# TEACHER EMPOWERMENT IN THE IMPLEMENTATION OF RESPONSE TO INTERVENTION: A CASE STUDY

by

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Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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## ABSTRACT

Evie Taff Barge. TEACHER EMPOWERMENT IN IMPLEMENTATION OF RESPONSE TO INTERVENTION, (under the direction of Dr. Judy Shoemaker) School of Education, Liberty University, March, 2012.

Response to Intervention (RtI) is a data-driven process that supports the academic needs of students through targeted interventions to address specific identified areas of weakness. When implemented effectively, RtI aids students at the onset of learning concerns and can remediate learning problems which have, in the past, led to students being classified as learning disabled. Few studies have recognized the role of teachers at the frontlines in implementing RtI, and many teachers are struggling with the complicated RtI process. Literacy and mathematics are the academic focuses for RtI in this study due to their importance for success in school and later as young people enter society beyond their K-12 years. The purpose of this study is to explore the impact of teacher empowerment on the implementation of RtI by examining teachers' experiences and measuring the students' progress on benchmark tests. Six teachers involved in the RtI implementation at Target Schools A and B were interviewed and observed, and their progress-monitoring data was examined. In this study, the effect of teacher empowerment was documented as the teachers began to take an active role in the RtI implementation at the school level by using their strengths in the classroom to lead the school staff in professional development to improve instruction in the RtI process.



*Keywords*: response to intervention, progress monitoring, literacy¸ mathematics, teacher empowerment, benchmark tests, tiered instruction, student support team

## Dedication

*I will give Thee thanks with all my heart; I will sing praises to Thee before the gods. I will bow down toward Thy holy temple, and give thanks to Thy name for Thy loving kindness and Thy truth; for Thou hast magnified Thy word according to all Thy name. On the day I called Thou didst answer me; Thou didst make me bold with strength in my soul* (NAS, Psalm 138: 1-3). Thanks to my Lord for being with always.

The successful completion of my dissertation and doctoral degree are dedicated to my family. There are no words to adequately convey my thanks to Bobby, my husband, who's unwavering support and love helped me move forward each day and successfully complete my dream to receive my Doctorate in Education. His patience and love made it possible.

My children who also loved and supported me through the degree: Taff, my son, who encouraged me at every turn and made his pride in me known. Bree, my stepdaughter, who encouraged me and understood when I missed lunches and other activities. My beautiful grandson, Colin, who did not always understand why I could not play, but loved me anyway.

My siblings, Jane, Johnny, Fred, and Bill, were always proud and supportive. Their unconditional love got me through the hard work and late hours.

Finally, this project is dedicated to all teachers across our nation who care deeply for their students and work tirelessly to help them succeed. Raise your voices!

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As anyone who has ever written a dissertation knows, it cannot be done alone. I want to thank the many generous people who helped me accomplish this lifetime dream:

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- All my family who understood when I missed yet another family function. I love you all.
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- To my neighbors and friends, Beth and Jerry, who let me stay at their quiet lake home when writing the bulk of my dissertation.

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## List of Abbreviations

Adequate Yearly Progress (AYP)

Criterion Referenced Based Competency Test (CRCT)

Diagnostic Indicator of Basic Early Literacy Skills (DIBELS)

Early Childhood Education (ECE)

Economically Disadvantaged (ED)

Individuals with Disabilities Educational Improvement Act (IDEA)

Institutional Review Board (IRB)

Mean (M)

Numbers and Operations (MATH)

Middle School (MS)

No Child Left Behind Act (NCLB)

National Center on Response to Intervention (NCRTI)

National Reading Panel (NRP)

Oral Reading Fluency (ORF)

Response to Intervention (RtI)

Standard Deviation (SD)

Student Support Team (SST)

Students with Disabilities (SWD)

Zone of Proximal Development (ZPD)

# CHAPTER 1: INTRODUCTION

## Background

The positive implementation of any new policy or process cannot begin at the management level, but must begin at the classroom or teacher level. The response to intervention (RtI) condition of the Individuals with Disabilities Education Improvement Act (IDEA) is an example of one process in which teachers are being asked to integrate into their daily classroom instruction (LaRocco & Murdica, 2009). Bender and Shores (2007) described RtI thus, "Response to Intervention is a process of implementing high-quality, scientifically validated instructional practices based on learner needs, monitoring student progress, and adjusting instruction based on the student's response" (p.7).

With the passage of the IDEA, the federal government officially allowed students to be classified as learning disabled based on documentation of how well they respond to interventions (National Center on RtI (NCRTI), 2010). Response to Intervention is beneficial in education for two reasons: (a) students receive academic intervention early, before the student gives up due to prolonged failure, and (b) it separates the students who are not successful as a result of prior instruction from those who demonstrate true disabilities (Edl, Humphrey & Martinez, 2009).

Holifield (2009) stated, "The reauthorization of IDEA (2004) incorporated the use of scientifically research-based interventions and brought RtI to the forefront as an alternative to the traditional approach of identifying students with disabilities" (p. 19). Teachers are now asked to identify students in need of intervention and select the appropriate intervention through collaboration with the special education teacher for preventative measures to support students who in the past would have attended special

education classes. This attempt to reduce the special education population was in response to a disproportionate number of students being identified as in need of special education services, therefore creating additional demands on decreased budgets within school districts (Manset-Williamson & Nelson, 2005). The burden of screening students for a learning disability falls on the regular education teacher, who is untrained in the complexities of special education (Goodman & Webb, 2006).

## Problem Statement

Because of the lack of the specialized knowledge of special education teachers, regular education teachers do not feel empowered when implementing RtI. The classroom teacher holds the key to success in student learning (Haller & Davis, 1981). If RtI is to be implemented effectively, understanding the thoughts and professional needs of the teachers responsible for performing the process is vital. Also, too many students are being incorrectly labeled as in need of special education services (Reeves, Bishop, & Filche, 2010). If implemented successfully, RtI is a proven method to improve reading and mathematics skills and prevent misidentification of students needing special education services. Reeves et al. (2010) suggested that for RtI to work, teachers must not only understand the process, but have adequate support for the needs which may arise during the implementation. As RtI is being carried out in our schools, educators must examine the influence this process may have on those at the front lines of its implementation (Nunn & Jantz, 2009). The voices of the teachers need to be heard as they experience the implementation of this process, and aspects associated with the implementation of RtI such as teacher beliefs and experiences must be studied.

## Purpose Statement

The purpose of this study is to examine the impact of teacher empowerment on

the implementation of RtI by measuring the students' progress on benchmark tests. This study shows how teachers have reacted to and experienced the implementation of the RtI process in their classrooms. Given the importance of classroom teachers to student learning, their viewpoint can determine the success or failure of the execution of RtI (Blackburn, 2008). The teachers' experiences must be included in the pursuit of an efficient execution of RtI. Their feedback can give insight to administrators as to whether they need more training, better understanding of the process, scheduling changes, or other adjustments to the RtI process (Davenport & Anderson, 2002). Using their input in the RtI implementation can empower teachers to be more effective in the use of RtI, which can improve student learning.

## Significance of the Study

This study explores teacher experiences in implementing RtI and focuses on concerns about reading and mathematics which are addressed by RtI. As Torgesen (2002) stated, "The primary reason for most special education referrals is difficulty in reading" (p. 9). Interventions for reading must begin early, before a student can experience failure and be part of everyday classroom practice, because, as Daly, Persampieri, McCurdy, and Gortmaker (2005) noted, "Literacy is important to success in school and beyond for effective participation in the workforce, community and society" (p. 395). Likewise, a sound basis in the key concepts of mathematics has been found important for responding to a constantly changing economic and social structure in society (Hoda, 2006).

A current problem in public schools is that the teaching of mathematical skills is lacking. This deficit causes the following problems for students academically: (a) students struggle to meet state standards in mathematics, (b) students earn failing grades,

and (c) the dropout rate is increasing because failing students cannot receive a high school diploma (Mong, 2008). Response to Intervention (RtI) was designed to prevent such failure and to promote literacy and mathematical functions through a collaboration of regular and special education teachers (NCRTI, 2009). The RtI process is based on the belief that every child can learn, so it is up to teachers to determine the instruction, curricular decisions, and classroom conditions to promote learning (NASP, 2006). The experiences of the teachers implementing the process of RtI are worth studying due to the impact of the teacher on student learning and the importance of literacy (Blackburn, 2008).

## Research Questions

### Research Question 1

*What are the teachers' experiences concerning Response to Intervention (RtI)?* As the teachers at Target School A implement RtI, their experiences were recorded through multiple sources of data, then their input was part of the decision-making process for RtI implementation at their school. The teachers at School B will be interviewed and their experiences compared to the teachers in School A, but their input was not used by the administration.

### Research Question 2

*What are the recurring themes seen in the experiences of the teachers in the implementation of RtI?* The data were coded by the research team consisting of a research assistant, an RtI specialist, and the writer. Then the team collaborated to complete the naturalist generalizations as themes in the implementation process surface.

### Research Question 3

*What does RtI mean to teachers?* The data were collected from the interviews

and observations in order to determine the teachers' meaning of RtI.

**Research Question 4**

*How does empowering teachers affect RtI implementation?* At the end of the grading period, the teachers from Target School A participated in interviews in order to determine the teacher experiences and perspectives after being empowered to be a part of the RtI decision-making team. The benchmark test data will also be used to measure the progress of the students in the participants' classrooms.

**Research Question 5**

*How do teachers perceive the traditional implementation of RtI?* The teachers from School B who participated in traditional RtI implementation participated in the focus interview after the grading period and their discussion was transcribed and coded to determine key themes from their experiences. The benchmark test data were also used to measure the progress of students in the participants' classrooms.

## Limitations

One inherent limitation of the case study design utilized in this study is the small number of teachers selected to participate: three teachers at each school. Another limitation in this study is with the selection process for the participants was not a true random selection. The selection process involved randomly selecting teachers who have initially volunteered to participate from a group participating in the decision making team for RtI. Also limiting this study is the fact that the sample comes from schools in the southeastern part of the country, which may limit the generalizability of this study to an inner city school or another part of the country.

## Research Plan

This study uses a qualitative, case study approach in order to gain understanding

of teachers' perspectives in implementing RtI. The qualitative method is appropriate for the study of teachers' experiences because multiple realities are reported by of different teachers. Prior research concerning teacher experiences is generally quantitative in nature and is one-sided, with a focus on the generation or production of programs and policies (Smit, 2003). The qualitative process requires this research to take place in the field—in this study, the classroom. Qualitative inquiry also allows the researcher to gain valuable insight into the problems the teachers are facing in the place where they feel most comfortable, the classroom.

Previous quantitative research paid little attention to what happens at the school level where the new programs translate to practice. An understanding of the teacher-level experiences can narrow the gap between program and theoretical text and program and practice. Essentially, RtI cannot be completely understood until it is experienced in the classroom. Using those experiences at the classroom level can provide valuable information for a more seamless implementation of RtI.

# CHAPTER 2: LITERATURE REVIEW

## Introduction

Response to Intervention is growing in strength as a process used by schools to improve student achievement. As a result, current educational literature is focusing on RtI as a means to close the achievement gap in student learning, especially in the area of reading instruction. The process of RtI is a fact of life in many schools across the nation. Despite the fact, RtI is not required by powerful federal regulations such as No Child Left Behind (NCLB, 2001) or Individuals with Disabilities Education Act (IDEA, 2004), it is recommended as a way addressing the various academic and behavioral needs of at-risk, struggling students (Thomas & Dykes, 2010). RtI also provides research-based strategies to intercede early and help elementary students succeed academically.

The literature shows RtI is used in many schools requiring teachers to carry out this often complicated and time-consuming process in an effort to help students succeed while being held accountable to federal mandates for success. State- and district-level school officials dictate the manner and timeline by which RtI is to be implemented at the school level (Mellard & Johnson, 2008). A synthesis of the literature indicates that teachers' input is often left out of implementation planning and decision making, which seems to be typical in most reform efforts in education.

## Purpose of the Literature Review

This literature review considered current literature to provide an underpinning for a research study concerning teachers' experiences in implementing the RtI process in reading and math instruction. This study looks at the teachers' understanding of RtI. Therefore, a key part of this study is the RtI process. In order to understand RtI, the

theory behind the process was explored through the literature. Theorists such as Piaget, Vygotsky, and Feurestein offered a sound basis for the implementation of teacher-mediated interventions, which are an integral part of RtI (Shamir & Tzureil, 2004). These theorists supplied keen insight into understanding how and why RtI, which is a highly social process, promotes successful in cognitive development (Miller, 2009; Pass, 2006; Shamir & Tzureil, 2004; Kim & Baylor, 2006).

RtI, as a theory itself, is worth studying in order to investigate the complexities of this process in helping close the achievement gap in students' learning (Holifield, 2009; Reeves, Bishop, & Filce, 2010; Thomas & Dykes, 2010; Vaughn, Linan-Thompson, & Hickman, 2003). The literature also provides a historical perspective of RtI, which reveals the importance of implementing the process when educating at-risk students (Mellard & Johnson, 2008). Not only are the teachers' experiences with RtI considered, but the teaching of reading and math is discussed, too. For this case study, reading math interventions are the focus of the RtI process due to the impact of reading on all other subject areas in education, and the use of mathematical processes to survive in the world (Goodman & Webb, 2006; Lyon & Moats, 1997; Manset-Williamson & Nelson, 2005; Renski, Homan, & Biaggs, 2009; Vaughn, Linan-Thompson, & Hickman, 2003). The theory behind the reading and mathematical processes needs to be examined if the experiences of teachers implementing RtI effectively are to be understood.

Most importantly, this study investigates the role of the teacher in carrying out the RtI process. Mellard and Johnson (2008) suggested that, historically, the teacher has not only been told to carry out an initiative in education, but also to perform the necessary planning with little or no training or resources, and at the same time to ensure students show improvement on mandated tests. While the literature revealed the teacher is the

most important piece of the education puzzle, it also indicated the teacher is usually the last person asked for input on educational decision making (Goodson, 1991; Haller & Sharon, 1981; Pearson & Moomaw, 2005). Wagner (2007) added that there is scarce if any research specifically examining teachers' perceptions regarding the implementation of RtI. As a result, the literature pertaining to the importance of the teacher in student success must be scrutinized. Finally, in considering the teachers' role in any type of implementation in education, the literature concerning teacher empowerment as part of the implementation process must be studied in an effort to understand the depth of teacher involvement in successful implementation of the RtI process in teaching and learning (Fullan, 2008; Lee, 1991; Overton, 2009; Short, 1998). Aspects of empowerment such as teacher training, collaboration, and decision making are explored in order to improve RtI implementation.

## Conceptual or Theoretical Framework

### Piaget

The first theorist examined in this study is Jean Piaget, a Swiss developmental psychologist whose influence on education is unquestionable (Hinde & Perry, 2007). Piaget studied children and cognitive development, which supports the premise for RtI. Many of Piaget's studies have focused on education. He was fascinated by children's thought processes, specifically how they comprehend the world around them. Piaget examined the connection among people, their environment, and knowledge, and his theory provides a foundation for RtI and teacher intervention in helping close the achievement gap in at-risk students.

Piaget recognized that knowledge is not a one-time acquisition but a process. According to Miller (2009), Piaget believed children built or created knowledge through

various interactions with society. Important to his studies of children's knowledge construction was the children's continuous interaction with their environment. He saw intelligence as children's adaptation to and interaction with the world around them. Piaget understood social experiences as having an effect on children's learning but only as an interaction with an object or person in their environment. Piaget believed adults such as teachers working with children were limited to supplying guidance rather than imparting learning and were a tool to aid in learning (Miller, 2009). Piaget posited that knowledge is a result of a child's independent exploration and discovery.

Piaget is also credited with the premise of cognition developing through a sequence of stages from birth to about 15 years of age. According to Piaget, the cognitive stages were ways of adjusting to their surroundings. Miller (2009) explained the Piagetian stages: (a) Sensorimotor Period spans birth to two years old, (b) Preoperational Period includes ages two to seven, (c) Concrete Operational Period contains the ages seven to eleven, and (d) Formal Operational Period involves ages eleven to fifteen. The stages are in a set order, but people vary in the amount of time it takes to move through the levels. For example, a student who struggles in school will progress through the stages at a slower pace than a child who is bright and inquisitive.

Piaget discussed the concept of readiness based on these stages. Miller (2009) explained Piaget's theory on learning posited that children can learn only when they are cognitively prepared to understand the learning experience based on their current stage of development. A student's readiness level, which is an important part of the RtI process, is determined by a universal screening instrument before entering into an intervention so that the type of learning situation responds to his/her level of cognitive development.

Onchwari, Onchwari, and Keengwe (2008) explained readiness as being determined by experiences that a child brings to the construction of knowledge. At-risk students who go through the RtI process possess fewer experiences and background knowledge than students not in RtI. Therefore, a part of the process is supplying them with the experiences and background knowledge they need to be successful. In addition, Hinde and Perry (2007) suggested learning must use developmentally appropriate practices based on readiness levels to steer decision-making when planning instruction, as theorized by Piaget. Piaget's theory concerning the learner's social environment which includes the teacher's role and the learner's readiness level is explained in the literature and gives support to RtI.

**Vygotsky**

While Piaget concluded development was affected by the environment, the focus of development was for the most part on the individual (Miller, 2009). Lev Vygotsky, a Russian psychologist and author, added to and, according to some experts, balanced the studies of Piaget in cognitive development through greater recognition of cultural influence (Pass, 2007; Miller, 2009). Vygotsky was a peer of Piaget; having been born in the same year, 1896. Wang (2009) stated, "He was praised as the 'Mozart of psychology" (p. 100).

Socioculturists such as Vygotsky believed culture determines the skills and knowledge a child may need and then gives them the needed tools to survive in the environment. Vygotsky's theory of learning placed the focus on social relations. According to Thomas and Dykes (2010), Piaget and Vygotsky agreed on the importance of readiness for learning. Vygotsky relied on dynamic assessment to determine a student's readiness level in order to understand a student's learning potential.

Vygotsky's process is the model for interventions using the universal screening or dynamic assessment in order to determine a students' readiness level for learning. In direct support of RtI, Miller (2009) explained that Vygotsky suggested the adult involved in the social interaction or learning experience is in charge of sharing knowledge with students if learning is to take place.

Miller (2009) stated Vygotsky's key theoretical contribution to learning is the zone of proximal development (ZPD) which allows educators to see not just a student's current abilities but, with the help of a mediator, the student's potential for learning. The ZPD is a student's capability to learn with the support of an adult such as the teacher. Shamir and Tzureil (2004) posited scaffolded learning is a part of the zone of proximal development. Scaffolding occurs when the teacher leads instruction by modeling then gradually turns the learning over to the student as an independent learner. RtI is a version of the zone of proximal development in which the teacher uses a dynamic assessment to determine the learner's readiness level. The teacher then meets the learners where they are and brings them through the zone of learning by scaffolding instruction so independent learning takes place. Current literature suggested that the theories of Piaget and Vygotsky work together to support RtI.

**Feurestein**

The last theorist examined in the literature to support RtI is Feurestein. He took the concepts discussed by Piaget and Vygotsky a step further in support of RtI as a reliable process in educating at-risk students (Shamir & Tzureil, 2004). Feurestein is a clinical psychologist who trained under Piaget at the University of Geneva. Feurestein suggested there are two types of learning: (a) direct learning between books and other learning tools and the mind of the student, and (b) mediated learning, which depends

upon the purposeful intervention of an adult. He went on to explain if the learning material becomes too difficult, then it is necessary for a trained adult to step in and mediate the learning (Shimir & Tzuriel, 2004). The key to the success of Feurestein's mediated learning experience is to provide appropriate instruction at the level of the student, and he expanded on the specific types of interventions involving the assistance of a more competent person such as the teacher to aid the student in learning. Learning experiences in mediated learning include peer tutoring and the teacher guiding the student in reading and mathematics.

A review of the literature establishes a foundation for RtI. It begins with Piaget's theory that the environment plays a part or provides a setting for learning to take place when the student is ready developmentally. Vygotsky's theory connects with Piaget's idea of a readiness level can be determined by Vygotsky's dynamic assessment to assess a student's mastery in learning when given support from a teacher. Feurestein's theory then adds to the ideas of Piaget and Vygotsky with a focus on the teacher and the need for mediated instruction to be appropriate to the learner's level and needs..

**Synthesis of the Theories as the Infrastructure for RtI**

In the past, psychologists believed that understanding and the learning process were internal functions in a person's mind (Kim & Baylor, 2006). Psychologists such as Vygotsky and Piaget explored the idea the mind cannot work alone, but cognition is assimilated through other people, psychological tools, and symbols in society (Pass, 2006). Pass (2007) studied the historical connection Vygotsky and Piaget, in which Vygotsky and Piaget exchanged ideas over a five-year period until Stalin forcibly ended East-West correspondence with the erection of the Iron Curtain.

Their correspondences began when, "Vygotsky wrote to Piaget that learning was

a socio-cultural-historical event and sent him a copy of his 1923 book, *Psychological Pedagogy*" (Pass, 2009, p 281). As a result, Piaget asked Vygotsky to compose the preface for Piaget's Russian translation of his book, *Language and Thought of the Child* (Pass, 2006). In response, Piaget penned a foreword in his Russian Translation of his book, *Language and Thought of the Child*, acknowledging the possibility that learning could be affected socially (Newman & Holzman, 1993). As a result of the communication between Piaget and Vygotsky, Vygotsky updated his notion of the three stages in child development from three to four: (a) capacity begins - assistance by a more competent peer, (b) assistance provided by self - capacity developed, (c) internalization - automization and (d) de-automization - recursive through prior stages.

Vygotsky's sociocultural approach is the theoretical framework that supports this exploration of the importance of teacher empowerment in advancing the implementation of RtI. Levykh (2008) explained, "Vygotsky considered education the driving force behind the development of the child" (p. 100). As Vygotsky's theory of development emerged, another theorist, Piaget, explained development based on the individual with society or culture as an influence on the individual (Miller, 2010). Vygotsky's work expands on the Piagetian theory connecting sociocultural processes taking place in society, and the mental process taking place in the individual (Shamir and Tzuriel, 2004).

Influential psychologists such as Piaget, Vygotsky, and Feurestein have posited that social relations are an important device in the act of learning and academic growth (Kim & Baylor, 2006). Through Piaget's research, a child's environment, including the teacher, was seen as either facilitating or restricting development. Vygotsky viewed society as an integral part of a child's development so tightly woven it becomes a single unit of development. As Miller (2011) explained Piaget took an interactionist stance

regarding biology and the environment, while Vygotsky focused on the cultural contributions of the environment to psychological development. The time for learning and teaching that takes place in interventions would have been insignificant to Piaget, who would have been interested in the actual learning or development within the child. "Piaget and Vygotsky believed that interaction with objects and materials direct cognitive development, but Vygotsky placed more emphasis on social interaction" (Miller, 2011, pp. 168-169).

Both Piaget and Vygotsky agreed on the role of conflict and contradictory elements in development. Piaget referred to this process as equilibrium while Vygotsky called it dialectical change. The most noted difference in the two ideas is that Piaget did not see a changing environment as a possible influence in causing the conflict that leads to development. Miller (2011) explained, "Vygotsky emphasized the collaboration of people or ideas in this process, where as Piaget emphasized conflict between one's own concepts and those of peer or adult" (p. 190). Such conflict motivated children to elaborate upon their thinking processes to justify a position.

Piaget surmised that these processes require construction of new schemas and thought patterns. According to Shamir and Tzureil (2004), Vygotsky added to Piaget's theory in that the interaction with a competent partner, such as a teacher, was more effective than someone at the same level. This emphasizes the fact that Vygotsky's theory supports the idea of a focus on the teacher as the better-endowed partner in the execution of the RtI process. However, both Piaget and Vygotsky supported the premise that the learning during the intervention should be a time for new information that disrupts and reshapes previous ideas or knowledge in order to construct new or corrected knowledge. If the proposed study focused on a specific type of learning and the effect on

a child, Piaget could have offered a better framework, but since the study being proposed focuses on providing the time for intense, teacher-led instruction during which the students master a concept and then move on to another area of learning, Vygotsky's theory is more applicable to this study.

A key concept in Vygotsky's theory was the social beginning of individual cognitive performance and language as the essential connection between the social and psychological level of human functioning (Gindis, 1998). Vygotsky believed individual abilities derived from relations with others in society. This theory explained socially meaningful activity shapes the individual. Shamir and Tzureil (2004) stated, "The fundamental way in which a child's higher mental functions are formed is the use of 'psychological tools' in 'mediated activities' shared with an adult or more competent peer" (p.61). Therefore, as children gain mastery learning, they gain the ability to regulate their own learning in order to work independently and make progress academically.

Vygotsky's sociocultural theory and Feuerstein's mediated learning experience theory are compatible and support the proposed research study. Both theorists focus on the adult as a mediator to aid in the child's development; however, Vygotsky did not expand on the types of activities of the mediator beyond their function as vehicles of symbolic tools (Shamir & Tzureil, 2004). Feuerstein (1979) went on to propose mediated learning experiences with an adult are a major determinant of the individual cognitive change. Feuerstein stated systematic exposure to the mediated learning experiences such as changing frequency, intensity of present stimuli, connecting students with familiar contexts, combining different and discrete objects and events, and transcending the concrete aspects of the stimuli beyond the immediate experience would lead to

internalization, which allows the child to acquire cognitive functions (Shamir & Tzureil, 2004).

Developmental changes in participation are tied to changes in learning, or as Miller (2011) put it "Doing creates knowing" (p. 171). This concept supports RtI's model of small group intervention within a designated block of time, because it is conducive to the implementation of RtI. First, the student's need or strength is identified by using data. In his zone of proximal development, Vygotsky described this need or strength as a child's specific developmental stage (Vygotsky, 1978). In the block of time set aside for the intervention, the student works with the more competent adult (the teacher) until the student is able to internalize the concept so he/she takes on the responsibility of learning and masters the concept. At this point, the student may progress to another intervention or move to grade-level instruction.

Vygotsky proposed children develop by using psychological tools (Miller, 2011). Psychological tools for the proposed study are the tools used by teachers in the intervention blocks. The tools include language systems, counting systems, writing, memorizing, computers, and electronic games. Many of these tools are difficult for the classroom teacher to use effectively during class time due to interruptions by the other students in the classroom or limited time for the intervention. Within the designated block of instruction, all students requiring an intervention are working with the teacher. The groups are homogeneous. Miller (2011) explained a major thrust of Vygotsky's theory:

> A main theoretical contribution is the account of the relationship between development and learning—one of the most important issues of cognitive development. Vygotsky argued learning drives development. As children

> learn (proceed through the zone of proximal development), they achieve a higher level of development. In turn, children's level of development affects their readiness to learn a new concept. (p. 178)

Vgotsky's ideas are directly related to the issues addressed in the proposed study. Because "social relations or relations among people genetically underlie all higher functions and their relationships" (Vygotsky, 1978, p. 163), a student's participation in various learning experiences nurtures a certain way of thinking. The physical setting along with effective instruction affects how they acquire skills and learn. Young people advance cognitively in a zone of proximal development, which is the gap between what a child can and cannot do, with triggers, discussion, guidance, and clarification (Miller, 2011). A teacher helps the student move past them to through the zone to independence in learning. Since the student and teacher share in a common goal, which is closing an achievement gap or filling an academic need, they form a unit of study. A unit of study that is conducive to learning is a small group that receives a period of maximized adult attention as they work towards the common goal of success (Miller, 2009). This successful practice supports the importance of the role of the teacher in student learning.

A review of the literature shows that RtI's foundation can be traced. It begins with Piaget's theory that the environment plays a part or provides a setting for learning to take place when the student is developmentally ready. Vygotsky's theory connects with Piaget's idea of a readiness level using a dynamic assessment so that the student reaches mastery in learning when given support from a teacher. Feurestein's theory then adds to the ideas of Piaget and Vygotsky with a focus on the teacher and the type of mediated instruction that must be appropriate to match the level and needs of the learner.

## The Reading Process

Reading is an intricate process concerning word identification, comprehension, fluency, and motivation (Leipzig, 2008). Reading weaves these four aspects into a tapestry of meaning. The three reading processes are complex, and each is vital to understanding the written word. Reading is so important that, in 1997, the U.S. Congress under the leadership of President Clinton asked the National Institute of Child Health and Human Development (NICHHD) and the U.S. Department of Education to form the National Reading Panel (NRP) to examine research on how children learn to read and to determine which methods of teaching reading were most effective (National Reading Panel, 2000).

The NRP was born out of a heated argument that developed over the best way to teach reading. On one side, the experts posited that if classrooms offered books that were interesting to children then children would love to read and reading would occur. In response to the NRP report, the Institute of Academic Excellence reported that the amount of time spent on reading practice is about seven minutes a day (Luck, 2010). The NRP reported that the explicit teaching of reading skills is needed and should be taught early, in order for reading to occur (2000).

After comprehensive research, the NRP's study established that the most effective method to teach reading was one that blended explicit teaching in phonemic awareness, systematic phonics instruction, methods to improve fluency, and strategies to improve comprehension (NRP, 2000). The panel combined five components in reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension. The findings of the NRP reflected those of Jean Chall and Dr. Keith Stanovich who were noted reading experts. Chall's stages of reading and Stanovich's research into reading were very close

to the NRP's conclusions, validating the results.

**Phonemic Awareness**

Phonemic awareness is essential for children to learn to read. Manset-Williams and Nelson (2005) defined phonemic awareness as separating a word into individual sounds or phonemes. Research showed that instruction in phonemic awareness is a means rather than an end to learning how to read (Torgerson, 2007). Phonemic awareness is not taught for its own sake but for its importance in aiding children to comprehend and use the alphabetic system in reading and writing. Phonemic instruction provides a connection between letters and sounds. A child who cannot hear the individual sounds that make up a word will fall behind in the process of reading when it becomes time to match the sound with letters. Sounds at the end and middle of a word are much harder to identify than sounds at the beginning of a word (Torgesen & Mathes, 2000; NRP, 2000). Phonemic awareness is a predecessor of phonics along the continuum of reading.. Students have mastered phonemic awareness when they can successfully sound out words with no difficulty, which usually occurs in kindergarten or first grade.

**Phonics**

Recent theories of reading stressed the importance of the alphabetic principle to relate phonological, orthographic, and word knowledge, mostly in the early stages of literacy (Piasta, Conner, Fishman, & Morrison, 2009). Pollard-Durodola and Simmons (2009) discussed empirical evidence that supported phonological awareness as a critical piece of successful reading. The NRP (2000) defined phonics instruction as the "relationship between letters and sounds to translate printed text into pronunciation" (p. 11). In addition to letter sound identification, spelling patterns and strategies to sound out words are included in phonics instruction. Much research has been presented concerning

the effectiveness of phonics instruction in learning to read (Gaskin, 2002; O'Hara, 1999). Students in kindergarten through second grade should master phonics in beginning reading, because the NRP (2000) found that systematic approaches to phonics were more effective than sporadic or responsive approaches.

**Oral Reading Fluency.**

Oral reading fluency is the child's degree of speed and accuracy in reading (Chall, 1967; Manset-Williams et al., 2005; NRP, 2000). Reading fluency has been identified as a key component in learning to read and in reading to learn (Rasinski, Homan, & Biggs, 2009). Many students who struggle with reading manifest difficulties in reading fluency and cannot chunk information for the purposes of comprehension. The greater the speed of automaticity in word recognition and decoding in reading text, the more successful reader the student will become (Manset-Williams, 2005). Reynolds (2000) stated, "The more fluent the reader, the more cognitive space is allowed for the processing of the meaning of the text" (p. 175). Fluency is a focus in third through fifth grades, when students should read aloud repeatedly with feedback from a teacher or peer. Fluency is an important measure of overall reading growth (Deno, Fuchs, Marston, & Shin, 2001).

