characteristics of the similarities and differences acquired from excerpts from the interviews (Grundberg, Ebbeskog, Dahlgren, & Religa, 2012; Gustafsson, Asp, & Fagerberg, 2009). For this study, the researcher strengthened credibility through open interviews and follow-up questions to avoid any misunderstanding of the participant's responses and /or his/her reflection on his/her experiences of the phenomenon (Boll & Rosenqvist, 2011; Marton & Booth, 1997; Ornek, 2008; Sjostrom & Dahlgren, 2002). In addition, to ensure that the research adheres to the standards of qualitative methods and to strengthen the data analysis, the researcher used peer debriefing in this study, where more than one reader analyzed the audio transcript to validate credible findings based on the data (Epley, Ferrari, & Cochrane, 2017; Peeters et al., 2014).

According to George and Thomas (2010), "Bracketing presumes that researchers are capable of separating their knowledge from personal experience, at least temporarily, while collecting and analyzing data" (p. 1094). Ashworth and Lucas (2000) suggested that

phenomenographers be sensitive to individual participants and that the research would benefit from bracketing, which is a part of phenomenological methodology. Moreover, Boll and Rosenqvist (2011) stated that Husserl's phenomenological bracketing method would strengthen phenomenographical study with regard to reliability and the interpretation of the findings. Even though it is not common to apply bracketing to phenomenographic research, the researcher exercised this practice to enrich the credibility of the study. However, Holland, Middleton, and Uys (2013) argued that bracketing is unnecessary because researchers consciously or unconsciously invoke this method to some degree. In spite of this argument this researcher chose to establish two bracketing conditions in the current study (a) implementation of structured interviews; and (b) noting the position taken by the researcher in terms of the theoretical framework, the development of research questions, the choice of participants, her beliefs regarding data driven instruction, and her underlying motivation for the research.

Dependability

Dependability is an evaluation measure that focuses on the consistency of the research process and the stability of data over time (Connelly, 2016; Creswell, 2013). According to Connelly (2016), dependability "Is similar to reliability in quantitative research, but with the understanding that stability of conditions depends on the nature of the study" (p. 435). To strengthen the research's dependability, the researcher used content analysis, repeatedly listened to the recorded interviews, transcribed them, and read the transcripts a number of times.

Confirmability

Larsson, Bergman, Fridlund, and Arvidsson (2010) affirmed "Conformability of the results is considered relevant due to the way in which the data were systematically and carefully handled: repeated readings, identification and reflection on the resulting conception" (pp. 8-9).

An audit trail is available to support confirmability. According to Amankwaa (2016), "An audit trail is a transparent description of the research steps taken from the start of a research project to the development and reporting of findings" (p. 122). The conformability for this study systematically employed Sjostrom and Dahlgren's seven-step interpretation of Marton's stages of data analysis, and the textual-structural descriptions in the final report used a consistent format to ensure that other researchers can compare the data on an equitable basis.

Transferability

Grundberg, Ebbeskog, Dahlgren, and Religa (2012), and Sjostrom and Dahlgren (2002) stated that Marton (1981) addressed the question of replicability in qualitative phenomenography. He argued that it is not justified, or even desirable, as the actual identification and description of the categories constitute the study's results. Therefore, transferability of the research findings to other studies involves recontextualisation of the authenticity of the result. However, Miyata and Kai (2009) stated, "To improve the quality of transferability, original researchers are responsible for providing sufficient descriptive data for implementers to make better transferability judgments" (p. 72).

Ethical Considerations

To ensure confidentiality and privacy, the researcher provided participants with full disclosure about the purpose of the study, a description of their means of participating, and information about how the researcher ensured their confidentiality and privacy. Prior to participation in the study, all participants signed consent forms. To protect the anonymity and confidentiality of the study participants, the researcher assigned pseudonyms to keep information and responses anonymous. This is important to ensure more honest respondents' answers.

The study participants did not experience any discomfort, risk, harm, or expense by participating, other than the time spent in the interview. The researcher made every effort to make participation in the study as convenient for the participants as possible by offering a twenty-dollar Visa gift card, which the researcher gave to each participant at the end of each interview as an incentive to participate.

Limitations

In educational research, the rationale is generally to facilitate learning by using the results to improve the overarching dynamics of courses, teaching, or programs (Stenfors-Hayes, Hult, & Dahlgren, 2013). The objective of using phenomenographic research in this study was to gain insight into the variation of teachers' perceptions of formative use of summative assessment in an RTI model. Although there are many advantages to and benefits of using the phenomenograhic method as a qualitative approach, nevertheless, this study is not without limitations. In alignment with phenomenographic data collection, purposeful sampling was employed, limiting the number of participants (Pihl, Fridlund, & Martensson, 2011). Phenomenographic research attempts to analyze statements of participants' experiences as a whole in a specific area of study. According to Sin (2010), "Generalizability in research generally refers to the extent to which the findings obtained from a specific sample are representative of the target population" (p. 309). Because the researcher used purposeful sampling, the findings may "limit the generalizability of the results (Manasatchakun, Roxberg, & Asp, 2018, p. 7). For example, this study utilized variation from New York City elementary and middle school teachers. Results may be different if the sample were New York suburban elementary and middle school teachers. According to Johansson, Nyirenda, Johansson, and Lorefalt (2011), another limitation is that in qualitative research, "The original finding of the

categories of description is a form of discovery and discoveries do not have to be replicable" (p. 342). Furthermore, there are also limits to the number of categories that the researcher can find through participant experiences (Andersson, Lundberg, Jonsson, Tingstrom, & Dahlgren, 2015).

Summary

According to Andersson, Lundberg, Jonsson, Tingstrom, and Dahlgren (2015) "Phenomenography is a well-established methodology in the field of education" (p. 225). This chapter described the phenomenographic research method as a way to provide a logical approach to understand the variation of teachers' perception of formative use of summative assessment in an RTI model. It described systematic qualitative descriptions of the process for designing and conducting phenomenographic research. The chapter included the purpose of the study, the research questions, a description of the qualitative research method, philosophical assumptions in phenomenographic research, the history of phenomenography, the research design, the setting, the participants, the instrument, data collection, data analysis, phenomenography's methodological considerations, ethical considerations, and limitations. Chapter IV will present the findings and interpretations of this phenomenographic research as a way of gathering data to understand the variation of perception as it pertains to teachers' experiences. Chapter V will discuss conclusions and offer recommendations for additional research in the field of education with regard to formative use of summative assessment in an RTI model.

CHAPTER IV

RESEARCH FINDINGS

Assarroudi and Heydari (2016) stated that research is an approach that attempts to answer questions and discover new knowledge. A lack of awareness in previous research literature of the extent to which educators apply data driven and mandated legal practices to their pedagogical approach to teaching and learning compelled this researcher to investigate a specific aspect of teachers' perceptions of data-driven practice i.e., formative use of summative assessment in a Response to Intervention framework. This chapter depicts participants' educational philosophy and characteristics, their pedagogical approach towards teaching and learning, and how that relates to data driven practices.

Larsson and Holmstrom (2007) asserted that the development of categories is the synopsis of the results of the researcher's interpretation of different ways of understanding the phenomenon. This chapter also presents a detailed description and validation of the five categories of teachers' perception of formative use of summative assessment in an RTI model and the outcome space that derived from participants' understanding and perception of the phenomenon. This chapter also includes a summary of the study.

Ways of Understanding: Phenomenography

Qualitative analysis allows researchers to acquire meaningful understanding and develop themes and relationships among responses. Phenomenographical investigation, a qualitative approach, evolved from an educational framework and is not an established and renowned methodological practice compared to phenomenology. However, researchers who support the phenomenographical approach describe it as an effective development and an authentic

annotation of people's experiences that, when put together, can bring about an undocked image of the phenomenon (Assarroudi & Heydari, 2016; Larsson & Holmstrom, 2007).

Participants' Educational Philosophy and Pedagogical Practices

Pedagogy is a discipline that is concerned with the practice and theory of teaching. Pedagogy informs teaching actions, decisions, strategies, and judgment by considering methods of learning, students' understandings and needs, and individual student's background and interests (Scotland, 2012). One chooses pedagogy based on a teaching philosophy because individual teachers bring their own beliefs, attitudes and values to all part of the instructional process (Weshah, 2013).

Table 4.1

Teacher Characteristics

Participant	Gender	Position	Grade	Classroom Setting	Experience	Teaching License
Teacher A	Female	Special Education Teacher	2nd and 3rd	Self-Contained	2	Yes
Teacher B	Female	General Education Teacher	K	Integrated Co-Teaching	3	Yes
Teacher C	Female	General Education Teacher	3rd	Integrated Co-Teaching	4	No
Teacher D	Male	General Education Teacher	5th	General Education	8	Yes
Teacher E	Female	General Education Teacher	1st	Integrated Co-Teaching	17	Yes

Teacher F	Male	General Education Teacher	4th	Integrated Co-Teaching	17	Yes
Teacher G	Female	Special Education Teacher	1st	Integrated Co-Teaching	5	Yes
Teacher H	Female	General Education Teacher	1st	General Education	13	Yes
Teacher I	Female	Special Education Teacher	4th and 5th	Self-Contained	23	Yes
Teacher J	Female	General Education Teacher	1st	General Education	14	No
Teacher K	Female	Special Education Teacher	5th	Self-Contained	7	Yes
Teacher L	Female	Special Education Teacher	K and 1st	Self-Contained	4	Yes
Teacher M	Female	General Education Teacher	8th	General Education	2	Yes
Teacher N	Female	General Education Teacher	3rd	Integrated Co-Teaching	3	Yes
Teacher O	Female	General Education Teacher	6th, 7th and 8th	General Education	14	No
Teacher P	Female	General Education Teacher	1st	General Education	3	Yes

Teacher Q	Female	General Education Teacher	4th	General Education	2	Yes
Teacher R	Female	General Education Teacher	4th	General Education	16	Yes

Participant A

Participant A is a female 2nd year teacher who works in a public school setting in an urban school district. She holds a New York State teaching certification and teaches in a 2nd and 3rd grade bridge self-contained special education classroom environment. Her educational philosophy is that all students can be successful. She reflected on some of the culturally responsive practices that she learned when she attended graduate school, such as, "All children can be productive citizens of the United States with guidance and support." Her pedagogical practices focus primarily on teaching and learning that spark intrinsic motivation among students. She said, "I think the first thing I try to do is to engage my students because if they're not engaged there're not going to pay attention at all to the lesson. So, I think engage the students and [try] to spark intrinsic motivation. A lot of my kids are motivated by me giving them prizes or saying, you know, you did a good job. My main goal is to inspire intrinsic motivation to let them know that they can do anything that they set their mind to."

