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Nature of Implementing Response to Intervention in Fourth Grade

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THE NATURE OF IMPLEMENTING RESPONSE TO INTERVENTION IN FOURTH GRADE

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ABSTRACT

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The ultimate goal of this concurrent embedded mixed-method study was to describe the implementation of Response to Intervention (RTI) and understand the role of Response to Intervention at the fourth-grade elementary school level on the academic performance. This study examined both qualitative and quantitative data. In the qualitative phase, a case-study method was utilized by collecting data in the form of interviews, observations, and corresponding data collection. The quantitative data examined student data based on progress monitoring in math and reading. The researcher analyzed and graphed the students' data to determine a trend of student performance when provided with Response to Intervention services. From the qualitative phase, the researcher identified four major themes: Response to Intervention Implementation; Response to Intervention Evaluation and Identification; Collaboration; and the Participants' Preparation for Response to Intervention. In the quantitative phase, the researcher found two general patterns of change on the students' data. These patterns were growth and non-growth. The findings showed that general education teachers, special education teachers, and interventionists supported the implementation of Response to Intervention and its processes. The quantitative data reflected the successful

practices of practitioners engaged in the implementation of Response to Intervention. The data showed that students did not fall further behind when they received interventions within the Response to Intervention framework. The interpretation of these findings led the researcher to examine the future implications for practitioners of Response to Intervention and policy makers. Overall, there was a need for further research into the implementation of Response to Intervention, how behavior should be included into the Response to Intervention framework, and the importance of in-depth quality training and professional development for educators.

Keywords: Response to Intervention, progress monitoring, mixed-method, RTI Implementation.

DEDUCTION and ACKNOWLEDGEMENTS

Once, when the Messenger of Allah (Peace be upon him) was asked who was most deserving of fine treatment, he replied, "your mother." When asked who would be next, he replied, "your mother." The third time he was queried, he again replied, "your mother." The fourth time he was asked this question, he replied, "your father." This hadith from Islam illustrates my own experiences, for without my parents; I would not be here today. My mother has been my wings, my heart, and my inspiration; and my father opened vistas without which I would never have taken flight, particularly as I am a woman from a conservative culture. I owe my parents everything, and wish to dedicate this dissertation to them.

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INTRODUCTION

In 2004, the United States reauthorized and amended the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA, 2004) and implemented the No Child Left Behind Act of 2001 (NCLB; 2002). Currently, Individuals with Disabilities Education Improvement Act of 2004 and No Child Left Behind Act of 2001 have attempted to provide all students with equal education rights including an increased demand that all children be educated fairly and with adequate instruction. As part of the federal revisions to Individuals with Disabilities Education Improvement Act of 2004 and Section 504, both the Free and Appropriate Education (FAPE) and Least Restrictive Environment (LRE) were added (U.S. Department of Education, 2010). Both FAPE and LRE encouraged providing services to students with disabilities in the general education environment to the greatest extent possible. LRE specifically "charges schools to integrate students with disabilities with students without disabilities" and that they must "consider supplementary aids and services to help the student succeed in the regular classroom" (Chapman, 2008, p. 13). In addition to developing Individuals with Disabilities Education Improvement Act of 2004 and No Child Left Behind Act of 2001, "Congress set the goal that by 2014, all students would read at grade level by the end of third grade" (Gibbs, 2011, p. 2).

The reauthorized IDEIA (2004) included new language that described the Response to Intervention (RTI) process--a multi-tiered approach to meet the needs of students who have special needs. Under Section 614 of IDEIA (2004), Response to Intervention should provide evaluations, eligibility determinations, individualized education programs, and educational placements. Section 614 also described The Rule of Construction, which was "the screening of a student by a teacher or specialist to determine appropriate instructional strategies for curriculum implementation shall not be considered to be an evaluation for eligibility for special education and related services" (IDEIA, 2004, Section 614 para. 3).

Both IDEIA (2004) and NCLB (2002) contained similar language in terms of implementing research-based interventions and instructions and using academic programs that helped to improve student progress. Individuals with Disabilities Education Improvement Act of 2004 and No Child Left Behind Act of 2001 emphasized that the lack of instruction must be considered in the eligibility decision-making process. As part of the eligibility process for determining students with disabilities, Individuals with Disabilities Education Improvement Act (2004) also encouraged the use of "scientific, research-based interventions" (p. 17). With this specific language, the criteria for referring a student to special education services was more accurate and, therefore, the student may have received appropriate support services.

Literature and several researchers (Fuchs & Young, 2006; Gaither, 2008; Pettey, 2007; Salvia, Ysseldyke, & Blot, 2010; Watson, Gable, & Greenwood, 2011) described how the RTI process was able to meet the demands of NCLB (2002) and IDEIA (2004) through combined use of assessments and intervention practices. This literature had also

indicated that Response to Intervention was a paradigm shift from the traditional wait-to-fail method in the special education field in which students would begin to fail courses before being referred to special education services. As an alternative model to the wait-to-fail method, early intervention was one of the core principles in the RTI model. Individuals with Disabilities Education Improvement Act of 2004 stressed that early intervention should be provided immediately when students showed a need for additional instruction, a specific intervention, and before those students fell further behind in the classroom.

Fuchs and Young (2006) pointed out that "the newly reauthorized law neither encourages nor discourages the continued use of IQ-achievement discrepancy; it says for a first time that practitioners may use an alternative: RTI" (p. 9). Employing earlier identification processes, such as Response to Intervention, were important to identify students with disabilities to prevent these students from failing school. With a newer method for identifying and evaluating students with disabilities and alongside updated legal IDEIA (2004), Response to Intervention was increasingly implemented in public schools across the United States. Webb (2007) emphasized,

> The significant distinction that separates RTI from the aptitude achievement discrepancy method is that RTI is implemented in general education to remediate the needs of all struggling learners, not just those students who demonstrate a significant aptitude-achievement gap. (p. 20)

In short, the earlier a problem was identified, the better the outcome for a student. The longer a problem was delayed before modifications were used, the less a student was able to master concepts that may have been needed later in life. Petursdottir (2006) agreed that early intervention had the potential to not only help a student with a disability but could even entirely prevent reading failure for a large population of struggling readers.