**Vocabulary Instruction**

Vocabulary is word meaning. Most theorists and researchers in education suggest that vocabulary knowledge and reading comprehension are connected, and many studies signify the correlation between the two. Students learn vocabulary more effectively when they are actively involved in constructing meaning instead of memorizing definitions. Research denoted that success in early vocabulary acquisition was in part dependent on prior literacy exposure in the home (Hart, Stephen, De Thorne, Thompson, & Cutting, 2009).

Word meaning must be explored and created through strategies such as illustration or webbing that utilize the students' own perspectives in creating interactions that build clarification (Smith, 1997). Also, the explicit teaching of word parts such as prefixes and suffixes lead to word understanding. If a student is to understand the meanings of words, a student needs to use the words in reading, writing, speaking, and listening. Deep understanding of vocabulary requires the interconnections among words and word meanings, the matching of words to children's own experiences, and abundant ongoing review and repetition (NRP, 2000; Torgensen, 2006).

**Comprehension**

Comprehension in reading is drawing meaning from passages, and it occurs at the word, sentence, and text level (Manset-Williams et al., 2005; Hilden & Pressley, 2007). Rupley (2009) separated reading comprehension into two domains: (a) reading/decoding text or inside-out components and (b) understanding text or outside-in components. This theory supports understanding of text independent from instruction that helps students become better decoders. Van Keer (2004) found that a key factor in reading comprehension achievement is the amount of time spent in explicit instruction for this skill.

The NRP (2000) found that "comprehension is a form of active and dynamic thinking and includes interpreting information through the filter of one's own beliefs, using the author's organizational plan to think about information, inferring what the author did not tell explicitly, as well as many other cognitive actions" (p. 28). Students who comprehend interact with information presented in a text. There are many strategies that have been successful in the teaching of reading: read/think aloud, summarization, story maps, and graphic organizers. However, teaching a combination of strategies is

most successful. In teaching comprehension, Vygotsky's theory of the ZPD is evident. Tactical teaching is useful when it includes a slow decrease of teacher responsibility as the teacher guides the strategy use, helps the students apply it in reading, and then allows the students to work independently using the strategy (NRP, 2000).

The five major components reading instruction are inseparable and form a continuum of learning toward read. Each component works with the other to promote an understanding of text at a student's appropriate reading level. Torgesen (2002) suggested that there is extensive concern that public education is not as effective as it should be in teaching all children to read. It is believed that 37% of fourth-grade children cannot read well enough to accomplish grade-level work effectively (National Center for Education Statistics, 2001). The ability to read is paramount in the success of a student, so much so that Braunger (2006) contended that the success of an elementary school is judged by its students' proficiency in reading. Learning to read is the top priority of elementary academics. In fact, early reading achievement is a predictor of later school success. Literacy is key to success in school and beyond for effective participation in the workforce, community, and society.

## Mathematical Domains

Mathematics is an ancient and broad field of study. Mathematics and reading have been seen as formal teaching concepts for over 5000 years. Jitendra, Sczesniak, and Smolkowski (2002) said that man has always had the desire to break down information through the measurement of distance, time, and other quantities. The human side of mathematics includes concepts such as measuring time, distance, and quantities. As a discipline, mathematics is described in terms of theorems, definitions, and proofs (Burns, 2005, p. 5). Many consider mathematics as an interconnected language and tool in the

acquisition of knowledge, and it is a key part of understanding or applying knowledge in the act of learning. Mathematics is a cornerstone of today's formal educational system.

The connection between reading and math cannot be denied. Cole (2008) reported that many researchers posit that the ability to read well is required in order to be successful in other areas such as mathematics. Areas in reading such as phonological decoding strategies are a key to success in mathematical skills in computation (Hecht, Torgeson, Wagner, & Rashotte; 2001). This thinking indicates that students struggling in math not only need math interventions but may also need reading interventions. Cole (2008) identified the problem in the sparsity of knowledge about supportive academic needs connected to improving math competency; even less is understood about the tie between reading and math computation skills. Hence, understanding about the teaching of mathematics is miniscule when compared to that about the teaching of reading (Hecht et al., 2002). There is exponentially more literature to support the effective teaching of reading than can be compared to the small amount of research about the effective teaching of mathematical skill acquisition.

In recent years, more studies have examined American students' deficit in math skills than have sought to understand the best way improve their basic skills or problem solving, which are key areas of mathematics. One fact on which reading experts, math experts, and RtI experts tend to agree is that interventions to help struggling students in reading or math needs to begin early in the child's school career (Seethaler & Fuchs, 2010). In early interventions and reading, the areas of phonemic awareness and phonics are predictors of future problems in reading. However, in the area of mathematics no set skills have been identified as predicting future problems in mathematics. Gertsen, Jordan, and Flojo (2005) indicated in their research that one effective screening method

for five and six year olds in kindergarten may be an instrument that examines simple number sense as shown by counting and basic computation with mental number lines. Such a method shows promise as an early predictor of mathematical difficulties. The authors do note that number sense is a broad concept in math and not an easy-to-define operation in the area of mathematics.

Burns (2005) stated that teachers are vital in providing a positive change in the teaching of mathematics. She goes on the say, "Regardless of the curriculum or the assessment process in a school district, the person in charge of adapting materials for a particular classroom and student is the teacher. It is through teachers' efforts that students have opportunities to learn mathematics" (p. 3). Van de Walle (2004) suggested that teachers must create a problem-solving atmosphere where children desire to learn about math through exploration and mastery. The mathematics expert agreed with Piaget's constructivist model where students learn through discovery and build mathematical competence. NCTM (2000) and Van de Walle (2004) agreed in the identification of five basic content standards that this research will examine in the effective teaching of mathematics in schools: (a) number and operations, (b) algebra, (c) geometry, (d) measurement, and (e) data analysis and probability.

**Number and Operations**

A big part of the numbers and operations domain in mathematics is number sense. Gertsen et al. (2005) stated that there is no clear definition of number sense. After an exhaustive search of the literature, the mathematicians derived a loose definition of number sense in schools as Gertsen et al. stated, "An understanding that allows students to approach concepts, ideas, and problems concerning numbers differently, according to their backgrounds and experiences, etc" (p. 296). Specifically number and operations

should help students understand numbers, understand meanings of operations, and compute fluently. Understanding numbers encompasses the multi-representation of numbers, number systems, and connections among numbers. Students must be able to cognitively manipulate operations and how they are interdependent. Fluency and estimation are also key components in number and operations in math.

**Algebra**

Van de Walle (2008) explained that when algebra is thought of across the grade levels from kindergarten to twelfth grades, the focus is on building algebraic thinking and algebraic concepts, which consists of functions, patterns, and the ability to transfer the knowledge to real situations with the help of symbols. In order for students to master algebraic concepts, they must be able to (a) analyze patterns, (b) utilize algebraic symbols successfully, (c) use mathematical models to represent numerical relationships, and (d) examine change in different contexts. In summation, Van de Walle stated, "Algebra is the focus on patterns, functions, and the ability to analyze situations with the help of symbols" (p. 198).

**Geometry**

Geometry is the study of the size, shape, and placement of two-dimensional and three-dimensional figures. Burns, Van Der Heyden, and Jiban (2006) explained that geometry is used in many areas by investigating spatial sense and geometric reasoning in real world experiences such as art, architecture, engineering, land surveys, space, sports, cars, and much more. Geometry is specifically linked to measurement. In the early years, geometry mostly includes shapes and solids, while in later school years it transfers to properties and relationships of shapes and solids and conceptual thinking in the

abstract. In the later high school years and college, geometry becomes for the most part reasoning and analysis.

**Measurement**

The domain of measurement transcends many areas of mathematics and content. It is a complicated and multifaceted part of mathematics. "Technically, a measurement is a number that indicates a comparison between the attribute of the object (or situation/event) being measured and the same attribute of a given unit of measure" (Van de Walle, 2004, p. 317). In other words, measurement provides a numeric connection between a unit and whatever is being measured in school, measurement typically denotes the characteristic that is measured is compared with a unit of measure with the same characteristic. A student must be aware of the different measurable attributes of items and the systems, units, and processes of measurement, then apply the correct formula or tool to get its measurement.

**Data Analysis and Probability**

Many believe that data analysis is synonymous with statistics, but in reality it is much more. Data analysis involves asking and answering questions about all that surrounds a person. For this to happen, data must be collected then arranged in some manner so that analysis can take place. In the same manner, many think probability is a toss of a coin or a guess, but it is more. Probability helps determine the likelihood of future events' occurrence. It is useful across the content areas and is woven in science, social studies, and much more. Data analysis and probability combine several mathematical strategies such as data collection and display, statistical methods to analyze data, and inferences, prediction, and estimation.

These five content domains guide the kindergarten through twelfth grade mathematics curriculum. These concepts begin as a basic foundation in early years and grow to cover very complicated processes in high school and college. It is vital that doing each year of a student's academic career, conceptual layers are added as students become proficient in the different fields of mathematics. The language of numbers is universal. Stigler and Hiebert (2007) stated, "A solid foundation in the basic aspects of mathematics is considered by most to be of paramount importance given the future ramifications of an ever changing social and economic structure" (p.6).

## Response to Intervention

"RtI is a process of implementing high-quality, scientifically validated instructional practices based on learner needs, monitoring student progress, and adjusting instruction based on the student's response" (Bender & Shores, 2007, p. 7). Implementing strategies similar to those in RtI to help at-risk students can be traced to President Johnson's attempt to provide aid for students from low socioeconomic backgrounds. He signed into law the Elementary and Secondary Education Act (ESEA, 1965) which established the Title I compensatory system in education designed to provide educational resources for students of poverty (Mellard & Johnson, 2008). The focus of RtI instruction is designed for struggling students, and many of them are classified as economically disadvantaged (ED). Many resources used in RtI may be paid for with federal Title I funds distributed to local school districts.

With the passage of the Individuals with Disabilities Education Act (IDEA, 2004), the federal government officially allowed students to be classified as learning disabled based on documentation of how well they respond to interventions (National Center on RtI (NCRTI, 2010). RtI is beneficial in education for two reasons: (a) students

receive academic intervention early, before the student gives up due to prolonged failure, and (b) it separates the students that are not successful as a result of prior instruction from those that demonstrate true disabilities (Edl et al., 2009).

Mellard and Johnson (2008) stated and Holifield (2009) agreed that the reauthorization of IDEA (2004) required the use of scientifically research-based interventions and propelled RtI to becoming a different way rather than the traditional method of identifying students with disabilities. This attempt to reduce the special education population was in response to a disproportionate number of students being identified as needing of special education services, which in turn created a drain on already depleted school district budgets (Manset-Williamson, & Nelson, 2005). Interventions for reading and mathematics must begin early before a student can experience failure and fall behind their successful peers. Reading is the key to success in school and later for survival in the workforce and society (Daly, Persampieri, McCurdy, & Gortmaker, 2005). Torgesen (2002) stated, "The primary reason for most special education referrals is difficulty in reading" (p. 9). RtI is designed to prevent failure and to promote literacy and mathematical concepts through a collaboration of regular and special education teachers (NCRTI, 2009).

The No Child Left Behind Act (NCLB) (2001) is one of the most revolutionary federal education policies that affect schools today. NCLB made several notable changes in educational standards for school: (a) holding teachers accountable for every student's progress; (b) making sure teachers are highly qualified in the area in which they teach; and (c) requiring proof that the curriculum being taught is based on scientific research. Many changes in the IDEA (2004) coordinated with the RtI process such as focus on interventions, early identification of problems, collecting data, and the use of research-

based instruction. Reading First mandates are found in the NCLB, and their responsibility is to see that all children are reading on grade level by third grade. RtI entails a process that IDEA, NCLB, and Reading First mandates can be met by raising student achievement in reading through screening, progress monitoring, early interventions, and practices that are evidence-based in the tiers of RtI. RtI, when implemented to fidelity, supports the goals of both NCLB and IDEA in increasing student achievement by using prevention with interventions for at-risk students (Mellard & Johnson, 2008; Nagle, Yunker, & Malmgren, 2006; Spillane, Reiser, & Reimer, 2002).

Response to Intervention is a comprehensive early-detection and prevention strategy that identifies struggling students and assists them before they fall behind. The National Center for Education Evaluation (NCEE ) (2009) showed that the RtI system combines universal screening and high quality instruction for all students with interventions targeted at struggling students. Students are screened to identify those at risk for future reading failure, but screening in mathematics is still in its early stages. Students whose screenings indicate deficits in reading skills are provided with more intense reading interventions. Students' responses to the interventions are then measured to determine whether they have made adequate progress and either (a) no longer need the intervention, (b) continue to need some type of intervention, or (c) need even more intensive intervention (Holifield, 2009).

**The RtI Tiers of Instruction**

NCRTI (2010) described RtI as "a preventative framework." Most RtI models are structured in three or four tiers utilizing scientifically based interventions determined by students' response to the intervention (Reeves, Bishop, & Filce, 2010). The tiered levels of instruction are designed so all students get an intervention, not only those with deficits

and the struggling students are not referred for special education services (Allington & Walmsey, 2007). The three tiers of prevention include primary, secondary, and tertiary (Holifield, 2009; Mellard & Johnson, 2008). As a student progresses through the levels of interventions, the instruction becomes more intensive.

Tier one includes approximately 80% of all students within a general school population Holifield, 2009; Mellard & Johnson, 2008). In elementary schools, all students in the first tier are exposed to the regular standards-based curriculum utilizing materials such as the basal reader, literacy centers, guided reading, novel studies, and math fluency and automaticity. In the first tier of intervention, differentiated instruction takes place in the general education classroom. Differentiation in instruction requires the use of the grade level standards of learning with some type of minor modification such as fewer vocabulary words or shorter reading passages.

Tier two is still considered general education, but the interventions that students receive grow in intensity and duration with more in-depth progress monitoring. The second level in RtI may require assistance for the regular classroom teacher from other teachers or outside professionals such as a reading or mathematics specialist or speech language pathologist. Typically, 15% of all students fall into tier two (Holifield, 2009). While students may move from tier one to tier two, they must continue to receive Tier One instruction in addition to tier two interventions. The model of instruction in the second tier is usually small group within the classroom. Students in tier two must receive some sort of double dose of instruction or intervention.

In most states, tier three is the final and most intensive intervention level (Bender & Shores, 2007). A student moves to the third tier once a team examines the data and diagnoses a learning difficulty. Tier three requires collaboration between several

stakeholders, including the regular education teacher, the special education teacher, a psychometrist, parents, and other educational or medical experts (Holifield, 2009). In this tier, the special education teacher takes over responsibility for the interventions (Gartin & Murdick, 2005). Five percent of all students make up this level and receive special services.

The tiered model may differ from state to state based on the number of tiers. For example, Georgia, the setting for this study, utilizes a four-tiered RtI model, and some states use as many as five or six tiers. Georgia's four levels are (a) standards-based classroom learning, (b) needs-based learning, (c) Student Support Team-driven learning (also called the pre-referral level), and (d) specially-designed learning (Georgia Response to Intervention Manual, 2008) (see figure 2.1). Georgia public schools require a Student Support Team to be established once a student reaches tier three of the four-tier system in (Bender & Shore, 2007).

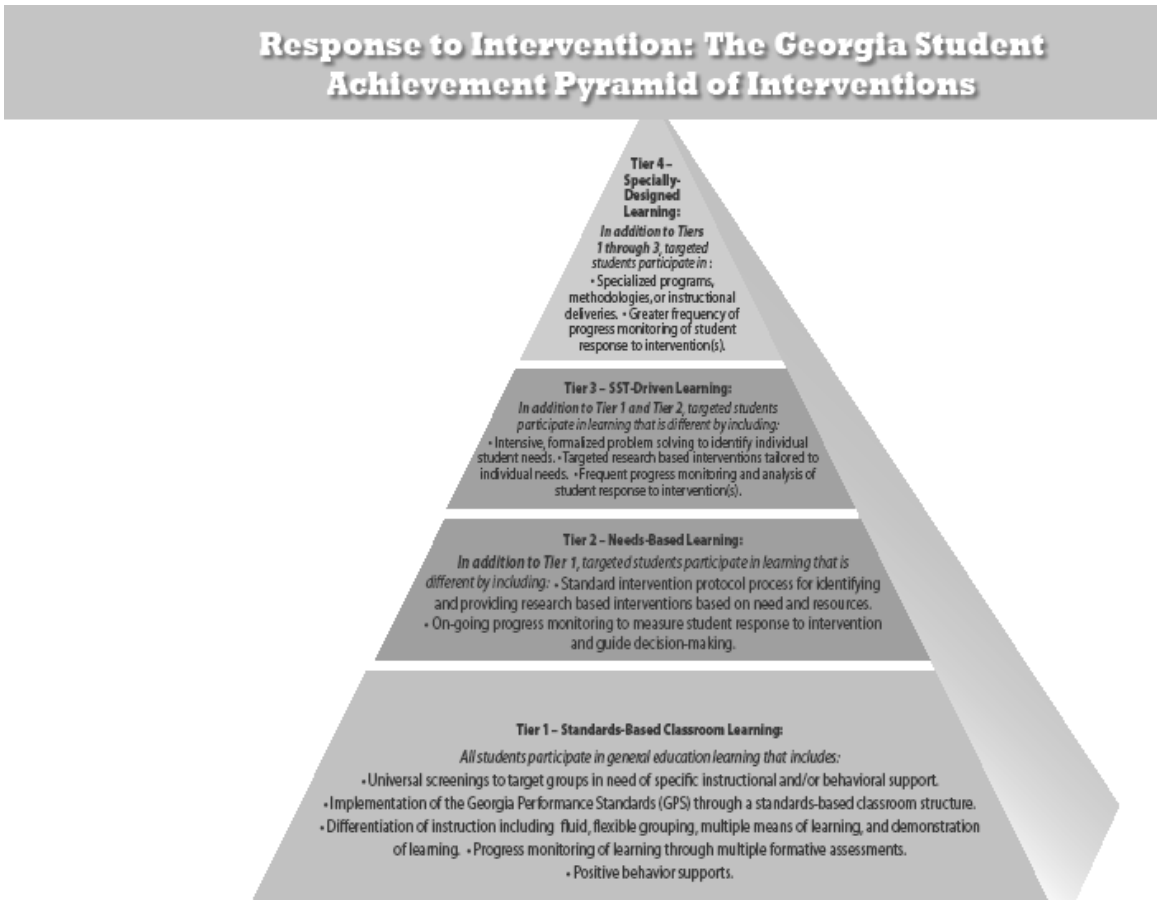



*Figure 1:* Georgia RtI Pyramid

**The Student Support Team**

In the state of Georgia, a key piece of RtI is the Student Support Team (SST), "a multi-disciplinary team which utilizes a problem-solving process to investigate the educational needs of students who are experiencing academic and/or behavioral difficulties" (Georgia Response to Intervention Manual, 2008, p. 15). The SST brings together classroom teacher(s), parents, and educational specialists or interventionists (Bailey, 2010). The SST process requires the use of specific research-based interventions in an effort to help at-risk students catch up academically (Burns, Vanderwood, & Ruby, 2005). The State of Georgia requires an SST to be established when a student does not respond to the first or second level of RtI. The SST looks at a student's academic issues

by compiling and analyzing additional information about a student's academic strengths and weaknesses along with background information (Bailey, 2010). The level of RtI that incorporates the SST is the last step before referral to a comprehensive evaluation for a possible disability.

**Role of the Teacher**

The role of the classroom teacher is a critical piece of the RtI puzzle and must be explored in the RtI process. This is evident in the positive implementation of any new policy or process. The implementation of a policy must not begin at the management level but at the classroom level. Observers of the change process have long contended that educational leaders must understand that the adoption and successful implementation of any innovation begins at the individual level (Fullan, 1985; Hall & Hord, 2006; Hord, Rutherford, Huling, & Hall, 2006; LaRocco & Murdica, 2009).

The response to intervention (RtI) condition of the Individuals with Disabilities Education Improvement Act (IDEA) is one of many processes that teachers are being asked to integrate into their daily classroom instruction (LaRocco & Murdica, 2009). Teachers are asked to identify students in need of interventions, select the appropriate intervention, and collaborate with the special education teacher to incorporate preventative measures for students who in the past would have attended special education classes. Thus, the burden of screening students for a learning disability falls on the regular education teacher, who is untrained in the complexities of special education (Goodman & Webb, 2006).

RtI requires that teachers offer students high quality instruction or provide interventions that are research-based to match student academic deficits. The teacher then must monitor students' progress over time in order to make important decisions

about instruction (Griffiths, Parson, Burns, VanDerHeyden, & Tilley, 2007). Teachers then modify their teaching based on the data from the progress monitoring. General education teachers are primarily responsible for the instruction in tiers one and two.

Sencibaugh (2007) suggested that general education and special education teachers need more training in the implementation of strategy instruction concerning reading comprehension interventions and several key areas in mathematics. There has been a variety of research to guide educational leaders as they support teachers when implementing change (Fullan, 2008; Hall & Hord, 2006; Wagner et al., 2006). However, there seems to very little research studying teacher concerns about implementing RtI. Gauging the status of teachers' feelings and experiences can provide insight into the implementation process (LaRocco & Murdica, 2009).

Gredler (2009) pointed out that Vygotsky believed that the teacher is the perfect model for the student, and the student is guided by this perfect model. Given the importance of classroom teachers to student learning, their viewpoint can determine the success or failure of the execution of RtI (Blackburn, 2008). The teachers' experiences must be included in the pursuit of an efficient execution of RtI. Their words can give insight to administrators as to whether they need more training, better understanding of the process, scheduling changes, or other adjustments to the RtI process (Davenport & Anderson, 2002). Previous quantitative research has paid little attention to what happens at the school level where the new programs translate to practice. An understanding of the teacher-level experiences can narrow the gap between program and theoretical text and program and practice. Essentially, the way RtI is viewed, understood, and experienced becomes real once teachers attempt to implement the process.

**The Proposed Model for Instructional Interventions**

In their study investigating RtI, Gottinger and Seibert (2002) advised that the use of time in the elementary school must be discussed so that the model of reading and math intervention used in the school sites has more meaning. The traditional time constraints in school scheduling must change to foster student success, yet there has been little teacher input concerning intervention scheduling (Haller & Sharon, 1981). The need for a better use of time for the study of core academic subjects in American schools is evident and urgent. In April of 1994, the report of the National Commission on Time and Learning (NCTL), *Prisoners of Time*, reported that we must reinvent schools around learning, not time, so that the flexible use of time can permit more individualized instruction. Both schools used in this study restructured the school day to provide a specific time to allow reading interventions which serves as a conduit for RtI. Teacher input concerning the effectiveness of this block of instruction can be beneficial in implementing RtI.

Wagner (2007) recommended that maximizing learning time as a critical strategy needed to improve student achievement. Making the most of learning time requires multiple processes to support great teaching and learning. The most effective policies and programs do not necessarily require a change in the length of the school day or year, which is costly, but may involve changes in instruction and in allocation of time within the school day (NCLT, 1994; Doherty & Hilber, 2007; Kosenovich, Ladinsky, Nelson, & Torgesen, 2007). Schools have attempted to change the time within the school day to build an intervention block that is responsive to the needs of the students. Davenport and Anderson (2002) proposed that restructuring time in the school day would provide a common time to maximize the use of all school personnel to teach small homogeneous

student groups of students to ensure learning.

Examining the structure of the school day shows that not all time is equal. Gettinger and Seibert (2002) categorized time in school into four different types: allocated time, instructional time, engaged time, and academic learning time—with the critical time in the school day being the academic learning time, when actual learning is taking place. Bontekoe, Kester, and Skilling (2006) explained, "The main driving optimization after compulsory issues are settled is the minimization of idle hours for students" (p. 526).

Students have individual academic needs that must be met in order for them to succeed in school. Success may be reached through of RtI blocks of interventions as it helps students with academic deficiencies, enriches students, and helps challenge bright students so that all students reach their potential and excel. Teachers are often very protective of their time with the students but are rarely listened to in its use. If an administrator is going to take some of this valuable commodity of time from the teacher for a common block of instruction, it is crucial that it be worth the risk.

Edl et al. (2009) demonstrated that effective interventions must be at least 30 minutes in length daily in addition to core reading instruction. Once the time is allotted, there will not be success without the following: intensity of instruction, acceleration of student performance towards grade-level standards, and acceleration in reading development (Torgesen, 2006). Wildenger, McIntyre, and Fiese (2008) added that interventions must be implemented consistently due to the importance of routines to independent learning for young children. This method of instruction would call for at-risk students to be pulled out of the regular classroom.

As Miller (2002) described it, in Vygotsky's zone of proximal development, a

more skilled person helps children improve from their current level to where they can be by utilizing appropriate teaching methods such as modeling or explaining. Vygotsky (1978) explained, “Learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with peers” (p. 90). Doherty and Hilberg (2007) suggested that teaching is aiding student performance to improve what students can do without the teacher, and learning is improved performance or advancement through the zone of proximal development toward proficiency and autonomy. Thus Vygotsky’s theory supports designated blocks of teacher-guided instruction. By designating a specific time each day during which an entire school participates in this intervention block, all personnel may be utilized so that the pupil-teacher ratio is much smaller. The smaller class size is more conducive to promote intense interaction between the teacher and the student so that the responsibility for learning shifts to the student, and learning takes place.

Vygotsky’s ideas continue to be relevant to the issues in learning, as seen when he shared, “Social relations or relations among people genetically underlie all higher functions and their relationships” (p. 163). A student’s participation in various learning experiences nurtures a certain way of thinking. The physical setting in which students work affects how they acquire skills and learn as shared by Miller (2011), “Children develop in a zone of proximal development—the distance between what a child can do with prompts, discussion, modeling and explanation in becoming an independent learner”(p. 218). A teacher helps the student move through the zone to independence in learning. A small group working with focused adult attention towards improvement is most conducive to student improvement.

## Teacher Empowerment

In order to advance RtI implementation, teacher empowerment must be understood. Empowerment is an important concept in many types of institutions, from businesses to service organizations (Rinehart & Short, 1993). To empower others is to give staff members ownership in the organization. Teacher empowerment is a theory that has slowly grown in strength due to current reforms and school improvement decisions (Pounder, 1998; Short, 1998; Zembylas & Papanastasiou, 2005). Empowerment calls attention to the importance of teachers in decision making concerning teaching and learning (Overton, 2009; Rinehart & Short, 1993; Zembylas & Papanastasiou, 2005). This information regarding decision making led to the belief that teacher empowerment improves commitment, proficiency, and student achievement (Marks & Louis, 1997; Pearson & Moomaw, 2005; Zembylas & Papanastasiou, 2005).

There are many definitions of teacher empowerment. Zembylas and Papanastasiou (2005) defined teacher empowerment as "investing teachers with the right to participate in the determination of school goals and policies and to exercise professional judgment about what and how to teach" (p. 437). This definition was shared by Lee (1991) and expanded to include teacher professionalism, while Lightfoot (1986) embraced the concepts of autonomy and responsibility in empowerment.

According to Rinehart and Short (1993), there were six dimensions of teacher empowerment:

- Participation of teachers in critical decisions that directly affect their work;
- Teacher impact as an indicator of influencing school life;
- Teacher status concerning professional respect from colleagues;
- Teacher autonomy, so teachers can control certain aspects of their work life;

- Professional development opportunities to enhance continuous learning and expand one's skills; and
- Self-efficacy, the perception of having the skills and ability to help students learn. (p. 571)

Marks and Louis (1997) posited that teacher empowerment was not adequate criteria for improving student progress in literacy. Also, there were studies that suggested there may be teachers who reject the idea of contributing to decision making and are content to have no part in decision making in the school (Marks & Louis, 1997; Zembylas & Papanastasiou, 2005). Zembylas and Papnastasiou surmised the connection between teacher empowerment and some levels of the school environment was hard to determine because the relationship is so complicated, saying "Teacher empowerment is a multidimensional construct" (p. 438).

Many teachers share a need to be empowered in the realm of education. Galen (2005) stated that people not familiar with education do not realize the disempowerment that educators feel due to unfunded hurdles imposed on them by educational legislation such as No Child Left Behind and resultant accountability. Educators must do more with fewer resources. Teacher empowerment has surfaced as a key component when analyzing reform initiatives, with the sound argument that empowering teachers is the best place to start in resolving many problems in school today (Pearson & Moomaw, 2005; Rinehart & Short, 1993).

Teachers contributing to school decision making was supported by most researchers, educators, and politicians due to the knowledge that the people closest to issues in education have the most skill in solving them (Cuban, 1990; Rinehart & Smith, 1993). Lee (1991) suggested "embedded within the participative problem solving

strategy is the assumption that the derived answers will improve outcomes or enhance production" (p. 38). For example, studies have indicated that workers involved in decision making will improve organizational efficiency. Researchers also believe employees who bring about and apply new ideas will lead to improved learning situations for students (Short & Greer, 1989; Rinehart & Short, 1993). These perspectives of empowerment are examples of a look-at-outcome effectiveness (Rinehart & Short, 1993). Overton (2009) found "instances of active and passive disempowering from an employer and/or its agents, thus creating a diminished desire to commit to the tasks of teaching, and thus has potential implications for students' learning" (p. 9). Goodson (1991) proposed research studies should enable the voice of teachers to be loudly and clearly heard in order to improve educational processes. The experts mentioned in this section support the goal of this case study concerning teacher empowerment and RtI.

## Summary

The topic of reading has been thoroughly examined in current literature, particularly in the area of a reading deficit in students' learning in today's schools. RtI is a relatively new topic in the area of education but has received detailed coverage in the literature. However, the teachers' voice has been silent in much of current literature in the areas of reading interventions and RtI implementation. This literature review concerning teacher empowerment in the implementation of RtI explores the following topics: (a) the theoretical framework, (b) the process of reading, (c) Response to Intervention, (d) the role of the teacher, (e) a pull out model intervention block, and (f) teacher empowerment in order to determine the role, if any, teacher empowerment plays in RtI implementation and student academic progress.

# CHAPER 3: METHODOLOGY

## Introduction

In education today, there is a well-documented deficiency in reading and math achievement. The RtI process has been designed as a remedy to this deficiency and to help reduce the number of students misidentified as in need of special education services. Unfortunately, teachers do not feel empowered when implementing RtI. The purpose of this case study is to look at teacher empowerment in relation to the implementation of RtI, and then to determine its value. The experiences of the teachers will be investigated through interviews, observations, instructional diagrams, and benchmark data. These multiple sources of data will be collected and analyzed by the writer, a research assistant, and an RtI specialist in order to ensure reliability and validity. Pertinent ethical issues will be addressed regarding the study.

## Research Design

The research design for this study is a collective case study. While collective case studies are considered qualitative research, this qualitative collective case study utilizes a mixed research design by including a small quantitative component. Yin (2009) explained case study as research which may include data quantitative in nature. Creswell (2007) stated that case study research is, for the most part, recognized as a type of research that is qualitative in nature. However, as Yin stated, "Some case study research goes beyond being a type of qualitative research by using a mix of qualitative and quantitative evidence" (p.19).

Hanson, J. W.Creswell, Plano Clark, Petska, and J. D. Creswell (2005) suggested that by including qualitative and quantitative data in a case study, a study will provide a

depth of research that a single form of research cannot. Hanson et al. (2005) described this mix of qualitative and quantitative data as a "concurrent nested design" (p. 229). They explained with this method, the focus is on either the qualitative or quantitative type of research. In this study, the nested quantitative data is given a less important role. The purpose of this case study is to provide qualitative data with a component of quantitative data in order to offer a deeper level of understanding of the phenomenon that is the focus of the study.