Participant B

Participant B thrives on her ability to provide children with various skill sets that could be useful throughout life. As a kindergarten teacher for 3 years, she is dedicated to students' learning by engaging in educational activity through play. She described the importance of play as her focal point and inspiration for teaching and learning. She said, "I think that learning through play is when they're learning the most. I have literacy and math centers because they

enjoy that. I always try to switch up the centers every other week, so they're learning through different games." In addition, to enhance student learning outcomes and achievement, she tries to incorporate new approaches to unearthing ideas and tries to create a classroom environment that is welcoming to all heterogeneous abilities. She said, "I use different techniques to get students engaged and stay on task. I make sure that it's hands on and I always say to them that it's a safe environment."

Participant C

As a third grade general education teacher, Participant C has been in the teaching profession for approximately 4 years. Her self-proclaimed ability to captivate children and uncover students' intelligence stems from her professed ability to effectively incorporate multiple modalities as an effective teaching tool for student success. She said, "I like to use teaching in order to expand on creativity and develop higher order thinking. I use manipulatives, videos, and hands on approaches in order to give students various opportunities to grasp what is being taught." Also, to provide students with the best possible outcome during their educational experience, she delivers her instruction using different tactics:

> "I use different techniques, methods, and strategies to get the children to master a skill. I like to create fun activities where students will have the prospect to understand what is being taught. For example, in math, when I'm teaching graphs, I like to use stickers to create an array for the visual learners and I may also, in turn, ask students how would they form an array using different stickers"

Participant D

Participant D teaches in a private school in an urban school district in New York City. He is responsible for providing educational services to students in a general education classroom

setting. Some of his students receive special education instruction and related services through a push-in or pull-out model giving them the opportunity to be educated in the least restrictive environment. Over the past 8 years as an educator, he feels that he meets the needs of all students through his perception that, "Teachers need to differentiate instruction and use what they know, and experiences, in order for students to achieve their goals." Moreover, he employs an assortment of pedagogical approaches in his instructional practice in all subjects to effectively advance student learning. He said, "I try to infuse manipulatives and visuals whenever I can, but also making sure to add the kind of work that is expected of them on the state exams."

Participant E

Participant E is a seventeen-year veteran teacher who currently provides instructional content to first graders in a public school environment. Her stance as a general education teacher stems from her belief that all students have an exceptional ability to bring something distinct to the world. She said, "All the children can learn, but not at the same time. You just have to differentiate your teaching methods because they all are able and capable of learning. You just have to engage them." Teaching in an integrated co-teaching classroom, she sometimes has to encourage student engagement by incorporating various areas of study to peak students' interest:

> I try to integrate everything with what I'm teaching. If I'm doing reading or math or if I'm doing whatever particular subject matter, I just integrate it to their particular needs or something that they are interested in. I also do surveys in the beginning of the year to see what they're interested in or what their reading interest is so that I can have those particular kinds of books in the classroom because they'll be more engaged in reading books of their interest. I think it improves their reading skills.

Participant F

A seventeen-year veteran teacher, Participant F currently teaches in a public school setting. His many years of experience have led him to obtain many leadership positions, such as, chapter leader, grade team leader, and union rep within his school district. He believes that to acquire higher student attainment, educators should construct lesson plans that incorporate activities to heighten active engagement:

> I believe that students should be engaged in work all the time. I think the interruption of lessons in terms of redundancy should take place every 20 minutes. Therefore, students need to be doing something a little different every 20 minutes. I have a tendency to lecture students and I realized over the years that lecturing does not work for younger students. There must be some type of creative cognitive interruption during a lesson. For example, during a math lesson, if you see that a child is taking a while to do the independent work, I'll tell them to stop and come back to that problem instead of sitting doing nothing for 20 minutes.

In addition, Participant F proposes that encouraging collaboration among teachers and parents is paramount to student success. His belief rests with the fact that students, teachers, and parents need to be in collaboration all the time, and he stresses the fact that when teachers create a positive relationship with everyone involved with the student's learning, it allows room for input and feedback:

> I make collaboration happen through progress reports and classroom newsletters. I also make that possible by inviting the parents to come into the classroom. I also have a student of the week celebration, thereby creating a by-in in the classroom. I also believe that creating a positive relationship between teachers and students is vital to students' academic achievement.

In order to promote deeper learning in his classroom and to set high expectations for his students, he feels that different methods of acquiring and expressing learning need to happen throughout the lesson:

> I'm going to give you a visual, I'm going to give a prompt and I'm going to have to do something in writing. Every once in a while you may need a kinesthetic approach where you have to touch, feel or move around the room to understand something even better. Mathematically speaking, you'll have manipulatives and a video perhaps on that particular math concept.

Participant G

Participant G has been teaching for 5 years and works in a public school setting in an urban school district. She holds a New York State teaching license and teaches 1st grade in an integrated co-teaching inclusion environment. She responds to the needs of all students by affording them different pathways to learning:

> My belief is that all students learn in different ways. When I work with my students, I differentiate according to what their needs are. My children in the classroom don't know that some students have special needs. I believe that when a person comes into the classroom, he/she shouldn't be able to see who maybe has an IEP. I don't believe in separating them. I give them differentiated work, but they work together as a group with children of their same peers.

Moreover, she stated that some of her pedagogical practices focus on instructional techniques that allow her to guide using different modes so students can attain knowledge:

> Because it's an integrated co-teaching class, some of the students have memory problems, so I do a lot of multisensory practices in the classroom. I taught them some

> basic sign language called Tucker signing. It's for students that have difficulty in reading. It helps them to be able to break words apart, identify letters' [sounds], and it also has a movement. When I'm signing a word to them, they'll write the letter down, tap the word apart and then read the word. Basically, I use a multi-sensory approach to learning, they see it, say it, sing it and write it.

Participant H

Participant H works in a public school setting and holds a permanent New York State teaching license. She currently teaches 1st grade as a general education teacher. Her educational philosophy essentially involves teaching students to become critical thinkers and problem solvers, and to encourage them to take more of an active role in their learning process. She maintains that a teacher's position is to guide and provide a gateway to information for students to a certain degree, rather than developing a platform as the principal source of information. She said, "I believe all students are capable of learning. I think that teachers should facilitate learning in their classroom and try their best to help every student achieve [their] potential." She concludes that some of her best practices in teaching take into account individual students, while providing alternate ways to deliver lessons. She added, "I try my best to be a facilitator and provide less of a teacher driven classroom. I try my best to have things that will allow for a student driven classroom. I also try to encourage them and motivate all of them."

Participant I

Participant I holds a New York State teaching license in reading, as well as a dual special and general education permanent license. She's a veteran teacher with over 13 years of experience. She considers herself a life-long learner who has confidence in the ability that all children can accomplish anything they set their mind to do. Moreover, her background

knowledge allows her the skillset to accommodate all children with various styles. She says, "My students are very visual, so they learn a lot visually. Instead of me standing in front of the class talking, they do better in group work and visually seeing things."

Furthermore, because of her background knowledge and years of experience, she voices that she is able to create a positive classroom where students' opinions are welcome. Her remarks were, "Well, to influence learning in my class, I like my kids to feel that they have a voice. I let the students drive the lesson. I'm just basically a facilitator for the lesson and they are the ones who give me the information, so I'm actually learning just as much as they are learning."

Participant J

Participant J has worked in an elementary non- public school setting for over 14 years. She teachers 1st graders and loves her job as an educator. Her principle philosophy is that a teacher's role is to establish a strong relationship with her students. Many of her students come from different socioeconomic backgrounds that she says correlate with their cognitive ability. She said that a lot of external circumstances play a role in what goes on inside the classroom. She points out that a proficient educator encourages a positive classroom atmosphere and establishes a connection with her students based on reciprocal respect and trust. She said,

> "I believe that an approach is to first get to know your students, and create a relationship of trust, especially when they're small. I work with 5 or 6 year olds, sometimes even 7 year olds, and at that point you know it's very hard for them to open up until they trust you, so you have to get to learn their needs, their strengths, and their weaknesses because every child is different. It's very important to get to know your students and provide them with whatever they need."

Some of her teaching practices lie with the fact that she utilizes differentiated instruction as an opportunity and approach to learning. Through this teaching practice, she is able to understand and recognize disparities and relationships among students:

> I believe there are certain children who have special learning styles. Some children are visual learners; some children are auditory, so it's important to identify those things to help get them to where they need to be. I also work with students according to their weaknesses and their strengths. I guide them, I model, and then I have them work on finding a solution independently, so it gives me an idea what they need help in. I like to use small groups because I find that it's more intimate and you get to know your students better.

Participant K

Participant K has been a special education teacher in a public school setting for over 7 years. She believes education is the most exceedingly paramount tool that a person can use to be able to explore greater opportunities to become successful in life. She believes that every student deserves an equal education. Responding to the different learning styles and needs among students in the classroom is what she perceives as the most important and effective thing she does in order to reach more of her students. She says, “I'd say my philosophy of education is that all students need differentiated instruction or different ways to be successful. It’s up to the teachers to make sure that students receive the instruction that they need”

She believes that individuals working with special needs children have an obligation and responsibility that allows students the opportunity to discover and utilize their individual abilities. She notes that society tends to oftentimes make students’ disabilities become the focal point as a method for learning, thus limiting them from using their strengths. Moreover, she

affirms that as a special education teacher, she has a duty to empower students to focus on their gifts. She said, “Again, with the differentiating instruction, looking at students where they are, where they need to be, and changing instruction to meet each student's individual needs.”

Participant L

Participant L teaches a self-contained kindergarten and 1st grade bridge class. She has been teaching for 4 years and has learned to accept students for their uniqueness. She has confidence in the fact that all students have the ability to learn. She believes that students have explicit needs, bring their own uniqueness to the classroom, and develop specific learning styles throughout their life. As an educator, she feels that everyone involved, including community members, are accountable for meeting the needs of every student. Her view about students learning a new concept is to tailor instruction and use four techniques, i.e., visual, auditory, kinesthetic and tactile (VAKT):

> I believe in the multi- sensory approach that all students learn in various ways, which is a lot of times why in my class we do center time. We have different hands on things such as kinesthetic, auditory, and visual- all different types of modalities that will engage students and allow them to expand their learning.