Statement of the Problem

Despite research from several sources (Berkeley, Bender, Peaster, & Saunders, 2009; Fuchs, Fuchs, & Compton, 2012; Learning Disabilities Association of America [LDA], 2010; Mather & Kaufman, 2006; Mellard, McKnight, & Woods, 2009; Schatschneider, Wagner, & Crawford, 2008) that have shown the efficacy of implementing Response to Intervention in schools and becoming a model that helped prevent students from falling behind in their academic and behavioral skills, there was still a considerable amount of debate and concern regarding the practice of Response to Intervention in schools including (a) whether or not Response to Intervention could truly identify students who had a disability, (b) that Response to Intervention could not be used as a stand-alone tool, (c) how well Response to Intervention was supported from an empirical standpoint, and (d) that there was not a standard approach to using an RTI process. Response to Intervention incorporated different levels of processes and decisions and its implementation varied among schools and districts. In addition, there was a discrepancy in the knowledge and understanding of how Response to Intervention should be implemented in public schools. Practitioners struggled to understand their role and responsibilities in the RTI process. In this regard, VanDerHeyden, Witt, and Barnett (2005) pointed out that "RTI has a simple structure, but it becomes more complicated when one attempts to use it for wide-scale decision making" (p. 340). Furthermore, in terms of state and district-level training for the practitioners of Response to Intervention, there were concerns that there was inadequate training, and training was not consistent. Hoover, Baca, Wexler-Love, and Saenz (2008) emphasized that more training was needed regarding the RTI process, especially progress monitoring, collecting data, and

decision making based on the data. Current training in the RTI model was not comprehensive; it did not discuss the role of the practitioner, the interventions that needed to be applied in each tier, and what instructional methods and data collection were indicated by evidence-based research.

Furthermore, limited research detailed the process of Response to Intervention implementations at each level and there was insufficient information regarding the role of practitioners in the RTI model. The National Association of State Directors of Special Education (NASDSE; 2006) wrote that, in order to comply with IDEIA (2004) and NCLB (2002), students could not be identified for special education services if there was a lack of instruction. However, by "third or fourth grade" (NASDSE, 2006, p. 17), some students showed difficulty reading and fell behind. Fourth grade was also considered an important transition period between the primary grade levels to the advanced academic levels that included core curricula. By the fourth grade, educators prepared students for middle school and to be independent with their academic and behavioral skills. During this transitional phase, students were not only required to be more independent, but they were also expected to read and synthesize information from grade-level reading material. Goodwin (2011) stressed that fourth grade was a critical transition academic level "when students move from 'learning to read' to 'reading to learn'" (p. 1). In addition, Gibbs (2011) agreed that academic goals changed around the fourth-grade level. In particular, he wrote that, in early elementary grades, Response to Intervention sought to address and prevent academic struggles; however, by middle school, it was used primarily to strengthen academic growth for students.

To meet the requirements of IDEIA (2004) and NCLB (2002) and to determine students' ability to process written information, Response to Intervention may have helped to rule out if instruction was poor or if the student had a disability. Therefore, there was a need to provide in-depth information about the procedures to implement Response to Intervention in reading and math performance in fourth grade.

Purpose of the Study

The intent of this study described the implementation of Response to Intervention (RTI) and understanding the role of the model at the fourth-grade elementary school level on the academic performance of students by utilizing data from various sources. To meet this goal, it was important to investigate the understanding of practitioners who were involved in the RTI model, investigate how Response to Intervention was implemented within each level in the academic context, and understand the different types of training and professional development that practitioners received regarding the implementations of Response to Intervention. To investigate the implementation of Response to Intervention, this study examined both qualitative and quantitative data. In the qualitative phase, data were collected in the form of interviews and observations from educators who were responsible for implementing the RTI model. In the quantitative phase, data were collected from de-identified students who were receiving Response to Intervention services at both Tiers II and III in reading and math subjects in the fourth grade.

The aim of this study was to provide an in-depth understanding of how elementary-level schools in one district structured the RTI processes in relation to each tier. It examined (a) how elementary level schools in one district structured the RTI processes in relation to each tier in reading and math performance; (b) how schools made decisions

about student movement from tier-to-tier; (c) the results that were experienced as a consequence of using the three-tiered RTI model; (d) how various school professionals interacted with each other during these processes; and (e) how school professionals were prepared to implement Response to Intervention at each tiered level in their school. Therefore, this study sought to answer the following research questions:

Q1 How do school practitioners (special educators, general educators, and interventionist) implement Response to Intervention at each multi-tiered level in the Response to Intervention model?

Q2 How are the practitioners prepared to implement Response to Intervention at each multi-tiered level in their school?

Q3 How has student progress in reading and math been affected by the implementation of Response to Intervention at the second and third tiers?

Significance of the Study

Through a common goal and similar language, IDEIA (2004) and NCLB (2002) strived to improve education for students with disabilities. Both acts encouraged Response to Intervention as a means to improve education; hence, there was a strong alignment of provisions between the two Acts. Fuchs, Fuchs, and Stecker (2010) clarified the Acts' view regarding RTI implementation. First, they pointed out that the Individuals with Disabilities Education Improvement Act of 2004 encouraged educators to use research-based intervention as an evaluation method to determine the eligibility of the students with a Specific Learning Disability (SLD). Second, the No Child Left Behind Act of 2001 viewed Response to Intervention as a service-delivery system that promoted early intervention and collaboration work between special and general educators as "separate and . . . disconnected silos" (Fuchs et al., 2010, p. 304). Although

both Acts strived to encourage the implementation of Response to Intervention, there were some discrepancies between them in how educators should implement this multi-tired system and be held accountable for providing appropriate services for the students. Many specific details of the Acts differed from each other, resulting in increased difficulties for educators attempting to follow Response to Intervention and the differing regulations set forth by these two Acts.

Despite the differing ideas between NCLB (2002) and IDEIA (2004), continued support for using Response to Intervention stemmed from the inefficiency of the wait-to-fail method. The wait-to-fail approach in identifying students with disabilities has been a limitation in education for many years by not adjusting to the needs of students in a timely and economical manner. Thomas (2007) stressed, "This Response to Intervention (RtI) Model provides a new window for school leaders to view special education and general education" (p. 1). He also assured that Response to Intervention would provide better education for all students as education moved away from the achievement discrepancy model.