Primarily, a collective case study approach is employed in this study to explore the meaning of response to intervention (RtI) through the experiences of six different teachers in two elementary schools. Creswell (2007) stated that case study research examines a topic by exploring cases in bound systems. This study employs the qualitative case study approach in order to have an in depth investigation into the phenomenon of RtI in helping at-risk children in learning to read. Gall, Gall, and Borg (2007) "defined the case study as the in-depth study of one or more instances of a phenomenon in its real-life context reflecting the perspective of the participants involved in the phenomenon" (p. 447).

In this case study, the phenomenon being examined is RtI implementation with teacher empowerment, and qualitative data includes interviews, observations, and diagrams. In order to explore RtI, six teachers' experiences were studied as they implement RtI in the public school setting. The unit of analysis is the elementary teachers in two North Georgia schools. Three teachers were empowered by being a part of the implementation process, while three teachers follow the dictates of the school district and implement RtI without being part of the decision-making process.

This study also included a quantitative research component with the students of the participants as embedded units of analysis. According to Yin (2009) and Creswell (2007), qualitative case study research, the overall design of this study, could include quantitative data as well. Thus, this case study also examined the student benchmark data on the DIBELS reading and math assessments so a stronger description of the study phenomenon can emerge.

Yin (2009) depicted a case study as "a linear but iterative" six-step process which includes (a) planning the study, (b) a research design, (c) preparation for the study, (d) data collection, (e) data analysis, and (f) reporting the findings" (p. 2). The step-by-step process is linear but includes revisiting of the planning and preparing steps. The research design is a plan giving direction to the researcher in the course of data collection, analysis, and interpretation (Gall et al., 2007). The design provides a logical model of proof enabling the researcher to make assumptions about connections among the variables investigated. Yin (2009) posited that the most important goal of the research design is to ensure the data surfacing during the study answers the research questions.

The phenomenon studied in depth is the implementation of RtI. Creswell (2007) stated, "The data collection in a case study research is typically extensive, drawing on multiple sources of information" (p. 75). This case study includes six interviews with the teachers about RtI implementation, classroom observations, and analysis of the progress monitoring. From these sources, common ideas surface which were used to guide the RtI process in Target School A, which empowered teachers and led to a more effective implementation of the RtI process. Teachers in Target Schools A and B were interviewed at the end of the grading period. In order to compare themes between the teachers from each school and their student academic progress on benchmark tests, the

study aims to determine if empowering has any effect on teacher beliefs and attitudes about RtI and whether it affects the implementation of the RtI process and increases student achievement.

Yin (2009) stated, "Defining the research questions is probably the most important step to be taken in a research study, so you should be patient and allow sufficient time for this task" (p. 10). Research questions need (a) to be appropriate to the study design, (b) require in-depth answers concerning the phenomenon in the study from which to draw rich data, and (c) be driven by the literature concerning the phenomenon in the study (Creswell, 2007).

**Research Questions**

**Research question 1.** *What are the teachers' experiences concerning Response to Intervention (RtI)?* Two focus interviews and one individual interview, classroom observation data, and benchmark test data were collected at the beginning of the grading period and at the end of the grading period. Permission was sought and gained from Lynn Bailey, graduate of Liberty University residing in Georgia, to utilize the Bailey-Tarver Survey. The interview consists of questions constructed from the Bailey-Tarver RtI/SST survey. The survey consists of 21 Likert-scale statements and two multiple-choice response questions. The validity of the content supports the effectiveness of the survey. A valid survey should measure what it is intended to measure. The validity of the survey content was proven through researcher's knowledge of the RtI process in Georgia and the reliability of the research prior to this study.

The observation checklist utilized was constructed by the researcher's state department of education in order to carry out focus walks for classroom observations throughout the district. The observation checklist has been in use for over five years in

schools throughout the state. The checklist examines aspects such as the curriculum used, the classroom set up, and academic standards being used.

**Research question 2.** *What are the recurring themes seen in the experiences of the teachers in the implementation of RtI?* This data were collected by transcribing two research assistants' notes from each interview. The observation data were written up by each assistant, and then transcribed verbatim in a collaborative effort between the researcher and the research assistants. Next, a team consisting of the writer, a research assistant, and the RtI coordinator will code the data. The benchmark tests were collected at the end of the grading period. A *t* test of the means was used to analyze the test data.

**Research question 3.** *What does RtI mean to teachers?* The teacher interviews provided this data concerning the meaning of RtI.

**Research question 4.** *How does empowering teachers affect RtI implementation?* The teachers at Target School A were administered a focus group interview at the beginning of the grading period and they were interviewed individually during the grading period. They were included in the RtI decision making team at their school, and their input was utilized in the implementation of RtI. Data was collected from the classroom observations and benchmark testing conversations with the teachers.

**Research question 5.** *How do teachers perceive the traditional implementation of RtI?* The teachers at Target School B were administered a focus group interview at the beginning of the grading period, then they were interviewed during the grading period. They were not included in any decision-making concerning RtI at their school. RtI was administered in the traditional manner by the Central Office Personnel. Data was gathered from the benchmark testing.

## Hypotheses

**Research hypothesis 1**. Teachers who are empowered by being part of the RtI decision-making and implementation process will implement the RtI process more effectively.

**Research hypothesis 2.** Students will make more progress in classrooms with teachers who are part of the RtI decision-making and implementation process than students in classrooms with teachers not involved in the decision making for the implementation of the RtI process.

**Null hypothesis 1.** Empowering teachers during the implementation process will not affect the implementation of RtI.

**Null Hypothesis 2.** There will be no difference in the progress made by students with teachers from Target School A who are part of the RtI process and students in classrooms with teachers from Target School B who are not part of the RtI process.

## Participants

Individuals who become part of the study must be readily available, willing to provide information, and have exposure to the phenomenon that is the focus of the study (Creswell, 2007). This case study included six teachers from grades three, four, and five from Target Schools A and B in the writer's school district. These teachers were purposefully selected based on their willingness to articulate their experiences with the phenomenon of RtI implementation in the classrooms and their status as being part of the RtI team at the target schools in which the interviews will take place. Three teachers from Target School A and three teachers from Target School B were selected. The selection was stratified in order to control for the variables of experience and degree status. Their degrees ranged from Bachelor of Science to Doctorate Degree. The

teachers were also part of the implementation since RtI's inception four years ago, and have been privy to all district training and information concerning RtI. The six teachers' experience in teaching ranged from 10 to 26 years.

**Setting/Site**

The field procedures of the case study protocol included (a) gaining access to organization and participants, (b) having necessary resources, (c) creating a clear schedule for collecting data, and (d) preparation for unplanned occurrences (Yin, 2009). This case study takes place at Target Schools A and B. Both schools are in the writer's school district, and the administration understands the nature of the study and is eager to participate in the study in an effort to improve student learning. These schools have kindergarten through fifth grade students and are located in rural northern Georgia between Chattanooga, Tennessee, and Atlanta, Georgia. Target School A has about 500 students with 85% Caucasian, 11% African American, and 4% Hispanic. Target School B has about 550 students with 89% Caucasian, 6% African American, and 5% Hispanic. The population at both schools has a transient rate of over 20%. Target School A has an 8% special education population, and Target School B has a 10% special education population. The economically disadvantaged students are identified based on students enrolled in the free and reduced lunch program and represent 54% and 58% of the total school populations.

The schools are similar in size and demographics. The administrative staff at both schools includes a principal and assistant principal and both are having difficulties in implementing RtI. Target School A agreed to utilize the case study theory of teacher empowerment with teachers' input in the decision-making process in implementing RtI. Target School B agreed to continue implementing RtI in the traditional manner. The

interviews were scheduled after school so the teachers were available, and the observations took place on a date predetermined by the administrators at the school. Each meeting was scheduled at the initial meeting, but open to change should some unforeseen incident occur.

The Target School District provides education to approximately 14,500 students. The system and each of its 20 schools are accredited by the Southern Association of Colleges and Schools. There are 12 elementary schools, four middle schools, and three high schools, as well as a lottery-funded pre-kindergarten center. Student demographics are 80% Caucasian, 8% African American, and 7% Hispanic, and students who are economically disadvantaged comprise 52% of the total student population. There are 12.5% of students receiving special education services, and 4% are English Language Learners (Target School District, 2010).

The median household income is $54,346, and per capita income is $22,683. The current unemployment rate is 11.4%. The percentages of Target School District residents with a high school diploma or with a bachelor's degree or higher are 83.2 and 15.0, respectively.

## Researcher's Role / Personal Biography

Case studies must accurately reveal the etic perspective of the writer (Gall et al., 2007). "The role of case study researcher becomes at times the measuring instrument in data collection and becomes personally involved with the phenomenon being studied" (Gall et al., 2007). I am a principal at At-Risk Elementary School in the Target School District and as an educator, has experienced many roles: teacher, assistant principal, curriculum director, and principal. I have received trainings and presented trainings pertaining to various educational issues and implementations. As a principal in the

Target School District, I was charged with the implementation of RtI in the school. To add to the reliability to the results, two different schools in the Target School District were used in this study rather than my own school. I share a common goal with the teachers and administrators in this study: to help children succeed in life. It is also my belief the teacher is left out of the equation when many curriculum and instruction decisions are being made.

Due to this bias and my role as an administrator, two research assistants have been employed to carry out the data collection. One research assistant is a teacher in the district at a different school, and the other research assistant is a retired teacher from the district. The aid of the district RtI coordinator in the county was also enlisted. The interviews and observations were carried out by the research assistants in order to help the teachers be more forthcoming with information. I worked with the research assistants in coding the data and discovering common themes to use in the RtI decision making. This shared process will add to the validity and reliability.

In addition to researcher and educator, I am also a mother and grandmother, and I believe parents must be active partners with the schools to help teachers work with our children. It is also my belief families must fulfill their duties at home to help their children be prepared physically and mentally to be successful each day. I am a Christian, and I know that the Lord is a vital part of this endeavor. Each educator assisting in the study is a Christian. "For where two or three have gathered together in My name, there I am in their midst" (Matthew 18:20, NAS).

## Data Collection

Gall et al.(2007) recommended the use of multiple methods of data collection about a central phenomenon in order to improve validity of case study results. All

research must begin by establishing a check and balance with the help of organizations such as the Institutional Review Board Service (IRB) as well as collaboration with experts in research. Seeking permission from the IRB is a fluid process. Conscientious completion of the required coursework must be accomplished, then a board of at least three people aided in the process of approving the proposed study. The compilation of knowledge gained during the various courses helped the researcher to create and complete a strong research proposal.

The research proposal along with the appropriate application was submitted to the dissertation committee. A copy was emailed for review and sent in hard copy form for faculty advisor signature, then the proposal was accepted and the study was ready to begin. The work began with the board suggesting revisions and the researcher completing the revisions. One week was required for the preliminary review then revisions must be completed quickly and returned to the IRB. The total time for the IRB review for this study was two months. The Liberty University IRB PowerPoint suggested the most important things in the process are that the researcher complete the requested revisions quickly and submit the project before June 10th.

The data collected in this study allowed emic perspective to be shared as the experiences of the teachers were shared as they worked to understand and implement RtI successfully. Through the data's rich descriptions of the understanding and implementation of RtI, the teachers' input was considered. Each description was critiqued by the teacher(s) involved to ensure accuracy and reliability. Simultaneously, the teachers became part of the RtI team at Target School A, and they provided input into the implementation of RtI in the school.

According to Yin (2009), there are five types of data, "(a) documentation, (b)

archival records, (c) interviews, (d) direct observations, (e) participant observations, and (f) physical artifacts. Documents can take many forms, such as emails or minutes of meetings. The demographics of the case are often archival records. Creswell (2007) suggests interviews are the most important type of case study data. Direct and participant observations provide insight to the "real-life" setting that is key to a case study. Direct observations involve an outsider observing a phenomenon, and participant observation is when the observer becoming part of the situation. Physical artifacts can also take many forms, such as explanatory diagrams or examples of classroom work. "Case studies can also include some quantitative evidence" (Yin, 2009, p. 19).

**Interviews**

Two focus interviews and one individual interview were conducted with the teachers in Target School A concerning their experiences in implementing RtI. Each interview was conducted by the research assistants, who also took notes. The writer and assistants transcribed the interviews verbatim within 48 hours of the actual interview in an effort to increase reliability. During preplanning for the 2011 school year, an initial focus interview was conducted with the teachers in their classrooms using an interview protocol with eight open-ended questions. All interview questions were adapted from the Bailey-Tarver RtI Survey questions. An individual interview was carried out half way through the study with each teacher in Target School A. A debriefing followed each interview by the interview team. A summative exit focus interview with teachers at Target Schools A and B at their respective schools was conducted at the end of the grading period, and was reflective in nature.

I interviewed the district level expert in RtI to ascertain specific details of the implementation of RtI and her perceptions of RtI in the Target School District. Also, the

researcher conducted face to face interviews with the principals at Target Schools A and B. The same interview was utilized for the RtI expert and school principals in order to understand their perception of RtI in the school district.

The interview questions for the interviews were generated from the Bailey-Tarver Survey instrument (see Appendices D-H for survey and interview questions). The Bailey-Tarver Survey was a synthesis of two pieces of earlier SST and RtI research. Bailey added survey items to the original Lee-Tarver Survey in order to incorporate RtI concepts into the original work. Bailey (2010) strived to protect the reliability of the original instrument while analyzing the new statements for validity. In order to validate the new survey items, Bailey linked the items to the research uncovered in the literature review in her study. Both the original survey for SST created by Lee-Tarver (2006) and the new RtI items added by Bailey were analyzed for reliability by utilizing the Cronbach's alpha test of reliability.

The Cronbach's alpha coefficient is one of the most effective measures for reliability for tests with items that have a possibility of different answers, such as survey type items (Gall et al., 2007). The Cronbach's alpha was utilized to provide evidence of consistency of the items on the Bailey-Tarver Survey instrument in order to measure reliability (Santos, 1999). Santos explained the coefficient measures of alpha values are from 0 to 1 and are used to create validity factors from survey scales (Bailey, 2010). A reliable Cronbach's alpha score is greater than 0.7 ($\alpha>0.7$), and the higher the score, the greater the reliability (Nunnaly, 1978).

All survey statements were tested for reliability using the Cronbach's alpha. The Cronbach's alpha coefficient for the Lee-Tarver Survey was 0.89, and the Bailey survey items were pretested with an average alpha value of 0.809. The Cronbach's alpha

coefficient shows the survey items to be reliable due to both alpha values being well over the accepted 0.7 alpha value.

**Observations**

Direct observations of the RtI implementation in the classrooms were conducted. A forty-five minute formal observation occurred during the intervention portion of the reading class while the teacher implemented various stages of RtI. The research assistants were in the periphery of the class taking notes, diagramming the class, taking photos, and observing the teacher's instruction. The local school district class observation form taken from the Georgia Department of Education (GaDOE) recommended evaluation forms was used to ensure consistency and completeness.

**Documents**

**Instructional diagram.** At the beginning of the grading period, each teacher in the study was asked to diagram or map the flow of instruction in his or her reading class (see Appendix I for an example of an instructional diagram) . For example, some classroom diagrams may include small group or writing centers and others may depict guided reading centers. These teachers were asked to repeat this illustration at the end of the grading period to note any changes that may have occurred in the RtI process. This data indicated whether RtI was incorporated in the natural flow of the class or if it was looked upon as separate.

**Progress monitoring.** Progress monitoring is essential to the RtI process (Holifield, 2009, p. 34). Target Schools A and B use the Diagnostic Indicators of Basic Early Literacy Skills (DIBELS) and the DIBELS for mathematics as the instruments used to monitor progress for each student. These benchmark scores from the DIBELS assessments were examined during the grading period for the teachers' classes in the

study. Good, Simmons, Kame'enui, Kaminski, and Wallin (2002) recommended the utilization of oral reading fluency (ORF) when measuring reading and oral mathematical fluency (OMF) growth for this age checks accuracy, fluency, and correct words read per minute in student's reading and correct mathematic computation completed per minute in student's addition and multiplication facts. The reliability for these test is $r = 0.92 – 0.97$, $p < .01$[c] and $r = 0.89 – 0.94$, $p < .01$[d] (Good, Simmons, Kame'enui, Kaminski & Wallin, 2002). Tables 1 and 2 illustrate categories aiding in RtI classification.

Table 1

*Fourth Grade DIBELS cut scores*

| DIBELS | Beginning of the Year | | Middle of the Year | | End of the Year | |
|---|---|---|---|---|---|---|
| | Scores | Status | Scores | Status | Scores | Status |
| DIBELS Oral Reading Fluency | ORF<71 | At-risk | ORF<83 | At-risk | ORF<96 | At-risk |
| | 71 ≤ ORF <93 | Some risk | 83<= ORF<105 | Some risk | 96≤ ORF<118 | Some risk |
| | ORF ≥93 | Low risk | ORF ≥ 105 | Low risk | ORF≥ 118 | Low risk |

Table 2

*Fifth Grade – DIBELS cut scores*

| DIBELS | Beginning of the Year | | Middle of the Year | | End of the Year | |
|---|---|---|---|---|---|---|
| | Scores | Status | Scores | Status | Scores | Status |
| DIBELS Oral Reading Fluency | ORF<81 | At-risk | ORF<94 | At-risk | ORF<103 | At-risk |
| | 81 ≤ ORF <104 | Some risk | 94≤ ORF<115 | Some risk | 103≤ ORF<124 | Some risk |

| | | | | | |
|---|---|---|---|---|---|
| ORF ≥104 | Low risk | ORF ≥ 115 | Low risk | ORF≥ 124 | Low risk |

The DIBELS for mathematics is still relatively new and the cut scores have not been published. The researcher and the teachers monitored for academic growth as the RtI process was implemented.

## Data Analysis

Three types of data analysis can be used in case study development, "interpretational, structural, and reflective analyses" (Gall et al., 2007, p. 465). The present study employed an interpretational analysis to reveal themes and patterns meaning regarding RtI implementation and teacher empowerment. A detailed description of the teachers' experiences and the school setting were compiled and transferred to a computer database daily, then stored on a password-protected flash drive. A three-person team consisting of the researcher and the two research assistants analyzed the data. All data collected was checked by the participants via email for accuracy and completeness. All handwritten transcriptions, fieldnotes, and diagrams were locked in a file cabinet in the researcher's office to which there is only one key. All documentation was alphabetized and labeled for easy use.

**Memoing.** Memoing notes were written in the margins of fieldnotes and transcripts to aid in the beginning stages of examining the database. Notes were transcribed into a T-chart with the facts of the case on one side and my reflections, opinions, and connections on the other side. Memoing blends the researcher's reflections and impressions of the moment with information from the data during the data collection and analysis. By collecting these notes, the researcher was able to organize thoughts,

make connections, and add reflections based on the data.

**Coding.** Creswell (2007) stated open coding is an initial step in data analysis. The data were examined several times and common threads were highlighted. The research assistant, the district RtI Coordinator, and the researcher collaborated as the data was coded, which increased accuracy in identifying themes, reduced bias in analysis, and made the examination of the data more thorough. For example, in RtI implementation, all experiences related to professional learning may be highlighted in green and all experiences dealing with scheduling or time in orange. The multicolored data were organized into various categories that surfaced as the data were analyzed. The color-coded notes were extrapolated to a Word document in order to look for a second level of codes or categories of data then stored on password protected thumb drive. These codes were supported by various sources of data. This step is important in that the researcher was able to move past the fixed questions developed for the study to hear the voices of the teachers as they tried to implement the complicated RtI process.

The depth of the case was developed through coding as each teacher's experiences were related to the categories that developed. The researcher developed a clear picture of the RtI implementation through the teachers' experiences, the perspectives of the members of the research team, and perspectives found in the related literature. From this large set of codes, some unrelated themes were abandoned.

As the data were dissected, patterns were established, which led to overarching themes. Five themes are left standing to develop into a narrative best describing the experiences of the teachers in implementing RtI. From the final themes that surface, the researcher was able to construct an illustration of the study in table form. For this study, a hierarchical tree diagram described by Creswell (2007) was employed to go from the

concrete facts to abstract concepts of RtI implementation that may transfer to different situations in different schools. The final themes were submitted to the decision-making team, including the teachers, to utilize in the implementation of RtI for the school.

**Direct interpretation.** Direct interpretation was used in order to allow a focus on a single concept for a deeper meaning of the phenomenon in the study (Creswell, 2007, p. 163). In some critical aspects of the case, instead of looking across all the data for interpretation horizontally, meaning will be determined from a single experience of a teacher in order to dig deeper and gain understanding. This in depth analysis allows the researcher an opportunity to gain insight into a single, important experience of the teacher in isolation. For example, if the teacher discusses the environment of the students, it will be important to determine what is related to the school or classroom environment and what is related to the student's home life. In this manner, issues will surface that can and cannot be controlled by the teacher.

**Naturalistic generalizations.** Creswell (2007) purported that these naturalistic generalizations are a final step in the data analysis process. In analyzing the data, generalizations concerning implementing RtI will come to the forefront. An example of this may be the issue of time (time for required instruction and interventions and time used while trying to manage the classroom, while working with small groups or individual students). The researcher shared these findings with the school's decision-making team so the implementation of RtI can be made more efficient and effective for schools across the district. The generalizations that arose from this case study were compared to and contrasted with information found in related literature.

The hierarchical tree diagram illustrated these generalizations. From the data collection, the researcher illustrated key findings in several ways. The sources of data

were divided into a table based on the key themes that arise. Then in each cell, lists of words or observations from each source to support each theme were added. This also aids in removing any unrelated data. The data analysis is a cycle, and many of the techniques mentioned above went back and forth until the final report was written.

**Statistical analysis of the DIBELS scores.** In order to determine if the RtI implementation in the classrooms in Target School A (where the teachers were part of the RtI decision-making team) was more effective, the students' DIBELS scores were measured against those of students in Target School B. First, a measure of central tendency was computed. For this study, the mean was determined for the gain in the benchmark test scores for the classes at Target School A and B. Then the standard deviation (SD) was used to measure the extent to which scores in a distribution deviated from their mean. After the SD was computed, a test for the statistical significance of observed differences in the mean scores of the two schools' scores was completed (Gall et al., 2007). A *t* test was used to determine the level of statistical significance of an observed difference between sample means. The null hypothesis was rejected if the *t* value reached a significance level of $p < .05$. This value is intended to help prevent Type I errors while at the same time reducing the possibilities of Type II errors.

**Research question 1.** *What are the teachers' experiences concerning Response to Intervention (RtI)?* The data for this research question were analyzed by open coding and memoing the transcription of the interviews and observations.

**Research question 2.** *What are the recurring themes seen in the experiences of the teachers in the implementation of RtI?* Open coding using highlighting of recurring themes and naturalistic generalizations were used for this research question.

**Research question 3**. *What does RtI mean to teachers?* The data analysis used

for this research question is open coding of the interview questions. The meaning varies from interview to interview as the different interviews were conducted.

**Research question 4**. *How does empowering teachers affect RtI implementation?* Open coding and memoing of the interviews, observations, and discussion of the benchmark tests were employed in the data analysis. Also, a *t* test was used to analyze the DIBELS scores.

**Research question 5**. *How do teachers perceive the traditional implementation of RtI?* Open coding and memoing were carried out for the final focus interview with treatment and control schools. The DIBELS scores of Target Schools A and B were analyzed using the *t* test, and scores were compared.

**Trustworthiness**

Several approaches were built into the study to meet the needs of the reader in order to aid in understanding and replication so educators will be able to utilize the study as they strive to improve teaching and learning: (a) the use of clear, important connections between the research questions, data collected, and findings, (b) the study is truthful and straightforward, with the use of direct quotes and detailed descriptions, (c) simple statistics from the data will be employed to provide a foundation for conclusions of the study, and (d) thick description was used through the study.

Reliability and validity ensure a high-quality qualitative research study. Yin (2009) suggested four ways to establish quality in research investigation construct validity, internal validity, external validity, and reliability. Many strategies aid in building reliability and validity, including triangulation or convergent lines of inquiry, memoing, member checks, a case study data base, and an audit trail.

Another strategy used to help establish trustworthiness was the employment of two research assistants to aid in the collection of the data and corroboration in transcribing the data for member checks. The assistants also helped to reduce any level of influence or bias on the part of myself as the researcher and principal in the district. I provided a rigorous training concerning research strategies for the participants in order to capture the data accurately, conduct the interviews appropriately, and protect the participants' identity. Although the research assistants worked diligently to capture the information during the observations and interviews; Schwandt (2007) and Onwuegbuzie, Leech, and Colins (2008) posited that it is difficult, if even possible, to adequately describe a lived happening. Schwandt defined, "Crisis of representation as the uncertainty within the human sciences about adequate means of describing social reality" (p. 48). However, Onwuegbuzie et al. explain that a planned, careful debriefing between researchers can help to overcome many problems in capturing a lived experience. After each collection of data, the research assistants and I met within hours of the interview or observation to debrief and transcribe the data collected. Memoing was used during this debriefing to examine the research assistants' own thoughts and impressions of the moment as well as looking at the overall information gathered from the participants. Thick description was used to express the details of the information, and the participants provided member checks of all transcribed information for accuracy and completeness. These combined measures will help in overcoming the crisis of representation and in seeking my goal of trustworthiness.

**Triangulation of data.** Yin (2009) stated, "Any case study finding or conclusion is likely to be more convincing and accurate if it is based on several different sources of information following a corroboratory mode" (p.116). The triangulation of multiple

sources of data aided construct validity. This study employed different types of information, which allowed for a triangulation of the data. These types are (a) the words of the teachers through interviews, (b) the actions of the teachers in direct observations, (c) the creative look at implementation through the instructional diagram, (d) the discussion of student progress based on the progress monitoring, and (e) the test data analysis. The triangulated data was organized into a matrix with the top cells representing the data types and the cells down the side representing the central themes of the research. Each cell inside the matrix provided support for the theme through the words and actions of the teachers as they implement RtI. This organization is important in identifying authentic codes and themes as the implementation unfolds. The research team collaborated to complete the data analysis.

**Triangulation of the theory.** Theory triangulation also aids in construct validity as the different teachers' perspectives or experiences regarding implementation of RtI were compared and contrasted and central themes stood out. Key concepts were illustrated in a Venn diagram. Adding the perspectives of the district level RtI coordinator, the researcher, the research assistants, and the literature also added more layers as the data were analyzed and information interpreted.

**Reflexivity/Memoing.** Memoing is writing reflective notes in the margins of the fieldnotes and transcripts. These notes were transferred electronically onto a T-chart to separate the facts of the case and the researcher's thoughts and opinions. This separation is important in recognizing the researcher's bias in the study and adds to the internal validity of the study.

**Member checks.** Each interview was written up by the research assistants then transcribed by the research team. Notes were taken via the interview protocol, too (see

Appendix C). This method aided in the accuracy and authenticity of the case study (Yin, 2009). Member checks are key to construct validity. After each interview, a follow-up interview with the teacher allowed the teacher to verify the notes' accuracy and completeness. Likewise, each observation was transcribed and the observation protocol was completed, to achieve authenticity, it is important for each observation protocol to be shared in order to be sure the researcher correctly interpreted activities and instruction in the classroom.

**Case study database.** Case notes, lesson plans, audiotapes, diagrams, protocols, and narratives were stored on a password protected flash drive, and all original documents were stored in marked files in a central storage cabinet that remained locked. Security and confidentiality of all artifacts were ensured. It was important all forms of information were within reach at any time in order to allow for the researcher's easy retrieval of data for examination by participants or for independent inspection as authorized by the researcher. The case study database adds to the reliability and external validity of a study and helps in replicating a study.

**Audit trail.** Data stored carefully with good organization allows the final report information to be traced back to the initial data in its raw form. All information was labeled and filed chronologically, which represented a timeline of the case study to aid in replication. The audit trail provides accountability of the researcher and reliability and external validity of the study (Creswell, 2007). The safeguard reduced the chance of losing important data and undue influence of bias as the facts of the case unfold. This safeguard was accomplished by citing relevant parts of the database, which included the actual data with an explanation of how the data were collected. The procedures and questions used in the case study protocol are noted in the database to prove adherence.

**Ethical Issues**

"Data collection and case study research poses various ethical problems" (Gall et al., 2007, p. 459). It is vital all research be transparent and strives to protect those involved in the study. This study worked to ensure accurate information is presented and will protect the study participants. The names of the school and teachers used in the study are pseudonyms in order to ensure anonymity and confidentiality. The purpose of this study is for the voices of the teachers to be heard in order to provide a way to implement RtI effectively so students are successful in school. In order to make sure the research is accurate and the teacher's words are used, several safeguards are in place. There was a constant review of the data by the teachers throughout the case study. Experts such as the RtI specialist and the assistant principal were consulted, and literature on the subject of RtI was explored. Participants were informed of the case study protocol and signed a consent form as affirmation of their willing participation in the study and acknowledgment that they could withdraw at any time from the study.

The local superintendant was provided a written explanation of the study, and his permission was gained prior to beginning the case study. Permission was obtained from the Liberty University Institutional Review Board (IRB) so the study could move forward. The Board answers first to God, then to the government as it works to produce safe, important research. To ensure ethical standards are followed, the researcher, too will follow the teachings of the Lord: "My son, do not forget my teaching, but let your heart keep my commandments; for length of days and years of life, and peace they will add to you. Do not let kindness and truth leave you; bind them around your neck. Write them in on the tablet of your heart. So you will find favor and good repute in the sight of God and man" Proverbs 3: 1-6 (New American Standard Bible).

# CHAPTER FOUR: RESEARCH RESULTS AND FINDINGS

Many programs are mandated or suggested for use in the classroom, and they are often implemented without teacher input despite teacher involvement in the planning discussions. It is possible such programs would be more effective with greater teacher empowerment in the implementation process. This study examines the effect of teacher empowerment on the implementation of one such program: Response to Intervention. Wright (2007) described "a change in a student's behavior or performance as a function of an intervention" (p. 3) is part of teaching and learning in some form across the nation. RtI has been recognized by the IDEA (2004) as an effective way to identify students with disabilities. Teachers are being asked to employ this complicated process while continuing to carry out all other facets of teaching and learning required on a daily basis.

The purpose of Chapter Four is to present the results from the research as it relates to themes that were mined. First, this chapter provides an overview of the study. Second, the chapter is organized around interpreting the findings for this case study, which are synthesized to produce common themes from the different cases and answer the research questions. The information is presented as a case study of perspectives and experiences about RtI implementation, spotlighting common issues and data about the complicated process that is RtI.

## Restatement of the Problem and Purpose

A review of the literature revealed a problem: not only is the teacher left out of the equation in seeking a formula for the positive application of RtI, but the voice of the teacher is also absent in most of the literature examining the implementation of RtI. Much of the literature is quantitative in design. The purpose of this study is to investigate

how teacher empowerment impacts the implementation of RtI. This study considers the experiences of teachers at the frontlines working with students in public education today and gives them a say in what is or is not done in the implementation process. Blackburn (2008) pointed out the vital role a teacher plays in putting into practice RtI or any other educational process. This philosophy led to this case study to explore the teachers' encounters with RtI and to provide venue for their voices to be heard concerning the implementation of RtI.

Wright (2007) also wrote that when RtI was in its earliest stages on the drawing board, it was designed to be a collaborative effort combining the resources and knowledge of all stakeholders, including teachers. There are several goals for this study: (a) to examine the effect of teacher empowerment on the implementation of an important process, RtI; (b) to look at the effectiveness of the implementation with empowerment versus without empowerment; and (c) to explore the effect, if any, of teacher empowerment on student achievement. The researcher used an analytical lens to study the experiences of teachers who have been empowered compared to teachers who were not intentionally empowered in implementing RtI. This research study is intended to discover how empowerment affected or did not affect the implementation of RtI.