Her belief about teaching and learning is seen through her ability to accommodate her students’ needs based on their individual cognitive ability. She customizes their work according to their level. She said, “Basically I'm all about differentiation. Differentiating all my assignments so that every student has the ability to learn a given task.”

Participant M

As a new teacher who has been teaching for 2 years, Participant M has the task of working with eighth graders in a general education setting. Her personal objective for her

classroom atmosphere is to provoke and inspire students to take more responsibility and be accountable for their own learning. She acknowledges that students should be carrying out learning tasks that make them strive to become more active learners, discovering what is important in what is being taught, rather than accepting what they are told. She said,

> I feel that students should be able to learn from each other's misconceptions. Teachers should make every opportunity available for students to learn. When a student seemingly is unable to learn, as a teacher, we should think that's never a possibility. A student can always learn and we need to give them the opportunity by designing engaging educational experiences.

She states that she employs her own personal experiences to assist and facilitate in delivering instruction. Each student possesses different abilities, therefore, during instruction, she tries to incorporate diverse tasks that give students the option to inquire, explore, and represent knowledge in their favored modality. Furthermore, she tries to ward off prejudgment and integrate her past personal experiences as a struggling student to let them understand her growth as an individual, while explaining to them that anything is possible if you put your mind to it. She said,

> By getting kids interested in learning, I try to share my personal past school experiences and make those connections by telling them how a lot of teachers thought I wouldn't be able to become something in life or get anywhere because I just could not grasp the work or do a task. I expressed my personal experiences to them to get them more engaged to learn. I also try to use multiple entry points where they can see learning as a part of their daily lives.

Participant N

Participant N is a 3rd teacher. She described her classroom setting as an integrated co-teaching framework. She holds the position as the general education teacher and works alongside a special education teacher in her 3rd grade classroom. As a new teacher, Participant N believes that teachers need to work collaboratively to achieve higher standards for students. With shared planning and collaboration, she points out that she is able to build a relationship with her colleagues that could improve her performance as a teacher. She said,

> I'll talk to other pedagogues in the building and confer with them about what are some of the things they do in their classroom that I can bring into my classroom that will improve my practice. I also speak with parents because they are a big part of how students learn. So whatever they tell me, I try to marry everything together.

She defines her pedagogical practice as old school mixed with modern day teaching and she describes her teaching philosophy as a balanced approach to teaching and learning. She centers her curriculum on the needs, capabilities, and benefits of the students. Also, she points out that when you really look at how schools are structured, things have not changed from the time she was a student herself. Students still use the classic textbooks, there's still a structured time for school, and some schools still require uniforms. Therefore, she blends conventional and student-centered approaches to teaching that allow students the opportunity to undertake new experiences while constructing opinions about their education. She said,

> I use progressive and traditional learning because there has been so much change in regard to the standards and what students should be doing in the classroom. It's a combination of learning from the books, hands-on, and students' past knowledge.

Participant O

Participant O is a veteran teacher who teaches in a non-public middle school establishment. Her classroom setting has primarily been centered on teaching ELA content. Even though she does not hold a NYS teaching license, she feels that she is equally trained and has the ability to educate students with a variety of abilities. As a public servant, Participant O acknowledges that teachers should be equipped and be able to prepare students to be lifelong learners. She affirms that students should acquire educational knowledge, character, and innovation that could positively influence the modern world. Moreover, she believes that every student's proficiency should be looked at based on an individual's ability, and educational advancement should be based on a student's growth and progress. She said,

> I think children have the ability to succeed at their own level. I believe that a child should basically be measured based on a student's individual academic progress, so I may have a child who is in 8th grade and began the school year on a 6th grade reading level, so, for me, I see success as someone who has progressed to the next level and is working their way towards grade level.

Furthermore, to increase student engagement, she asserts that using verbal positive reinforcement, such as, positive praise and encouraging feedback, stimulates and boosts a student's confidence. She said,

> What I do to influence learning is that I use a lot of verbal encouragement. Students come in with a lot of responsibilities these days, so learning may be the last thing on their mind. When they come into my class, I make them feel that this is a relaxed environment and there is room to fail and it's ok.

Participant P

Participant P is a 1st grade general education teacher in a public school setting. She has been teaching for 3 years and holds New York State initial teaching certification. Her educational philosophy and her goals for her students are to provide them with the best quality education possible. Her belief about students' learning is constructivist, where students are engaged in their own learning experience that can further impact students' achievement. She revealed,

> Students should be able to extract educational information independently by fun explicit activity because that's how learning takes place. Teachers should immerse students in fun and interesting ways where learning is not just books and tests.

To promote deep learning and understanding of what is taught in the classroom, and to make students' more enthusiastic about learning, and to get students motivated and involved, she provides them with interesting activities. She noted, "I try to get them involved in the teaching and learning process, whether it's playing games that they like, doing hands- on activities, using manipulatives, or connecting them to stories that they could relate to."

Participant Q

Participant Q is new to the teaching profession. She is a general education teacher and has only been teaching for 2 years in a public school setting. She praises the knowledge she gained in college on classroom behavior for the development of her teaching philosophy. She adopted the principle of positive reinforcement as a classroom discipline. She believes that teachers have a duty to put into place a structured classroom routine from the beginning of the school year, instead of waiting for things to happen. Also, she believes that educators should conduct themselves in an affirmative manner at all times. She stated,

I believe that classroom management is one of the leading factors that can inhibit students' learning. I feel that it is critical to work with a child, not in opposition to them, and integrate positive reinforcement to achieve desired behavior.

To check for understanding of instruction and to determine students' learning outcomes, Participant Q's pedagogical practices comprise implementing basic formative assessment strategies during the lesson. She expressed, "I use thumbs up and thumbs down to check for students' understanding. Thumbs up if they understand and thumbs down if they're not understanding."

Participant R

Participant R is a general education teacher who presently teachers in a non-public school setting. For over 16 years, she has taught many grade levels. Currently, she teaches 4th grade, where some of her students get pulled out of class and receive special education teacher support. Because her class consists of heterogeneous groups of individuals, she believes that she has a moral obligation as a teacher to bestow upon students individualized instruction that could help them become successful and self-motivated learners. She accepts that all students can learn if they are taught correctly. She said, "I believe that each student can benefit from individualized help. They all have strengths and weaknesses, and even though we have whole group instruction, afterwards, we need to place them in small groups to target what they need help in."

To promote educational outcomes for her students, she capitalizes on teaching approaches using past knowledge as an opening stage for instruction and tailors her lessons to students' needs. She says,

"I use Engage New York, Envision textbooks, and Spectrum textbooks to try to get different ideas and perspectives on the best way to deliver instruction. I try to use hands-

on activities as well. So it's basically book learning and hands-on to meet all of the different learning styles."

Phenomenographic Data Analysis Process

The researcher selected eighteen NYC elementary and middle school teachers because their position, responsibilities, and pedagogical practices impacted students' referral for special education services. In compliance with rules related to research conducted with human subjects, the LIU Post Institutional Review Board examined and approved the study. The interviewees participated voluntarily as described in Appendix A. Before the researcher embarked on the interviews, all participants signed consent forms and were advised that they could withdraw from the study at any time, as detailed in Appendix B. In addition, the researcher detailed the protocols implemented during the in-depth, face-to-face interviews with participants in Appendix C of this study. The researcher kept data safely stored and only available to the researcher.

Prior to conducting the interviews, based on Ashworth and Lucas (2000), the researcher bracketed any preconceived ideas. Secondly, the researcher adopted the second order perspective, and recorded and interpreted the data from each participant's perspective. Thirdly, the researcher did not develop or add any preexisting categories prior to looking at the data. She generated all categories from the transcripts, utilizing participants' words.

To increase rigor, the researcher utilized a peer-debriefing technique, which is "a disinterested peer outside of the research study to challenge the methodology and findings" (Hays, Wood, Dahl, & Kirk-Jenkins, 2016, p. 175). She first performed the data analysis by herself, while a second associate researcher participated as a co-reader during the entire process. In addition, adhering to the best practices of qualitative research, to address dependability in contrast to reliability, the researcher manually and meticulously followed the seven steps of data

analysis recommended by Stenfors-Hayes, Hult, and Dahlgren (2013) regarding the audio transcripts. The researcher became familiar with the material by reading and re-reading the transcripts, and the researcher identified the important elements that pertained to specific questions. The researcher condensed and reduced the participants' responses to uncover essential parts of the interviews. The researcher performed a first round grouping of participants' similar comments and developed a preliminary comparison of categories. The researcher named the categories, and, finally, wrote descriptions of the nature of the similarities between the categories.

Participants' in phenomenographical studies are not large. Eighteen NYC elementary and middle school teachers were interviewed. Figure 4.1 represents a graphical summary of participants in terms of the characteristics gender, experience, school setting, classroom setting, and teaching experience.

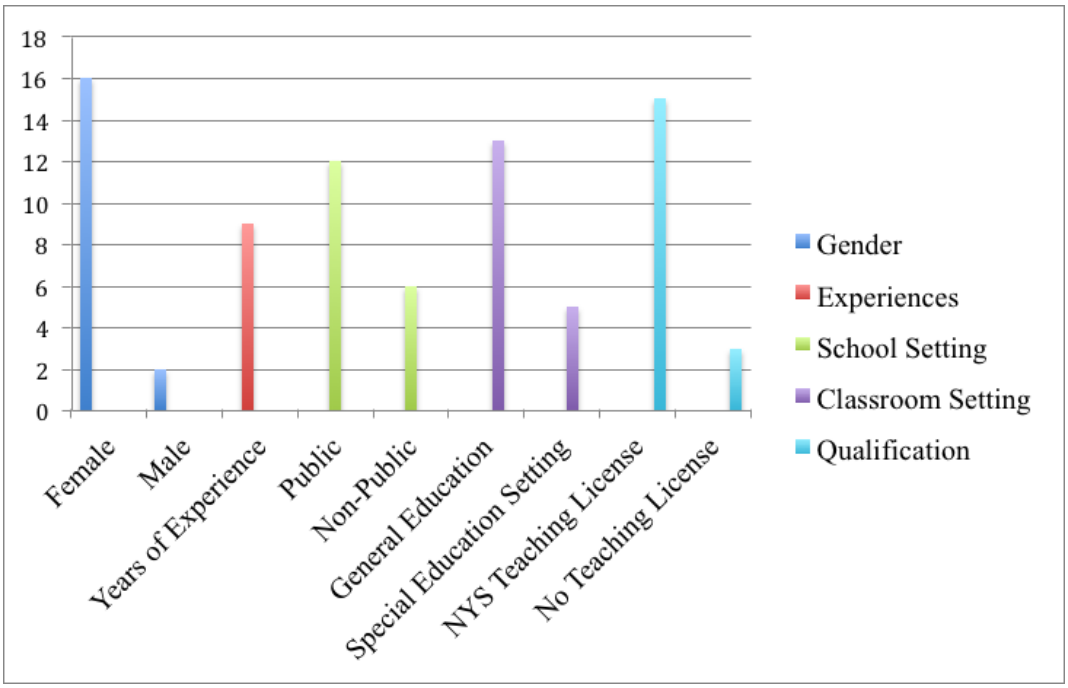

Figure 4.1. Summary of participants in terms of the characteristics gender, experience, school setting, classroom setting, and teaching experience.