Furthermore, there has been more support and evidence for the use of Response to Intervention in public schools. According to the Colorado Department of Education (CDE; 2008), the administration of the Exceptional Children's Educational Act (ECEA; 2007) has shifted from using the old criteria of the discrepancy model 2.08 (6)(b)(i) that stated, "A student cannot be eligible for special education services if there is no documentation under specific criteria including significant discrepancy between estimated intellectual potential and actual level of performance [and] significantly

impaired achievement." The discrepancy model criteria were revised to include the following RTI language:

> The child does not achieve adequately for the child's age or to meet state-approved grade-level standards in one or more of the following areas [basic reading skills reading comprehension, mathematical calculation] when provided with learning experiences and instruction appropriate for the child's age or state-approved grade-level standards. (ECEA, 2007, p. 11)

Using the RTI process was useful in providing a more accurate and systematic approach to identifying students with a Specific Learning Disability. Current research noted that Response to Intervention was beneficial as it added an extra dimension to the process of identifying students because it focused on all students, regardless of ability level. If a student began to fall below the benchmark, immediate interventions were put in placed to support the student in order to prevent failure. However, if that same student did not improve despite increased interventions, he or she could then be evaluated with additional formal assessments to help identify the student's needs and whether or not the student should be placed in special education (CDE, 2008; Gersten & Edomono, 2006; Mather & Kaufman, 2006; Murray, Woodruff, & Vaughn, 2010).

Increasing research and updated laws has continued to support the use of Response to Intervention in public schools as a method for both identifying students with a Specific Learning Disability and for universally improving the education for all students. However, despite this growing support for Response to Intervention, there was still a continued need to research and improve the overall RTI process. It was important to understand the role of each educator at each level in the RTI model. Hence, this study was significant as it added further information to the literature review regarding

implementation of Response to Intervention. It also explained the roles of practitioners and the process of Response to Intervention at each tier level.

Theoretical Perspective

Response to Intervention (RTI) is not a new model. It has been implemented in many forms over the past decades. According to Davis (1989), the Regular Education Initiative (REI) movement merged the regular and special education systems and changed it to a "unitary educational system," (p. 440) which served all students under one effective design and required an active collaboration between regular and special educators. Davis (1989) explained further, "The REI debate is really about how our nation's schools can better serve students who require special attention, interventions, and support systems to enjoy a better quality of life--educationally, personally, socially, and vocationally" (p. 444).

Regarding the difficulty of identifying students with disabilities, many educators have traditionally relied on the aptitude-achievement test, which typically did not reflect the true abilities of these students. To solve this problem in the educational system, various experts have discussed newer methods of assessment including the RTI model. These early intervention processes were important to identify students with special needs in order to design individualized plans that helped prevent these students from failing school. Harlacher, Walker, and Sanford (2010) argued that the changes in the IDEIA (2004) were initially started to introduce Response to Intervention as a new method to identify students with disabilities.

Fuchs, Fuchs, and Vaughn (2008) explained that Response to Intervention was a method by which students were identified who were at risk of failure in the classroom

and who needed extra support: "RTI is meant to provide earlier intervention and prevention and more valid disabilities identification" (pp. 71-72) by constantly monitoring student academic progress. In this regard, Gatti (2004) discussed the need for a system to benefit all children, especially those who had a Specific Learning Disability. To provide the best services for students, assessments, screening methods, and interventions were processes that should have been introduced into all school settings. To prevent students from failing and to improve lifelong skills, classroom teachers and educators should have used formal assessments and research-based instruction, which were embedded in the RTI model. Fuchs et al. (2010) stated that Response to Intervention was intended to provide identification and early intervention to students with learning disabilities using valid techniques.

Key Definitions

Terms that were utilized in the current study are defined as follows:

AIMSweb. "A scientifically based, formative assessment system that 'informs' teaching and learning process . . . AIMSweb enables evidence-based evaluation and data driven instruction" (Shinn, Shinn, & Langell, 2008, p. 15).

Evidence-based practice. Educational practices and instructional strategies that were supported by scientific research studies (National Center on Response to Intervention, 2012).

Implementation with fidelity. As interventions are provided, they should be given in the manner for which they were initially designed. Implementation with fidelity preserves integrity of research-based interventions (CDE, 2008). Buffum, Mattos, and

Weber (2009) stated, “Fidelity helps educators evaluate the efficacy of adopted programs in improving students learning” (p. 79).

Integrated data collection. During the RTI process, data collection and progress monitoring are important steps to make informed “decisions at each tier of service delivery.” This data collection should be drawn from curriculum-based assessments (NASDSE, 2006, p. 25).

IQ-achievement discrepancy. Refers to the discrepancy between the student’s IQ and his/her achievement test score (Siegel, 2003; Vaughn & Fuchs, 2003)

Multiple tiers of intervention service delivery. A multi-tiered model of intervention providing different levels of targeted instruction depending on students’ individual needs. Each tier--universal instruction, targeted instruction, and intensive instruction--has specific supports in place to improve students’ academic or behavioral needs through research-based instruction (NASDSE, 2006; National Center on Response to Intervention, 2012).

Problem-solving method. Based upon the scientific method, problem-solving methods seek to design “instructional strategies” at each tier of intervention. Because it is “difficult to predict with certainty which instructional approaches will work with which students,” problem-solving methods improve the chance of successful interventions and progress monitoring (NASDSE, 2006, p. 25).

Progress monitoring. “Progress monitoring generates the useful data for making instructional decision based on the review and analysis of student data” (*Response to Intervention [RtI] District Handbook*, 2011-2012, p. 36).

Research-based instruction/interventions. "A *research-based* instructional practice or intervention is one found to be reliable, trustworthy, and valid based on evidence" (CDE, 2008 p.127), the goal being that when a program is used with students, the students would show improvement. Improvement was documented and monitored frequently to determine if the program was effective.

Response to intervention (RTI). Response to Intervention is an intervention model with an inherent multi-tiered system of evidence-based interventions. Response to Intervention aims to identify students who are at risk in their academic and behavioral performance. There are three essential components of Response to Intervention: (a) multi-tiered models of service delivery, (b) problem-solving methods, and (c) integrated data systems (Fiorello, Hale, & Snyder, 2006; Fuchs & Young, 2006; Greenfield, Rinaldi, Proctor, & Cardarelli, 2010; NASDSE, 2006; National Center on Response to Intervention, 2012; Vaughn & Fuchs, 2003; Webb, 2007).