The results are described through themes which surfaced when data sources were triangulated. The data sources included the observations, interviews, diagrams, and student data. This information was then organized around the research questions used to guide the study:

- Research Question 1: *What are the teachers' experiences concerning Response to Intervention?*

- Research Question 2: *What are the recurring themes seen in the experiences of the teachers in the implementation of RtI?*
- Research Question 3: *What does RtI mean to teachers?*
- Research Question 4: *How does empowering teachers affect RtI implementation?*
- Research Question 5: *How do teachers perceive the traditional implementation of RtI?*

## Organization of Data

The data were revealed in relation to the themes that emerged during the data analysis. The technique of thick description was utilized to give information concerning the results and to expose themes that emerged from the different sources of data. Gall et al. (2007) explained thick description as an accurate representation of the phenomenon in the case study utilizing accounts that reconstruct an incident in context with the perceptions and meanings being part of the circumstance. In creating a thick description, the researcher examines the data for concepts which organize the information and connect it to other research found in the literature. Thick description also adds to the external validity of the study: as Gall et al. (2007) explained, full details enable generalizability to different settings, people, and circumstances.

Ary et al. (2006) posited that typically case studies do not have transferability, but a researcher is "responsible in providing sufficiently rich, detailed, thick descriptions of the context so potential users can make the necessary comparisons and judgments about similarity and hence transferability" (507). This type of description makes it possible for the researcher to denote social and cultural designs and place the information in proper context. Yin (2009) agreed facts and data from the participants being studied through different sources of data support validity. The use of participants' narratives and

viewpoints regarding actual situations will supply authentic, thick description and, hence, validity. The teachers, administrators, and RtI coordinator all provide such details.

Summaries of findings, quotes from participants, diagrams, and observations reported in the study are part of the picture painted by the results of the study coming together. Analysis of the data generated by these narrative and visual sources were reviewed as one unit to allow systematic connections. Statistical findings were submitted in tables and graphs (Ary et al., 2007; Creswell, 2007). Descriptive statistics were used to understand the full implications of the statistical data (Bogdan & Biklen, 2007). First, as each theme came to the forefront, it is discussed separately. Then findings for the research questions are discussed based on the surfaced themes.

Data analysis involves a fluid process. Once all data were collected, the task of data analysis began. First, the researcher and two research assistants interpreted the teachers' experiences when implementing RtI through a theoretical lens that took into account the teachers' current classroom context, the complexity of the RtI process itself, and the way the school and district supported the implementation. Second, an interpretive approach was employed in order to more clearly understand the issues associated with implementing RtI at the school level through the eyes of teachers. Pattern matching was used to examine the data. Last, coding protocols formed the foundation for themes emerging from the case study (Creswell, 2009). The coding protocols included (a) organizing data into initially broad categories within the data sources, (b) clustering data into categories of developing themes in data sources, (c) grouping data into categories across the different data sources, (d) revisiting and discussing the data to look for clarification of information, (e) building reliability by reaching consensus with two research assistants regarding themes which surfaced from

the data sources, and (f) ensuring reflexivity by participants to achieve reliability of themes across all data. (Blanks, 2011).

The fieldnotes were classified by color codes. The researcher utilized a different colored paper for notes regarding each school and the RtI coordinator. Notes regarding each teacher and administrator were written in a different colored font to differentiate participants and to ensure anonymity. The organization of colored paper and print helped prevent confusion, ensured accuracy in reporting the data, and helped with an in-depth analysis. During the long hours of coding, the breakdown into separate colors helped the research team stay focused.

## Participants

The three types of participants in this case study were (a) classroom teachers who taught in grades three, four, and five; (b) principals at each of the schools providing the setting for the case study; and (c) the district RtI coordinator and expert. The first group of participants completed interviews and observations. The observations took place in the classroom during the RtI block of instruction. The last two groups of participants completed interviews. The selection process of participants was more arduous than I had first expected. In an effort to reduce my role as a principal in the district and to keep the participants truly anonymous, my research assistants took over the process under my direction. This ensured the participating teachers remained anonymous to the researcher and controlled for researcher bias.

At the beginning of the study, a particular principal in the researched school district asked for her school to be included in the study. This principal believed the school needed to improve the RtI process. This school had created a new RtI team that included teachers as members known as Target School A. A few days later, another

principal had heard about the research and asked if her school could have some part in the study for much the same reason as the first principal volunteer. The second school became Target School B. At this point, the need for research assistants came into play to reduce bias and add reliability. The research assistants required some training. Both assistants were teachers, one current and one recently retired. The research assistants were familiar with the study and RtI. They had taught using the RtI process in their classrooms. Neither assistant knew the teachers or principals who were part of the study either personally or professionally.

Table 3

*School Demographics*

| School | # of Students | Black | White | ED | SWD |
|---|---|---|---|---|---|
| Target School A | 796 | 58 | 689 | 390 | 102 |
| Target School B | 702 | 64 | 598 | 394 | 107 |

The schools were given pseudonyms. They were a purposeful sample because Target School A had created an RtI team with teachers and Target School B had no RtI team with teachers. Both schools were willing to participate in the study. The fact the two schools did not make AYP due to the students with disabilities (SWD) subgroup fueled their eagerness to join in the study in an effort to improve their RtI process, to aid in the appropriate identification of students with disabilities, and to increase academic performance school-wide. Both schools shared similar demographics, as seen in Table 3. Notably, both schools evidenced a high poverty rate (ED). The two schools were closest in size in the district, too. The identified subgroup populations match the subgroups

identified in federal No Child Left Behind (NCLB) legislation, and there must be at least 40 students to be labeled a measureable subgroup.

With the principal's permission, the research assistants called a meeting with the teachers in grades three through five in Target School A's conference room, where they solicited volunteers. Out of 18 teachers, 15 volunteered to participate in the study. Each teacher was assigned a number by the research assistants, then one from each grade level was randomly selected and given an informed consent form to take with them. They were to read the form, sign it to grant their consent to participate, and send it via the school system courier back to the research assistant employed at another school in the district. This same process was carried out for Target School B. Each initial interview provided a time to establish pseudonyms for the participants. The participants' identities were protected first by the use of numbers and then by pseudonyms in order to achieve a narrative flow. The teachers' pseudonyms for Target School A are Karen, Samantha, and Sara with Principal A. The teachers were excited to use a fake name. Karen laughed, "I always wanted to be called Karen," and Samantha added, "We almost named our daughter Samantha."

The very nature of qualitative research is iterative instead of linear (Yin. 2009). Therefore, as the study progressed, many twists and turns took place, which led to additions and modifications to the literature review as well as other points in the study. At this point in the study, the content focus was reading. During the teacher selection process, teachers volunteered to be in the study then from the list of volunteers, the participants were randomly selected to be in the study. In the beginning, the study was going to focus on reading, but some of the teachers randomly selected turned out to be math teachers, so there was a need for research into the mathematical process. Two of

the teachers selected were reading teachers and four were math teachers. At this point it also became apparent there is much more RtI-related research on reading than math.

Table 4

*Teacher Demographics-Target School A*

| Teacher | Years of Experience | Degree |
|---|---|---|
| Karen | 10 | Master's Degree in ECE |
| Sara | 26 | Master's Degree in ECE |
| | | Master's Degree in MS |
| Samantha | 11 | BS Degree in ECE |
| | | BS Degree in MS |
| | | ELA/Social Science |

Table 5

*Teacher Demographics-Target School B*

| Teacher | Years of Experience | Degree |
|---|---|---|
| Rose | 10 | B.S. Degree in ECE |
| Ron | 22 | Ed. S Degree in Leadership |
| Michelle | 14 | Master's Degree in ECE |

Triangulation was a crucial part of the foundation to support credibility in the study. Data could be compared between different teachers at different schools and

analyzed based on empowerment or lack thereof in the RtI process. Sample triangulation was obvious in the similar years of experience of the teacher participants: two teacher participants at each school had advanced degrees while one participant at each school had accomplished a bachelor's degree. Therefore, their perspectives could be compared and contrasted in light of their commonalities. By using the administration and a district RtI expert as participants, another layer of depth of information as well as perspectives was added. Triangulation could move both horizontally between the teachers and vertically between the teachers and administration. There were nine participants, which enabled a cross-case synthesis. Yin (2009) stated "cross-case synthesis could identify common themes presented as cross case synthesis of ideas" (p. 58). This comparison across cases also adds to the validity and reliability of the results.

Participants involved in the qualitative practice of member checks add to the research and validate the participant data in the study (Martin, 2011). A member check occurs when the subject in the study examines the information specific to him or her from interviews or observations and determines if the experiences have been portrayed as they truly happened. Member checks add accuracy in the collection of data and, ultimately, in the findings of the study. In this study, the participants received the transcribed notes from interviews and observations within 48 hours of the interview or observation. The two research assistants took detailed notes while conducting the interviews and observations, then collaborated with the researcher to transcribe the notes verbatim. The member checks verified the collaborative transcriptions captured the authentic words and actions of the participants. Sara, a Target School A participant, emailed back to the research assistant, "I do not see how you were able to capture all I said; I talk so fast." Karen, another participant at Target School A, stated the assistants had "nailed the

experience on the head." This was indicative of the level of confidence the participants had in the research assistants and provided evidence of reliability and validity in the interview and observation transcriptions.

## Instrumentation

Data collection was achieved by various methods and instruments over the course of five months so triangulation of the data could be carried out. Multiple sources of data made triangulation possible. Triangulation of the data between interviews, observations, diagrams, and statistical data provided dependability and credibility in the research results. The key data came from the interviews and observations, and instructional diagrams and student data were secondary types of data collected. In this study, not only did the different sources of data add to the triangulation, but participants came from different levels in the school setting. Additionally, both schools and participants had similar demographics in an effort to triangulate the theory. Throughout the study, many visits were made to the schools. The facilities were clean, and the staff was warm and welcoming to visitors. Students moved about in an orderly fashion from class to class. The students' actions reflect the fact rituals and routines were in place in each school.

### Interviews – (I)

The interview questions were derived from the Bailey-Tarver RtI Survey that had been deemed reliable on the Cronbach Alpha Scale with a score of .89 (see Appendix F). The survey had been used in two different studies and proved reliable. Both principals met individually with the researcher and an assistant to answer questions about their school and the RtI process utilizing the Bailey-Tarver protocol. All interview data was included the participant's pseudonym and venue to avoid confusion about who is speaking and through which venue. The interview venue was designated as (I) to

differentiate between the other venues. In an effort to authenticate the data, each principal was asked to review the transcribed interview with an opportunity to change or add in information she deemed necessary. The district RtI expert was interviewed separately, too, by the researcher and research assistant. The RtI coordinator followed the same protocol to check the information gathered from her interview in an attempt to authenticate the information. The importance of RtI to the district RtI coordinator was obvious as she often spoke passionately about the subject and its necessity in the classroom setting if all students were to succeed. All participants were open and willing to answer the interview questions in depth.

The critical interviews in the study were those of the teacher participants who actually implemented RtI on a daily basis in the classroom. In an effort to put the teachers at ease, the assistants scheduled the interviews at their convenience in their comfort zone, their classroom. All subjects were forthcoming with information, but the information seemed to flow more freely as each successive interview occurred, with the most information at the exit interview.

At the experimental school, Target School A, a sense of empowerment was established through two methods. First, the teacher participants completed three interviews each—an initial focus group interview, an individual interview, and an exit focus interview—so they knew their voice would be heard by all who read the study. Second, the school-level RtI coordinator formed an RtI team which consisted of the Title I teacher, the lead special education teacher, and a teacher from each grade level, including the teacher participants in the study, so their feedback was received by those in charge of and taking part in the RtI implementation at their school.

Target School B was set up as the control school without teacher empowerment. The teachers at this school carried out the RtI process in the traditional manner, as directed by the district office and school leaders. Each school in the county had received the same RtI and intervention training. In an attempt to keep the integrity of the traditional implementation of RtI, the teachers at Target School B were given only the exit interview based on the Bailey-Tarver RtI Survey. The same exit surveys were used at both schools in order to add to the validity of the study. Even though this was the only interview for participants at Target School B, the teachers were very eager to discuss RtI and answered the questions in depth.

**Observations – (O)**

Another critical piece of data came from the observations in the classroom, allowing the phenomenon to be seen in its natural setting, which is central to any case study. The observations venue was labeled using an (O) and the participant's pseudonym. The case study research design adhered to an Appreciative Inquiry methodology to steer the project. This method enabled observations of RtI in action in its natural setting instead of an experimental model, which led teachers to speak at ease with honesty about the implementation of RtI. It was obvious this was a novelty when one teacher stated, "We do not get many chances to share what we know and it be used to help with something that we have to do in teaching." The researcher was able to cultivate a theory instead of simply testing one by the use of the inductive process, which supported development from data to overarching themes (Creswell, 2007; Yin, 2009). Each observation was conducted by appointment with the teacher and carried out by the research assistants. An observation protocol was followed in the same manner for each

teacher. The protocol utilized was recommended by the state department of education and had been proven reliable through usage over time (see Appendix C).

**Instructional Flow Diagram - (D)**

The teachers were asked to create a depiction of the flow of instruction in their RtI block. This diagram explained the way the instruction was delivered, whether it was lecture, small group instruction, direct instruction, or exploratory learning taking place. The instructional flow diagram was identified by the participant's pseudonym and (D). Each teacher at Target School A drew a rough diagram that was redrawn on the computer in a collaborative effort between the research assistants and the researcher. This was used as a tool during observations to see if the teachers' concepts regarding their RtI time and their actual lessons correlated. The diagrams were also compared to what the literature on RtI recommended be done during the RtI block.

**DIBELS Data for Oral Reading Fluency (ORF) and Math Number Sense and Operations (MATH) Statistical Data**

Quantitative data were taken from the DIBELS reading and math scores for students at the participating schools in order to support the results from the interviews and observations. In the research, this statistical data venue was referred to with the school's pseudonym (Target School A or B) and (ORF) or (MATH). The district test coordinator deidentified all benchmark score data to ensure student anonymity. Ary et al. (2007) and Bogdan and Biklen (2007) recommended descriptive statistics be drawn on to explore the basis of the participants' experiences. The mean, standard deviation, paired *t* tests, and independent *t* tests were calculated to determine if any relationships were statistically significant, as well as if the students from Target School A with teachers who

were empowered improved at a greater rate than students at Target School B with teachers who were not empowered.

## Results: Themes

From the data supplied by the different instruments, five themes clearly stood out in the experiences of each participant: (a) teacher understanding of the RtI process, (b) team concept/collaboration, (c) time in relation to the implementation of RtI, (d) barriers to the implementation of RtI, and (e) empowerment. All five themes are interconnected through the literature and in the experiences of the participants. The first two themes can stand alone, but can also be dependent upon one another. If time had not turned out to be such a pervasive issue throughout the data, it could have been a subtopic of the barriers to RtI. The first four themes all work together or against each other in leading to the last theme, empowerment. The results from observations, teacher participant interviews, and administrative interviews clarified, reinforced, or brought into question one another's information in the study. Each data venue from each participant as well as supported by the literature. Each data venue helped to add threads of information, which aided in comprehending what was happening as the teachers implemented RtI on a daily basis. Ultimately, the different threads came together to complete a tapestry depicting the effect of teacher empowerment on RtI implementation.

Each piece of data used was labeled to distinguish between the instrument being used and which person was speaking from which school. For example, if data from Sara's observation from Target School A was being used, it would read—Sara-(O) A; or if a quote from Rose's interview from Target School B was being used, it would read—Rose-(I) B. The results were structured to indicate how the experiences of the participants related to each theme through the words and actions of the participants.

Once the themes were fully supported by the information collected from the various sources in the study, the research questions could be answered.

**Theme One: Teacher Understanding of the RtI Process**

As the teachers told their own story of implementing RtI in their classroom, their level of understanding of the RtI process became clear. The premise behind this study was if teachers are empowered in the implementation of RtI, the implementation will be more successful. If this premise holds true, the group with the most understanding will be the group that was empowered, which enabled a more effective implementation (Reeves et al., 2010). Zembylas and Papanastasiou (2005) believed a key piece of teacher empowerment is an understanding of the phenomenon of interest in the implementation of any type of process. If a teacher does not have a firm grasp of the phenomenon of RtI, then there can never be self-assurance or confidence, which is part of empowerment and necessary in the successful implementation of RtI.

Bender and Shores (2007) defined RtI as a process of applying research-based interventions based on student needs identified through progress monitoring, followed by adapting the teaching to how the student responds. Wright (2007) put the definition in simpler terms: "RtI is the change in a student's behavior or performance as a function of an intervention" (p. 2). Whatever the definition, one fact remains true: teachers must have a firm grasp on what RtI means in order to implement this process successfully. Most teachers were able at least to describe the RtI process in parts, but few could really explain it in detail.

Teachers participating in their first focus group interview at Target School A were able to explain verbally what RtI was to them. Many participants' definitions were accurate, as shown by their remarks:

- If a student is struggling you look for an intervention to help—to help them master a skill in reading or math; something that will help them improve academically [Sara (I) A]
- You know—if what a teacher is doing (instructionally) does not work then you talk to other teachers to get ideas of what to try to figure out what the students need to succeed [Karen (I) A].
- I think RtI is supposed to get students caught up to grade level with skills and concepts—you know close any gaps in instruction [Samantha (I) A].
- Yes, maybe there are other issues going on with the student that cause gaps in academics. RtI provides a way so the student doesn't go straight to special education. Interventions can show other directions for the teacher to go instead of special education and testing. I only had one student placed in special education last year [Sara (I) A].

The teachers at Target School B could also verbalize the meaning of RtI and their understanding of the phenomenon in their interview. Although when Rose grimaced as she spoke, she hinted at negative concepts associated with RtI:

- RtI means the use of evidence based interventions to help improve struggling students [Michelle (I) B].
- It means additional student assistance for students who are below the norm [Rose (I) B].
- It is specific interventions to keep students from failing [Ron (I) B].
- It involves data collection, meetings, and paperwork [Rose (I) B].

When the teachers at Target School B discussed what RtI meant, they all shared their level of understanding of the RtI process. Rose and Ron both admitted they were a

work-in-progress, while Michelle believed she understood the process and felt confident in what she was doing in the classroom. The teachers at Target School A never discussed their level of expertise in relation to RtI.

The administrators, including the RtI coordinator, exhibited their understanding of RtI. All three were able to explain the tiers of the RtI process and how to determine success:

- I am afraid there is a core group of teachers who still believe special education is the magic ticket. They believe the flow is from Tier 1 to Tier 2 to Tier 3 to get to test a student for special education and for many, it does not happen fast enough. The majority of teachers at this school get it, but a few veteran teachers still think special education is the goal of RtI [Principal A (I)].
- RtI—if it really works—will decrease the number of referrals to special education. It is hard to get teachers to understand RtI is to prevent students from being placed in special education. Many think RtI is just hoops you must go through in order to get a student placed in special education. Veteran teachers seem to struggle with this the most, while new teachers are great at flexible grouping and interventions but struggle with the data [Principal B (I)].
- The State D. O. E. mandated SST be utilized by the school districts. Special Education regulates requirements for the RtI model for identification of students in need of special education. I believe about 25% of the district personnel understand the way these programs (SST, RtI, and Special Education) work together, and 75% are still not quite sure at all. Sometimes emotions take over logic when a teacher has a child that is a slow learner and having little success in the classroom. The teacher may be convinced the slow

learner is in need of special education, but the student does not qualify for special education services. [District Coordinator (I)].

Like the interviews, the observations also gave insight into the teachers' understanding of RtI implementation in the classroom. In Target School A, Karen began the class with students participating in a fluency intervention and working with a partner. Sara used scaffolding, which the literature suggests as an effective way to catch students up to the grade-level activity. In the review of the literature, Vygotsky is credited with first using the concept of scaffolding in his zone of proximal development (ZPD) theory in explaining the way students learn (Shamir and Tzureil, 2004). Samantha utilized small-group activities when delivering instruction in the classroom. Small group instruction is a common way to differentiate for at-risk students (Holifield, 2009). Each teacher tackled RtI in interesting and different ways to suit their teaching styles and the students in the classroom:

- In Sara's lesson, the teacher modeled graphing on the overhead projector and then the students discussed graphing before the lesson progressed to a performance-based activity where the students worked independently with the optional help of a partner [Sara (O) A].
- Samantha explained to the students they would be working on different activities today, which she listed: *Brain Pop*, a science activity about earthquakes; math games with pattern puzzles; *Versa Tiles;* and review of yesterday's unit test. Samantha called five students to the horseshoe-shaped table to redo the questions they had missed on the test. The other students split into groups to complete their activities with help from support students. A special education teacher went over the test individually with one student.

Everyone completed his or her assignment in a quiet, orderly fashion [Samantha (O) A].

- Karen began her class by telling the students it was time to check their reading fluency. Some students responded with a "Yeah!" Next, she asked them to get with their reading partner, and she would come around with their reading passages that were either science or social studies based. This allowed the teacher to assign the correct fluency reading level to each student. While one student read, the partner monitored and marked their progress on the reading passages. It was evident they knew how to code the reading passages for errors in reading. After both partners read, the students graphed their reading progress on a bar chart. They utilized the *Six Minute Reading Solution* to monitor reading fluency. This took between five and ten minutes, then the class moved to a whole group activity on how to do a timeline. The teacher scaffolded the activity from modeling a timeline based on the history of the state, to group creation of a timeline of the teacher's life, to the first steps of an individual project to build a timeline of each student's life [Karen (O) A].

After completing the observations, the research team first reacted with confusion. The request to the teachers had been to observe an RtI block of instruction. The team expected to see something similar to Samantha's class, with small group instruction and differentiation, possibly including help from an outside source such as the special education teacher. Sara's entire class had been whole group instruction, with only the possibility of working with a neighboring student, which no student chose to do. Karen's class spent less than ten minutes participating in RtI by doing a research-based intervention to monitor fluency. Then she moved to a whole group social studies lesson.

The research team's understanding of what transpired gave validity to the qualitative case study approach in research, which takes place in the field or real life rather than in a laboratory. After much discussion, questioning of the data, and repeated examination of the participant data and the literature, understanding dawned on the research team. Sara had explained to the research assistants as they were leaving her entire class was in the RtI process and all were academically at-risk; therefore, she had utilized Vygotsky's ZPD theory. Miller (2009) explained Vygotsky's theory as a student's potential of learning with help from an adult such as the teacher in order to grow academically. In essence, she already knew their readiness level and where they needed to be in completing the state standard for graphing, so she took a difficult lesson and provided the scaffolding needed to prepare them to work independently. Karen did begin her RtI block with a perfect intervention for reading fluency, but changed due to time constraints, using the RtI time to cover state social studies standards with a scaffolded lesson. It was evident the teachers did understand RtI in their classroom, but they also had to work to meet time constraints and other curriculum obligations that constitute the reality of public education. Thus, they followed Vygotsky's theory.

The differences in levels of understanding were very visible in the exit focus group interviews between the experimental school, Target School A, and the control school, Target School B. Target School A had gone through five months of being part of the RtI team, participating in several interviews, and being observed. They knew their voices had been heard and felt the effects of empowerment in the implementation of RtI. For Target School B, the teachers had continued to implement RtI in the traditional manner, giving very little, if any, input to those in charge. Bender and Shores (2007) described the RtI process as having four tiers which is the RtI model used in Georgia.

The four tiers are (a) standards-based classroom learning, (b) needs-based learning, (c) Student Support Team (SST)-driven learning, and (d) specially-designed learning. The third level is also called the pre-referral level. Georgia public schools require a Student Support Team be established once a student reaches tier three of the four-tier system (Bender & Shores, 2007). SST is a cross-disciplinary team that uses problem solving to look at the educational needs of students who are having academic and/or behavioral problems. When asked about the relationship between SST, RtI, and special education, the teachers at Target School A answered as follows:

- RtI is a process you must go through for any student. If they continue to struggle then SST may begin [Samantha (I) A].
- If interventions do not work, then you move to SST. SST is more formalized and there is not as much leeway as in RtI. RtI has more options available [Samantha (I) A].
- Sometimes RtI and SST depend on what you are doing. You assess the students then pull a group to work with based on a common need seen in the data analysis [Karen (I) A].
- SST is mandated and more consistent. It seems more collaborative in nature [Sara (I) A].
- RtI and the use of data are important. If a student is making progress in one area but not in another—you can see the discrepancy—there are "I thinks" or hunches [Sara (I) A].
- The purpose of RtI is to help all students succeed in school [Karen (I) A].
- Overall, I feel K-5 reading is more successful because we have been doing it longer and data collection has really improved [Sara (I) A].

- If RtI is effective, you can decrease the number in special education by finding the right intervention and the students make academic progress [Samantha (I) A].
- I think RtI supports inclusion rather than pullout instruction in the resource room. If the teacher differentiates properly, they won't need special education. Yes, RtI is the biggest supporter of inclusion. A lot of teachers just want to have students pulled out, but you won't need to anymore [Sara (I) A].
- But it (RtI) can help identify those with true problems, and it cannot be fixed with an intervention on RtI—a real disability [Sara (I) A].
- If a new student comes to my class, the first thing I do is DIBEL them to see the data and I look at scores to see where they are academically [Karen (I) A].
- I see a big gap between second and fourth grades with third grade caught up in the middle. In second grade, everything is read to the students. Third grade is a big jump in the academic level. You cannot read anything on tests unless it is in the IEP. I guess reading is the key for third grade, especially fluency [Karen (I) A]

In comparison, Target School B participants' exit interview comments make plain the difference in the level of understanding between the two schools. The empowered school is much deeper in their understanding than the traditional school. The teachers at Target School B discuss RtI, SST, and Special Education as follows:

- I guess the purpose of SST is to show how you support the needs of struggling students or their behavior [Rose (I) B].

- SST is supporting students to succeed with a team. I hate to use the word struggling, but they are…RtI is more involved with only research-based interventions [Michelle (I) B].
- Yeah, SST may not be research-based interventions to improve student achievement. It might be just be small group or special seating and not really research-based [Ron (I) B].
- It seems to me RtI is more collaborative than SST because it constantly changes with the students and interventions [Michelle (I) B].
- SST and RtI are about the same, but I try to keep students out of Tier 3[Rose (I) B].
- I feel we take the students through the entire process that can take up to a year, then we do not even get to attend the placement meeting for special education—the final meeting. I have to investigate the next year to find out if the child placed [Ron (I) B].
- Yes, you would think the ones who start the process would get to be a part of the placement committee and help make the decisions [Michelle (I) B].
- I had a couple of students place in special education last year [Rose (I) B].
- I had a student I thought might be learning disabled but placed in the area of speech and another placed in EBD [Michelle (I) B].
- There was one student we got the paperwork ready for testing, but did not place into special education [Ron (I) B]

Comparing the teachers' dialogue with the content of literature on RtI shows the teachers at Target School A understand the RtI process better than teachers at Target

School B. Even the Flow of Instruction Diagrams in Target School A show more groups with teacher facilitator models than the diagrams in Target School B, which is indicative of understanding.

**Theme Two: Team Concept/Collaboration**

Each school had some sort of team for RtI and collaborated to some degree concerning RtI. The RtI team for Target School A consisted of the counselor, who was the lead RtI person in the school, and the grade-level teacher leaders. Information traveled from the district level to the counselor to the grade-level teacher who shared with each teacher in the grade level. Each grade-level team met weekly. The RtI team for Target School B consisted of the assistant principal, who managed RtI, and the Title I teacher, who managed SST. This team meets annually to review the files, as well as on an as needed basis. At other times, each grade level teams determine what to do.

Target School A allowed several times for teachers to collaborate. Each grade level had meetings every Tuesday to collaborate, and one area discussed was RtI. The grade-level leader for RtI was available during planning periods to solve problems concerning RtI and SST. The grade level team always had at least two people at all RtI meetings with parents. The principal was part of the RtI team by helping with Tier 2 in leading a small group in reading and math. At Target School A, each grade level has a day set aside each nine weeks for collaboration while the students attend special areas all day. During this collaboration day, RtI issues were discussed.

At Target School B, there is no set day for collaboration, but the staff do communicate with each other about shared students as the need arises. The collaboration depends upon the grade level. As with any group dynamic, some teams work well together while others do not. The team for RtI usually remains intact for a year while the

student is in that particular grade. Based on the information given by the teachers at Target School A, the RtI process was fluid, depending upon the data and the needs of the student. At Target School B, the RtI process seemed to last year to year based on who taught the student for the year and the grade level. The RtI process seems to be more rigid with little movement of students in and out of the process as intended by RtI experts.

The teacher participants described the collaboration at Target School A as follows:

- Yes, we all work together on grade level, even administration help with small group interventions [Samantha (I) A].
- During collaboration day and grade level, we plan together to get ideas how to reach and help students with complicated needs. We collaborate each week at grade level meetings and every seventh week for collaboration day. It is a great time to share ideas and strategies as to what works and what doesn't work in helping struggling students [Sara (I) A].
- This year is so tough I do not think I could do the work without collaborating with other teachers. These fifth grade students have a wide variety of needs that must be met [Samantha (I) A].
- Fourth grade students are great; you will enjoy next year, but we still work together to conquer and divide[Sara (I) A].
- We are part of the RtI team which meets regularly to look at what is going on in the school. We discuss and all share ideas to help make things better [Karen (I) A].

- I feel we have a collaborative culture at our school, but there are still a few cliques [Karen (I) A].

In the list below, teacher participants describe collaboration at Target School B:

- Teachers are really responsible for RtI until the end of the year. We sort of hold each other accountable by looking at the data at grade levels. I also meet with my teacher partner since we are a two-person team and collaborate about the data. It is kind of informal [Michelle (I) B].
- If I see a student struggling, I keep my eyes on them. I am departmentalized in my grade level, and I don't really have anyone to talk to. I'm math [Ron (I) B].
- I meet with the assistant principal in charge of RtI at the end of the year [Michelle (I) B].
- When problems arise, like a couple of weeks ago, I talked to the assistant principal about a tricky problem with a student, and she contacted the district office coordinator. I am not sure who that is now [Rose (I) B].
- There is really no set day to collaborate for RtI [Rose (I) B].
- We have to talk to each other to make the groups work. Whoever is involved has to be in the loop. I guess it depends on the grade level. My team—we feed off each other with ideas to improve RtI [Michelle (I) B].
- Luckily, fifth grade has a good group of students this year [Ron (I) A].
- The classroom teacher manages Tier 2 data, and Tier 3 involves consulting with SST/RtI coordinator in the school. This is often the Title I teacher and sometimes the assistant principal. This team meets to make sure everything is

in order with the paperwork, assessment, and data. They also collaborate to determine the right intervention for the student's specific need(s). This is a very important step as the team determines if student needs a new intervention, if the previous intervention is not working, if the current interventions simply need to continue, or if they are ready to leave the intervention and go back into Tier I or enrichment [Principal B (I)].

In addition to horizontal collaboration at the school level, there was also vertical collaboration which included the district office. Other people also collaborate with the school team, such as special education teachers and English language learner teachers. The following dialogue describes the other levels of collaboration:

- The teachers at each grade level meet for SST meetings and make sure the work is consistent from person to person. I guess the counselor helps to see things are consistent for the entire school [Samantha (I) A].
- The counselor meets once during the nine weeks with district level RtI people. She emails or meets with the six grade level people a couple of times a week—we do use email a lot [Sara (I) A].
- RtI points out gaps in student achievement—if successful, can show gaps closing. We meet with the middle school to discuss the information from RtI to help students continue to grow academically even when they leave our school [Samantha (I) A].
- The special education staff is always invited to RtI student meetings to offer suggestions for interventions to try so a student may be helped and not need special services [Principal A (I)].