Of the 18 participants', 16 females and 2 males voluntary participated in the study. Teaching experience among the participant, ranged from approximately 23 years to 2 years. Only 9 teachers had more than 5 years of teaching experience. Participants' school settings consisted of 12 public schools teachers and 6 non-public school teachers. Thirteen participants were general education teachers, whereas 5 were special education teachers. Fifteen of the participants held NYS teaching licenses from different grade levels, while 3 teachers were not certified.

Emerging Categories

Phenomenographic categories reflect collective levels and combinations of different aspects of the phenomena that exist at a particular point in time. According to Assarroudi and Heydari (2016), "The categories of description demonstrated different concepts of a single phenomenon held by a person, or a group of people" (p. 221). The categories signified the phenomenon of statements revealed in the research study, while simultaneously emphasizing the relationship among the variation (Daly, Adams, & Bodner, 2012; Eckerdal, 2015).

The categories evolved from the interview data of the eighteen teachers who participated in the study. During each interview, the participants recounted their experiences. The researcher considered their views, extracted quotations from the transcripts of the participants' descriptions, and used them as evidence to support and represent the categories. As a result of the data analysis, five descriptive categories emerged from teachers' perceptions of formative use of summative assessment in a response to intervention model.

Table 4.2

Teacher's Perceptions Expressed as Categories of Description

Category	Description
Teachers' Awareness of RTI	This category addresses teachers' proficiency and ability to analytically support the progress of all children through an intervention process.
Teachers' Use of Evidence-Based Assessment Strategies	This category focuses on the various assessment strategies teachers apply to adjust teaching practices and provide intervention.
Teachers Apply Universal Screening Measures and Progress Monitoring	This category explored teachers' ability to effectively apply research-based tools prior to the intervention process
Teachers' Self-Efficacy Towards Data Driven Intervention Practices	This category examines teachers' attitude toward applying data results to enhance students' learning
Support and Training About Intervention Practices	This category discusses ways in which teachers received support about new educational trends in relation to RTI.

Category One: Teachers' Awareness of RTI

Response to intervention is a process that educators use to make appropriate educational decisions based on data about at-risk students who may require special education services. An important fundamental principle of RTI is the use of evidence-based intervention within the different tiers of instruction. In this category, the transcripts revealed that participants had limited understanding of response to intervention (RTI), i.e., when, how and why RTI should be implemented. When the researcher asked participants about their level of understanding regarding implementing RTI, participants seemed apprehensive and indicated a number of general education teaching techniques that they used to convey learning. For example, Participant B identified her methods as follows:

> Some students need an extra period or two to develop in order to understand parts of the curriculum as the other students. They might need smaller groups, maybe they're shy to ask questions or just need continuous practice that will help them.

Educators are expected to meet the needs of students who demonstrate difficulty reaching grade appropriate achievement levels, mainly those who are at- risk students, but some teachers struggle with this task. According to O'Connor, Sanchez, Beach, and Bocian (2017), "Difficulty implementing research-based interventions effectively in schools is legendary" (p. 99). Findings demonstrated that participants had a misconception about general education interventions and RTI procedures. Participant D explained his strategies for aiding struggling learners. He said:

> It's pretty similar to what I do with my gen. ed. population. Again, if I see some students are struggling even when I do differentiate, I'll provide more opportunities for them to demonstrate mastery. I usually do that either in the form of homework or maybe two or three questions or tasks for them to do something short enough where they're practicing what they've learned and hopefully realizing the mistakes that they made.

Moreover, the interviews revealed that participants are unaware that RTI is a policy required by the New York State Education Department (NYSED). Participant F gave an overall outlook about RTI, and felt it was not a school-wide practice. The participant explained:

> I mean I'm familiar with it only on paper. In terms of practice in my school I would say it is null and void, which is a shame, because I know that there are specific strategies for the different levels. For me to be aware of it and apply it to my teaching practice, it would make a difference, but, unfortunately, I'm not as aware of it taking place in this school. I don't want to say it's not important, but it's not monitored at our school to make sure that it happens. So, if administrators are not checking to see that that type of work is

> being done, then to me it is not as important, whereas you would come in and check for something else and make sure it's there. But it's sad to say because you know that's what the kids can use. You know so you shouldn't have to wait for anybody to say anything, but you know, the less work the better.

In addition, Participant J also reported the absence of RTI being carried out in her school and remarked:

> I don't think our school has a set RTI program that they implement. We have a SETSS teacher in our school, so when I see that a child is struggling I keep notes about what I see and request the child to be tested because maybe the child has some kind of learning needs. I'm not a special education teacher, so I'm really not sure.

RTI offers educators an opportunity to focus on preventive measures to support struggling learners with remedial intervention in order to gain foundational academic skills. Even though participants communicated that they provide students who encounter academic difficulties provisions to meet academic standards through an assortment of implemented best practices, participants' account of RTI was unclear and often confused its' methods and procedures with general education instructional strategies.

Category Two: Teachers' Use of Evidence-Based Assessment Strategies

Teachers commonly use two main assessment practices to assess students' learning of new material and knowledge, which are classroom formative and summative assessment. Formative assessment includes the accumulation of data for enriching a student's learning, whereas summative assessment data assess how much knowledge a student has retained at the end of a learning sequence.

This category presents teachers' use of formative and summative assessment strategies to influence teaching practices and to provide research-based intervention. Throughout the learning process, teachers used formative and summative assessments to determine how students progressed through a specific learning goal or learning standard. Participants expressed that different assessments afforded a means for teachers to provide helpful and valuable adjustments regarding instructional decisions that had a great impact on student achievement. However, the interview transcript confirmed that some of the formative assessments conducted by teachers are considered informal in the field and the results lack the minimum standards of reliability and validity used within the response to intervention (RTI) forum. While summative assessments are given periodically as part of a grading process, there are time constraints preventing teachers from providing immediately tailored interventional instruction to struggling learners.

Several participants described the strategies they endorsed for conducting classroom assessment. Participant F framed his account around assessment practices and said:

> I use exit slips every once in a while. I do check-ins during the lessons and I walk around to see how many of the students are really getting it on paper. Also, for those who don't like to write, I take verbal cues from what you're doing and how you're doing based on how much you are participating. If you're not participating freely and frequently then I know something is not right.

Additionally, Participant I noted:

> One way that I employed formative assessment, and it's systemic in our building, is that I take low inference notes whenever a lesson is being taught. I also walk around, writing down notes, so that it can inform me of the students who are actually getting the lesson and who's not getting the lesson.

Participant K responded:

> I always do a Q & A in the beginning of every lesson to build upon what we learned yesterday. I try to make sure that I take low inference conference notes because it helps to drive my instruction. When I'm looking over and reflecting on my notes, I know where I need to start or which kids missed what I were saying, and I also use exit slips. I use visual cues- red, yellow or green cards. Green if I'm ok, yellow is I'm not, and red is I really need your assistance. I do pre-test so that I don't waste my time teaching something that all the kids may already know.

Moreover, in order to assess whether or not students have approached, met, exceeded, or mastered the standards of the entire unit, the researcher noted that participants described summative assessments as handwritten tests and chapter and end of unit tests. Participant Q shared her thoughts on summative assessment. She said, "I use the end of module unit assessments for reading, writing and math." While Participant O noted:

> We use a common core curriculum [hopefully, research based], so oftentimes the summative aspect comes directly from the curriculum itself. A lot of times I use backward design and look at the assessment first. I look at the benchmarks the children are supposed to meet, not teaching to the test, but making sure that all aspects of it is covered, and then administer that assessment in addition to teacher made assessments.

According to Agran, Spooner, and Singer (2017), "Rather than choosing any instructional practices they wish based on their personal experience or opinions, educators are expected to select practices in which there is sufficient evidence (data) to validate their effectiveness in producing desired learning outcomes" (p. 3), as indicated by Participant O.

To measure students' learning outcomes, teachers utilize different assessment methods in the classroom, generally formative and summative methods. Despite the benefits of utilizing assessment results for instruction, the transcripts indicted that some of the assessment practices adopted and utilized by participants, such as exit slips, home-work assignments or checklists, to measure students' learning outcomes are not considered evidence-based practices and limit at-risk students from receiving immediate research-based intervention.

Category Three: Teachers Apply Universal Screening Measures and Progress Monitoring

Universal screening is administered in order to provide educators with a measure of students' current performance on various skill sets to assist in determining which students need added academic support. In addition, it also provides continuous progress monitoring to determine if students are responding to the intervention implemented by teachers. This category indicated participants' lack of awareness about implementing systematic universal screening and progress monitoring to identify at-risk students to determine appropriate research-based intervention. The transcripts show that participants neglected to apply research-based screening and progressing monitoring tools, such as, DIBELS or Aimsweb, as a predictive cursor to detect students who are lacking specific academic skills. When respondents were asked what the criteria are to determine which students should receive research-based intervention in their school, Participant C expressed, "Well, I personally use their grades and the feedback from the children, exit tickets, and the results is what I call a "Red Flag" child that determines if a child needs that extra intervention." Participant J expressed her methods. She said:

> What I do is I bring it to my principal's attention and I bring it to the SETSS teacher's attention and I explain to them what I see and recommend [that] they may need testing

> for services. But as far as the process is concerned I only just express what I see and what I did to help them.