Response to Intervention includes the following three tiers:

- Tier I is effective for all students in the general classroom setting as it monitors student progress.
- Tier II begins when a noticeable group of students from the general classroom who are struggling with the material. At this point, interventions are given to small groups of students through either problem-solving or standard methods.
- Tier III targets students who are not benefiting from the small group instruction that Tier II provided. This tier works with a small group of students to provide intervention that is even more intensive. The

> intervention during Tier III is done with specialists who can determine whether, after a 60-day period, a student has a significant disability. (Burns, Jacob, & Wagner, 2008)

Universal screening. Are typically brief, conducted with all students at a grade level, and followed by additional testing or short-term progress monitoring to corroborate students' risk status (National Center on Response to Intervention, 2012).

Limitations of the Study

There were several limitations in this study. First, the study was limited to 6 to 8 weeks of data collecting. Second, the study was designed to collect data from one district with the intent to understand the implementation of an RTI model at the fourth-grade level. Another limitation was the population and structure of the study that included students, teachers, special education teachers, and interventionist from the fourth grade at two schools from one district. Participants were purposefully selected in the qualitative phase of the study. Purposeful sampling was one of the qualitative core principles as it allowed the researcher to gain an in-depth understanding regarding the phenomena being investigated (Creswell, 2009; Merriam, 1998). Therefore, it was difficult to generalize the results of this study. However, Brantlinger, Jimenez, Klingner, Pugach, and Richardson (2005) pointed out that "qualitative research is not done for purpose of generalization but rather to produce evidence based on the exploration of specific contexts and particular individuals" (p. 203).

Summary

This chapter provided an introduction of the study that was conducted. The ultimate goals of this study were to (a) provide a better understanding of how the RTI

process was implemented at the fourth-grade level, (b) explain how schools made decisions about movement from tier to tier; (c) understand the results that were experienced as a consequence of using the three-tiered RTI model; (d) discuss how various school professionals interacted at each multi-tiered level; and (e) discuss how school professionals were prepared to implement Response to Intervention at each tiered level in their school.

CHAPTER II

REVIEW OF LITERATURE

Individualized assessments and research-based interventions are the foundation of special education; educators use them to identify students with special needs and to collect information about their abilities and needs in order to provide them with adequate services. This fundamental process supports educators in making decisions regarding a student's education. Many teachers struggle with identifying and placing students in special education before students begin to fail classes; students who frequently fail classes may not necessarily have a physical disability but may have a low cognitive ability, e.g., a specific learning disability, autism, or Attention-Deficit-Hyperactive Disorder (ADHD).

According to the Colorado Department of Education (CDE; 2008), the systematic approach of Response to Intervention demonstrated two distinct advantages. First, by observing all students, regardless of ability level, teachers were more engaged and encouraged to collaborate with other educators including special education teachers. This increased awareness of students encouraged educators to consider different aspects of instruction with integrity and fidelity. Second, the process of indentifying a student who had special needs was clearer and more precise because it accounted for teacher error. When interventions were used early, it was easier to rule out the possibility that the student was truly learning disabled and not due to a "lack of appropriate instruction" (CDE, 2008, p. 17).

Lipson and Wixson (2010) noted that a strong advantage of Response to Intervention was its systematic and comprehensive "approach to language and literacy assessment and instruction that supports all pre-K-12 students and teachers" (p. 14). With regard to supporting all students, Response to Intervention was sensitive to differences in all students including age, grade level, and learning needs. Moreover, to encourage the systematic role of Response to Intervention, all professionals must collaborate to use adequate and appropriate resources. Instructional resources should focus on utilizing research-based instruction, e.g., phonemically-based reading, to ensure the success of all students in public schools. The advantage of Response to Intervention's systematic and comprehensive approach was that it enhanced, using the analysis of data, how all students were supported with targeted interventions to promote success in basic skill areas. Typically, general education teachers implemented the first tier of Response to Intervention, which aided in the universal screening and interventions for the general classroom (Bender, 2009; Berkeley et al., 2009; Lipson & Wixson, 2010; Vaughn & Fuchs, 2003).

According to Berkeley et al. (2009), the Response to Intervention "process is still a new concept to many educators and parents" (p. 86), even though the process had its theoretical roots dating back to the 1960s. Since Response to Intervention was still new to educators due to the lack of strong empirical research, the aim of this study was to investigate and analyze the literature and research supporting Response to Intervention, both as a theoretical perspective and a practical approach for working with students who were not achieving at the expected grade level.

History and Development of Response to Intervention

Historically, to diagnose students with special needs, educators have relied on an aptitude-achievement testing model such as the IQ-achievement discrepancy. This aptitude-achievement test identified students with special needs by measuring and comparing a child's IQ to other students of similar age. This method of assessment has been the standard of identification as it was based on the assumption that a student's reading ability was linked to his or her IQ score (Fuchs & Young, 2006).

These achievement-discrepancy methods for identifying learning disabilities have long been a source of debate among educators and policy makers. Even now, there continues to be controversy over what is the best method of identifying students who may have learning disabilities.

Vaughn and Fuchs (2003) argued that the aptitude achievement test has far too many flaws, some of which they outlined:

> Assumptions *not* empirically supported include that the: . . . (2) academic performance of students with a discrepancy differs from that of students without a discrepancy (Gresham, 2002), (3) discrepancy yields reliable information (Reynolds, 1984), (4) findings inform instruction (Elliott & Fuchs, 1997; Fletcher et al., 1998), and (5) use of IQ tests is a necessary procedure for identifying students with LD (Donovan & Cross, 2002). (p. 138)

Several sources aligned with and elaborated further upon these flaws. Fuchs and Young (2006) stated, "Children with low IQ scores who fail to read are genuinely reading disabled and do not fail to read because of low IQ scores" (p. 10). The achievement-discrepancy test did not examine the specific skills and abilities that a student could do. Poor readers, for example, may not have the processing speed, verbal skills, or memory to

easily achieve the test. Despite having difficulty with specific skills, many children with disabilities could learn to read well.