- The district level reading specialist has trained teachers in some of the interventions for reading. I also feel math vertical teaming has helped me with understanding the importance of working with the previous year's math curriculum and the next year's math curriculum in order to see where my students are and where they need to go in order to be successful. The principal, special education teacher, paraprofessionals, and Title I teacher all take a group for interventions [Samantha (I) A].
- Vertical teaming—it helps to talk with the last year teacher to see what was tried and successful, and it helps to prepare the next year teacher. Can hit the floor running. It can save a lot of time [Karen (I) A].
- On collaborative day, we implement math enrichment. We have added math regular rotation each week. The Title I teacher does this class with special areas. Then the Title I teacher gives us feedback about problems that may arise or successes [Sara (I) A].
- Both the assistant principal and the Title I teacher work with the district level RtI person [Michelle (I) B].
- Administration, paraprofessionals, teachers, Title I, ELL teachers, and special education teachers take part in the interventions [Rose (I) B].
- I am a part of the team a year while I have the child. The ELL and Title I teacher work with the regular education teachers. Talking about our students vertically has helped—can give helpful hints [Michelle (I) B].
- I formed a system level team with elementary and secondary principals, special education director and coordinators, curriculum department, testing coordinator, associate superintendent, and psychologists. At the school level,

each school level person varies from the media specialist, counselor, assistant principal or classroom teachers. The system team meets monthly, and the school coordinators meet quarterly. The schools are supported by visits, collecting data, attending SST meetings, I created a system-wide RtI manual, and a system-level pyramid of intervention [District Level Coordinator (I)].

**Theme Three: Time in Relation to RtI Implementation**

Each participant addressed the issue of time repeatedly throughout the interviews. In most instances, time is a scare commodity, a concern that seems prevalent in education today. In fact, there were a few occasions when perception of time as applied to RtI was not negative.

Interestingly enough, the first mention of time was in relation to the RtI leadership at the schools:

- For us the counselor is over the whole school's RtI program, but the teacher does the progress monitoring. I think the counselor who is in charge really has a tough job. She has many responsibilities. Let's see…she is the counselor so she works with the kids daily, she is in charge of the gifted program and is the lead for RtI/SST. She is very busy [Samantha (I) A].
- Yeah she (the counselor) gets information and passes it on to the six grade level teachers who then meet with us—I guess this helps..I think the counselor and the teacher at each grade level delegate jobs—but it does not always go so well and I think it can be overwhelming [Karen (I) A].
- Our assistant principal handles the RtI for the school, she does 504, discipline, testing, meetings, and so much more. She is very busy! A Title I teacher is

over the SST part. She manages all the students' folders, helps with meetings, and teaches small groups all day long [Michelle (I) B].

- Both the A.P. and the Title I teacher meet with district person regularly [Sara (I) A].

The participants seemed to hold the lack of time as the biggest road block to effective implementation of RtI. Many problems arose with scheduling RtI blocks of instruction. Trying to fit in all the curriculum and still focus on reading and math takes time and ultimately affects RtI. Assessing the students, analyzing the data, planning, and addressing the identified needs of the students take a big chunk of time, which can lead to frustration and negativity regarding RtI implementation? The long hours the teachers work to get their job done also shows the commitment these educators make to help their students. Plus, fulfilling the extra work with RtI implementation can be at the sacrifice of the teachers' family time. The following participants' comments provided further evidence of the importance of time in RtI implementation:

- This year teachers are more a part of it (RtI process) but for some it is a question of finding the time to get it all done [Samantha (I) A].
- Yeah, time is the thing. Teachers now have more control/responsibility, but may not get it all done [Karen (I) A].
- This year, the Title I teacher does the primary grades so we don't have her help in the upper grades [Sara (I) A].
- I might not rush into RtI due to the paperwork—there is a mountain of paperwork. Just the initial paperwork is tough [Sara (I) A].
- It is not always easy to manage the paperwork, but necessary. I work late and take work home. I try to keep up-to-date because you do not want to get

behind because it is hard to catch up along with everything else we have to do as teachers [Samantha (I) A].

- I have found if you keep up with the assessments and do the data weekly so you don't get behind, you are okay. If you get behind—it can be overwhelming [Karen (I) A].
- A weakness for RtI is definitely time and scheduling so a student can be double dipped in certain content in which they have a deficit. But if we double dip, it means taking time away from some other content such as social studies and science. Not enough time in the day. Sometimes we feel RtI is too much with other initiatives such as common core standards and writing workshop to name a few [Principal A (I)]!
- We have some interventions but not sure how to use them correctly. I do not have the time to figure them out [Samantha, (I) A].
- Wow! Last year, I had so many students in trouble academically; I could not get to them all. It was just a really low group that for some reason teachers before had not put into the RtI process. Since there were so many, I just had to pick the most at-risk and help them and let some go [Sara (I) A].
- Sometimes it is hard to do all you need to do. For example, I teach all day, do morning duty, Science Olympiad, I'm grade level chair, and I am on the school improvement team [Karen (I) A].
- My own children are in so many things after school so when I have to leave to take care of them—I still take work home [Karen (I) A].
- I'll tell you a hard part of RtI is scheduling with 25 students and who does what when…[Ron (I) B].

- Sometimes I do not feel there is enough time in the day—I come early and stay late—7:30 – 5:30 and still can't get it all done. I don't see how some teachers leave at 3:00 [Michelle (I) B].
- I take side notes to help me know what needs to be done for students—you have to be aware at all times. I always work long hours and take stuff home, too [Karen (I) A].
- I know RtI is important, but hard to find time to do interventions to fidelity [Rose (I) B].
- Yes, I have to take 30 minutes out of science and social studies to do interventions [Ron (I) B].
- We are all so busy. I am on the Leadership Team, I tutor in the afternoons, writing team, I am getting my gifted endorsement, and I volunteer on our school relay for life team [Rose (I) B].
- I do Science Olympiad Team, Math Team, tutoring after school, school council, Leadership Team¸ Math Workshop so I will be a model classroom [Ron (I) B].
- I hear repeatedly time is a weakness for teachers at this school; no matter what there is never enough time to give students all that they need [Principal B (I)].
- The time factor guided the instructional plan for Karen's RtI block. She spent the first few minutes doing a fluency intervention then moved to scaffolding a lesson that was social studies based in order to fit the necessary curriculum into a lesson designed to help students reach mastery level [Karen (O) A].

Through the experiences of the participants, it was obvious time is a precious commodity in the field of education, especially as it applies to RtI. Doherty and Hilber

(2007) posited that the school day does not necessarily need to be extended, which is costly, but the restructuring of the present school day can aid in effective use of time for educators. Both schools have attempted to change the time within the school day to build an intervention block to aid in the implementation of RtI. In Target School A, each grade level has a dedicated block of time for RtI. At Target School B, the entire school has an RtI block from 8:00 to 8:45 daily.

**Theme Four: Barriers to the Implementation of RtI**

As the participants shared their experiences in implementing RtI, a few barriers to this implementation emerged. The most common barriers were (a) professional development, (b) assessment, and (c) problems with interventions. If RtI is to be implemented successfully, these barriers must be addressed and overcome in order to have a seamless implementation of RtI.

**Professional development.** There was complete agreement among all participants there was a need for more professional development in the RtI process from basic information to data analysis. Even though there was a disconnect in what is a perceived need to what is a real need differs from the district level to the school level concerning professional development, the district RtI coordinator offered keen insights into the problem. The following information relevant to the professional development barrier emerged during the interviews:

- The only real training we have had is what the counselor has given us. Sometimes the counselor gets the information to the grade level representative who in turn redelivers it to the teachers during grade level meetings [Sara (I) A].

- There is no real consistency. Last year, the counselor was given several things to do for math training, but we as a school organized it to work for us and our students [Samantha (I) A].
- Grade level teachers mostly work with teachers after school. They run so long and are sometimes full of tension after a long day. Also, I think training on the best way to conduct meetings would be helpful [Principal (I) A].
- In the past, I have had training at the school level and the RtI specialist. I have had some training on interventions. We have not really had any school-wide training this year [Karen (I) A].
- We need more professional learning for RtI and related issues such as scheduling, interventions, and help managing small groups. Since we have been working on this project, I have talked to other teachers and many have shared the same need. The need for training in the use of work stations or centers has been expressed by many teachers, especially for math stations with the integration of science and social studies stations working effectively in the classroom [Samantha (I) A].
- I feel we need more training. In the past, we have had training with the district RtI coordinator about RtI, and our principal has given us information [Rose (I) B].
- The primary training for RtI was in 2007 with the district coordinator training special education teachers and SST/RtI school level people [District RtI Coordinator (I)].
- I attend conferences related to RtI and redeliver information to district level people and school level people. I organize school level professional

development when requested. I have worked with each school at some time or another [District RtI Coordinator (I)].

- Teachers are trained using the train the trainer method which is both efficient and cost effective. I trained the school level RtI person who then trained the teachers at school. There is a need for continuing professional development for administrators and teachers [District RtI Coordinator (I)].

**Assessment.** Data collection is a vital piece in guiding the RtI process. Almost any mention of RtI in the literature review included data from assessments such as universal screening or progress monitoring and even some summative assessments such as the CRCT for students in grades three, four, and five. RtI works to improve student achievement by screening students initially and then monitoring students' learning incrementally to determine if growth is evident (Mellard & Johnson, 2008). Many participants viewed assessing the students as a barrier to RtI implementation:

- RtI means the individual teacher has to progress monitor the students to check for progress, if there is any, then some students are put into an intervention [Karen (I) A].
- Fridays are taken up by assessments in order to get the progress monitoring completed [Sara (I) A].
- We have to progress monitor with AIMSWEB and DIBELS and I have found if you keep up and do this weekly so you do not get behind, you are okay. If you get behind, it can be overwhelming [Karen (I) A].
- Well the problem with progress monitoring like the CBM is they don't give the complete picture with just one assessment—you need to use different probes each month. Sometimes it seems like there is a lot of inconsistency

with progress monitoring. Each grade level uses a different probe so it is hard for the next teacher to understand the data—there needs to be more consistency across the school [Karen (I) A].

- We use DIBELS and DAZE for comprehension, speed drills like mad minute, speed drill for writing with words per minute to sentences per minute [Rose (I) B].
- I use AIMSWEB probes like MCOMPs and CBM's [Michelle (I) B].
- In my class, I use AIMS probes and fluency probes [Ron (I) B].
- It is hard for me to get time to get all the progress monitoring that the students need with 15 at-risk students [Rose (I) B].
- Some teachers just seem to collect data but don't really analyze it, but some do. It takes a lot of time, but grade levels teams help keep us accountable [Michelle (I) B].
- In respect to the paperwork, the data analysis seems to be more burdensome to teachers than the data collection [Principal B (I)].
- The real challenge comes with the progress monitoring then getting the data into charts and graphs so it is easy to see progress or regression [District RtI Coordinator (I)].
- Summative data and data pertaining to reading are strengths in this district, but we are not as strong with formative data and data pertaining to math. Math is in need of a reliable universal screener [District RtI Coordinator (I)]

The participants spoke loud and clear as to the hurdle assessing the students was for them in implementing RtI. The challenge for the teachers was not just completing the time-consuming assessments, but knowing how to use the resulting data. There was a

disconnect between collection and analysis of the assessments, possibly due to the need for more professional development in data analysis specific to RtI.

**Interventions.** If the assessment is the guide for RtI, then the intervention is the vehicle for successful RtI. Most participants attested to the difficulty in matching the best intervention to the student need. If the student's need is not met with an appropriate intervention in the most efficient manner, progress will not be made, which could have a lasting negative effect on the student's teaching (Wright, 2007). Thus, assessments must be administered to identify the student's deficit area; otherwise the area of need could be mistreated and the student's learning process impeded. For instance, since some interventions run for 12 weeks before progress is assessed, an initial misidentification of the student's need would waste valuable time. Therefore, it is crucial the teacher get the diagnosis right the first time. However, teaching does not come with a clear-cut guide of the "if this happens, then do that for the student" variety; several participants spoke of the barriers to implementation in the following comments:

- If what the teacher is doing (instructionally) does not work, then, you talk to other teachers to get ideas of what to try to figure out what the students needs to succeed [Karen (I) A]
- There is confusion as to what intervention to use for what student need or at what level of need. Sometimes you find an intervention only to find out it is not research based [Sara (I) A].
- I wish RtI was more streamlined with a flow chart with directions to tell an educator to do this if this does not work or to do this when this happens [Principal A (I)].

- I have never had any math intervention training and would really welcome some type of training [Sara (I) A].
- It must be the correct program for the child's particular need and the right level for the Tier that the child is in whether it is Tier 2 or Tier 3. The Tier, student need, and intervention must match. Then math has so few interventions [Karen (I) A].
- I struggle with what to do at what Tier in RtI. What is SST and what is an RtI intervention? Which intervention to use when? It gets confusing [Samantha (I) A]!
- There seems to be more interventions for the intermediate levels, but really the primary grades need more so the students can be helped earlier so we do not lose them [Samantha (I) A].
- We know that reading has many more interventions that are effective than math [Ron (I) B].
- I only know of one problem solving intervention that I found on www.interventioncentral.org [Samantha (I) A]
- There are many more reading interventions than math interventions on the market that are considered research based [Principal B (I)].
- There are more reading interventions available than math interventions. Teachers love the direct instruction programs that are prevalent in reading, and they want this for math. There is no such thing for math due to the very nature of math in going from the concrete to the abstract and all that is in between in the mathematical process. It is almost a different language [District RtI Coordinator (I)].

The matter of inadequate math interventions surfaced as the participants' data were analyzed. Due to IDEA and NCLB requirements, RtI first examined reading, thus reading has been studied much longer than math instruction in relation to RtI. Plus, many experts feel if a child cannot read, then he or she cannot do math. This deficiency in math was recognized in the review of the literature. Students are screened to identify those at risk for future reading failure, but screening in mathematics is still in its early stages (Holifield, 2009). Seethaler and Fuch (2010) suggested that no set skills in mathematics have been recognized as reliable signals of future problems in mathematics as with phonemic awareness and phonics in reading. There has been much more research into the effective teaching of reading than in the teaching of math, but the field is growing.

**Theme Five: Teacher Empowerment**

Teacher empowerment occurs when teachers have a say in school-based decision making regarding programs, such as the implementation of RtI in this study. Many organizational leaders advocate the use of teacher input since teachers are a part of such processes and can help improve them (Cuban, 1990). In this case study, implementing RtI in the classroom is the process where teacher input was requested. Teachers at Target School A have been empowered by the school-wide RtI team and this study. Their voices have been heard. Teachers at Target School B were not purposefully empowered in the area of RtI. The words of the teacher participants at Target School A describe their experiences regarding empowerment:

- Last year, we had an intervention block for reading with all teachers teaching an intervention. Many teachers expressed concerns with this model, and now

we have Title I teachers helping with interventions with a block at each grade level [Samantha (I) A].

- We have tried it both ways with the school-wide block and grade level block. Some of the teacher concerns with the schoolwide block were that special area teachers were not qualified to teach reading. Also, it was hard to monitor to see if the intervention was working. Now, it is working well on grade level with help from Title I teachers [Sara (I) A].
- I do feel part of the RtI team. My input is considered, but off the top of my head, I can't think of single thing I have contributed [Sara (I) A].
- I feel my input has been appreciated. We had a school-wide intervention block, but this did not work. Teachers could not keep up with the timelines for interventions, so we went to grade level blocks of interventions and is much more successful. I think another way that the school has improved in RtI based on teacher input is in asking for specific interventions based on student needs [Samantha (I) A].
- I think it's great you are letting me be a part of this project, and that you want my ideas and thoughts on RtI [Samantha (I) A].
- I have voiced my opinion, and it is always taken into consideration especially since I know the students best. One example was when I heard about an effective program that was research based, so I told the principal, and she got it for us [Karen (I) A].
- My grade level is trying to decide if we want to be two- or three-person teams next year. We get to make that decision and inform the administration [Karen (I) A].

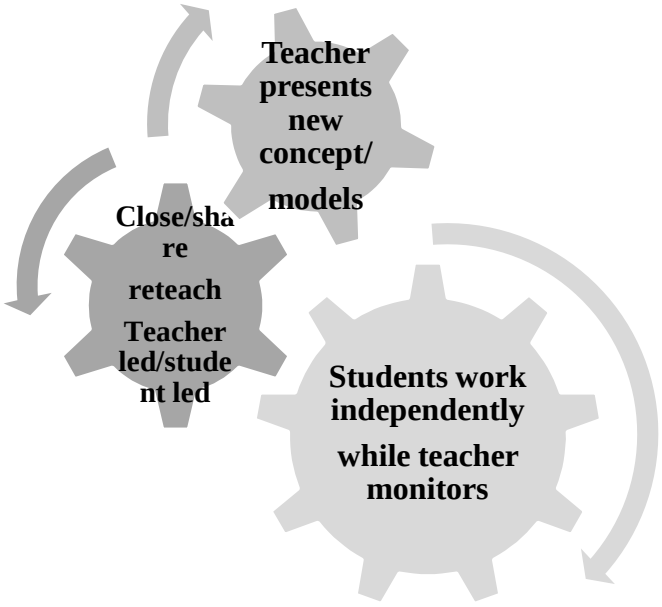
- I teach math and several of the math teachers were concerned about so much more reading instruction than math, and our scores showed it. We spoke to the principal and are adding math to the regular special education rotation. The content is still not balanced, but is better now based on teacher information [Samantha (I) A].
- I think the classroom teacher has a keener insight as to the implementation of RtI [Karen (I) A].
- We are in the room with the students, and we know how it all fits together. The content, instruction, interventions, format, assessments—all of it [Samantha (I) A].
- Teachers are professionals, so we should be able to make decisions in implementing RtI [Sara (I) A].
- Yes, I do feel a part of the process. I have easy access to the school RtI coordinator. She listens to me, and we work together. The teachers shared a need with implementing stations, so I am working with another teacher to help train and guide other teachers in implementing stations, which are a big part of RtI and small group instruction [Samantha (I) A].
- The most recent example of modifications in RtI by us is like Samantha said in helping setting up stations in order to differentiate and bring science and social studies into reading interventions [Sara (I) A].
- I have really been successful with math stations and so has another teacher in the school who is in the lower grades. We are going to collaborate to develop training for the entire staff. It will begin the first of the year at grade levels. We will begin with an overview about RtI and then go into the use of math

stations. Then we will share specific work stations that have been successful. It may be a make and take type of professional learning [Samantha (I) A].

- Right now we are looking at the schedule to help work smart and maximize time. Primary grades which have self-contained classes all day can do so much more than a three-person team or a grade level that is departmentalized like many upper grades. It is almost like the days of three-person teams and departments in elementary school are over, if we are to get everything that is required done [Sara (I)A]

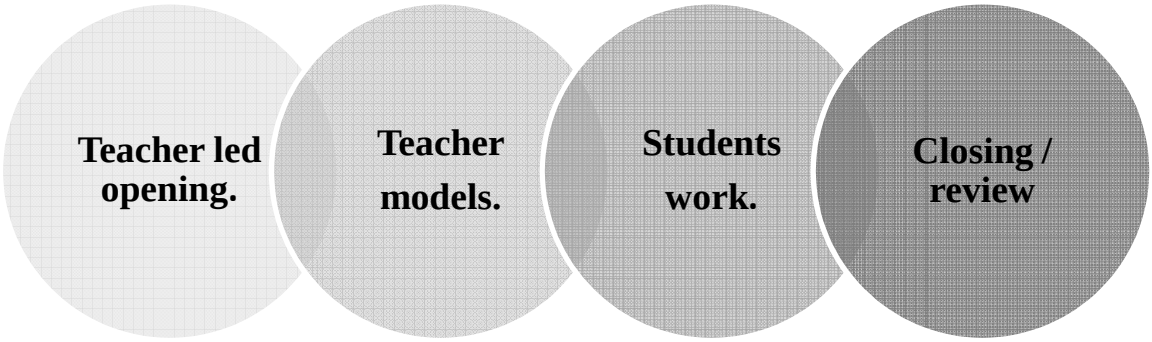
**Results: Instructional Diagrams**

The teachers submitted their instructional diagrams for RtI as a group. The teachers at each school agreed they all used the same layout in each school. The teachers at each school were instructed to use one of the diagrams depicted in the Microsoft Word Program, Smart Art, to illustrate their instructional flow, and then explain the meaning of the diagram in relation to their RtI instructional flow. Figure 2 illustrates Target School A's perception of their instructional flow, and Figure 3 illustrates the perceptions of Target School B.




We follow the workshop model as a framework for out teaching with an opening usually led by the teacher with the teacher modeling a new skill with students. Next, the student works individually or in pairs to practice the new skill. During this time the teacher shifts roles and becomes a facilitator. The teacher monitors and does not enter in to the learning unless a child is on the wrong track, then the teacher can pull this child aside and re-teach or guide them. Sometimes the work time is whole group or small group. The lesson ends with a teacher or student led review or students sharing their work. We chose this model because it seems fluid and constantly moving which is how we see our role in the classroom. Our goal is to let the students do most of the work, but at times due to the nature of the lesson or its difficulty level, it may shift. We also like the arrows which show how the teacher is constantly moving about the room.

Figure 2: *Target School A Instructional Flow Diagram*




Our teaching follows the workshop model mandated by the school district. The teacher opens the lesson with the standard that needs to be taught then moves to a time for the teacher to model the new skill or concept based on the standard. We let the student work independently using the new concept, and then we close with a review of the standard. In the closing, students may ask questions which may lead to the next day's lesson. We have the week planned out, but it is often changed due to the needs of the students. We chose this model because it shows how we move through the steps of the workshop model of instruction which is linear but overlaps.

Figure 3: *Target School B Instructional Flow Diagram*

The two diagrams have similarities and differences. Both schools use the workshop model with an opening, work time, and closing. As the research team viewed the Instructional Diagrams for RtI, four key points of difference stood out: (a) The teachers at Target School A see themselves as a leader and facilitator, but at Target School B, the teachers do not mention facilitating, (b) Target School A mentions small

groups and fluidity in the RtI process, (c) Target School A's diagram seems more cyclic while Target School B is linear, which is reflected in the statements that RtI runs all year, and (d) Target School A's diagram more closely resembles Vygosky's ZPD process, in which the teachers helps the student to become an independent learner.

## The Statistical Analysis for the Benchmark Tests

Descriptive statistics were employed to provide a complete data story concerning the effect of empowering teachers in an effort to improve the implementation of RtI and to reach the ultimate educational goal of RtI—raising student achievement in the areas of reading and math. Descriptive statistics were necessary for this case study to establish a statistical foundation for rejecting the null hypothesis. The null hypothesis for this study was there would be no difference in the progress made by students in classrooms with teachers who are empowered, and students in classrooms with teachers who are not empowered. The research hypothesis stated students would make more progress in classrooms with teachers who are part of the RtI decision-making and implementation process than students in classrooms with teachers not involved in the decision-making for the implementation of the RtI process.

In the experimental school, Target School A, the teachers were empowered by being a part of the RtI process, which allowed the teacher participants' ideas to be heard in relation to the implementation of RtI. In the control school, Target School B, the teacher participants implemented RtI in the traditional manner and were interviewed only once, at the end of the study. The principals at each school and the district RtI coordinator also agreed to participate.

**Measures of Central Tendency**

First, the measures of central tendency were found for third, fourth, and fifth grade levels in the content areas of reading and math for Target Schools A and B. The mean, median, and model of students' scores on the DIBELS assessment were calculated to measure the improvement between the beginning and the ending benchmark tests for Oral Reading Fluency (ORF) and Numbers and Operations (MATH) taken from the DIBELS Reading and Math Assessments used in the Target School District (See Appendix K). As the data analysis progressed, the mean, which is the most common measure of central tendency, was utilized in the computations for mean, standard deviation, and *t* tests. The sample mean was used for further statistical analysis because it is the most effective estimate of the population mean and due to its stable nature (Howell, 2008). Next, the standard deviation was determined to measure the average of the deviation of each DIBELS' score from the mean score. This analysis allows a survey of how many scores fall no more than a standard deviation below and above the mean. Descriptive statistics are reported in Table 6. For the variables, the mean and standard deviation were calculated for growth between the beginning and ending benchmark scores for Target Schools A and B. The differences are calculated as ending scores minus beginning scores.

Table 6

D*escriptive Statistics from the Beginning to Ending Benchmark for Schools A & B*

| Content | Mean Average | S D Average | Avg. Mean Difference |
|---|---|---|---|
| ORF A | 1.62 | 3.81 | |

| | | | |
|---|---|---|---|
| ORF B | 0.97 | 2.25 | |
| Difference (A-B) | | | 0.65 |
| MATH A | 5.61 | 4.58 | |
| MATH B | 4.30 | 4.55 | |
| Difference (A-B) | | | 1.31 |

As the data story unfolded, it revealed each grade level and content area did show progress, which is the goal of all educators in teaching students.

**Paired *t* tests**

Descriptive statistics alone cannot rule out the occurrence of simple chance or determine whether empowering the teachers is responsible for progress in the DIBELS benchmark assessments. The null hypothesis must be tested to see if the improvement is coincidental or could be connected to the empowering treatment. Gall et al. (2007) posited the *t* test helps to demonstrate whether the researcher should accept or reject the null hypothesis. The null hypotheses related to student progress for this study is that there will be no difference in the progress made by students in classrooms with teachers who are part of the RtI decision making and students in classrooms with teachers who are not part of the RtI decision making.

Twelve paired *t* tests were conducted to determine if scores improved from the beginning benchmark to the ending benchmark for each of the three grade levels, two subject matters, and two schools. This case study used the standard probability for rejecting the null hypothesis of $p<0.05$ to attempt to control for Type I and Type II errors.

Table 7

Target School A - DIBELS' Scores Beginning to Ending Comparisons by Subject

| Content | N | Mean | Standard Dev. | t value | p value |
|---|---|---|---|---|---|
| 5ORFA | 137 | 0.5182 | 5.2442 | 1.16 | 0.2494 |
| 4ORFA | 126 | 1.8730 | 2.4690 | 8.52 | <.0001 |
| 3ORFA | 130 | 2.4692 | 3.7150 | 7.58 | <.0001 |
| 5MATHA | 94 | 5.1383 | 3.8482 | 12.95 | <.0001 |
| 4MATHA | 113 | 6.7522 | 4.9163 | 14.60 | <.0001 |
| 3MATHA | 116 | 4.9483 | 4.9675 | 10.73 | <.0001 |

Table 7 brings more key information to the data story for this case study. Reading in a horizontal direction, the reader can see the significance of the DIBELS results based on the difference between the scores of the beginning and ending benchmarks for Target School A by grade level, by oral reading fluency (ORF), and by numbers and operations (MATH). Row one gives the results for fifth grade oral reading fluency (ORF); these fifth grade results show a *p* value of 0.25,which is greater than the standard *p* value of 0.05 determined prior to the study, and thus are not significant, therefore, there was no statistical difference between the beginning and the middle fluency scores. Rows two and three show the differences between the beginning and ending oral reading fluency scores for fourth and third grades, respectively. Fourth and third grade results are significant at $p<.0001$ from the beginning to the ending fluency scores. The mean scores improved by 1.87 points for fourth grade and by 2.47 points for third grade. Rows four through six reveal the numbers and operations scores from the DIBELS Math assessment (MATH) by grade level for Target School A. Column five gives the results for fifth

grade numbers and operations, which are significant, with a *p* value of <0.0001, which is less than the predetermined *p* value of 0.05. For fifth grade, mean scores improved by 5.14 points. Columns five and six indicate the difference between the beginning and ending numbers and operations scores for fourth and third grades respectively. Fourth and third grade results are also significant, with *p*<.0001 for the beginning and ending numbers and operations scores. The mean scores grew by 6.75 points in fourth grade and 4.95 in third grade. Even though all grade levels did not have significant results, all grade levels in Target School A made progress.

Table 8

*Target School B - DIBELS' Scores Beginning to Ending Comparisons by Subject*

| Content | N | Mean | Standard Dev. | *t* value | *p* value |
|---|---|---|---|---|---|
| 5ORFB | 96 | 0.7500 | 2.1374 | 3.44 | 0.0009 |
| 4ORFB | 99 | 1.0303 | 2.2653 | 4.53 | <.0001 |
| 3ORFB | 103 | 1.1262 | 2.3543 | 4.85 | <.0001 |
| 5MATHB | 94 | 4.3085 | 4.8968 | 8.53 | <.0001 |
| 4MATHB | 98 | 4.8980 | 4.7483 | 10.21 | <.0001 |
| 3MATHB | 101 | 3.6931 | 3.9868 | 9.31 | <.0001 |

The growth from the beginning to the ending DIBELS assessments for oral reading fluency (ORF) and numbers and operations (MATH) were calculated for Target School B. Table 8 gives the results for third through fifth grade scores in reading and math. The scores for each grade level content assessment are arranged in horizontal order. Row

one shows the results for fifth grade are significant at $p<.0009$, which is less than the $p$ value of 0.05. ORF values grew from by 0.75 points between the beginning and ending benchmark. Rows two and three show the values for beginning and ending benchmark ORF scores for fourth and third grade, both of which show $p<0.0001$, which is significant. Fourth grade ORF mean scores grew by 1.03 points, and third grade ORF mean scores grew by 1.13 points.

Progress was then measured for the number and operations section of the DIBELS Math assessment for fifth, fourth, and third grades at Target School B, and the results are reported in Table 5. Row four shows the results for fifth grade MATH are significant, with a $p<0.0001$. The fifth grade mean scores improved by 4.31 points between the beginning and ending benchmark tests. Rows five and six show the results for fourth and third grade MATH, respectively. The results for both grade levels are significant, with a $p<.0001$. Fourth grade improved by a mean score of 4.90 points, and third grade improved by a mean score of 3.69 points.

The results also show the least progress made in both schools was in fifth grade oral reading fluency, with Target School A having a mean score difference of 0.52 and Target School B of 0.75. While Target School A did not demonstrate a significant gain, Target School B did make a significant gain. Another similarity is in the area of numbers and operations, where Target Schools A and B made the most growth in fourth grade, with mean score changes of 6.75 and 4.90, respectively. Both schools made significant gains in fourth grade MATH.

**Independent *t* tests**

The significance level was computed to determine whether the null hypothesis could be rejected. The confidence limits explain how small or large the mean can be without having to reject the null hypothesis. For the purposes of this study, paired *t* tests were conducted to decide if there was growth between the first administration of the benchmark and the ending administration of the benchmark within each school, as seen in Tables 4 and 5. The independent *t* tests also helped show whether the improvements were greater at Target School A, which received the treatment, than at Target School B, which did not receive the treatment.

Ary et al. (2007) stated pooling the variance depends on equal variances. However, often the variances are unequal, as seen in this case. For that reason, the pooled and unpooled variances were calculated (See Appendix K). This is a critical step since sample sizes of student scores from school to school were unequal. With two sample variances, a weighted average of them establishes a more accurate idea of the variance of the population scores, which is pooling or averaging (Howell, 2008). Ary (2007 stated pooling the variance depends on equal variances. However, often the variances are unequal so an unpooled variance is calculated.

Six independent *t* tests were conducted to determine if the improvement between the beginning and ending benchmark assessments was similar between Target Schools A and B.

Table 9

*Independent t tests for 5th Grade Oral Reading Fluency between Target Schools A and B*

| | N | Mean | Standard Deviation | |
|---|---|---|---|---|
| Target School A | 137 | 0.5182 | 5.2442 | |
| Target School B | 98 | 0.7500 | 2.1374 | |
| *p* value | | | | 0.6424 |

Table 9 shows the independent *t* tests for the fifth grade oral reading fluency test between Target School A and B scores on the DIBELS assessment. The results measuring Target School A against Target School B for ORF in fifth grade were not significant to show improvement, with a *p* value of 0.64, which is greater than the predetermined *p* value of 0.05. Therefore, the null hypothesis cannot be rejected even though Target School A did outperform Target School B.