The use of admissible and appropriate research-based assessment screening gives teachers a structured baseline of students' academic deficit at an early stage to ensure that their academic difficulties are remediated. However, according to the transcript, utilizing an academic screening tool for students who are not meeting academic standards was non-existent. Participant F elaborated on how his school identifies students who require short-term or continuous intervention to achieve academic success. He said:

> I think the school relies on the teacher's professional judgment and for me I would say it's a percentage point. So, if you're supposed to be hundred percent and you're still getting 40 percent and 30 percent consistently with classroom work…. I mean, it's not necessarily a research-based tool that's used to determine who gets intervention. I think you know, if you're just functioning on a low level then you should benefit from this intervention or that intervention.

Participant H's response is also aligned with the absence of using measures that are valid and reliable to accurately display and predict academic difficulty. She stated, "If they're struggling in a particular area then you have to give them the intervention, especially in reading or math." While Participant I voiced, "They usually do the bottom one third. They'll ask you what's the bottom one third of your class and those are the kids that we do the intervention with."

Student progress monitoring is a procedure that enables teachers to interpret students' responsiveness from the intervention for educators to construct movement among tiers and make educated decisions. If educators use academic progress monitoring, students who are responding

to the intervention instructions should show growth; however, if students are nonresponsive, teachers can make timely decisions and adjust the intervention.

Participants disclosed the absence of the use of adequate progress monitoring systems as a tool to track student progress. Adequate progress monitoring starts with a baseline where teachers can link student performances on a specific skill by creating a graphed line. When participants were asked to describe how interventions are documented for at- risk students, Participants R's response was, "I have a grade book that I use and I have portfolios for the kids where I collect their work." Participant Q stated, "I guess just the basics - keeping records of student work and assessment in a book. There's not a standard way of documenting it in my school." While Participant K voiced:

> I feel like in our building everybody has their own individualized way of keeping their records. Somebody may have a binder for keeping track because they don't want to get in trouble, like this is what I've been doing with the kids, but there's no computerized system that uploads all of the results and keeps track. Everybody uses their own individual presentation. So there's not a universal structured way of documenting, not from what I know.

Universal screening allows educators to establish a baseline of students' academic functioning in order to align instructional starting points, while progress monitoring gives teachers the opportunity to see student growth and if students are responding to the intervention. Participants stated that they applied different informal assessments to determine which students should receive intervention. However, these assessment strategies are not aligned with RTI, are considered low-stakes, and are considered not to have a significant academic impact for struggling learners.

Category Four: Teachers' Self-Efficacy Towards Data Driven Intervention Practices

The use of data driven practices enables educators to identify patterns of students' strengths and weaknesses that can further aid teachers to inform and guide their instructional practices. Teachers' efficacy towards implementing data driven practices can play an important role in meeting the needs of all learners because educators' ability to use student data results and apply them towards implementing evidence-based intervention and instruction, especially within a multi-tiered framework, can influence students' academic success.

Educators with a high level of efficacy tend to take necessary steps to promote and enhance students' outcomes and are more inclined to adopt initiatives that will expand student learning; whereas teachers with low efficacy exhibit conflicting interpretations of data or insufficiently use data effectively. This category addresses participant efficacy in relation to applying data results towards research-based interventions to promote students' learning. When participants were asked to describe what they do with the assessment data results for at-risk students, participants expressed that the data they collected on assessment were applied to make instructional and classroom adjustments, however, the transcript reveled that educators' efficacy towards the adequate use of data results to link individuals with scientific, research-based interventions to promote learning was low. Participant A stated,

> I use the data results from the assessments to see if students understand what was taught and to group my students. If it was too hard and most of the students [failed] then I have to re-teach that lesson to them.

Participant B claimed, "I do a lot of differentiation in the classroom. I give them different work that might be a little easier. I'll pull them out in small groups to explain step by step what to do." While Participant H expressed her persistence in using data results to adjust varied teaching

techniques to increase student achievement, she made no remarks about applying data to implement research-based intervention supportive. She stated:

> Well, I would say that I'm very determined. I'm always trying to figure out how to make things work for each student because there's no one size fits all for your class. I have twenty-two students, so when I give a test, I never just say ok, let's move on to the next chapter. I look at the results. I'm constantly differentiating instruction based on what the data show. You know I'm constantly doing flexible grouping and modifying things to work for the students.

Participant C expressed her extra effort to help students who are not meeting academic standards, however, when asked how she employs data results for students who are at-risk and need intervention, her decision to neglect to take the extra step and exercise a research-based intervention was evident. She stated:

> If I feel that a child is really struggling then I speak to the principal in regard to what else can be done and if there are other services that can be provided for the child. But meanwhile, while they're under my care, I target those needs during center time where I break down the concepts further and I reteach the lesson.

Teachers have an enormous impact on student achievement. Even though understanding teachers' efficacy with regard to the endorsement and implementation of data results to implement interventions can have a lasting impact on students' academic progress, teachers low efficacy throughout the transcript was observable through their lack of pursuing utilization of students' data results and applying them towards a research-based, systematic, intervention process.

Category Five: Support for and Training About Intervention Practices

Professional development (PD) is an opportunity to engage teachers by giving them strategies to strengthen their pedagogical practice throughout their career and to increase awareness and skills to use research-based practices. This category focused on teachers' limited professional development opportunities that gave teachers the knowledge to select and implement best practices in their classrooms. Participants' accounts were of poor quality professional development. Teachers criticized PD for lack of continuity and coherence with regard to research-based interventions, such as RTI, and for a lack of on-going support that focused on teachers' needs. Reports indicated that teachers may have overheard, or are aware of RTI, but there seems to be a disconnect between what RTI is and how it actually is carried out in real time. Participant A reflected on her experience. She said:

> I mean, most recently, last week, we had a PD session on data. It was just like a general overview of what RTI might look like, but it really didn't focus on RTI data analysis or anything like that. It was just a general overview of what data is, how to use it, and what you can do with it in your teaching.

Participant I shared her thoughts on her ability to become familiar with RTI procedures. She said:

> Well, in this building I can say that there has not been any support for that. From my experience, administrators are not monitoring what's going on in the building. They assume that everybody's doing RTI, but it's not being done. I knew about RTI from working in another district. But, you know, when you go into different schools RTI is done differently. I don't think it's uniform across the board in NYC public schools.

Moreover, Participant P noted a lack of targeted training that focused on RTI related practices. She said, "A couple of times a year a bunch of teachers from the Brooklyn and Queens

archdiocese go to these PDs that weren't strictly on response to intervention. It was more like intervention combined with something else."

Professional development training should provide enough information to deepen teachers' knowledge. In light of many laws and regulations, such as the use of IDEA Child Find mandates which state that RTI data must be used as a part of the process of determining if a child has specific learning disabilities, schools must provide mandatory support to teachers to keep them abreast of changes in various policies and curricula. However, many of the participants reported that many professional development trainings were vague and teachers did not get specific knowledge to promote the use of data results to provide students with RTI. When the researcher asked participants to describe any professional development where they had the opportunity to become familiar with response to intervention or its procedures, Participant J stated, "I don't think I've been to any where the focus was response to intervention." Participant L pointed out:

> Well, I'd say maybe not much. I've been to Fundations in reading PD where they talked about using their program as part of RTI. They did not explain how it's used for RTI. The focus was more about how to use their program and different components of it.

Also, when the researcher asked participants to describe if they had any professional development or support with Response to Intervention data analysis procedures, Participant K stated:

> No, I haven't and that's a big struggle for me because I always say teachers just don't know how to analyze the data. We became proficient trying to figure out our reading levels, but there are still some teachers who don't know how to analyze data to inform instruction or to provide intervention.

Participant I also pointed out the lack of training she received with regard to RTI procedures. She said:

> Well, we've had workshops as far as looking at student work. We have protocols that we follow for every grade and that's been pretty good because we do have a grade team leader that really models what it should look like. It's more like looking at student data in general, not specific RTI data.

To prepare teachers to successfully implement an RTI system, professional development is crucial. Because of a lack of effective professional development opportunities, teachers had diminished ability to use research-based intervention practices to enhance instructional teaching and improve student learning.

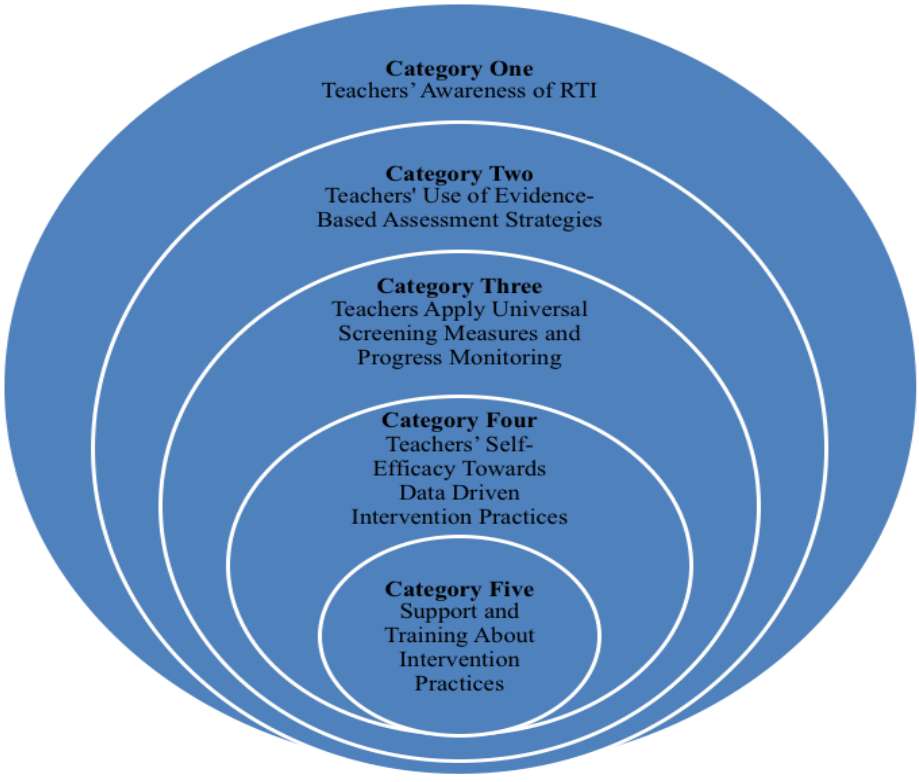

Figure 4.2. Outcome space for teachers' perception of formative use of summative assessment in a Response to Intervention model.