The complexities of achievement-discrepancy also did not take into account other factors such as dyslexia, ADHD, and other disorders that could contribute to failing a standardized test even if the child was able to understand and process the information through other means. Therefore, this method of assessment did not reflect students' true abilities and capacities; low achievement on an assessment did not provide a diagnosis of a specific learning disability but only served to show a symptom of a disability (Berkeley et al., 2009; Fuchs & Fuchs, 2006; Fuchs & Young, 2006; Kavale, Holdnack, & Mostert, 2005).

Another flaw of the traditional achievement-discrepancy testing model lied with labeling students. Historically, educators depended on using Wechsler Intelligence Scale for Children (WISC) or Binet IQ scores to determine the eligibility of the students in special education services; this often resulted in labeling students, which gave students "a destructive, self fulfilling prophecy" (Dunn, 1968, p. 9). Dunn (1968) continued to argue that the achievement-discrepancy diagnostic process should change as it resulted in labeling the students; it did more "harm than good in that they have resulted in disability labels and in that they have grouped children homogeneously in school on the basis of these labels" (p. 8).

Administrators and educators historically referred students with special needs to a special education program because they thought that was the right program. On the other hand, evidence showed that there were valid reasons to remove children from mainstream educational classrooms; it was detrimental socio-culturally. A lot of these children should

have socialized with their peers in order to have the opportunity to move forward in development (Dunn, 1968).

The traditional implementation of the achievement-discrepancy testing model that was applied in the public school system was cumbersome, slow, and often resulted in students failing before being fully evaluated and diagnosed. Siegel (2003) acknowledged another significant problem with the traditional implementation of the achievement-discrepancy test: "Most [school] systems have a long delay before testing can take place, so that for a time nothing happens and the child does not get help" (p. 3). This delay between when students were evaluated and diagnosed was often referred to as the wait-to-fail method. Many students often failed classes before a proper diagnosis had been made; as such, they did not receive appropriate modifications in the classroom.

The President's Commission on Excellence in Special Education (U.S. Department of Education, 2002) emphasized that valuable educational resources were used to determine the appropriate special needs category a student would fit into by using a battery of assessments, when the priority should instead be placed upon using those resources for implementing interventions: "When schools are encouraged by federal and state guidelines to focus on assessment as a priority . . . the main victims are the students themselves whose instructional needs are not addressed in the cumbersome assessment process" (p. 22).

Webb (2007) described the connection between the current practice of using achievement-discrepancy tests and the wait-to-fail method in schools. Webb (2007) stated, "The inherent concern within the achievement discrepancy method is that a struggling student often never receives any formal specialized support or treatment until a

demonstrated pattern of failure has emerged" (p. 16). Fortunately, for children with disabilities, IDEIA (2004) specified that these students should have the opportunity to have an alternative assessment; "children with disabilities are included in general state and district-wide assessment programs, with appropriate accommodations, where necessary" (Ysseldyke & Olsen, 1999, p. 177).

In recent years, increasing evidence has shown that the use of achievement-discrepancy tests and the wait-to-fail method to identify learning disabilities were highly ineffective and unreliable. Students in early elementary years were not receiving the help they needed. As such, a student should be assessed by observing the amount of progress he or she demonstrated over a specified amount of time. The United States has begun to increase educational demands with IDEIA (2004) and NCLB (2002) for students with learning disabilities. Moreover, there have been increased demands for early identification of students with special needs. Achievement-discrepancy tests and the wait-to-fail method do not properly assess or identify students with learning disabilities; as a result, these practices do not allow children to receive the best education (Dunn, 2005; Feifer, 2008).

To address the inadequacies of the achievement-discrepancy tests and the wait-to-fail method, the United States has begun to examine different methods of identifying students with special needs. The United States also examined its laws regarding special education and, in 2004, updated the Individuals with Disabilities Education Act (IDEIA, 2004) and implemented the No Child Left Behind Act (NCLB; 2002). Individuals with Disabilities Education Improvement Act of 2004 and No Child Left Behind Act of 2001 have attempted to provide all students with equal education rights including an increased

demand that all children be educated fairly and with adequate instruction. Literature on Response to Intervention has described how the RTI process was able to meet the demands of No Child Left Behind Act of 2001 and Individuals with Disabilities Education Improvement Act of 2004 through a combined use of assessments and intervention practices (Fuchs & Young, 2006; Gaither, 2008; Pettey, 2007; Salvia et al., 2010).

Response to Intervention Implementation and Structure

Kavale et al. (2005) differentiated between the achievement-discrepancy model and the RTI model. In the achievement-discrepancy model, a student who tested poorly initially would be referred to special services; however, the initial evaluations were not always specific enough to provide the correct services. In the RTI model, if the teacher noticed that a student was not succeeding in the classroom, the student may have been diagnosed with the help of teacher observations. If the initial modifications did not work for the student, then the teacher may have made a second report with which to apply a new method of modification. McLeskey, Rosenberg, and Westling (2010) further described Response to Intervention in the following manner:

> An approach to the identification of special education needs that is based on the assumption that students who struggle academically should be identified with a learning disability only if they do not respond to effective and intensive levels of instructional. It is also a tiered service-delivery approach in which teachers provide more intensive levels of service to students only when lower levels of instructional intensity fail to succeed. (p. 445)

Although Response to Intervention itself is not an assessment tool, by observing if a student functions poorly in the classroom and observing how well increased intervention services support a student, educators can then use more assessments to support the evidence that a student may have a learning disability and needs additional support

services. These additional services (such as reading to the student, allowing extra time on assignments, and modifying the curriculum) should allow a student to achieve academically in the classroom. Furthermore, if needed, a student can also receive further evaluations in order to provide him or her with an Individualized Education Program (IEP) and place the student into appropriate educational settings.

The President's Commission on Excellence in Special Education recommended that Response to Intervention replace old methods of identifying students with a learning disability (Petursdottir, 2006). Furthermore, Response to Intervention has the potential to improve the academic and behavioral performance of all students through the use of continuous progress monitoring. Although the traditional method of assessment can be useful, Response to Intervention is a preferable method for diagnosing a learning disability; therefore, it is a model that should be used to meet the laws of the United States. On the issue of diagnosing a student correctly through Response to Intervention, Burns et al. (2008) suggested, "that ethically a child should not be exposed to the risk of misdiagnosis unless deficiencies in instruction have first been ruled out" (p. 267). Ideally, Response to Intervention would incorporate this idea throughout classrooms so all students were effectively educated.