Table 10

*Independent t tests for 4th Grade Oral Reading Fluency between Target Schools A and B*

| | N | Mean | Standard Deviation | |
|---|---|---|---|---|
| Target School A | 126 | 1.8730 | 3.7150 | |
| Target School B | 99 | 1.0303 | 2.2653 | |
| *P* value | | | | 0.0090 |

Table 10 shows the independent *t* test for the fourth grade oral reading fluency test between Target Schools A and B. The results measuring Target School A against Target School B for ORF in fourth grade indicated there was no statistical difference in the variances between Target School A and B, so the pooled results were examined. The pooled results indicate the differences between Target Schools A and B were highly significant. Therefore, the null hypothesis can be rejected and the research hypothesis accepted. Also, with the differences in Target Schools A and B, Target School A showed greater overall progress than Target School B.

Table 11

*Independent t tests for 3rd Grade Oral Reading Fluency between Target Schools A and B*

| | N | Mean | Standard Deviation | |
|---|---|---|---|---|
| Target School A | 130 | 2.4692 | 3.7150 | |
| Target School B | 103 | 1.1262 | 2.3543 | |
| *p* value | | | | 0.0009 |

Table 11 shows the independent *t* test for the third grade oral reading fluency test between Target Schools A and B. The results measuring Target School A against Target School B for ORF in third grade indicated high statistical difference between Target Schools A and B. This required the use of unpooled results, which indicated the differences between Target Schools A and B were highly significant. Therefore, the null hypothesis was rejected, and it was concluded Target School A showed greater progress than Target School B.

Table 12

*Independent t tests - 5th Grade Numbers and Operations between Target Schools A and B*

| | N | Mean | Standard Deviation | |
|---|---|---|---|---|
| Target School A | 94 | 5.1383 | 3.8482 | |
| Target School B | 94 | 4.3085 | 4.8968 | |
| *P* value | | | | 0.1981 |

Table 12 shows the independent *t* tests for the fourth grade numbers and operations test between Target Schools A and B. The results measuring Target School A against Target School B for Numbers and Operations in the fifth grade indicated no statistical difference between Target Schools A and B, with p=0.20, which is greater than the standard <0.05. Therefore, the null hypothesis cannot be rejected, and it was concluded both schools improved, but at the same rate. Target School A improved 5.14%, while Target School B improved at 4.31% in numbers and operations mean scores.

Table 13

*Independent t tests - 4th Grade Numbers and Operations between Target Schools A and B*

| | N | Mean | Standard Deviation | |
|---|---|---|---|---|
| Target School A | 113 | 6.7522 | 4.1963 | |
| Target School B | 98 | 4.8980 | 4.7483 | |
| *p* value | | | | 0.0060 |

Table 13 shows the results of the independent *t* test comparing the mean improvement score of the fourth grade math assessment between Target School A, with a mean score of 6.75, and Target School B, with a mean score of 4.90. These differences were statistically significant difference with $p$ =0.006, which is less than the standard $p < 0.05$. Therefore, the null hypothesis can be rejected, and the research hypothesis accepted because Target School A showed greater progress than Target School B.

Table 14

*Independent t tests - 3rd Grade Numbers and Operations between Target Schools A and B*

| | N | Mean | Standard Deviation | |
|---|---|---|---|---|
| Target School A | 116 | 4.9483 | 4.9675 | |
| Target School B | 101 | 3.6931 | 3.9868 | |
| *p* value | | | | 0.0403 |

Table 14 shows the results of the independent *t* test comparing the mean improvement score of the Third grade math assessment between Target School A, with a mean score of 4.95, and Target School B, with a mean score of 3.69. The results indicated the differences are statistically significant between Target Schools A and B, with $p$=0.04, which is less than the standard $p < 0.05$. Therefore, the null hypothesis can be rejected, and it was concluded Target School A showed greater progress than Target School B.

Based on the data analyses, both schools had a higher ending benchmark score than beginning benchmark score for each grade level and subject matter except Target

School A's fifth grade oral reading fluency tests. Furthermore, Target School A had a higher mean improvement score than Target School B in every case, except for fifth grade oral reading fluency and numbers and operations scores, however, were not a statistically significant amount.

## Summary of Results

This chapter provided results from this qualitative case study that examined the effects of teacher empowerment on the implementation of RtI in the public school setting. Two schools from a rural district in North Georgia provided the backdrop for the case studies. Both schools were having difficulties in implementing RtI to raise student achievement and decrease the number of students in the special education programs. Both schools had received the same professional development and resources provided by the district. The district RtI coordinator led the school district's implementation of RtI. A rich, thick description of the implementation of RtI was produced by employing various types of data collection through the words and actions of the participants. Excerpts from the data were also juxtaposed information from the literature to add to the thick description. Thick description is the most reliable way for potential readers to determine the comparability of the context of a study to other settings, and therefore to determine transferability (Gall et al., 2007). Multiple sources of data helped insure external validity.

Data were collected at both schools through different sources to afford structural corroboration. Both schools shared several demographics: (a) they were closest in size in the district, (c) they had similar subgroups measured on the state test, and (d) they did not make AYP based on the scores of the SWD subgroup on the state test. Target School A participants were part of the RtI decision making team which received them to be

empowerment in RtI decision-making. Target School B participants received RtI implemented in the traditional top-down method without teacher empowerment. The most telling data came from the participant interviews and classroom observations. Several interviews were carried out at the schools with the principals and teacher participants. The district RtI coordinator was also interviewed.

Non-participatory classroom observations were also done for the teacher participants who were being empowered in implementing RtI at Target School A. Second in importance to the interviews and observations were the instructional diagrams and statistical analysis. Each school created a diagram depicting the instructional flow for the RtI block. Additionally, data were transcribed by a research team within 48 hours and sent to the participant in order to create consensus about the validity of the transcription. To determine if empowering teachers helped to improve the RtI implementation or increased student achievement, statistical analysis was completed on the Georgia testable grades (three, four, and five) for benchmark assessments used in RtI progress monitoring.

The interviews and observations from the teacher participants in Target School A indicated an in-depth understanding of the RtI process, which is key to teacher empowerment. The exit focus interviews showed the teacher participants were not only empowered to implement RtI, but also empowered to use their talents to improve the process. The observations revealed a keen understanding of components of a successful implementation of RtI. The following components were evident in the observations: (a) placing students in small groups or pairs to work together; (b) preplanning effective research-based interventions for small group reviews and fluency building; and (c) scaffolding instruction with modeling, group work, and individual work. The

instructional diagram, even though it did not match what was seen in the classroom, indicated an understanding of flexible grouping and teachers as facilitators in Target School A, which experienced teacher empowerment. The statistical results were mixed. All identified significance was in the hypothesized direction. According to the data, at no time did Target School B outperform Target School A.

Much of the data supported the research hypothesis that teacher empowerment improves the implementation of RtI and student achievement. The empowered teachers at Target School A had a greater understanding of the RtI process, so much so they were planning to design their own professional development to help improve RtI. Each classroom observation indicated some form of RtI implemented effectively during instruction. Even Target School A's diagram gave proof the empowered teachers understood and implemented RtI correctly. The student data indicated that the students at Target School A made greater gains than the students at Target School B on benchmark data.

There were some mixed results seen in the data. Target School A fifth grade benchmark data did not show statistically significant improvements. The participant-teacher who implemented RtI in the classroom with flexible, small groups or stations with support from the special education teacher while she worked a group of at-risk students—had the only grade level that did not show statistically significant improvements even though the gains were higher in Target School A. There are explanations for the lack of student improvement. For example, the way the test was administered or the mindset of the students could have played a role in the results. Another factor is this was the first year she used the learning stations, and the dip in scores could be a result of first year implementation. Another reason for the statistically

significant improvements is because RtI did not begin at the school until four years ago, when the fifth grade students were in second grade. Therefore, these students missed the early intervention in kindergarten and first grade which is vital to the RtI process. During the interviews, School A participants stated that this 5th grade group was one of the lowest academically they had ever worked with at this school, but School B participants stated their students were an unusually hard working, bright group of 5th grade students and were expecting great things.

Future research needs to provide more exploration of the themes identified in this case study concerning teacher empowerment in the RtI process. Many issues affect the complex RtI process, including teacher experience and degree level, school culture, and other aspects of environment. Future studies should also investigate different ways to empower teachers, such as through specific professional development or teacher recognition among peers. Also, researchers could examine different student assessment data, such as the state-mandated, summative CRCT scores in Georgia

## CHAPTER FIVE: DISCUSSION

I embarked on this study to investigate the effects of teacher empowerment on the implementation of RtI in a public school setting by telling the story of six teachers in two elementary schools in North Georgia. Information from the principals of the two schools and the district RtI coordinator supplemented the experiences of the teachers. The teacher participants' stories from their own lived experiences in the classroom came together in a tapestry of information which helped guide the research. This study went a stitch further as the data from empowered teachers was compared to data from teachers who were not empowered in the implementation of RtI. Weaving in statistical data added another level of complexity to the image created by the study by comparing empowered teachers' grade level benchmark assessments to those of the unempowered teacher's in an attempt to determine if teacher empowerment can affect student achievement in an important process like RtI. This study strived to create a complete tapestry design to determine the value of the RtI educational process in closing the achievement gap for at-risk students. The style of research chosen to stitch this intricate picture was a multiple case study approach.

Case study research should take place in the natural setting of the phenomenon being studied. Honig (2006) stated, "Despite concentrated efforts to produce specific outcomes, policy makers frequently neglect to consider ways in which prior reform policies, school contexts, and individual teacher characteristics interact to produce both intended and unintended consequences" (p. 201). This sentiment was repeated through much of the literature as prior studies of RtI have been quantitative with little thought

regarding the experiences of teachers who actually carry out the implementation with students in their classrooms on a daily basis.

## Overview

The fundamental steps of RtI implementation were carried out by the participants in this study, and data were collected through interviews, observations, instructional diagrams, and statistical data analysis of benchmark assessments taken at the beginning and the end of the study. A plethora of information was gleaned through interviews with the participants concerning RtI, its implementation, and empowerment. The participants discussed many key experiences in the daily implementation of RtI—some positive and some negative. A review of the literature revealed a repeated concern the teacher was typically the last person asked for input on decision making in an educational setting (Goodson, 1991; Haller & Sharon, 1981; Pearson & Moomaw, 2005). This study showed much can be learned through the eyes and words of teachers about how to improve this process so our young people receive a sound education that closes gaps in learning.

Another key thread of important data in this study was classroom observations of the RtI process in action. The teachers welcomed the research assistants into their classrooms to see how they managed RtI with students on a daily basis. During the visit by the research assistants, the students did not alter their daily routine of learning in the classroom. Two other forms of data included instructional diagrams of RtI implementation and benchmark assessment data, both of which helped to complete the tapestry of RtI and empowerment.

By nature, qualitative research offers many discoveries during the twists and turns of the data collection from lived experiences in their natural context. Gall et al. (2007) stated that the case study is an involved study of an occurrence in its true to life context

which indicates the viewpoints of the participants working with the phenomenon and in the directions it may lead the research. The researcher took a leap of faith when beginning the study not knowing what direction the results would take to complete the investigation into the implementation of RtI and teacher empowerment. The literature review provided a solid foundation of the theories behind RtI including reading, mathematics, and empowerment. From this information, the research questions were developed. The findings were revealed in Chapter Four were from the data provided through the different instruments of research utilized in the study. Yin (2009) stated that a key objective of case study research is to see the information comes together during the study to answer the research questions. The purpose of this chapter is to offer a summary in the form of the answers to the research questions and recommendations based on these results.

**Research Questions**

**Research question 1.** *What are the teachers' experiences concerning Response to Intervention?* The participants many unique experiences regarding the implementation of RtI led to a conundrum for the research team in deciding what to report first. The teacher experiences in using the RtI process with their students ran the gamut from the very positive to the negative and from the successful to the not-too-successful. But underlying the fruitful and fruitless efforts was a sense of quiet determination to implement the complicated process with the goal to help all students succeed. This determination was born of the desire to help students, who had had relatively few successes in the past in their academic lives, which educators know will impact their fate. This research captures first-hand the experiences of success reflected in the light in the eyes of children with the dawning of understanding brought about by the fine-tuned craft

of teaching using interventions. Vast research concerning the process of RtI suggests the effective implementation of RtI, with its resulting positive effect on student achievement, is due to the use of prevention with interventions for struggling students (Mellard & Johnson, 2008; Nagle, Yunker, & Malmgren, 2006; Spillane, Reiser, & Reimer, 2002). The teachers shared times when students "got it" and made progress. They also revealed those moments when hard work does not pay off with the resounding message to never giving up. In a unified voice, all participants insisted on one thing regarding RtI implementation: "It must be done!"

The teacher participants shared both successful and unsuccessful experiences in helping students through the RtI process. One teacher shared a time when a student came to her classroom later in the year. The student had gone through the SST process, and there had been discussions with the parents about testing for special education. Since the student was new to Target School A, the teacher asked the parents for more time to get to know the student and try an intervention. The parents agreed, and a new intervention for math was administered so the student would receive two classes of math a day. The student began to make progress within a few weeks and eventually made great gains. This vignette brings Vygotsky's zone of proximal development (ZPD) theory to the modern school arena. Miller (2009) posited Vygotsky's key contribution to learning is the (ZPD) theory which recommends a more knowledgeable adult meet the student at the current level of achievement and, with the help of the expert, catch the student up to where he should be academically.

A teacher participant at Target School A worked with a student who had struggled the prior year in school due to behavioral issues. As she built a

relationship with the student, the teacher conferenced with the parents of the student who were eager for help for their child, and she designed positive behavior supports successful at school and home. Using a checklist for behavior, both the parents and teacher employed frequent rewards chosen by the student at school and at home. The student made progress and became motivated to do well in school. The teacher took great pride in the fact that after a couple of the months the student no longer needed the rewards. The teachers in the study all agreed success breeds success.

Another teacher participant, at Target School A, recounted an unsuccessful story of a student she began working with who she thinks may have been a slow learner. The data on the student did not reveal any strength in the content areas. The teacher went on to say this was one of the most frustrating cases. The teacher implemented an intervention designed to help with number sense. One day the student would comprehend the material and her confidence would grow, then the next day the information would be gone and so would her confidence. One time this student even made gains on the benchmark tests, but when it came to the cumulative test, the student did not pass. This teacher continues to collaborate with the school level RtI coordinator and plans to try a different intervention which she hopes will be successful. The student is now at the SST level in RtI.

The observations of the teachers at Target School A by the research assistants in their classroom visits exposed a straight connection of real lived experiences to the theories of Piaget, Vygotsky, and Feurestein, Piaget saw learning as a social interaction, Vygotsky recognized the importance of help from an expert along with scaffolded instruction, and Feurestein added the use of specific tools such as interventions (Shamir & Tzureil, 2004). One teacher participant scaffolded by first

conducting a whole group lesson about graphing by modeling a graphing activity as the class guided her actions, then having the students do an activity independently under her guidance. The next observed teacher began a lesson with an oral reading fluency intervention. She then moved to an activity similar to the first teacher's, in which she first modeled a lesson then worked with students to complete a similar activity with new information, and finally had students do a similar project independently. The third teacher had used small, flexible groups to customize instruction in her classroom. While other groups completed different review-type lessons in math and science, this teacher worked with one small group to help them understand the mathematical concepts causing them difficulty.

Comments from the teacher participants at both schools regarding the challenges to the process's execution often cited the same problems, such as class size, student management, and turmoil in the home lives of students. In using the RtI process, three teachers from both schools felt they had more success with the subgroup of Students with Disabilities (SWD) while two other teachers had more success with the subgroup of English Language Learners (ELL). All participants saw less success with slow learners and students with behavioral problems. One teacher remarked success depended upon the specific need of the student. Most participants agreed data collection, grouping, and commitment to their students were positive aspects of the implementation. All teachers' accounts of what they saw during RtI implementation showed confidence and self-esteem helped students achieve success rather than failure.

The teacher participants expressed more confidence concerning RtI implementation in their schools than did the administrators and district RtI

coordinator. The teacher participants rated themselves as a work-in-progress in using RtI in the classroom. Only one teacher at Target School B said she understood RtI and felt confident in what she was doing. Another teacher at School B surmised that most teachers at her school understood that RtI is not just to get students placed in special education. If that is the case, their understanding is in line with the literature. In response to the disproportionate number of students being identified as needing of special education services, RtI aims to reduce the special education population (Manset-Williamson Nelson, 2005). On the other hand, that teacher's principal, Principal B, believe many teachers think of RtI as just a series of hoops to jump through in order to get a student tested and eligible for special education. The district RtI coordinator went on to say only about 25% of the district staff understands RtI with 75% expressing unsure about the process.

The teachers at Target School A believed the majority of the teachers understand RtI and its importance, but there were still teachers who think it is the way to get to special education testing. Their administrator, Principal A, expressed concerned about a core group of teachers who see special education as the answer to helping students who are struggling. Principal A went on to say teachers see the RtI tiers as a path towards testing, and it does not go fast enough. Principal A and Principal B agreed the veteran teachers have the most trouble comprehending the benefits of RtI as something other than a gateway to special education. Even though the teachers had a more optimistic view of the numbers of teachers implementing RtI successfully, every participant realized some educators ineffectively implement RtI.

Overall, positive experiences implementing RtI far outnumber the negative ones. Teachers' positive experiences focused on their commitment to effective teaching; they

care deeply for their students, understand RtI is important for students to succeed, and are proud of their accomplishments in their careers. Any negative feedback regarding teacher experiences typically revealed teachers' desire to improve, such as by "getting better with the intervention selection" or "finding better ways to manage the students."

**Research question 2.** *What are the recurring themes seen in the experiences of the teachers in the implementation of Response to Intervention?* Data analysis produced five key themes exposed of the influence of teacher empowerment on the implementation of the RtI process. The themes that stood out as the commonalities between the participants are as follows: (a) teacher understanding of the RtI process, (b) team concept/collaboration, (c) time in relation to the implementation of RtI, (d) barriers to the implementation of RtI, and (e) empowerment. The themes were triangulated through the words, actions, and outcomes of each participant interview, observational data, statistical data, and instructional diagrams. As the two assistants and the researcher conducted the data analysis, they concurred on key themes of the topics.

***Teacher understanding of the RtI process.*** Teacher understanding of the process was obvious through incidents at both schools. The most clearly understood areas of RtI include data collection, identification of the needs of the student, and the meaning of RtI itself. The areas of RtI least understood were math interventions, the SST/RtI connection, and matching the correct intervention to the identified need of the student. Understanding of the RtI process can be seen throughout all facets of the data gathered from the participants' words in the interviews to the fact that every set of benchmark scores that were statistically analyzed showed positive growth.

The most authentic level of understanding shone through in the daily workings of the teacher participants' classrooms during the observations. Although some level of RtI

implementation was evident in each classroom, the approach to implementing RtI varied from teacher to teacher. Study results indicated one teacher made accommodations for implementing RtI by changing the whole group method to several small groups with her leading one of the groups of students. The next teacher made some modifications for RtI by having pairs of students carry out reading fluency checks and then moved to a more traditional way of teaching which assimilated RtI into regular classroom instruction. Another teacher showed no modifications to the traditional classroom grouping but did bring key aspects of RtI into typical curriculum and instruction. All three teachers drew from the theories of Piaget, Vygotsky, and Feurestein, which include the concept of the social learner, the need for help in the form of a learned adult, and specific interventions (Shamir & Tzureil, 2004). Each teacher went through teacher-led instruction to enable students to complete successful, independent work.

All participants not only showed understanding of RtI but applied this knowledge on a daily basis. The participants pointed out RtI helped them stay focused on the struggling students and their specific needs so they do not fall through the cracks. RtI is a comprehensive early-detection and prevention strategy to identify struggling students and assists them before they fall behind. Nagle, Yunker and Malmgren (2006) contended the RtI framework should begin early and be preventative in an effort to keep the child from failing instead of waiting until failures must be dealt with. The participants noted the process was fluid and diagnostic in nature what works for one child may not have work for another. Furthermore, success requires knowledge of more than just gaps in learning; it requires contextual information such as whether the child had breakfast that morning or how many different schools the child had. Two teachers pointed out what they saw as key ingredients to successful RtI execution many of which overlapped. Some of the RtI

pieces they mentioned include (a) differentiating instruction (b) flexible grouping, (c) scaffolding, (d) commitment, (e) caring for children, (f) adapting sound instruction, (g) providing evidence based interventions, (h) data collecting and analyzing, (i) administering universal screening, and (j) monitoring progress. All of the participants may not have been at the application level but they understood the importance of these elements for properly carrying out RtI.

***Team concept/collaboration.*** Teachers spoke strongly about collaboration and team work among the school staff participants in an effort to implement RtI and empowerment efficiently. Teacher collaboration in decision-making concerning teaching and learning has been recognized as vital to the success of any educational process (Overton, 2009; Rinehart & Short, 1993; Zembylas & Papanastasiou, 2005). Teachers collaborated horizontally in the grade level teams and vertically on different committees and grade levels. Teachers understood the importance of working as a team to unite and conquer the difficult RtI process in helping students thrive academically. The RtI implementation should flow collaboratively from the district level coordinator to a school level coordinator to the individual teachers.

Target School A added a step that helped to distribute the work and provided consistency. In addition to the school counselor as the school-level expert who met with the district-level person, School A trained a teacher at each grade level to act as liaison between the busy counselor and the equally busy teachers. This distribution of RtI knowledge allowed for horizontal and vertical diffusion of knowledge downward from the district RtI coordinator to the school coordinator to the grade level person, and horizontally from the grade-level liaisons to their peers in each grade-level team. Target School B divided the work load by having a school-level RtI coordinator, the assistant

principal, and an SST school-level coordinator, the Title I teacher. This followed the more traditional top-down model with two authority figures imparting information among the teachers in a downward flow.

As a school, Target School A with its RtI team seemed to promote a more collaborative school-wide environment. Karen illustrated this fact when she stated that if what she did failed to help students, she talked to other teachers to get ideas of what to do next. Both school administrations created venues for collaboration. All grade levels at both schools had common planning daily. At the suggestion of a teacher, Target School A had added a collaboration day every nine weeks for each grade level to plan together. This was accomplished by restructuring the school day; on a grade level's collaboration day, all other grades omitted special areas, and the students of each grade level spent the entire day studying mathematical concepts through art, music, technology, and physical education leaving their classroom teachers free to work together.

The Target School A participants noted the teachers collaborated at weekly grade-level meetings. They went on to say administration and special education helped with small groups in implementing interventions, creating additional collaboration. Not only do the teachers plan horizontally, but they share with students' previous teachers as they work to understand student needs. The Target School B teacher participants spoke about going to a student's teacher from the year before for advice. They even placed RtI and SST data in a specifically colored folder to represent the process being used for the student. The participants talked about vertical collaboration when meeting with middle school teachers about students in order to help the students make a smooth transition, especially the vulnerable students going through the RtI process. Principal A made sure special education teachers were invited to RtI and SST meetings, believing such

collaboration would be the best way to help students in need. Target School A teacher participants' success stories demonstrated positive collaboration with parents, and both sets of teachers met with parents in an effort to combine forces and help the students improve.

The value placed on collaboration and the support structures in place for it were more apparent in Target School A because of the vertical and horizontal collaboration as well as the teachers as the teachers' belief that the varied and complicated needs of their students today cannot be met by teachers working alone. They knew success would require support from other teachers, experts, and Internet sources. Empirical research on positive school climate, which is part of empowering teachers, stresses the need for social structures to create collaborative environments (Coburn & Stein, 2006; Ross & Gray (2006); Wahlstrom & Louis (2008). Collaboration occurred on two levels. One level is required mandates of SST and other school policies. The other level of collaboration occurred by choice as the teachers sought each other's help improve their implementation of the RtI process. The teacher participants felt more secure in the shared knowledge of their colleagues. Group sense-making provided comfort and security as coworkers strove to help students succeed and grow academically.

The teachers at the experimental school, Target School A, worked with special education and Title I staff to implement RtI at each grade level so the programs employed in the interventions is used as the program designers intended. Target School A teachers collaborate vertically and horizontally on a weekly basis, consistently from the school RtI person to the grade level person to the teachers. The control school, Target School B collaborates on an as-needed basis that appears to be primarily annual as students move from one grade level to the next.

***Time in relation to the implementation of RtI.*** With the exception of the district RtI coordinator, there was a unified voice from the other participants that stressed the effect of a time deficit in achieving all that is required for effective RtI implementation. The school level participants felt frustrated, and all holding the same opinion with the lack of time impeding their ability to help students. Principal B confided she hears repeatedly about insufficient time; no matter what, there is never enough time to give the students what they need in on order to improve their reading and math skills. A teacher at Target School A stated the lack of time prevented her from adequately understanding and implementing many of the interventions provided by the school.

Often, not only urgency, but panic crept into their voices when speaking of time. The participants revealed this pressure when they explained how often they stay late and take work home in order to get the job done. Teachers must keep up with the demands of RtI because they know that they cannot afford to get behind or it was almost impossible to catch up. Along with the conversation about time came the topic of the public's perception of educators as nonprofessionals. One teacher asserted the public has no idea what teachers do each day to help their students. She continued to say on weekdays she works from 7:30 until the custodian runs her out at 6:00, and also works on weekends, all in order to get the work done right. Another participant addressed the fact that completing the work competes with the attention she owes her family. She has two middle-school children who are involved in activities after school. So, she has to leave, but she feels so guilty that she just packs the work up and takes it home. A participant at School B added to the discussion of the time conflict by expounding on all she does at the school. At the time of this study, she served on the vertical math team and math workshop, which required her to have a model classroom for the school to view. She also

assisted with the yearbook, worked on power teacher implementation, and served on the science committee, safety committee, leadership academy, and parent involvement team—not to mention taking time to help in this research. The teacher participants agreed that teachers have trouble saying no. Both the words of the teachers and the literature demonstrate a need to remedy the issues that the lack of time creates for teachers. Literature argues there is no need to change the length of the school day or year but simply to require changes in instruction and the use of time within the school day (Doherty & Hilber, 2007; Kosenovich, Ladinsky, Nelson, & Torgesen, 2007; NCLT, 1994).

Some teachers spent most of each Friday on assessing students. At Target School A, the teachers began the RtI process with a universal screening then they begin the process for those who indicate a need or gap in learning. Once the need is identified, an intervention is administered, and progress is monitored to see if the student is responding. The research assistants learned that if a teacher gets behind in the assessment at this early stage in the process, he or she will fall behind and the process will become overwhelming. If the progress-monitoring data shows the student is not making progress, either another intervention will begin, or the student will move up in the tiers of the RtI Pyramid.

Target School A created a school-wide block during which interventions would take place, , but teachers did not feel they could adequately measure or control what other teachers, especially non-classroom teachers such as the physical education instructor, were doing during that time. So they suggested and moved to grade level blocks with special education and Title I help. Target School B continued to use the school-wide block during which all staff worked with students. A teacher admitted due to the fact he

working in a departmentalized grade level, finding time to meet with other staff members who worked with his students was not possible in the school-wide block system. Both methods had advantages and disadvantages in there structural application.

Unlike the teacher participants, the district RtI coordinator stated RtI is manageable for teachers within the hours available during the school day. She went on to say that teachers must make sure to devote an adequate amount of time each day to RtI and follow the intervention as was intended by the developer of the program.

***Barriers to the implementation of RtI.*** As the participants shared experiences, they recognized a few other important roadblocks to the successful implementation of RtI. The most common barriers were professional development, assessment, and problems with interventions. The first barrier addressed by the participants was the need for professional development in relation to RtI. Other duties were added to district RtI coordinator's demanding job overseeing the implementation of RtI, which limited her work with RtI in the county. In addition to coordinated efforts to implement the RtI process, she works with the CRCT administration in the county, and helps to identify students in need of special education.

Sencibaugh (2007) stated that teachers are in need of more professional development in the implementation of educational programs affecting reading and mathematical areas of intervention. Any process is only a good as the teachers who administer it. A review of the literature speaks to the importance of professional development and utilization of research-based interventions. Also cited was the noticeable lack of intervention training, which is due to disagreement among the experts as to what constitutes research based intervention (Kratochwill, Volpiansky, Clements, & Ball, 2007).

The district coordinator stated the primary training for RtI took place in 2007. Since then, school-level professional development in RtI has been given when the school administrators requested it. The district coordinator agreed there was a need for professional development for teachers and administrators, which this study also found to be a concern. Teachers and administrators need to be prepared and knowledgeable for the challenges they will encounter in implementing RtI. Their opinions and ideas can help direct professional development in order to provide new training and future implementations of RtI. At the same time, any process is only as good as the teachers who administer it. The review of the literature spoke to the importance of professional development and utilization of research-based interventions. The literature expressed a noticeable lack of intervention training is due to disagreement among the experts as to what constitutes research-based (Kratochwill, Volpiansky, Clements, & Ball, 2007).

Teacher participants tending to their many day-to-day teaching responsibilities have searched the Internet for ideas to help students. They also relied on the school-level RtI leaders and each other when a need arose that they could not handle alone. Some remembered the training from the district coordinator, but others did not. When asked about next steps in district RtI implementation, the teachers in the study discussed the need for professional learning in relation to scheduling, interventions, and managing small groups. Each participant did mention the help given to them by the district reading specialists, who provided common training for many of the reading interventions. There is no counterpart to this training in math interventions in the district.

Two teachers who moved from out of state to the Target School District reflected on training at previous teaching assignments in other states. One teacher participated in a year-long professional development program in co-teaching, which brought in RtI

elements such as differentiation, grouping, and collaboration. Similarly, another teacher had taught in a neighboring state and received training in co-teaching and classroom management. All participants agreed the counselor, the assistant principal, and the Title I teacher did an adequate job in contributing to the professional learning, but with the demands of their other duties, it was limited. Professional development was a definite deficiency in the process of RtI mentioned by each participant during the study. Several participants stated they received the most effective training in our state with a connection to special education professional development. To communicate instructions and guidance regarding RtI, both schools employ a redelivery model dependent upon competing duties, budgetary constraints and limited personnel. The redelivery system at Target School A with its more frequent meetings and horizontal communication seemed more deliberately designed.

Second, assessment acts as a barrier because of its connection to time and difficulty in knowing how to analyze the data it generates. Assessment is vital to the success of the RtI process because it identifies student needs and determines progress (Holifield, 2009). Assessment data comes in the explicit forms from universal screening and progress monitoring, numerous informal measures, and the all important annual state assessment (Bender & Shores, 2007). The last item has made accountability a dreaded idea. The participants mentioned assessment at many different levels. A teacher participant from School B pointed out a problem with progress monitoring because probes like Curriculum-based Measures (CBM) do not give a complete picture. She felt that one probe was never enough and there was inconsistency within progress monitoring. Different grade levels used different types of probes. Thus, one grade level may not understand what a previous grade level did in assessing the students.

One teacher at Target School A complained about the amount of time assessment took away from teaching. She spent most of each Friday screening and monitoring for progress for students, and time invested does not include the analysis. According to various sources, the data analysis is the most burdensome part of assessment (Bender & Shores, 2007; Holifield, 2009). Many sources also point out the need for a more effective universal screener for mathematics along with more consistent probes (Bender & Shores, 2007; Mellard & Johnson, 2008). A common assessment problem that another teacher acknowledged was the enormous amount of data to look at from progress monitoring such as DIBELS, DAZE, AIMSWEB, timed fact tests, unit pre- and post-tests, and benchmark tests. Sometimes teachers must calculate whole class averages to discover where a student is in relation to the class, requiring significant analysis. Educators also had to look at CRCT information as well as less formal classroom data and class work. As noted earlier, a teacher at Target School B mentioned that if a teacher gets behind, the other constant demands of teaching make catching up on RtI nearly impossible.