Relationship Among Categories

The five categories of understanding and their centralized overlapping relationships formed the outcome space for this study. The highest classification is category one: teachers' awareness of RTI, which indicates participants' lack of implementing RTI procedures for struggling learners that include a systematic, multi-tier approach, i.e., screening, progress monitoring, and evidence-based interventions. There is also a clear relation between categories two and three. Participants' acknowledged that assessment data results allowed them the opportunity to understand what students know individually and as a group and to make instructional improvement and provide purposeful grouping. However, participants were unaware that the formative and summative assessments they apply towards remediating students' academic deficiencies are not evidence-based assessment practice (category two: teachers' use of evidence-based assessment strategies), which correlates with their inability to use a tiered intervention process for struggling learners (category three: teachers apply universal screening measures and progress monitoring). Applying a research-based intervention, such as RTI, should consist of more than just implementing recommended procedures, such as, universal screening and progress monitoring. It also requires educators' acknowledgement of and willingness to accept the overarching principles and value of the reform (category four: teachers' self-efficacy towards data driven intervention practices). Even though schools provided professional development, much of it was not tailored to or on subject matter that could provide important information that could aid teachers in acquiring knowledge to provide RTI (category five: support for and training about intervention practices).

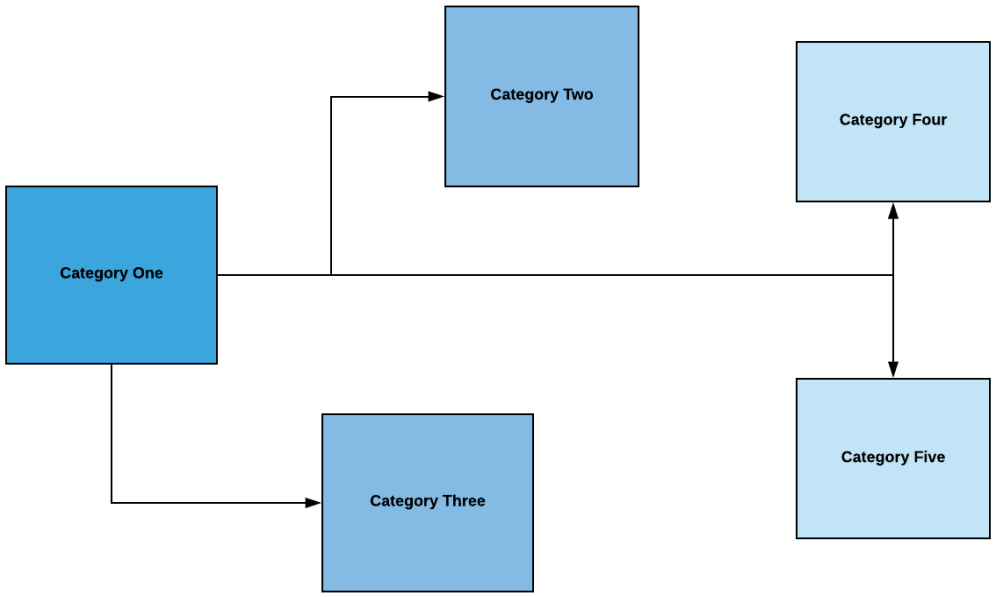

Figure 4.3. Overlapping relationship among categories.

Summary

Chapter Four detailed methodology data collection, data analysis, participants' educational philosophy and pedagogical practices, participants' characteristics, five descriptive categories of different ways individuals experienced the phenomena, and outcome space that derived from participants' understanding and perceptions using phenomenographic methodology. The researcher presented the outcome space in a figure, which represented teachers' perception of data driven practices based on the meaning and structure of their awareness. The researcher recounted and narrated each category in detail. The researcher wove quotes from participants' interviews into the context.

Chapter V will present a short summary of the study and its findings, discuss and answer research questions, make literature connections to the categories, give implications and recommendations for practice and for future research, and present the researcher's final thoughts.

CHAPTER V

SUMMARY OF THE STUDY

Stipulations embedded in the Individuals with Disabilities Act (IDEA), such as the use of RTI to identify students with specific learning disabilities, have increased the pressure placed on teachers to meet school standards and the academic needs of all students. As a result, stakeholders and policymakers are constantly negotiating and reinventing various aspects of daily educational processes that will enable pedagogues to target students' specific learning shortcomings.

Through a qualitative research approach that used phenomenographic methodology, the objective of this study was to describe how people experience different aspects of a phenomenon. Employing purposeful sample, eighteen NYC elementary and middle school teachers participated in the study, which examined their perception of data driven practice, i.e., formative use of summative assessment in a response to intervention model. The data collection consisted of using in-depth and audio-recorded interviews and was coded using Dahlgren and Fallsberg's seven-step data analysis system (Stenfors-Hayes, Hult, & Dahlgren, 2013). From the results of the study, the researcher extracted five categories of description of teachers' perception of the phenomenon and an outcome space of the coherent relations of the categories, illustrated in a hierarchical structure. This chapter presents responses to the research questions that guided the study, makes literature connections to the categories, gives implications and recommendations for practice, recommends future research, and presents the researcher's final thoughts.

Responses to Research Questions

The findings from the study indicated the following in terms of the four research questions listed below:

1. RQ 1: To what extent do teachers utilize RTI in their pedagogical practices?
2. RQ 2: To what extent do teachers collect assessment data to make research-based instructional decisions?
3. RQ 3: To what extent does teachers' self-efficacy affect the use of application of data results to support research-based intervention practices?
4. RQ 4: To what extent is professional development available to support teachers with regard to implementing research-based practices?

Research Question One

The adoption of RTI requires educators to develop the fundamental skills needed to implement the practice with fidelity. Evidence from the transcripts indicated that participants' approaches to implementing the RTI system are weak, with teachers lacking the knowledge and skill needed to effectively support and implement such practice.

Research Question Two

Participants expressed that the various formative and summative assessments that they administered were used to adjust their teaching and instructional practices to better help students learn; however, only some of the assessment procedures implemented by teachers were scientifically research-based. The practices used are not considered valid for making meaningful educational decisions. In addition, the assessments discussed by teachers can be considered universal screening or used for progress monitoring, which is used to identify a starting point to begin or monitor an intervention. The formative and summative assessment tools such as teacher made materials that participants used to identify students' learning, and

teachers' misconceptions and gaps in practice do not meet the guidelines for providing research-based intervention.

Research Question Three

Teachers play a prominent role in influencing student outcomes; moreover, their self-efficacy towards implementing strategic intervention practices can ultimately impact decisions that can influence student achievement. Nevertheless, these research findings indicated that participants exhibited low self-efficacy with regard to applying data results to support research-based intervention practices.

Research Question Four

Professional development allows educators the opportunity to continue to grow professionally and to gain new skill sets. Participants had been provided with different training opportunities in connection with the current educational paradigm shift. However, the transcript indicated a theme that participants were concerned about lack of targeted, individualized professional development that could enhance their pedagogy practices to enhance their ability to provided research-based intervention to struggling learners within the classroom.

Connections Between Research Findings and the Literature

In Chapter II, the researcher presented the groundwork of literature that surrounds the extent to which teachers apply various teaching methods within their pedagogical practices. The researcher relied on empirical inquires about educational policies and trends, student expectations, psychological theories, the historical underpinnings of school reform and assessment practices, and professional development. Since previous research has not directly examined teachers' perception of formative use of summative assessment in a Response to

Intervention model, this research added to the literature regarding teachers' perception of data driven practices. The results were coherent with the literature presented in Chapter II

This study also captured five categories that are represented in a hierarchy. The hierarchies are below.

Teachers' Awareness of RTI

The reauthorization of the IDEA states that the use of the discrepancy formula is no longer the sole method used to identify students with learning disabilities, for the use of research-based interventions is now equally permissible (Kavale, Kauffman, Bachmeier, & LeFever, 2008). The wait- to-fail system has sparked policy makers to implement the use of Response to Intervention (RTI) as an alternative evaluation procedure to identify struggling learners early in their educational careers who have shown cognitively that they may have a learning disability (Kuo, 2015). Snyder and Golightly (2017) stated that 17.5 % of students struggle with reading problems during the first three years that students enter school in the United States. Kelley, Leary and Goldstein (2018) affirmed that students who enter school with limited reading abilities were characterized as academically incapable of meeting long-term grade standards, which placed them at a higher risk for scholastic failure. Moreover, "children who have reading difficulties may enter the earlier grades lacking certain skills which have been found to be the keys to making good readers" (Turse & Albrecht, 2015, p. 88). Also, Cantrell, Almasi, Rintamaa and Carter (2016) pointed out that data from the National Center for Education Statistics (2011) showed that the number of students reading below grade level has not improved significantly since 2009.

Participants also reported lack of awareness of RTI applications, which supports Regan, Berkeley, Hughes, and Brad (2015) who stated, "Teachers were uncertain about RTI processes,

their changing professional roles, data-based decision making, and ways to help students who continued to struggle" (p. 390). Even though the NYS Department of Education has an RTI system in place that schools are required to follow, participants in this study who worked in a public school setting elaborated on the fact that they feel that administrators do not supervise and emphasize the implementation of RTI, so teachers do not put effort into implementing RTI practices. According to Sansosti, Noltemeyer and Goss (2010) and the National Joint Committee on Learning Disabilities (2011), effectively carrying out RTI practices with commitment should be a collaborative effort by teachers and school leaders. However, since some private schools do not accept any federally funds, these schools are not mandated to follow some of the guidelines that are mandated in the NYS public schools. Many participants who participated in this study worked in a private school setting. They relied on non-RTI appropriate classroom data to aid their decision to refer students for special education services.

Another striking finding from the review of the transcripts pointed out participants' confusion about whether or not RTI is a general education or a special education intervention initiative. Isbell and Szabo (2015) stated that general education classroom teachers are responsible for implementing different strategies in the various scaffolding tiers so that all students learn. Analysis of the data showed that many of the interventions administered by participants were merely general education interventions that included teaching strategies and did not consist of tiered grouping or progress monitoring. According to Archerd (2015), educators collectively confuse who should be implementing RTI. Zirkel (2011) also voiced that both special education articles and case laws that interpret RTI and GEI tend to foster, rather than clarify, the confusion.

While professional literature and case law have continued to confuse RTI practices (Zirkel, 2012), Hauerwas, Brown, and Scott (2013) asserted that RTI advocates indicated that RTI is part of a general education overhaul of practice designed to improve all students' learning outcomes at an early stage in students' learning. In an attempt to clarify the misunderstanding about RTI and GEI, Zirkel (2018) stated that for an intervention to be considered RTI, it must meet systematic characteristics outlined and described by the IDEA.