The current practices of Response to Intervention follow an early model of early intervention practices. Vaughn and Fuchs (2003) stated,

> The roots of a response-to-approach to the identification of LD reside in a 1982 National Research Council study (Heller, Holtzman, & Messick, 1982), which proposed that the validity of a special education classification be judged according to three criteria. (p. 138)

Like RTI, this early model recommended three different criteria or tiers. The first criterion involved the general classroom and observed how well the instructional method

benefited students. The second criterion examined if the intervention program would help improve the education of struggling learners. The final criterion judged whether formal assessments could identify a student accurately. If all three criteria were met in this early model, then a student would be referred to special education services and, thus, would be labeled with a disability.

Fiorello et al. (2006) stated that the three-tier system of the RTI model provided a number of strengths such as "providing preventative services to children before they experience significant academic failure, and emphasizing ongoing progress monitoring to establish what interventions work and those that do not" (p. 836). Fuchs and Fuchs (2007) elaborated on the benefits of Response to Intervention: "Advantages of RTI include earlier identification, a stronger focus on prevention, and assessment with clearer implications for academic programming" (p. 14). With a method to assess all students earlier, teachers could identify whether the classroom instruction was insufficient or if a student had a disability. A supplementary potential of Response to Intervention was that it provided benefits to all students, especially students who were low achievers during early elementary education.

To expand upon how Response to Intervention was able to recognize students in need of intervention and special services, it was important to describe the detailed process of the three separate tiers. Burns et al. (2008) recognized that a tier system had the benefit of separating students: (a) students who were working well with the current instruction and content, (b) students who were struggling a little and as a result needed a small amount of intervention, and (c) students who were struggling and more than likely had a

learning disability. Those students who did have a learning disability were not only identified but were offered special needs services in a more timely matter.

To further describe the specific layout of these three tiers, NASDSE (2006) recommended that these tiers should have "increasing intensities of instruction that are provided to students in direct proportion to their individual needs" (p. 22)." As further illustrated by National Association of State Directors of Special Education, the first tier included the core instructional intervention and should support all students. Tier II targeted group interventions for students who were at-risk. Tier III was considered intensive individual interventions. Furthermore, each tier encompassed the following target percentage of students that should receive support in each tier: Tier I should serve 80% of the school's population, Tier II should serve 15% of the school's population, and Tier III should serve 5% of the school's population.

Components of Response to Intervention

Screening, Progress Monitoring, and Assessments

Throughout the RTI model, universal screening, progress monitoring, and assessments allowed for the proper assessment, identification, and support of students who had a learning disability. Ongoing progress monitoring, universal screening, and assessments were the most beneficial and accurate methods to identify children with special needs as well as students who showed signs of academic failure (CDE, 2008; Feifer, 2008; Schatschneider et al., 2008; Speece, 2007; Speece & Case, 2001;Stecker, Fuchs, & Fuchs, 2005).

First, Response to Intervention required that teachers practice universal screening throughout the RTI process. Fuchs et al. (2008) pointed out that "the goal of screening is to identify students who are at risk of reading failure so that prevention services can be provided to these students as quickly as possible" (p. 28). Screening could be a quick checklist, probe, or survey that measured the performance and skills of students. Often screening data were collected at a universal level (Tier I) several times throughout the school year to identify those students who began to struggle with the curriculum and who were in need of Tier-II intervention services. When universal screening showed that a student was not meeting the benchmark or a designated goal, then he or she was given interventions within the Tier-II framework (Deno et al., 2009; Feifer, 2008; Jenkins, Hudson, & Johnson, 2007; Johnson, Mellard, Fuchs, & McKnight, 2006).

Progress monitoring was the second component of evaluating students' needs during the RTI process. Speece (2007) described progress monitoring as

> A method of keeping track of children's academic development. Progress monitoring requires frequent data collection with technically adequate measures, interpretation of the data at regular intervals, and changes to instruction based on the interpretation of child progress. (p. 3)

Essentially, a student's progress was graphed over time to determine if a student was responding to the instruction. This method also allowed educators to design and monitor early intervention techniques that were used in the intervention processes.

Progress monitoring shared many similarities to screening and may occur at each tier of the RTI model. However, it occurred more frequently (once or twice weekly) and was typically geared toward assessing student progress once a student had already begun to receive interventions within Tier II or Tier III. At the universal level (Tier I), it led educators in making decisions about the instruction in the general classroom environment.

To do so, educators examined all students by using cut points to determine which students needed more intensive intervention.

At Tiers II and III, progress monitoring differed slightly than in Tier I in terms of frequency and analysis methods. Progress monitoring at this level helped educators determine if the intervention was helping students to succeed or if the student needed more intensive interventions (Johnson et al., 2006). This component of Response to Intervention served to provide accurate identification after students had been provided intervention support (CDE, 2008; Fuchs et al., 2008; Stecker et al., 2005).

Educators often used progress monitoring tools such as curriculum-based measurement (CBM) and AIMSweb® to check the progress of students while they were receiving interventions. CBM was useful to educators as it was less time-consuming and less disruptive than a traditional formal assessment. To track a student's progress, CBM used standard directions, scoring rules, and materials, and was a timed assessment. AIMSweb® was an online tool that helped educators collect data on students. These methods also helped to obtain data on each student who was receiving an intervention to determine whether or not the student may have a disability (CDE, 2008; Jenkins et al., 2007; Johnson et al., 2006; Salvia et al., 2010; Stecker et al., 2005).

Finally, the assessment component of the RTI model also integrated methods that would not only save time between special and general educators but would also allow for multiple evaluations that result in a more reliable assessment process. Kame'enui, Fuchs, and Francis (2006) indicated that assessments, when used in the RTI process, provided the means for creating a successful preventative program. The concept that Response to

Intervention would reduce the number of students who were mislabeled was ethically important.