The third and last barrier to implementing RtI is the complex quality of the interventions. The problem comes in several forms: (a) determining which intervention to use for a specific need (b) understanding which intervention belongs in which tier, and (c) the paucity of math interventions compared to reading interventions (Wright, 2007). Principal A discussed a common request for RtI to be more streamlined with a flow chart showing educators what to do for each specific need and what to do when one intervention does not work. Each teacher at Target School A concurred that students may struggle through an entire year as a teacher tries intervention after intervention without noticeable results. Another problem which surfaced was that some teachers believed that certain interventions are

exclusively designed for a specific tier of instruction, when in fact the level of intensity or duration might make an intervention appropriate at several tiers. Many interventions do not recommend how long they will take to achieve results.

Reading interventions are prevalent in education today, and teachers have easier access to them and a better understanding of their use (Manset-Williams & Nelson, 2005). RtI has focused on reading for a much longer time, while math is relatively new on the scene. The two math teacher participants listed the specific skills in reading: phonemic awareness, decoding, fluency, vocabulary, and comprehension and noted there are no counterparts for math skills. According to Cole (2008), reading has many direct instruction programs that almost anyone can use, but math has no such products due to math instruction's movement from the concrete to the abstract. Interventions, though vital, causes countless problems in the RtI process (Wright, 2007).

Each barrier to the implementation of RtI complicates an already complex process. This research takes place in the everyday school context and sheds light on real lived experiences and perspectives, so it provides valuable insight to improve the RtI process. It showed the perceptions of upper management or the district coordinator did not match what was happening in the classroom, especially in relation to time constraints. The teachers' perspectives are essential to getting a realistic picture of the RtI process. The participants found professional development, assessment, and problems with interventions were all barriers acted as barriers to implementing RtI in our schools.

***Empowerment.*** The theme of empowerment was the most dominant theme that surfaced during the analysis of the data. Empowerment calls attention to the importance of teachers in decision making in an educational setting (Overton, 2009; Rinehart &

Short, 1993; Zembylas & Papanastasiou, 2005). Many researchers have argued teacher empowerment has a positive effect on commitment, proficiency, and student achievement (Marks & Louis, 1997; Pearson & Moomaw, 2005; Zembylas & Papanastasiou, 2005). As the teacher participants became deeply involved in this case study, the concept of empowerment seemed to underlie their experiences and come through in their comments. At Target School A, the school level coordinator formed an RtI team with the administration, a Title I teacher, the lead special education teacher, and a teacher from each grade level which included the teachers in this study. The case study data collection team and the RtI team which met three times during the duration of this study provided an outlet for the voice of the teachers to be heard but also to be part of RtI decision making at the school. The case study traces the teachers' experiences as they became empowered in the RtI decision-making process.

The participant teachers at Target School A spoke enthusiastically about being part of this study and being able to express their ideas about RtI. The empowered participants appreciated their opinions' being taken into consideration in decision-making concerning RtI. They even cited examples of their suggestions' use in the school, ranging from new resources to the move from a school-wide RtI block to grade-level blocks.

Researchers, educators, and politicians have endorsed the involvement of teachers in school decision-making due to the fact teachers who engage with the issues in education have the ability and understanding to resolve them (Cuban, 1990; Rinehart & Smith, 1993). The teachers came to the same conclusion, and pointed out the importance of the classroom teacher in daily implementation of RtI with elementary students. They believed the teacher "got it!" The teacher participants went on to say the classroom

teacher is the one who makes the classroom the many activities and goals of the classroom fit together with boys and girls thriving and improving academically. Teachers at Target School B did occasionally have a voice in the school decision-making, but it was not in the area of RtI. Also, the teachers from School B very rarely had a chance to have a say in any decisions at the school; they mentioned one occasion when they were allowed to determine the makeup of grade-level teams. Between the two schools, the starkest differences related to empowerment were in the level of collaboration and in the level of negativity regarding RtI implementation, which appeared more often in the comments of Target School B participants.

The teachers from School A stated empowerment changed their roles in the RtI implementation. They transformed from teachers who did as they were told to leaders among their peers. They not only had ideas but shared and acted upon them, which helped make RtI implementation more effective and efficient. Despite the time constraints and other barriers to execution of RtI in the classroom, these teachers succeeded and improved in the implementation based on their firsthand knowledge of all that affects the classroom and students.

**Research question 3.** *What does RtI mean to teacher?* Mellard and Johnson (2008) define RtI as "a process of instruction, assessment, and intervention allows schools to identify struggling students early, provide appropriate instructional interventions, and increase the likelihood the students can be successful and maintain their class placement" (p. 1). Teachers and administrators need to be prepared and knowledgeable in order to address the challenges they will encounter in implementing RtI, and parts of the above definition of RtI appeared throughout conversations with the participants. Some type of training for RtI is evident in the data collected, since each

teacher exhibits some grasp of its meaning. Often, however, RtI means different things to different teachers based on their level of prior knowledge. Despite this, each participant conveyed a similar belief that based on what they knew, RtI was worth the effort it takes to implement as part of daily classroom routines. Each participant saw RtI was a way to help all students succeed academically.

Both principal participants acknowledged that most teachers definitely see the need for RtI and do not think it is a wasted effort. A teacher participant from Target School A confirmed that in the school district, the SST process was utilized in the district prior to the tiers of RtI, which explains why the teachers at Target School B said the lines between SST and RtI were blurred. Nevertheless, they concluded that SST entails the use of evidence-based interventions to help struggling students succeed. The teachers at School B understood RtI was a sort of clearinghouse to provide interventions to keep students from entering the specialized services of special education. They elaborated that RtI is designed to remedy any skills deficit a student may have.

A participant from Target School B recognized RtI involves continuous improvement in either an intervention showing progress or another intervention being employed to help the student. On a related note, the teachers at Target School B described a negative relationship with RtI and the meetings and paperwork it requires. On the other hand, a teacher participant from Target School A explained RtI, with its use of data, takes guesses and hunches out of the equation when working to help students who are not academically successful.

**Research question 4.** *How does empowering teachers affect RtI implementation?* It is important to understand empowerment as it relates to this study. Empowerment is multifaceted with many levels of application. The literature explained

empowerment in the following ways: (a) providing teachers with opportunities to be a part of deciding school procedures, (b) arming them with the training necessary to improve their craft, (c) viewing them as professionals, and (d) recognizing the resulting perceptions of responsibility and autonomy (Lee, 1995; Lightfoot, 1997; Zembylas & Papanastasiiou, 2005). Also, in a review of the literature, described six levels of empowerment: (a) teachers were actively involved in the decision making which influences their job, (b) teachers begin to impact the functions of the school, (c) teachers were recognized as professionals, (d) teachers took control of their own careers, (e) training was provided to improve their skills as teachers, and (f) teachers strived to do their best to help students improve (Rinehart & Short, 1993).

On the surface, all aspects of the data indicated teacher empowerment did affect the implementation of RtI. The teacher participants at Target School A, where empowerment became a part of their professional lives through the school RtI Team and participation in this case study, responded very positively to being a part of the RtI decision-making team at the school. The teachers even became leaders in the school's RtI implementation. As noticeable as the empowerment was in the experimental school, it was absent in the control school, Target School B. There was not only a breakdown in empowerment but a lower degree of understanding of RtI and of collaboration, both of which are vital to the RtI process.

The participants from the experimental school recognized teachers have insight into implementing the process in their own classrooms, and empowerment helped them further understand how RtI fits together with other curriculum demands, the students, and instruction. For instance, the instructional diagrams showed teachers from Target School A understood RtI's use of the teacher as a facilitator, while teachers from Target School

B showed the teacher leading the instruction. As a result of their experiences both within and outside the study, School A participants asserted that teachers are professionals and should have a say in RtI decision-making for the school.

A teacher participant at Target School A said she felt a part of the RtI team at her school, and the RtI school coordinator was always open and appreciative of her ideas and suggestions. Even with this encouragement, she confided that it took her a while to speak up due to confusion about the tiers of RtI and interventions. She concluded with a sense of shared responsibility which helped increase her understanding of the RtI process. Her positive response is typical of the experiences revealed through the case study, which offers significant evidence of the positive effect of empowerment. Teachers said they liked knowing they had helped guide implementation in their school by suggesting the grade-level blocks in place of all-school blocks. The teacher participants also noted that if they found an evidence-based intervention that worked, the administration trusted their judgment and would purchase it for them to use in the school. One teacher participant's actions acted as the most telling evidence of the positive effect of empowerment. Having successfully implemented learning stations in her classroom, this teacher is working with a colleague to offer training on how to use learning stations in the RtI process to differentiate instruction and work with small groups.

The classroom observations confirm what the teachers report that the teachers at Target School A had embraced RtI implementation in their classrooms. The research assistants saw the teachers felt confident with the execution of some form of RtI. In each classroom the students were making gains as a result of artful teaching with RtI to help close gaps.

The teachers at Target School B also implement RtI. The participants explained the team at their school consisted of the assistant principal and Title I teacher working with the school, which created a top-down delivery style. The school had a daily, the intervention block. The administration scheduled this time for the intervention block, but it was rarely mentioned in the interviews about RtI. Part of the interview questions asked about SST. The literature suggested SST is a collaborative approach in which the teacher(s), parents, and educational specialists working together to create a plan to enable the child to make progress (Bailey, 2010). The SST recommends specific research-based interventions to help at-risk students catch up academically (Burns, Vanderwood, & Ruby, 2005). The School B teacher participants' remarks revealed several misconceptions regarding SST which is part of the RtI process. They believed SST was less formal and did not require evidence-based interventions. A teacher also stated RtI was a collaborative process, while SST required less collaboration, which is actually the opposite of accurate portrayal of SST is in the implementation of RtI.

The teacher interviews indicated several weaknesses in RtI Implementation at Target School B. When asked who was responsible for RtI in the school, one teacher stated the assistant principal and Title I teacher were but that the classroom teachers were responsible until the end of the year. This and other comments from the participants showed that at Target School B, RtI is a less dynamic process intended to be following a year-to-year cycle. RtI should be temporary: identifying a gap, helping the student catch up, and putting him or her back in the regular curriculum at their level. Another teacher explained that he was departmentalized and really had no one to talk to about student needs, so he often searched the Internet for intervention ideas. The teacher participants did note they were able to decide the size of their team – whether two or three people, but

this was a scheduling issue and had nothing to do with RtI. The fact the teacher participants felt isolated and did not fully engage in collaboration in implementing RtI led to many areas of confusion and misconceptions concerning RtI.

Even though the statistical analysis did not show a statistically significant improvements in each content area and grade level, Overall, Target School A showed more growth in scores on the DIBELS assessment than Target School B which lends support to the effect of empowerment in implementing RtI

**Research question 5.** *How do teachers perceive the traditional implementation of RtI?* In the past, educational leaders who were far removed from the day-to-day school functions have put forth policies and requirements for teachers to carry out without any regard for teacher input (Pearson & Moomaw, 2005). In this study, teacher participants at Target School B were not intentionally empowered in any way. Instead, they continued to implement RtI according to the traditional top-down approach. The assistant principal and Title I teacher received information from the district office which they then shared with the school. The teachers were told what to do in implementing RtI. It appeared to be a year-long, one-size-fits-all implementation process with little understanding of and distinction between SST and RtI. Information was transferred inconsistently and both the school-level RtI people and the classroom teachers felt a greater workload.

According to the, empowerment creates a sense of ownership regarding a phenomenon so teachers have both greater understanding and a positive environment, which may lead to increased success in implementation and ultimately improved student achievement (Gredler, 2009). Whereas participants at Target School A indicated a sense of pride when they kept a student from needing special education services, several participants from Target School B hinted at frustration

when a student in the process was not found eligible for special education. For instance, some teachers said they spend the entire year taking a student through the RtI process but do not get to attend the placement meeting for special education, instead having to investigate the next year to find out if the student was eligible. One teacher recounted his team's preparation of the paperwork for a student's special education testing but the student did not place into special education services. The interviews showed teachers at Target School B misunderstood the purpose of RtI, attributing too much significance to its role as an eventual feeder to special education.

Collaboration was less structured at Target School B. One participant said the amount of collaboration depended on the grade level and also noted that other committees she was on also helped implementing RtI, showing some fragmentation. Teachers noticed they do not have a set day to collaborate, instead meeting on an as-needed basis with their grade-level teams. They felt that meeting with the school level people was a hit-or-miss effort limited by available time.

As was evident in the information provided by the teacher participants from Target School B, what they understand about RtI and is not consistent with what is actually the case. The RtI process is intended to be fluid, and with no yearly timeline for its implementation; instead, the timeline should be determined by the student's level of needs and their response to the intervention. Any grade- level teacher may be a part of the placement meeting, having participated in the education of the student. Collaboration should be a school-wide effort in which every teacher participates. If a team is departmentalized, then there should be vertical collaboration; alternatively, the departmentalized grade-level teachers can collaborate regarding the needs of the student

since all content areas overlap. There should be regularly-scheduled meetings concerning RtI to be sure everyone is implementing it consistently and correctly and to discuss the progress of the students. Also, decisions concerning student interventions and tier placement must be made as a group, and all interventions in both the SST tier and RtI process as a whole must evidence-based.

At Target School A, each observed classroom had implemented some form of RtI in an effort to help all students. The instructional diagrams at Target School A showed groupings with the teacher moving about as a facilitator. The diagram from Target School B indicated groupings, but the teacher was still the center of instruction as in traditional teaching. The student data also indicated greater gains at Target School A than at Target School B. Clearly, there was support that the empowered school showed more success in the RtI implementation than the traditional school in many different areas related to student success and effective implementation.

## Recommendations

The research supports several recommendations for aiding RtI implementation adding empowerment. First, for the purposes of this case study, three teachers at one school were empowered in the implementation of RtI, which produced a measurable favorable effect. One recommendation is for district and school administrators to work to empower all teachers through a school environment that provides a forum for teachers to be heard in the implementation of RtI and all it entails. Such a forum would allow any teacher to share ideas that might improve RtI execution. This case study demonstrates the way teachers may be transformed by empowerment no longer going through the motions and doing what is required, but instead becoming leaders in improving education.

The second recommendation is for school districts to organize and deliver more professional development for the understanding and implementation of RtI. Teachers voiced a need for training in evidence-based interventions so they can be carried out in the intended manner. Such training would help teachers know what intervention to employ for common student needs. Additional training about the relationship between SST and RtI would help clear up confusion about the difference between the two, as well as about the tiers of RtI. Most teachers in this study were given autonomy in scheduling; if that model is used, teachers need scheduling training so that time can be used efficiently. Perhaps a needs assessment survey could be administered to teachers, and professional development could be based on the resulting data.

Third, the use of time during the school day must be examined in depth and the school day restructured (but not lengthened) if needed. Teachers' ideas in relation to time management must be sought, and administration must work with the teachers to maximize time to its fullest. Some already existing, outdated strategies must be replaced with more current, effective strategies in the classroom. Educators must think outside-the- box about the use of time during the school day.

The fourth and last recommendation relates to data, which is a driving force in RtI implementation. Educators collect both summative and formative assessment data, which bolsters accountability in education today. However, many educators find data analysis challenging. Training should be provided in the analysis and use of data procured from the type of assessment a particular district uses. Also, common data types used throughout the school or district so each teacher understands the nature and purpose of the data collected. Such a policy would give consistency to the data analysis so data is collected not to appease administration but to help students and teachers improve.

## Limitations

As with any study, there are limitations in the findings of this study. Two limitations exist regarding the participants in the study; their small number and lack of diversity. Gall et al. (2007) suggested that to allow for replication, a researcher should select a large sample in order to provide a representation of the population. On the other hand, Yin (2009) stated the sample size does not matter, but what is important is to be able to test a theory. A total of nine participants were used in this case study. While this is a small number compare to all research, it is a large number considering the nature of qualitative case studies. Creswell (2007) asserts the participants should reflect the demographics of the context in which the study takes place. This study's participants did cross different career levels from the district administration to school administration to teachers. Gender, too, was addressed as much as possible for this study. There were five female teachers and one male teacher from grades three, four, and five as well as two female principals from two different schools and one female district RtI coordinator.

The fact all the teachers were Caucasian acts as a limitation, but the female, Caucasian female subgroup is the largest demographic in the school district so it does reflect reality. Future studies could select subgroups which reflect their demographics, including more participants and a greater focus on diversity.

Another limitation to this study was in the participant selection process, which was not truly random. The two schools used in the study were chosen based on convenience of their location for the research assistants and the administrators' willingness to participate in the study. In an effort not to force compliance by teachers in the study, volunteers were sought from teachers in the third, fourth, and fifth grades. The volunteers were assigned numbers and randomly selected to participate, and each teacher

signed an informed consent form. The Liberty University Institutional Review Board approved this process.

The most obvious limitation was in the study's setting in one district in the southern region of the United States. Would results be generalizable to schools in other areas of the country? Gall et al. (2007) suggested complete details from thick description in case studies and other qualitative research improve generalizability to different situations, contexts, and people. This case study was filled with thick description, from the words of the teachers, to a look at the RtI process in action, to teacher-created diagrams of RtI to statistical benchmark data. Countless details were provided straight from the experiences of the teachers so thick description can allow for the transfer of this research to other schools all over the country.

## Future Research

Further research is recommended into the complex concepts of RtI and teacher empowerment especially since RtI constantly changes as science makes known more about the brain and learning processes. In relation to RtI, specific investigations of the most current interventions would be enlightening. Likewise, teachers' needs as they work to implement the process in school settings could be explored. The effects of RtI and teacher empowerment on student achievement require further investigation. Also, feelings that teachers have towards empowerment should be studied. Especially because there is a branch of research that suggests some teachers do not welcome empowerment. Each of these issues related to RtI warrant further review.

## Conclusion

This case study looked at the effect of teacher empowerment on the implementation of RtI, a process required in schools across the nation. It compared a

school where the participants were empowered to a school with participants who were not empowered. Through the triangulation of several sources of data and theories, it can be inferred there is a relationship between teacher empowerment in RtI implementation and student achievement. The research did show the empowered teachers in the study embraced RtI as a way to help children find success in school and thrive. They saw RtI as an attempt to catch students up early in their educational lives before they had a chance to fail, which can start a domino effect in which students develop feelings of hopelessness and ultimately drop out of school. The empowered teachers seemed to experience more success and confidence in the process, which made the teaching and learning flow more smoothly.

The most powerful result was the actions of the teacher participants at the experimental school saw a need for teachers to be trained in the use of learning stations, which are helpful in implementing RtI. One of the teachers in the study who was accomplished in using these stations, collaborated with another teacher to design a professional development course for the other teachers in the school. The administration embraced the idea and urged them on. When the study concluded, the planning was in the beginning stages, but the training had been scheduled on the school-wide calendar. The training would begin with an overview of RtI before addressing specific learning stations. Each teacher participant was very excited about the event; the teacher providing the training was excited to share her expertise with others, and the other teachers were eager to improve their craft and help students in the process.

Walk into any school across American and ask the first teacher you meet, "What is the best part of teaching?" Chances are you will get a passionate answer along the lines of, "When they get *it*, and you see that light in their eyes!" or "When they are

excited about learning!" Vygotsky (1978) would be proud to know his theory is still thriving in schools today under the guise of RtI, and it is helping students not only improve but be excited about learning. A sampling of the anecdotes occurred during the case study demonstrates excitement:

- The lesson progressed from the teacher modeling graphing and the students discussing it to a performance-based assignment in which the students created pictographs similar to the model using colored cereal rings. The students chose different ways to organize the cereal graphs. As the students worked, the teacher walked around the room watching students but not saying a word. After ten minutes, the teacher began asking how many cereal pieces of each color each student had on the graph. The same students fired off correct answers to the questions while other students had to sort through their piles of cereal. The teacher then asked the class, "Why do you think some could answer much more quickly than others?" The students looked around and realized the ones who lined the cereal up by color could answer quicker than those who just had piles or had organized the cereal pieces by size. She reminded the students of the earlier lesson and of the fact they were making projects called pictographs. *The research assistant could see the dawn of understanding in the eyes of all the students*—especially those that did not line of the different colors of cereal and were still counting. The class then had a robust discussion about the advantages of organizing data into a graph [Sara (O) A].
- The classroom teacher began by telling the class it was time to check their reading fluency. *A cry of "Yeah!" went up from the students.* Then in one

> fluid motion pairs of students moved to their respective special reading spaces in the room (the floor, the corner, on the rug, or under tables). The teacher then gave out organized reading passages divided by reading levels to match the students' independent reading levels. While one student read, the partner, using a silent timer, monitored and marked progress on the reading passage. It was evident to the research assistants that the students knew how to code the reading passage for missed or omitted words. After both partners read, the students discussed their reading progress and graphed it on a bar chart. The students performed like a well rehearsed choir whose conductor, the teacher needed to give very few instructions. Rituals and routines were apparent. The students were excited and took ownership in the learning [Karen (O) A].

During the exit interview, at the end of the study, Samantha announced her plan to design a professional development course at her school. During the observation stage of the study, the research assistants had seen the learning stations she had developed for her students to practice math and science. The students had been engaged, and learning was taking place in a student-controlled atmosphere under the careful eye of the teacher- facilitator. The learning stations provided a time for the teacher to work with a small group of at-risk students while the rest of the class worked in small groups to do math and science review. Samantha, one of the participants from Target School A offered compelling evidence for what teacher empowerment promises:

"Since we have been working with this project (the case study), I have talked to other teachers, and many have shared the same need – the need for training about

work stations or centers in math with the integration of science and social studies working effectively in the classroom. I have been successful with math stations, and so has another teacher friend of mine who teaches in the first grade. We met with our principal, and will be collaborating to develop training for the whole school. It will begin the first of the year during grade levels. We will begin with an overview of RtI, and the use of math stations then go on to present specific math stations which have been successful. It maybe a make and take type of professional learning." [Samantha (I) A].

Empowerment provided to Samantha and the other Target School A participants in the implementation of RtI created a school culture where teachers could develop into leaders. The encouragement they received set the stage for continuing improvement in the RtI process. So, who has benefitted? Of course, the teachers have. Ultimately, though, their students will receive the greatest benefits from ongoing attention to interventions that can improve their learning.

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## APPENDIX A

## LIBERTY UNIVERSITY IRB APPROVAL LETTER

## APPENDIX A: LIBERTY UNIVERSITY IRB APPROVAL LETTER

Good Afternoon Evie,

We are pleased to inform you that your above study has been approved by the Liberty IRB. This approval is extended to you for one year. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. Attached you'll find the forms for those cases.

Thank you for your cooperation with the IRB and we wish you well with your research project. We will be glad to send you a written memo from the Liberty IRB, as needed, upon request.

Sincerely,

**Fernando Garzon, Psy.D.**
*IRB Chair, Associate Professor*
**Center for Counseling & Family Studies**

**(434) 592-5054**

*40 Years of Training Champions for Christ: 1971-2011*

## APPENDIX B

## TEACHER CONSENT FORM

## APPENDIX B: TEACHER CONSENT FORM

Teacher Empowerment in the Implementation of Response to Intervention: Case Study

Evie Barge
Liberty University
Department of Education

You are invited to participate in a research study examining teacher empowerment and response to intervention. You were selected as a possible participant because of your willingness to discuss response to intervention in your school. In order to provide informed consent, please read this form and ask any questions you may have before agreeing to be in the study. Also please read the copy of all interview questions that are attached to this form.

This study is being conducted by Evie Barge and research assistants: Jennifer Appling and Sybil Payne.

### Background Information

The purpose of this study is to examine the impact of teacher empowerment on the implementation of RtI by measuring the students' progress on benchmark tests. The classroom teacher holds the key to success in student learning. If RtI is to be implemented effectively, understanding the thoughts and professional needs of the teachers responsible for performing the process is vital. The voices of the teachers need to be heard as they experience the implementation of this process, and aspects associated with the implementation of RtI such as teacher beliefs and experiences must be studied. This data will be used as part of the case study at Liberty University allowing the voice and experiences of the teacher in the RtI process to be shared in the implementation of RtI in an elementary school setting. Once complete, the research paper will be part of an online dissertation data base through the school library services.

### Procedures

If you agree to be in this study, you will be asked to do the following things:

- Participate in two group interviews and a solo interview that will take from 45 to 60 minutes each during the fall grading period. A research assistant will conduct the interviews with another assistant will be taking notes during the interview. Please read the attached list of interview questions that will be used during the interviews.
- Be observed during the intervention segment of your class time during the fall grading period by the two research assistants.
- Asked to diagram the flow of instruction in your classroom during intervention time.

- The reading benchmark data from your school that has been deidentified by the district test coordinator from the beginning of the grading period to the end of the grading period will be analyzed.

**Risks and Benefits of Being in the Study**

There are always risks associated with research, however, they should be no more than the participant would encounter in everyday life. During the course of the study, If any child abuse is witnessed, it would be reported. For example, while the research assistants are in the school, any issues that might be witnessed that could harm or threaten a child such as an adult placing hands in anger on a child's body or if a child reported to the research assistant that they were being abused, would be information that would be reported to school officials. All participants will be protected by anonymity throughout the study report. The study may involve additional risks to the participant, which are currently unforeseeable. Any participant may leave the study at any time.

There are many benefits to the participants in the study. Any input provided by the participants may aid in the implementation of response to intervention which is mandated by the school district. Information gained from the study could make the process more effective and efficient to teachers and as a result help teachers and students.

**Confidentiality:**

The records of this study will be kept private. Any sort of report that might be published through the Liberty data base will not include any information that will make it possible to identify a subject. Even your school principal will not be privy to your participation in this study. Research records will be stored securely under lock and key with only the researcher having access to the records. All reports, notes, and transcriptions will be stored in a locked file cabinet in a locked office. Any material entered into the computer will be saved on a password-protected flash drive and kept locked in another location. Since focus groups are used, there is no guaranteed assurance that other participants will maintain the subject's confidentiality and privacy, but data that will be gathered will not be of a sensitive nature.

**Voluntary Nature of the Study:**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the Liberty University or the Bartow County School District. If you decide to participate, you are free to not answer any question or to withdraw at any time with our affecting those relationships.

**Contact and Questions:**

The researcher conducting the study is Evie Barge. The main research assistant helping with the study is Jennifer Appling. You may ask any questions you have now. If you

have questions later, **you are encouraged** to direct them to the research assistant at 770-606-5847 or to jennifer.appling@bartow.k12.ga.us.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the Institutional Review Board, Dr. Fernando Garzon, Chair, 1971 University Blvd.., Suite 1582, Lynchburg, VA 24502 or email at fgarzon@liberty.edu.
**You will be given a copy of this information to keep for your records.**

**Statement of Consent:**
I have read and understood the above information. I have asked questions and have received answers; I consent to participate in the study. Once you completely understand the information above, please sign and send via the school district courier to Jennifer Appling at Elm Elementary School.

Signature: _____ Date: _____

Signature of Investigator: _____ Date _____

## APPENDIX C

## PERMISSION TO USE DR. LYNN R. BAILEY'S SURVEY

## APPENDIX C: PERMISSION TO USE DR. LYNN R. BAILEY'S SURVEY

From: Bailey, Lynn Russell
Sent: Tuesday, April 19, 2011 9:09 PM
To: Barge, Evie
Subject: RE: Survey

I would be most honored for you to use my work. :) Please feel free to correspond with me via email or you can call me on my cell. 678-234-9011. I teach school so I can't pick up during the day. However, I could speak most afternoons. :) I look forward to hearing from you soon. lb

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Dr. Lynn Bailey
mikelynn91@comcast.net (home)
lbailey@henry.k12.ga.us (work)
lrbailey@liberty.edu (school)

"Fear less, hope more, eat less, chew more, whine less, breathe more, talk less, say more, hate less, love more, and good things will be yours" (Swedish Proverb)

_____

From: Barge, Evie
Sent: Tuesday, April 19, 2011 3:14 PM
To: Bailey, Lynn Russell
Subject: Survey

Ms. Bailey,

Hello,

My name is Evie Barge and I am currently enrolled at Liberty in EDUC989. I am a principal at an elementary school in Northwest Georgia.

I am doing my prospectus using the case study design about Teacher experiences in implementing RTI.

I would like to talk to you about the survey that you used. I would like to adapt your survey questions and use them to generate my interview questions for the teachers that I am working with in order to provide reliability and validity. I would like to gain your permission to use your survey.
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Please contact me at your earliest convenience to discuss your survey.  I enjoyed reading your dissertation, and it has been very helpful in developing my prospectus.

I look forward to hearing from you.

Sincerely,
Evie Barge

# APPENDIX D

# TEACHER PARTICIPANT SURVEY

## APPENDIX D: TEACHER PARTICIPANT SURVEY

Dear Educator:

Thank you for agreeing to participate in this study of "Teacher Perceptions of SST and RTI Effectiveness". The purpose of this study is to investigate general education teacher perceptions of Student Support Team (SST) and Response to Intervention (RTI). It is vital that the teachers and specialists who compose the SST and conduct RTI be knowledgeable and prepared for the challenges they face. Their perceptions and opinions can help guide administrators and professional development personnel as they plan for future training and implementation of new procedures.

Because school districts and counties in Georgia have been given great latitude in what they label their tiers of intervention, this survey will use the following terms for consistency across the state:

- ✓ **General education**: Students are afforded an education based on the Georgia Performance Standards without an Individualized Education Plan (IEP) for accommodations.
- ✓ **Special education**: Students are afforded an Individualized Education Plan (IEP) for academic or behavioral modifications due to the presence of a diagnosed disability that negatively impacts his/her education.
- ✓ **Tiered intervention**: Struggling students are provided research-based interventions with graduating levels of intensity based on data collected over time. A student's failure to respond appropriately to academic and/or behavioral interventions would call for changing or increasing the intensity of research-based interventions on his/her behalf.
- ✓ **Student Support Team (SST)** is a collaboration of experts and interventionists to systematically problem solve and provide research-based interventions on behalf of struggling learners. The team may be known by a variety of names or acronyms, but their common function is to document interventions and the data collected for the purpose of monitoring a student's achievement or lack thereof.
- ✓ **Response to Intervention (RTI)** is defined by providing for research-based interventions over time while progress monitoring the students response to those interventions. The state of Georgia recommends both duration and increased intensity of interventions to help ascertain whether a student needs further evaluation by a psychologist and/or an individualized education plan.