Teachers' Use of Evidence-Based Assessment Strategies

According to Cotton (2017), Drouin (2010), and Mandinach (2012), the practice of teachers using various assessments is not a new method in the teaching paradigm and is generally used by instructors to help gauge students' progress. Formative assessment evaluates students' progress during teaching and learning and allows teachers to immediately modify or readjust instructional plans to harmonize with the needs of students, while allowing students opportunity for improvement; whereas summative assessment focuses on students' results from the completion of a learning sequence (Das et al., 2017; Dixson & Worrell, 2016; Schoenfeld, 2015). Participants expressed that formative assessments were used to modify various teaching and learning practices to improve students' learning outcomes, while the implementation of summative assessment gave teachers an idea of students' overall learning.

According to Marghitan, Tulbure, and Gavrila (2016), "Differentiated instruction represents a modern approach of instruction, which is meant to be based on understanding, respect and the revaluation of differences between the educable" (p. 179). Administering different types of assessments, participants were able to differentiate instruction through small groups and divert from the one-size-fits-all classroom model to provide students with the opportunity for positive academic results. However, participants were not able to apply

research-based interventions and, alternatively, applied strategies that were not conducive to providing students with intervention support. According to Accardo, Finnegan, Gulkus and Papay (2017) and Torres, Farley and Cook (2012), evidence-based interventions are applications that go through rigorous standards, that, when carried out, generally produce meaningful and positive results with regard to student achievement.

Even with the benefits of applying some different assessment practices to provide a more student-centered classroom environment, "scores on all types of assessment should meet minimum standards of reliability and validity, with decisions that are high-stakes requiring more robust assessment scores" (Dixson & Worrell, 2016, p. 159). Limited research has examined the validity of the assessments proposed for classroom support for ongoing student intervention purposes. Because of the absence of psychometric properties, formative and summative assessment instruments implemented by teachers are considered informal and low-stakes (Dixson & Worrell, 2016; Pellegrino, DiBello, & Goldman, 2016).

Teachers Apply Universal Screening Measures and Progress Monitoring

Van Norman, Klingbeil, and Nelson (2017) affirmed that "The purpose of universal screening is twofold in that schools use screening data to (a) assess whether core instruction and curricula are meeting the needs of students and (b) identify individual students that are at-risk for later difficulties" (p. 349). Moreover, universal-screening instruments can be used as a baseline benchmark to quantify all students' responses in order to set academic student goals. Therefore, if students fall below a certain criterion score or percentile, they may be regarded as at-risk and provided with supplemental research-based instruction (Lembke, McMaster, & Stecker, 2010; Turse & Albrecht, 2015; Vaughn & Swanson, 2015). Progress monitoring tools must be reliable and valid measures that employ standardized administration and scoring methods that generate

accurate and significant information about student performance (Lembke, McMaster, & Stecker, 2010; Stevenson, 2015). The intervention data "are plotted on a graph, and a line of best fit" (Lembke, McMaster, & Stecker, 2010, p. 23) to provide a visual concept about students' current level of performance and their rate of improvement.

Since universal screening and progress monitoring inform high-stakes decisions, it is critical that the tools are technically sound for academic intervention. Koehler-Hak (2013) said, "There is growing evidence that by extending formative evaluation through the use of CBM data to all students, educators can begin to address a number of issues facing our schools today" (p. 51).

Teachers' Self-Efficacy Towards Data Driven Intervention Practices

As part of school accountability reform, states and school districts have intensified the use of student assessment data associated with school improvement. Sun, Johnson and Przybylski (2016) said, "With federal and state government policies demanding accountability, school leaders are relying more and more on evidence, and thus, increasingly using student and school data to inform decision-making" (p. 93). With teachers' performances tied to student achievement, teachers' attitudes towards the application of data driven practices can have an enormous impact on both teachers and students.

According to Accardo, Finnegan, Gulkus, & Papay (2017), teacher efficacy is defined as "Teacher perceptions regarding their professional ability to effectively carry out instructional practices" (p. 310). Kim and Seo (2018) stated that research results demonstrated that there is a significant relationship between teacher efficacy and positive student learning outcomes. Therefore, educators' self-efficacy plays an influential role in the direct implementation of research-based practices. Many participants stated that they use data to make instructional

decisions to improve teaching and learning, however, the results of this study indicated that participants appear to have low self-efficacy, due to the fact that they do not analyze data results to target individualized research-based interventions, such as RTI, for struggling learners. According to Donnell and Gettinger (2015) and Kanadl (2017), teachers with low self-efficacy avoid teaching activities and evade supporting students who have difficulty learning. In addition, teachers' low sense of efficacy serves as a determinant that undermines teachers' responsibility for student achievement (Evans, 2009). Since "RTI emphasizes problem-solving, data-based decision-making, and prevention of learning challenges" (Donnell & Gettinger, 2015, p. 47), participants' low self-efficacy contributed to their failure to use data for intervention purposes to bring about positive student outcomes.

Support for and Training About Intervention Practices

Research on professional development has emphasized the positive effect it has on teachers to enhance school and students' learning (Baldan & Guven, 2018). Professional development is a means by which teachers discuss and experts present to educators various educational trends that will allow them to strengthen their practice throughout their career. According to Babanoglu and Yardimci (2017), professional development is actions that can expand an individual's knowledge, understanding, and other characteristics as an educator and is "Pivotal to increasing educator capacity for RtI" (Castillo et al., 2016, p. 893). Therefore, providing educators with extended training can aid in career advancement. However, there are many barriers that educators face with regard to professional development that targets their own individual needs. According to Matherson and Windle (2017), there is a disparity between the design of the professional development and the reality of the specific pedagogical areas in which educators need support.

Regan, Berkeley, Hughes, and Brad (2015) indicated that educators felt that they were not appropriately trained to carry out any type of procedural intervention for students who may need extra support. Participants in this study also expressed that the professional development required by the school district is based on the perceived targeted needs of the students and is irrelevant to teachers' needs to better strengthen their content and pedagogical knowledge to increase their own skills to meet the needs of struggling learners, especially with regard to applying research-based interventions. According to Meyer and Behar-Horenstein (2015), "Teachers were frustrated by a lack of professional development and support from school leaders and limited educational resources" (p. 390).

Implications and Recommendations for Practice

This study aimed to understand and describe the variation of teachers' perceptions of data-driven practice, i.e., formative use of summative assessment in an RTI model. By choosing to use qualitative research, the researcher wanted to explore a phenomenon as experienced by individuals, so as to gain deeper and meaningful understanding. Although research exists regarding educational data driven assessment practices, results from this research imply that there are some areas of teacher performance where teachers lack overall understanding and the ability to implement research-based assessment and data driven intervention practices. As the study relates to professional development for practitioners, there are numerous implications and recommendations for practice to assist teachers to assist students who need extra support. The implications and recommendation for practice suggest that there is an overarching need for improved professional development with regards to teachers implementing research-based intervention. The following section describes the significance of professional development based on each emerging category that derived from the transcript , i.e., (a) teachers' awareness of

RTI; (b) teachers' use of evidence-based assessment strategies; (c) teachers apply of universal screening measures and progress monitoring; (d) teachers' self-efficacy towards data driven intervention practices; and (e) support for and training about intervention practices.

Category One

The reauthorization of the Individuals With Disabilities Education Act (IDEA) authorized implementation of Response to Intervention (RTI) as an intervention model to identify and deliver scientifically based intervention that parallels children's individual academic needs for those children who are not progressing according to the academic benchmark criteria in the general education curriculum. Through this process, teachers should use the data from assessment, in conjunction with other supporting evidence, to ultimately identify students with learning disabilities in the classroom. However, teachers confused some general education instructional strategies, such as working with students in small groups, with research-based intervention that uses a systematic multi-tier approach to support students in need of intervention. These mishaps could later affect students' performances. With the ever-changing educational policies and practices that are introduced in schools every year, it is not surprising that findings from this research implied that the participants indicated lack of awareness of RTI specifics.

Even though the New York State Education Department (NYSED) has established regulations for RTI as a school-wide approach to prevent academic non-performance in specific content areas, according to Sabatino, Kelly, Moriarity, and Lean (2013), implementing scientifically based research procedures to correlate with school, class-wide, and individual needs can be an intricate process. To help schools establish an RTI school-wide approach, school leaders should attend professional development that will enable them to understand that

the success of RTI implementation requires school leaders to support teachers in acquiring, understanding, and using scientific, research-based interventions to make certain that students' educational needs are met through prevention and early intervention.

Category Two

Teachers significantly affect how well their students advance in school, and teachers have been conducting assessment practices for many years. Over the past decade, rapid changes have occurred in general education practice to increase the focus on early identification and intervention for students who are considered at-risk. The formative assessment approach is usually risk-free. Here teachers discover learning goals, implement immediate student feedback, and adjust instruction based on students' inaccuracies or misconceptions. In contrast, summative assessment's primary purpose is to assign students a score as evidence of their proficiency. Schoenfeld (2015) questioned whether some assessment strategies that have been implemented and used in the classroom to assess students' performances are reliable and valid. According to Grosas, Raju, Schuett, Chuck, and Millar (2014), for an assessment to be valid, it is imperative that it have well-defined, detailed learning outcomes, standards, and criteria for student outcomes.

Many educators in this study selected teaching strategies that are conventional, rather than evidence-based, approaches. This underscores the challenge of teachers' lack of awareness of evidence-based assessment strategies. Many teachers may not be aware that, even with their advantages, some of their assessment strategies are not evidence-based, and, depending on the use of the outcome, the results are not valid for providing research-based intervention for struggling learners, such as RTI. Therefore, it is important for teachers to be knowledgeable about the goals and the importance of these assessments and how they plan to use assessment

results. In addressing the issue, school leaders may need to develop effective ways to support teachers with regard to the application of performance assessment strategies that help students reach appropriate academic standards. Since valid assessment strategies are known to impact teaching and learning, support and inform instruction, and provide accurate information about what students know and can do, school leaders may need to provide and model best practices to enhance teachers' awareness of these strategies by providing professional development that targets critical thinking about instruction and assessment to provide valuable information that can unquestionably impact student achievement.

Category Three

Universal screening can positively impact students' academic outcomes. It affords educators a baseline benchmark for all students within the school system. According to Hannan, Holbrook, and Ricci (2012), universal screening of all students requires the use of authentic, standardized, criterion-based measures that are reliable and valid to anticipate academic difficulty, while "progress monitoring lies in its use as a tool for instructional decision making" (Vaughn & Swanson, 2015, p. 14). For this reason, it is important that screening measurement assessment tools be highly efficient and indicate evidence-based interventions.