Currently, there were several varieties of formal assessments in addition to aptitude achievement tests in the United States. Assessments such as Dynamic Indicator of Basic Early Skills (DIBELS), CBM, and AIMSwebs® could help to further assess whether or not a student has a learning disability. These tests evaluated achievement, development, and behavior for students with special needs. Many of these assessment tools were standardized so students may be easily evaluated and identified. McLaughlin and Lewis (2008) mentioned that assessments for special education were a systematic process that was used to make important decisions regarding a student's education. In this regard, Payne (1992) outlined a standard method of diagnosing students for learning disabilities in the United States:

> The diagnostic process might involve the following sequence: (a) informal assessment by teacher, (b) survey battery, (c) group diagnostic test, and (d) individual diagnostic test. Individual diagnostic tests are usually administered by testing expert. A standardized diagnostic test can be used to (a) identify for the student and instructor the types of errors being made, (b) make the instructor aware of the important elements, difficulties, and subject and skill sequences in the learning process, and (c) suggest remedial procedures. (p. 326)

Diagnostic testing could help to correctly provide teachers with valuable information regarding a student's needs. The more detailed the information, the better the education a student would receive during their academic years. When a student had continually performed poorly in the RTI framework, educators would use formal assessments to help diagnose and verify a student's disability. If a specific disability was determined, educators would be able to provide more appropriate interventions, accommodations, and

modifications that best fit the student's needs (Gersten & Edomono, 2006; Schatschneider et al., 2008).

High Quality Research-Based Interventions and Instruction Within Response to Intervention

Although examining student progress through assessments, universal screening, and progress monitoring was important, it was also necessary to ensure that students were not failing because of poor instruction. According to IDEIA (2004), while making decisions regarding whether or not a student had a disability, he or she should not be diagnosed if there was a lack of appropriate instruction. To prevent the unnecessary identification of students with a learning disability and to promote the success of Response to Intervention, the quality of instruction, the fidelity of implementation, collaboration among staff, and the use of research-based interventions were important. While implementing Response to Intervention, it was important that interventions were used correctly and as planned so student growth was accurately measured rather than measuring an issue with the teaching practices (CDE, 2008; Gresham, MacMillan, Frankenberger, & Bocian, 2000; Harlacher et al., 2010).

Fidelity of intervention implementation was described as accuracy, attentiveness, and loyalty to the standardization and procedures in a program. Fidelity contained two aspects: how well the intervention is implemented and how sufficient the amount of time the intervention is within the program. For example, if an intervention might require that students receive 20 minutes of extra instruction per day, then the instructor must follow that guideline (CDE, 2008; *Response to Intervention [RtI] District Handbook*, 2011-2012).

A critical foundation behind fidelity and the quality of instruction relied on the use of research-based interventions. According to McDougal, Graney, Wright, and Ardoin (2010) and the *Response to Intervention [RtI] District Handbook* (2011-2012), research-based interventions were reliable, valid, and trustworthy interventions based on evidence from peer-reviewed, empirical research. Furthermore, these interventions should consistently show improvement in achievement when they were used in schools as an intervention. Although all students learn differently and there was no single best approach to teaching students, the instruction should remain systematic, direct, and explicit (CDE, 2008; McDougal et al., 2010; *Response to Intervention [RtI] District Handbook*, 2011).

Collaboration and Team-Solving Problem

According to Kerins, Trotter, and Schoenbrodt (2010), "Collaboration between professionals is necessary, and responsibility for areas of learning may adjust based on expertise of the collaborators" (p. 300). One method that allowed students, both in special education and in general education, to learn together was the use of co-teaching. This method used different kinds of instruction based on the needs of the students. One example of co-teaching was alternative teaching; this was done when the classroom teacher provided individualized instruction for a small group of students or a number of students so another teacher could work with the other big group (Salend, 2005).

On a similar point, VanDerHeyden, Witt, and Gilbertson (2007) emphasized that Response to Intervention was an on-going process to provide continued intervention and instruction based on the student response or lack of response to the intervention in order to make further decisions about the student's progress. Response to Intervention ensured

that team members utilized a problem-solving model of assessment to make their decisions regarding the student's progress.

Fuchs et al. (2010) indicated that schools were increasingly merging special education and mainstream education students together; therefore, special education teachers should change their responsibilities and duties. Many students needed a small amount of support in the classroom while others need very strong support. This differentiation in the classroom illustrated a variety of different needs.

Advantages of Response to Intervention

A very important aspect of implementing Response to Intervention in schools was to prevent students from falling behind without receiving adequate intervention. Instead of students waiting to fail before even receiving testing, Response to Intervention had the possibility to differentiate between students who truly had a learning disability and needed special education from those who needed only moderate intervention to improve overall academic performance. Distinguishing between students who struggled and needed some extra support from students who had a learning disability was important so that the proper interventions and supports were put in place. Furthermore, if the results of the identification were immediate, there was a better chance of students receiving modifications earlier.

According to Shinn, 2007; Lay, 2007; and the Learning Disabilities Association of America (LDA, 2010), a strong advantage to using Response to Intervention was that it was a quick and effective process. Shinn (2007) remarked that "goals are typically set for 6-12 weeks and students are assessed one to two times per week" (p. 614). Lay and the Learning Disabilities Association of America advocated the use of RTI model as it

provided intervention for students earlier than with older identification models. Learning Disabilities Association of America also stated that Response to Intervention worked best with the help of research-based interventions and continued monitoring of student progress in the classroom.

Aside from more accurate identification and preventing students from failing, there were other advantages to using the RTI process. The tiered instruction in Response to Intervention helped avoid providing students who did not need special education services with interventions that could be costly and students with the most need would get the necessary intervention resources. There were also indications that Response to Intervention was an effective method in general classrooms as it worked with all children to improve developmental growth, especially academic, social, and interpersonal growth. Furthermore, because of these strengths, Response to Intervention could lead to better educational outcomes for many children (Harlacher et al., 2010; Jackson, Ryndak, & Wehmeyer, 2009).

Response to Intervention also used scaffolding in the general classroom. According to Caffrey (2006), the use of scaffolding allowed a student to use the knowledge he/she already had and then, with the help of a teacher who gradually introduced new material (that connected to the old material), the student was able to master the knowledge of the new material alone. Caffery separated scaffolding into two steps: "independent performance is what the student can achieve alone; assisted performance is what the student can achieve with the help" (p. 1) of the teacher. Response to Intervention could detect students who were struggling, which could provide

a student with additional help. For example, if a student was mildly struggling, a teacher could provide extra assistance to the student by using a scaffolding method.