***Thank you for taking the time to respond to these statements.***

Please return your consent and survey to the building level designee:

Survey deadline:

| |
|---|
| |

*Directions: Please consider carefully and circle ONE response to each of the following statements.*

| Demographics | | | | |
|---|---|---|---|---|
| Respondent's Completed Years of Classroom Experience | 0-5 years | 6-12 years | 13-19 years | 20 + years |
| Respondent's Highest Level of Academic Training | Bachelor of Science (B.S.) | Master of Education (M.Ed.) | Education Specialist (Ed.S.) | Doctor of Education (Ed.D. or Ph.D.) |
| Respondent's Certification | General Education | | Special Education | |
| Respondent's school has: | A designated person whose sole responsibility is to carry out or facilitate SST and/or RTI frameworks (i.e. Student Support Specialists or RTI coach or leader) for the school. | | A contact person for SST and/or RTI who has numerous other duties assigned (i.e. Assistant Principal, ILT, counselor, and/or grade level lead teacher) within the school. | |

| Perception Survey | | | | | |
|---|---|---|---|---|---|
| 1. I am familiar with the tiered intervention model which provides more intensive interventions for students based on responses to previous interventions (RTI). | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 2. I received adequate training prior to serving on the Student Support Team (SST). | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 3. I received adequate training prior to the implementation of Response to Intervention (RTI) | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 4. I understand the basic eligibility criteria for special education. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 5. I understand the purpose and operation of Student Support Team (SST). | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 6. I consider the paperwork and documentation | Strongly | Agree | No | Disagree | Strongly |

| | | | | | |
|---|---|---|---|---|---|
| required for the Student Support Team (SST) as part of my intervention on behalf of the student. | Agree | | Opinion | | Disagree |
| 7. I remain actively involved in the SST process when I refer a struggling student. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 8. Research-based interventions and progress monitoring are common classroom practices for struggling learners in the general education setting. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 9. Careful attention to paperwork and documentation are critical parts of the intervention process. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 10. The Student Support Team (SST) meetings are useful to me as I seek to help the student. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 11. It is my responsibility to provide the interventions for students in Student Support Team (SST). | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 12. It should be the responsibility of others to provide the interventions and document the Response to Interventions (RTI). | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 13. The Student Support Team (SST) meeting is vital for bringing parental input into the intervention plan. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 14. The Student Support Team (SST) meeting should produce ideas for research-based interventions for struggling learners. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 15. My input at Student Support Team (SST) meetings is both valued and desired. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 16. Most general education teachers are supportive of the SST process and the RTI framework. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 17. The Student Support Team's (SST) primary purpose is to move students toward special education. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 18. When I refer a student to Student Support Team (SST), I expect that he/she will be evaluated for special education. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 19. The Student Support Team (SST) is valuable for monitoring the transition from Special Education back to the general education classroom. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |

| | | | | | |
|---|---|---|---|---|---|
| 20. The Response to Intervention (RTI) framework prolongs the Student Support Team (SST) process unnecessarily. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |
| 21. I am supportive of the SST process and the RTI framework and believe it to be effective for helping struggling students. | Strongly Agree | Agree | No Opinion | Disagree | Strongly Disagree |

| Short Answer Response | | | | |
|---|---|---|---|---|
| In your opinion, what modifications, if any, could be made to increase the effectiveness of the Student Support Team (SST) and/or Response to Intervention (RTI) framework? (Select up to THREE (3) responses) | ◊ More time to meet<br>◊ Less paperwork<br>◊ Accelerated process | ◊ SST/RTI Staff in-service<br>◊ In-service for intervention strategies | ◊ More input from specialists<br>◊ Specially trained facilitators of the process | ◊ Better team communication<br>◊ Observations of the learner by others |
| If you have recently chosen not to refer a student for SST/RTI, please explain your reasons and/or concerns. (Select up to THREE (3) responses) | ◊ No students experiencing problems<br>◊ Have been able to deal with concerns on my own | ◊ Do not know enough about SST/RTI<br>◊ Not aware of how/when to facilitate SST/RTI | ◊ Process is too time consuming<br>◊ Results may negatively affect expectations for student | ◊ Problem is not serious enough to document RTI and meet with SST<br>◊ SST/RTI often produces little improvement |

## APPENDIX E

## BEGINNING FOCUS INTERVIEW FOR TEACHERS

## APPENDIX E: BEGINNING FOCUS INTERVIEW FOR TEACHERS

Date: _____

Interviewer: _____

Interviewees: _____

_____

| | Bailey Tarver Survey Question | Barge Interview Question |
|---|---|---|
| 1. | I am familiar with the tiered intervention model which provides more intensive interventions for students based on responses to previous interventions (RtI). | What does RtI mean to you? |
| 2. | 5. I understand the purpose and operation of Student Support Team (SST). | What does SST mean to you? What is its purpose? |
| 3. | Respondent's School has a designated person whose sole responsibility is to carry out or facilitate SST and/or RtI frameworks. | Who in responsible for RtI in your school? Is this their only job in the school? |
| 4. | Respondent School has a designated person whose sole responsibility is to carry out or facilitate SST and/or RtI frameworks. | How do you contact and meet with this person? |
| 5. | 5. I understand the purpose and operation of Student Support Team (SST).<br>6. I consider the paperwork and documentation required for the Student Support Team (SST) as part of my intervention on behalf of the students. | How do SST and RtI work together? |
| 6. | 8. Research-based interventions and progress monitoring are common classroom practices for struggling learners in the general education setting. | What reading interventions are you familiar with for struggling learners? |
| 7. | 8. Research-based interventions and progress monitoring are common classroom practices for struggling learners in the general education | How do you progress monitor for struggling readers? |

| | | |
|---|---|---|
| | setting. | |
| 8. | 11. It is my responsibility to provide the interventions for students in Student Support Team (SST). | How are reading interventions implemented in your school? Who provides the interventions? |
| 9. | 13. The Student Support Team (SST) meeting is vital for bringing parental input into the intervention plan.<br>14. The Student Support Team (SST) meeting should produce ideas for research-based interventions or struggling learners. | How do you collaborate with other teachers and parents in working with struggling readers? |
| 10. | 16. Most general education teachers are supportive of the SST process and the RtI framework.<br>21. I am supportive of the SST process and the RtI framework and believe it to be effective for helping struggling students. | What do you feel is the purpose of RtI/SST? |
| 11. | 16. Most general education teachers are supportive of the SST process and the RtI framework.<br>21. I am supportive of the SST process and the RtI framework and believe it to be effective for helping struggling students. | How do you feel about the success of the RtI process in your school? |
| 12. | 18. When I refer a student to SST, I expect that he/she will be evaluated for special education.<br>20. The Response to intervention (RTI) framework prolongs the Student Support Team process unnecessarily. | How do you feel the RtI process works with special education identification? |

## APPENDIX F

## INDIVIDUAL TEACHER INTERVIEW

## APPENDIX F: INDIVIDUAL TEACHER INTERVIEW

Date: _____

Interviewer: _____

Interviewee: _____

| | Bailey Tarver Survey Question | Barge Interview Question |
|---|---|---|
| 1. | | What is your name? |
| 2. | Respondent's completed years of classroom experience. | How many years of classroom experience have you completed? |
| 3. | Respondent's certification | What is your current certification? |
| 4. | I am familiar with the tiered intervention model which provides more intensive interventions for students based on responses to previous interventions (RtI). | Tell me about your experiences with RtI in your classroom. |
| 5. | 3. I received adequate training prior to the implementation of Response to Intervention (RtI). | What training have you had in preparation for RtI? |
| 6. | 6. I consider the paperwork and documentation required for the Student Support Team (SST) as part of my intervention on behalf of the student. | How do you manage the paperwork for SST that is associated with the tiers in RtI? |
| 7. | 9. Careful attention to paperwork and documentation are critical parts of the intervention process.<br>11. It is my responsibility to provide the interventions for students in Student Support Team (SST). | How do you find the time to plan for the interventions and the paperwork for the different tiers in RtI? |
| 8. | 5. I understand the basic eligibility criteria for special education.<br>20. The Response to Intervention (RtI) framework prolongs the Student Support team (SST) process unnecessarily. | How has RtI affected students you work with getting placed in special education? |
| 9. | 21. I am supportive of the SST process and the RtI framework and | Have the students that you have worked with in RtI made academic progress? |

| | | |
|---|---|---|
| | believe it to be effective for helping struggling students. | Using data, what is the ratio of those students who have made progress to those who have not made progress? |
| 10. | If you have recently chosen not to refer a student for SST/RtI please explain your reasons and/or concerns. | What are the main reasons that you have had for not referring a student to the RtI process for reading? |
| 11. | In your opinion what modifications, if any, could be made to increase the effectiveness of the Student Support Team (SST) and/or Response to Intervention (RtI) framework? | Since beginning this RtI project, do you feel that you are part of the RtI team at your school? Please explain why or why not. |
| 12. | In your opinion what modifications, if any, could be made to increase the effectiveness of the Student Support Team (SST) and/or Response to Intervention (RtI) framework? | As part of the RtI team at your school, has the process changed in anyway? If so please explain the changes and be specific. If not, please give some suggestions that you have for improving the process. |

## APPENDIX G

## EXIT FOCUS INTERVIEW FOR TEACHERS

## APPENDIX G: EXIT FOCUS INTERVIEW FOR TEACHERS

Date: _____

School: _____

Interviewer: _____

Interviewees: _____

_____

| | Bailey Tarver Survey Question | Barge Interview Question |
|---|---|---|
| 1. | I am familiar with the tiered intervention model which provides more intensive interventions for students based on responses to previous interventions (RtI). | What does RtI mean to you? |
| 2. | 5. I understand the purpose and operation of Student Support Team (SST). | What does SST mean to you? What is its purpose? |
| 3. | Respondent's School has a designated person whose sole responsibility is to carry out or facilitate SST and/or RtI frameworks. | Who in responsible for RtI in your school? Is this their only job in the school? |
| 4. | Respondent School has a designated person whose sole responsibility is to carry out or facilitate SST and/or RtI frameworks. | How do you contact and meet with this person? |
| 5. | 5. I understand the purpose and operation of Student Support Team (SST).<br>6. I consider the paperwork and documentation required for the Student Support Team (SST) as part of my intervention on behalf of the students. | How do SST and RtI work together? |
| 6. | 8. Research-based interventions and progress monitoring are common classroom practices for struggling learners in the general education | What reading interventions are you familiar with for struggling learners? |

| | | |
|---|---|---|
| | setting. | |
| 7. | 8. Research-based interventions and progress monitoring are common classroom practices for struggling learners in the general education setting. | How do you progress monitor for struggling readers? |
| 8. | 11. It is my responsibility to provide the interventions for students in Student Support Team (SST). | How are reading interventions implemented in your school? Who provides the interventions? |
| 9. | 13. The Student Support Team (SST) meeting is vital for bringing parental input into the intervention plan.<br>14. The Student Support Team (SST) meeting should produce ideas for research-based interventions or struggling learners. | How do you collaborate with other teachers and parents in working with struggling readers? |
| 10. | 16. Most general education teachers are supportive of the SST process and the RtI framework.<br>21. I am supportive of the SST process and the RtI framework and believe it to be effective for helping struggling students. | What do you feel is the purpose of RtI? |
| 11. | 16. Most general education teachers are supportive of the SST process and the RtI framework.<br>21. I am supportive of the SST process and the RtI framework and believe it to be effective for helping struggling students. | How do you feel about the success of the RtI process in your school? |
| 12. | 18. When I refer a student to SST, I expect that he/she will be evaluated for special education.<br>20. The Response to intervention (RTI) framework prolongs the Student Support Team process unnecessarily. | How do you feel the RtI process works in conjunction with special education identification? |
| 13. | If you have recently chose not to refer a student for SST/RtI please explain your reasons and/or concerns. | What are the main reasons that you have had for referring a student to the RtI process for reading? |
| 14 | In your opinion what modifications, if any, could be made to increase the effectiveness of the Student Support Team (SST) and/or Response to Intervention (RtI) framework? | Do you feel that you are part of the RtI team to help modify the implementation of the RtI process at your school? Please explain why or why not. |
| 15 | In your opinion what modifications, if | As part of the RtI team at your school, |

| | | |
|---|---|---|
| | any, could be made to increase the effectiveness of the Student Support Team (SST) and/or Response to Intervention (RtI) framework? | what are some modifications that have been made in the RtI process implementation? Please explain the changes and be specific. |
| 16. | In your opinion what modifications, if any, could be made to increase the effectiveness of the Student Support Team (SST) and/or Response to Intervention (RtI) framework? | What do you feel are some next steps for modifying the RtI process implementation in your school in order to increase its effectiveness. |

## APPENDIX H

## INTERVIEW FOR ADMINISTRATORS AND RtI COORDINATOR

## APPENDIX H: INTERVIEW FOR ADMINISTRATORS AND RtI COORDINATOR

Date: _____

Name: _____

Title: _____

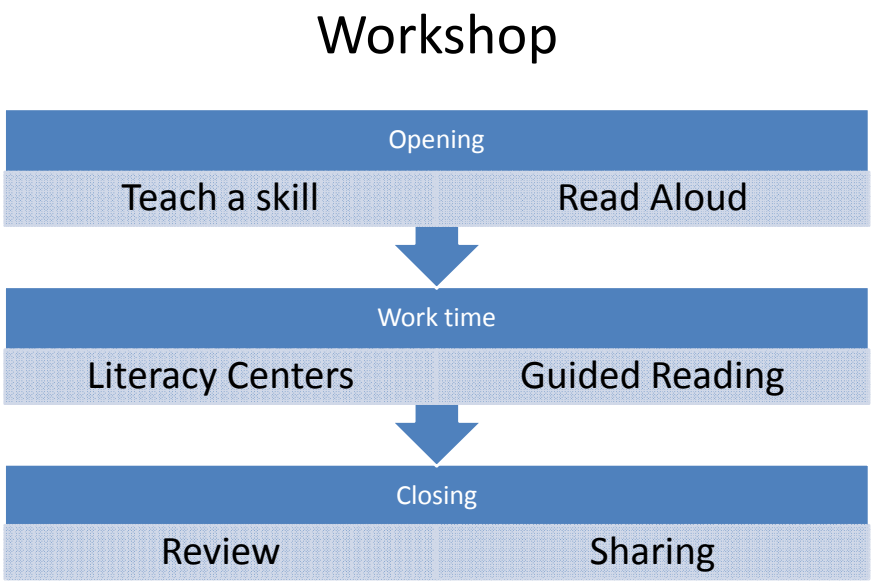
| | Bailey Survey Question | Interview Question taken from Survey |
|---|---|---|
| 1. | Respondent's School has a designated person whose sole responsibility is to carry out or facilitate SST and/or RtI frameworks. | How is the RtI process in the schools in your school district managed? Is it successful? |
| 2. | 6. I consider the paperwork and documentation required for the Student Support Team (SST) as part of my intervention on behalf of the students. | Explain the paperwork required for your school district's RtI process. |
| 3. | 8. Research-based interventions and progress monitoring are common classroom practices for struggling learners in the general education setting. | What are some of the most common reading interventions utilized in your school district? How do teachers progress monitor? |
| 4. | 3. I received adequate training prior to the implementation of Response to Intervention (RtI). | How are teachers trained for RtI in your county? |
| 5. | 18. When I refer a student to SST, I expect that he/she will be evaluated for special education. 20. The Response to intervention (RTI) framework prolongs the Student Support Team process unnecessarily. | How does SST, RtI, and special education work together? Do you believe that teachers understand this connection? |
| 6. | In your opinion what modifications, if any, could be made to increase the effectiveness of the Student Support Team (SST) and/or Response to Intervention (RtI) framework? | What do you perceive to a strength and weakness of the RtI implementation in your school district? |

| | | |
|---|---|---|
| 7. | In your opinion what modifications, if any, could be made to increase the effectiveness of the Student Support Team (SST) and/or Response to Intervention (RtI) framework? | What do you feel are some next steps for modifying the RtI process implementation in your school in order to increase its effectiveness? |
| 8. | 21. I am supportive of the SST process and the RtI framework and believe it to be effective for helping struggling students. | How do you know if RtI is successful in your county |

# APPENDIX I

# INSTRUCTIONAL DIAGRAM – EXAMPLE

## APPENDIX I: INSTRUCTIONAL DIAGRAM – EXAMPLE



## APPENDIX J

## BARTOW COUNTY OBSERVATION INSTRUMENT

## APPENDIX J: BARTOW COUNTY OBSERVATION INSTRUMENT

### GAPSS Classroom Instruction Observation Form

**Teacher: _____ Subject _____**
**Date: _____ Time In: _____ Time Out: _____ Beginning Middle End**

| Strand No. | Instruction Strand | Observed |
|---|---|---|
| C 1.1 | Lesson/units are clearly aligned with GPS/QCC. | |
| I 1.3 | Learning goals are aligned with GPS/QCC and are communicated by the instructor. | |
| | Students apply learning goals in performance tasks aligned to the standard. | |
| I 2.1 | Sequencing of the instructional period is predictable and logical. | |
| | The lesson begins with a clearly defined opening to strengthen learning. | |
| | Content specific vocabulary is developed in context. | |
| I 2.2 | Higher order thinking skills and processes are utilized in instruction. | |
| | Higher order thinking skills and processes are evident in student work. | |
| I 2.3 | Instruction is differentiated to meet student readiness levels, learning profiles, and interests. | |
| I 2.4 | Instruction and tasks reinforce students' understanding of the purpose for what they are learning and its connection to the world beyond the classroom. | |
| I 2.5 | The classroom instructor implements grouping strategies | |
| I 2.7 | The use of technology is integrated effectively into instruction. | |
| I 3.1 | Instructional goals, activities, interactions, and classroom environment convey high expectations for student achievement. | |
| I 3.3 | Students demonstrate personal efficacy and responsibility. | |
| | **Assessment Strand** | |
| A 2.2 | Formative assessments are utilized during instruction to provide immediate evidence of student learning and to provide specific feedback to students. | |
| | Written commentary is aligned to GPS standard(s) and elements or QCC content standards. | |
| | **Planning and Organization Strand** | |
| PO 3.2 | Materials and resources are effectively allocated. | |
| PO 4.1 | Classroom management is conducive to student learning | |
| PO 4.3 | Instruction is provided in a safe and orderly environment. | |
| PO 4.2 | Instruction time is maximized. | |

| | **School Culture Strand** | |
|---|---|---|
| SC 1.1 | The culture of the classroom reflects a risk-free learning environment. | |

| **Action** | **Observed** | **Action** | **Observed** | **Action** | **Observed** |
|---|---|---|---|---|---|
| Whole Group | | Facilitator | | Recall Activities | |
| Small Group | | Lecturer | | Textbook Activities | |
| Paired | | Monitoring student prog. | | Worksheet Activities | |
| Independent | | Model/Demonstrate | | Higher order responses | |
| Other | | Other | | Performance Tasks | |
| | | | | Discussions | |
| | | | | Listening | |
| | | | | Other | |

## APPENDIX K

## DIBELS BENCHMARK - STATISTICAL INFORMATION

## APPENDIX K: DIBELS BENCHMARK - STATISTICAL INFORMATION

Table K1

D*escriptive Statistics from the Beginning to Middle Benchmark for Schools A & B*

| Variable | Label | Mean Difference | Median Difference | Mode of Difference | Standard Deviation |
|---|---|---|---|---|---|
| ORFa5 | 5-ORF A | 0.52 | 1.00 | 0.00 | 5.24 |
| ORFa4 | 4-ORF A | 1.87 | 2.00 | 2.00 | 2.47 |
| ORFa3 | 3-ORF A | 2.47 | 2.00 | 2.00 | 3.72 |
| Matha5 | 5-MATH A | 5.14 | 5.50 | 4.00 | 3.85 |
| Matha4 | 4-MATH A | 6.75 | 7.00 | 7.00 | 4.92 |
| Matha3 | 3-MATH A | 4.95 | 5.00 | 4.00 | 4.97 |
| ORFb5 | 5-ORF B | 0.75 | 1.00 | 0.00 | 2.14 |
| ORFb4 | 4-ORF B | 1.03 | 1.00 | 0.00 | 2.27 |
| ORFb3 | 3-ORF B | 1.13 | 2.00 | 2.00 | 2.35 |
| Mathb5 | 5-MATH B | 4.31 | 4.00 | 2.00 | 4.90 |
| Mathb4 | 4-MATH B | 4.90 | 4.00 | 2.00 | 4.75 |
| Mathb3 | 3-MATH B | 3.69 | 4.00 | 4.00 | 3.99 |

Table K2

*Target School A - DIBELS' Scores Beginning to Middle Comparisons by Subject*

| Statistic | 5-ORF A | 4-ORF A | 3-ORF A | 5-MATH A | 4-MATH A | 3-MATH A |
|---|---|---|---|---|---|---|
| N | 137 | 126 | 130 | 94 | 113 | 116 |
| Mean | 0.5182 | 1.8730 | 2.4692 | 5.1383 | 6.7522 | 4.9483 |
| Std. Dev. | .2442 | 2.4690 | 3.7150 | 3.8482 | 4.9163 | 4.9675 |
| Std. Error | 0.4480 | 0.2200 | 0.3258 | 0.3969 | 0.4625 | 0.4612 |
| Minimum | -44.0000 | -10.0000 | -16.0000 | -12.0000 | -12.0000 | -25.0000 |
| Maximum | 13.0000 | 13.0000 | 20.0000 | 15.0000 | 28.0000 | 25.0000 |
| 95% CL M | -0.3678 | 1.4377 | 1.8246 | 4.3501 | 5.8359 | 4.0347 |
| Range | 1.4043 | 2.3083 | 3.1139 | 5.9265 | 7.6686 | 5.8619 |
| 95% CL SD | 4.6881 | 2.1972 | 3.3117 | 3.3658 | 4.3482 | 4.4001 |
| Range | 5.9511 | 2.8181 | 4.2310 | 4.4934 | 5.6566 | 5.7142 |
| DF | 136 | 125 | 129 | 93 | 112 | 115 |
| *t* value | 1.16 | 8.52 | 7.58 | 12.95 | 14.60 | 10.73 |
| Pr > \| t \| | 0.2494 | <.0001 | <.0001 | <.0001 | <.0001 | <.0001 |

Table K3

*Target School B - DIBELS' Scores Beginning to Middle Comparisons by Subject*

| Statistics | 5-ORF B | 4-ORF B | 3-ORF B | 5-MATH B | 4-MATH B | 3-MATH B |
|---|---|---|---|---|---|---|
| N | 96 | 99 | 103 | 94 | 98 | 101 |
| Mean | 0.7500 | 1.0303 | 1.1262 | 4.3085 | 4.8980 | 3.6931 |
| Std. Dev. | 2.1374 | 2.2653 | 2.3543 | 4.8968 | 4.7483 | 3.9868 |
| Std. Error | 0.2181 | 0.2277 | 0.2320 | 0.5051 | 0.4796 | 0.3967 |
| Minimum | -10.0000 | -10.0000 | -12.0000 | -13.0000 | -6.0000 | -8.0000 |
| Maximum | 6.0000 | 13.0000 | 4.0000 | 25.0000 | 25.0000 | 25.0000 |
| 95% CL M | -0.3169 | 0.5785 | 0.6661 | 3.3055 | 3.9460 | 2.9060 |
| Range | 1.1831 | 1.4821 | 1.5863 | 5.3115 | 5.8499 | 4.4801 |
| 95% CL SD | 1.8719 | 1.9877 | 2.0708 | 4.2829 | 4.1638 | 3.5026 |
| Range | 2.4913 | 2.6337 | 2.7284 | 5.7178 | 5.5251 | 4.6277 |
| DF | 95 | 98 | 102 | 93 | 97 | 100 |
| *t* value | 3.44 | 4.53 | 4.85 | 8.53 | 10.21 | 9.31 |
| Pr > \| t \| | 0.0009 | <.0001 | <.0001 | <.0001 | <.0001 | <.0001 |

Table K4

*Independent t-tests for 5th Grade Oral Reading Fluency between Target Schools A and B*

| Grade Level orfschool5 | Target School A 5orfa | Target School B 5orfb | Diff(1-2) | Diff(1-2) |
|---|---|---|---|---|
| N | 137 | 98 | | |
| Mean | 0.5182 | 0.7500 | -0.2318 | |
| Std. Dev. | 5.2442 | 2.1374 | 4.2509 | |
| Std. Error | 0.4480 | 0.21881 | 0.5658 | |
| Minimum | -44.0000 | -10.0000 | | |
| Maximum | 13.0000 | 6.0000 | | |
| 95% CL Mean | -0.3678 | 0.3169 | | |
| Range | 1.4043 | 1.1831 | | |
| Pooled | | | -1.3465 | 0.8830 |
| Satterthwaite | | | -1.2146 | 0.7511 |
| 95% CL Std. Dev. | 4.6881 | 1.8719 | | |
| Range | 5.9511 | 2.4913 | | |
| Pooled | | | 3.8961 | 4.6774 |

Table K5

*Variances measured using Pooled and Satterthwaite Methods*

| Method | Variances | Degrees of Freedom | *t* Value | Pr> \| *t* \| |
|---|---|---|---|---|
| Pooled | Equal | 231 | -0.41 | 0.6825 |
| Satterthwaite | Unequal | 192.63 | -0.47 | 0.6424 |

Table K6

*Equality of Variances for 5$^{th}$ Grade*

| Method | Num DF | Den DF | F Value | Pr>F |
|---|---|---|---|---|
| Folded F | 136 | 95 | 6.02 | <0.0001 |

Table K7

*Independent t-tests for 4th Grade Oral Reading Fluency between Target Schools A and B*

| Grade Level | Target School A | Target School B | Diff(1-2) | Diff(1-2) |
|---|---|---|---|---|
| Orfschool4 | 4orfa | 4orfb | | |
| N | 126 | 99 | | |
| Mean | 1.8730 | 1.0303 | 0.8427 | |
| Std. Dev. | 2.4690 | 2.2653 | 2.3816 | |
| Std. Error | 0.2200 | 0.2277 | 0.3199 | |
| Minimum | -10.0000 | -10.0000 | | |
| Maximum | 13.0000 | 13 .0000 | | |
| 95% CL Mean | 1.4377 | 0.5785 | | |
| Range | 2.3083 | 1.4821 | | |
| Pooled | | | 0.2124 | 1.4730 |
| Satterthwaite | | | 0.2188 | 1.4666 |
| 95% CL Std. Dev. | 2.1972 | 1.9877 | | |
| Range | 2.8181 | 2.6337 | | |
| Pooled | | | 2.1796 | 2.6252 |

Table K8

*Variances measured using Pooled and Satterthwaite Methods*

| Method | Variances | Degrees of Freedom | *t* Value | Pr> \| *t* \| |
|---|---|---|---|---|
| Pooled | Equal | 223 | 2.63 | 0.0090 |
| Satterthwaite | Unequal | 217.65 | 2.66 | 0.0083 |

Table K9

*Equality of Variances for 4$^{th}$ Grade*

| Method | Num DF | Den DF | F Value | Pr>F |
|---|---|---|---|---|
| Folded F | 125 | 98 | 1.19 | < 0.0001 |

Table K10

*Independent t-tests for 3rd Grade Oral Reading Fluency between Target Schools A and B*

| Grade Level | Target School A | Target School B | Diff(1-2) | Diff(1-2) |
|---|---|---|---|---|
| Orfschool3 | 3orfa | 3orfb | | |
| N | 130 | 103 | | |
| Mean | 2.4692 | 1.1262 | 1.3430 | |
| Std. Dev. | 3.7150 | 2.3543 | 3.1866 | |
| Std. Error | 0.3258 | 0.2320 | 0.4204 | |
| Minimum | -16.0000 | -12.0000 | | |
| Maximum | 20.0000 | 4 .0000 | | |
| 95% CL Mean | 1.8246 | 0.6661 | | |
| Range | 3.1139 | 1.5863 | | |
| Pooled | | | 0.5148 | 2.1712 |
| Satterthwaite | | | 0.5548 | 2.1313 |
| 95% CL Std. Dev. | 3.3117 | 2.0708 | | |
| Range | 4.2310 | 2.7284 | | |
| Pooled | | | 2.9207 | 3.5063 |

Table K11

*Variances measured using Pooled and Satterthwaite Methods for 3rd Grade*

| Method | Variances | Degrees of Freedom | t Value | Pr> \| t \| |
|---|---|---|---|---|
| Pooled | Equal | 231 | 3.19 | 0.0016 |
| Satterthwaite | Unequal | 221.08 | 3.36 | 0.0009 |

Table K12

*Equality of Variances for 3rd Grade*

| Method | Num DF | Den DF | F Value | Pr>F |
|---|---|---|---|---|
| Folded F | 129 | 102 | 2.49 | <0.00001 |

Table K13

*Independent t-tests - 5th Grade Numbers and Operations between Target Schools A and B*

| Grade Level | Target School A | Target School B | Diff(1-2) | Diff(1-2) |
|---|---|---|---|---|
| Mathschool5 | 5Matha | 5Mathb | | |
| N | 94 | 94 | | |
| Mean | 5.1383 | 4.3085 | 0.8298 | |
| Std. Dev. | 3.8482 | 4.8969 | 4.4038 | |
| Std. Error | 0.3969 | 0.5051 | 0.6424 | |
| Minimum | -12.0000 | -13.0000 | | |
| Maximum | 15.0000 | 25.0000 | | |
| 95% CL Mean | 4.3501 | 3.3055 | | |
| Range | 5.9265 | 5.3115 | | |
| Pooled | | | -0.4375 | 2.0970 |
| Satterthwaite | | | -0.4379 | 2.0975 |
| 95% CL Std. Dev. | 3.3658 | 4.2829 | | |
| Range | 4.4934 | 5.7178 | | |
| Pooled | | | 3.9982 | 4.9019 |

Table K14

*Variances measured using Pooled and Satterthwaite Methods for 5th Grade*

| Method | Variances | Degrees of Freedom | *t* Value | Pr> \| *t* \| |
|---|---|---|---|---|
| Pooled | Equal | 186 | 1.29 | 0.1980 |
| Satterthwaite | Unequal | 176.15 | 1.29 | 0.1981 |

Table K15

*Equality of Variances for 5th Grade*

| Method | Num DF | Den DF | F Value | Pr>F |
|---|---|---|---|---|
| Folded F | 93 | 93 | 1.62 | 0.0211 |

Table K16

*Independent t-tests - 4th Grade Numbers and Operations between Target Schools A and B*

| Grade Level | Target School A | Target School B | Diff(1-2) | Diff(1-2) |
|---|---|---|---|---|
| Mathschool4 | 4Matha | 4Mathb | | |
| N | 113 | 98 | | |
| Mean | 6.7522 | 4.8980 | 1.8543 | |
| Std. Dev. | 4.9163 | 4.8969 | 4.8391 | |
| Std. Error | 0.4625 | 0.4796 | 0.6680 | |
| Minimum | -12.0000 | -6.0000 | | |
| Maximum | 28.0000 | 25.0000 | | |
| 95% CL Mean | 5.8359 | 3.9460 | | |
| Range | 7.6686 | 5.8499 | | |
| Pooled | | | 0.5375 | 3.1711 |
| Satterthwaite | | | 0.5406 | 3.1679 |
| 95% CL Std. Dev. | 4.3482 | 4.1638 | | |
| Range | 5.6566 | 5.5251 | | |
| Pooled | | | 4.4163 | 5.3520 |

Table K17

*Variances measured using Pooled and Satterthwaite Methods for 5th Grade*

| Method | Variances | Degrees of Freedom | *t* Value | Pr> \| *t* \| |
|---|---|---|---|---|
| Pooled | Equal | 209 | 2.78 | 0.0060 |
| Satterthwaite | Unequal | 206.57 | 2.78 | 0.0059 |

Table K18

*Equality of Variances for 4th Grade*

| Method | Num DF | Den DF | F Value | Pr>F |
|---|---|---|---|---|
| Folded F | 112 | 97 | 1.07 | 0.7273 |

Table K19

*Independent t-tests - 3rd Grade Numbers and Operations between Target Schools A and B*

| Grade Level | Target School A | Target School B | Diff(1-2) | Diff(1-2) |
|---|---|---|---|---|
| Mathschool3 | 3Matha | 3Mathb | | |
| N | 116 | 101 | | |
| Mean | 4.9483 | 3.6931 | 1.2552 | |
| Std. Dev. | 4.9675 | 3.9868 | 4.5378 | |
| Std. Error | 0.4612 | 0.3967 | 0.6176 | |
| Minimum | -25.0000 | -8.0000 | | |
| Maximum | 25.0000 | 25.0000 | | |
| 95% CL Mean | 4.0347 | 2.9060 | | |
| Range | 5.8619 | 4.4081 | | |
| Pooled | | | 0.0379 | 2.4725 |
| Satterthwaite | | | 0.0561 | 2.4544 |
| 95% CL Std. Dev. | 4.4001 | 3.5026 | | |
| Range | 5.7042 | 4.6277 | | |
| Pooled | | | 4.1464 | 5.0114 |

Table K20

*Variances measured using Pooled and Satterthwaite Methods for 3rd Grade*

| Method | Variances | Degrees of Freedom | *t* Value | Pr> \| *t* \| |
|---|---|---|---|---|
| Pooled | Equal | 215 | 2.03 | 0.0433 |
| Satterthwaite | Unequal | 213.63 | 2.06 | 0.0403 |

Table K21

*Equality of Variances for 3rd Grade*

| Method | Num DF | Den DF | F Value | Pr>F |
|---|---|---|---|---|
| Folded F | 115 | 100 | 1.55 | 0.0248 |