According to Tanner, Eklund, Kilgus, and Johnson (2018), highly efficient screening methods should be effective and instrumental to provide informative data for the instructional decision-making process. However, results from this study indicated that teachers are not using efficient screening and research-based materials designed to address the areas in which students are deficient. The successful implementation of intervention relies on educators effectively using research-based, valid, and reliable data collection assessment tools. Addressing this issue requires that school principals provide teachers with adequate training for them to be able to

choose the right assessment administration tool. Teachers also may need coaching that targets specific areas of interpreting and charting scores to determine whether students met or on target towards meeting their goals.

Category Four

Educational data and how it is used is a critical component of an effective classroom that plays a major role in student achievement. The results can be used to facilitate intervention through early identification for students who are at-risk and may need remediation. Since teachers' use of students' data can regulate who needs grade-level support, teachers' attitudes toward engaging in the effective use of data to increase student achievement relies on their self-efficacy. This is important because teachers' levels of self-efficacy could influence how teachers view and implement reforms and practices. Teachers with high levels of self-efficacy are inclined to be open-minded, feel more comfortable with the decisions they make in the classroom, and possess the knowledge and skills to implement support for those who are struggling academically. Despite the importance of improving educational outcomes, the present study's findings highlighted that teachers' have low self-efficacy towards applying data to provide intervention to facilitate student achievement. According to Filderman and Toste (2018), educators reported uncertainty about the process of collecting, interpreting, and using student data results for important decision making because they have not received direct professional development training that is targeted to that specific area. Teacher training continues to be an important area for consideration. An important role for teacher professional development is to raise both the competence and the confidence of teachers. To address teacher needs and to develop their self-efficacy towards their pedagogical practices, teacher support may be needed through effective professional development presentations and workshops, such that

new skills are described and demonstrated to promote positive attitudes and teacher acceptance so that educators will implement classroom initiatives.

Category Five

Teacher professional development is a necessary element in educational reform. Schools that promote professional development create educational life-long learners because PD increases teachers' capacity for leadership that can positively affect their attitudes towards the profession. School leaders have the responsibility to provide continuing services in order to strengthen teachers' skills, knowledge, and attitudes towards improving the quality of education and administrators must select professional development to support the application of various school reforms to ensure that educational outcomes are enhanced for all. According to Matherson and Windle (2017), there is variance between what is presented and offered to teachers and what they really need from professional development to competently grow as educators. When targeted, individualized, professional training is offered, this could ensure that teachers' needs are met and that they will be engaged and motivated. Although participants in this study declared that student needs pertaining to academic improvement were at the forefront of many mandatory professional development sessions that they attended, participants stated that their individual needs were ignored regarding gaining extended knowledge that would benefit their overall pedagogical practices.

To ensure that teachers are presented with the relevant training, school leaders could assign PD elements that will develop those pedagogical skills that are necessary to impact students' learning. Professional development should accommodate the needs of all teachers and should be designed to provide them with techniques and strategies that will allow them to cater to students' individual needs. Moreover, school leaders should be receptive and allow teachers

to request direct, skill-based, needed professional training because pedagogical deficits are not the same for every teacher.

Recommendations for Future Research

While recommendations for school leaders are being suggested as part of using the research findings to aid educators to improve their pedagogical practices, there are further implications for continued research because the research findings are considered preliminary. Additional suggestions for future research follow.

- This study employed eighteen NYC elementary and middle school teachers, which is a sufficient number of participants for phenomenographic qualitative research. Also, this research only employed elementary and middle school educators from an urban school district in NYC. Future research could expand on the topic using high school and pre-school teachers.
- The participants for the study were a mixture of special and general education teachers. Researchers could validate or expand on the study's results using samples of public only or private only l general education teachers. .
- This study used phenomenographic methods, researchers could further explore this study by using a different methodology, or a sample population from rural and/or suburban school districts, to determine if their results are compatible with the findings in this study.
- In this study's findings, teachers referenced a lack of awareness of the detailed process of implementing RTI due to the fact that it was not a PD menu choice in relation to providing research-based interventions for students who may need extra help to meet content benchmarks. Further studies should focus on the extent to which educators are knowledgeable about NYSED mandated school regulations that involve providing RTI.

- Educators in this study indicated that they used formative and summative assessment strategies for making instructional and learning adjustments. However, there are still considerable disparities in perceived understanding of the use of valid and reliable formative and summative assessment strategies where students' results can lead to research-based intervention. Consequently, more research is needed in regard to teachers' perceived understanding of the reliability and validity of classroom assessment strategies for implementation of research-based interventions for struggling learners.
- Conducting assessment is a critical role in collecting data to provide research-based intervention. The results from this research revealed that participants employed formal, general education student identification practices that are not valid and reliable universal screening and progress monitoring instruments that can yield data to identify and provide information to implement RTI for students who are at-risk. Future research could examine teachers' proficiency in identifying the most effective classroom screening and progress monitoring instruments to generate meaningful research-based data to identify at-risk students early enough to provide appropriate intervention.
- Using assessment results correctly can lead to improved student performance. The use of data for continuous student academic improvement relies on educators' levels of self-efficacy. Participants in the research presented themselves as having low self-efficacy regarding their ability to use student data to provide research-based intervention. Since school leaders play a major role in providing necessary support to help build teachers' confidence to help students meet their learning goals, if principals lack confidence in their own ability to aid teachers to build their self-efficacy, then this could, in turn, reflect teachers' levels of self-efficacy towards providing intervention for students. Therefore,

future research could identify school leaders' self-efficacy in using school-wide research-based data to provide academic intervention.

Final thoughts

This study examined the perceptions of elementary and middle school teachers' perceptions of data driven practices, i.e., formative use of summative assessment in an RTI model. This study provided important information for the educational community about using data driven instructional practices for student intervention. Despite the enormous advances in educational policies and practices, from analyzing the overall transcripts, the findings revealed teachers' lack of awareness of RTI, teachers not using evidence-based assessment strategies, teachers not applying universal screening measures and progress monitoring, teachers exhibiting low self-efficacy towards data driven intervention practices, and teachers lacking support and training about intervention practices.

The research findings were supported by the literature, and implications for practice were recommended to address the research findings. In addition, categories were developed based on the qualitative data that was collected using phenomenographic methodology, and suggestions for future research were mentioned. The information acquired from this study could benefit schools to help them develop different courses of professional development to promote and advance educators' application of data driven practices that could eventually create a positive learning environment beneficial to supporting both teachers and students. Providing teachers with insightful resources on multiple evidence-based interventions may incline teachers to adjust their teaching strategies and compel them to engage in targeted intervention for struggling students (Burns et al., 2013).

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APPENDIX A
Invitation to participate in the Study

LIU Post Long Island University

720 Northern Boulevard

Brookville, NY 11548-1300

My name is Tricia White and I am seeking elementary and middle school teachers who engage in teaching teach reading to participate in a doctoral research study. The purpose of the study is to investigate teachers' experiences, understanding, and perception of data-driven practices as related to Response to Intervention. The interview will be a taped session,that will take less than 1 hour. Additionally, we assure you that any information included in my report has no identifying information of you as the respondent and your responses will be restricted to the research team members only. At the end of the interview, you will receive a $20.00 visa gift card as compensation for your time and effort. If you are interested, please contact me at (929) 369-4905 or tricia.white@my.liu.edu.

Thanks

APPENDIX B
Participant Consent

Thank you for accepting to participate in my study. My name is Tricia White and I would like to talk to you about your experiences, so that I can understand and describe your perception of data-driven practice, i.e., formative use of summative assessment in a Response to Intervention framework. The interview should last approximately 1 hour. The interview session will be taped recorded. The interview will only be viewed by the research study team and your responses will be kept confidential. You may reject to answer any of the 25 questions and withdraw from the study at any time.

Are you willing to participate in this interview? Yes _____ No _____

Sign _____ Date _____

APPENDIX C

Interview Questions

Interviewer: What grade are you currently teaching?

Interviewer: What is your position, general education teacher or special education teacher?

Interviewer: How many years have you been teaching?

Interviewer: Do you hold a NYS teaching license?

Interviewer: Educational philosophy is a set of beliefs that influences what and how students are taught. What is your educational philosophy as a teacher?

Interviewer: Pedagogical practices are concerned with what a teacher does to influence learning in students. Can you describe some of your pedagogical practices that you implement in your classroom as a teacher?

Interviewer: Teachers conduct formative assessment during the learning process. Can you describe various ways in which you employ formative assessment in your teaching practice?

Interviewer: Summative assessment evaluates student learning at the end of an instructional unit. Can you describe ways in which you employ summative assessment in your teaching practice?

Interviewer: Can you give an outline of the frequency of when you administer different assessments?

Interviewer: Can you describe how you use the assessment data results?

Interviewer: Can you explain how you employ data results for students who are at risk and need intervention?

Interviewer: What scientific research based reading program does your school use as part of its curriculum?

Interviewer: With regard to respond to intervention, can you define your level of understanding with regard to implementing it?

Interviewer: What is your perception of the rationale of why we use response to intervention practices in schools?

Interviewer: What are the criteria to determine which students should receive research-based intervention in your school?

Interviewer: Can you describe how interventions are documented for at-risk students in your class?

Interviewer: Self-efficacy is one's belief that one has the ability to succeed in any specific situation or accomplish a task. Can you describe your level of self-efficacy since you were a first year teacher until the present?

Interviewer: Pedagogical practice is concerned with what a teacher does to influence learning. How does your level of self-efficacy affect your assessment practices?

Interviewer: Describe how your level of self-efficacy affects your ability to be a highly effective ELA teacher.

Interviewer: Do you think your level of self-efficacy affects your students' achievement?

Interviewer: Can you explain various school factors that negatively or positively affect your self-efficacy?

Interviewer: Explain how your school supports teachers who may need extra support in adapting to changes within the overall teaching profession, such as mandated laws, accountability measures, or content standards.

Interviewer: With regard to respond to intervention, can you describe, if any, professional development where you have had the ability to become familiar with RTI procedures?

Interviewer: With regard to respond to intervention data analysis, can you describe if any, professional development or support you've receive from your school.

Interviewer: Is there anything more you would like to add?

Interviewer: I will be analyzing the information you and others gave me. If you request, I'll send you a copy of the transcript.

Thank you so much for your time.