Students' needs could be effectively addressed using an RTI approach. To implement changes in government standards, it was necessary to show the importance of Response to Intervention in elementary schools. One study conducted by Webb (2007) showed the effects of using RTI intervention in various schools from elementary to high school:

> 82% of struggling readers can overcome their difficulties when intervention is provided in the early grades. Success rates diminish to 46% if intervention is withheld until the later elementary years. The child's chance of becoming successful in reading decreases even more when intervention is delayed until the middle and high school years. At this stage of a student's educational career, the success rate is reported to be only 15%. (p. 1)

Two studies (Hale, Kaufman, Naglieri, & Kavale, 2006; Payne, 1992) emphasized that any child with special needs could be effectively found and assessed using an approach similar to Response to Intervention as it assured early intervention by using standards throughout educational settings. However, looking for problems early was not enough to identify all children with special needs. To provide the best possible intervention, students should be thoroughly assessed. Response to Intervention alone was not enough to diagnose and solve educational issues. When paired with governmental standards (e.g., IDEIA, 2004), cognitive assessments, and regular monitoring of student progress, Response to Intervention was a successful means of providing the best education for students with learning disabilities. Nevertheless, a variety of assessments should be used; evaluations for a student must follow these features to be fully effective in diagnosing a child with a disability.

The United States has continued to improve the implementation of Response to Intervention in all schools. Elliott (2008) elaborated, "Many states have established information to help school districts understand and use RTI to determine eligibility and to help struggling learners" (p. 73). In a study conducted by Lay (2007), many teachers believed the implementation of Response to Intervention would be a success provided there were adequate resources, training on additional assessments (to further identify students after intervention had been carried out), and on applying the curriculum.

To make Response to Intervention successful, the process needed to be respected in order to be effective; a poorly applied model would result in the isolation of students with severe needs and students with lesser needs. The goal of Response to Intervention was not to segregate students but to support all students within general curriculum. Teachers also needed to acquire a core base of knowledge and skills to facilitate their ability to teach and work collaboratively in meeting the needs of all students. Inclusion allowed students with special needs to receive their education in regular classrooms with regular students which was the right of every special needs student. Response to Intervention would incorporate this idea throughout classrooms so all students were effectively educated, keeping in mind the idea of the students' rights under IDEIA (2004).

Finally, it was important to report performance of students with and without disabilities in equal detail according to federal amendments written in 1997. By reporting the performance of these students, educators would be able to develop assessments; this would allow educators and policy makers to improve the implementation of Response to Intervention (Copeland & Cosbey, 2009; Hardman & Dawson, 2008; McLaughlin, 2010).

Analysis of the Response to Intervention Model in Reading, Math, and Behavioral Issues

The following empirical studies addressed the implementation and effectiveness of Response to Intervention. These studies investigated the effectiveness of applying Response to Intervention at different levels in order to achieve the students' academic success. In addition, some of the studies examined the validity of the achievement-discrepancy model. In this following section, several studies reviewed the implementation of Response to Intervention and examined the effectiveness of the RTI process including student improvement in reading, math, and behavior; the results of progress monitoring; how Response to Intervention worked to improve screening; and identification within the public school environment.

Two important components in the Response to Intervention framework were screening and progress monitoring. These aspects were vital for identifying students who were at risk of failing school. It was important to implement screening and progress monitoring with fidelity in order to enhance the identification process and provide the best intervention for students with disabilities. Several studies (Deno et al., 2009; Griffiths, VanDerHeyden, Skokut, & Lilles, 2009; Hawkins, Kroeger, Musti-Rao, Barnett, & Ward, 2008; Jenkins et al., 2007; Mellard et al., 2009; Murray et al., 2010; Stecker et al., 2005; VanDerHeyden et al., 2007) examined the effectiveness of the Response to Intervention framework by implementing both screening and progress monitoring within the different tiers of the model. These studies provided positive results that supported the use of Response to Intervention in screening students for additional interventions. To analyze the overall effectiveness of Response to Intervention, the studies used a combination of

formal assessments, progress monitoring, and benchmarks as well as examining the retention rates of students.

Murray et al. (2010) studied the RTI process in first-grade classrooms from six Title I schools between 2002 and 2005. The researchers divided the participants into three different cohorts to examine the Response to Intervention framework in comparison to a control group. The first cohort (2002 to 2003) served as the control group where neither students nor teachers received support using the RTI process. In the second cohort (2003 to 2004), teachers received professional development while the researchers used progress-monitoring methods and provided support. In the third cohort (2004 to 2005), the researchers provided Tier I interventions in reading and continued to support teachers.

Throughout the process, a variety of reading assessments and behavioral assessments tracked the progress of students. The results from this study showed a promising trend toward two aspects of Response to Intervention--academic intervention and improvement and the retention rate of students. After the study, significantly fewer students needed to be retained in the first-grade setting. Moreover, the overall reading ability, according to pre- and post-tests, showed that students were able to improve within the RTI process.

The results of the Hawkins et al. (2008) study supported those of the study conducted by Murray et al. (2010). The researchers implemented class-wide Tier-I interventions with the use of progress monitoring and data collection. After 5 weeks, students were monitored to see if they had or had not met the benchmark. Only 63% of students were able to meet this goal; the remaining students were provided Tier-II intervention services. Again, students were monitored for improvement before being

placed in the third tier of intervention services. All but one student met the benchmark after Tier-II interventions, which indicated significant growth for most students. The results of this study showed strong evidence that the RTI process was supportive of all students and could also help staff members identify students who continuously struggled and may need to be further tested for a disability.

The studies conducted by Mellard et al. (2009) and Stecker et al. (2005) examined specific types of screening and progress monitoring used throughout schools. The results of both studies were well-aligned; however, each one examined different progress-monitoring methods. Mellard et al. examined the use of screening instruments such as DIBELS; whereas, Stecker et al. examined the use of curriculum-based measurement (CBM). Results indicated a lack of understanding regarding the purpose of different measures of progress monitoring and how frequently it should be used through the academic school year. Therefore, it was necessary to provide training for teachers regarding implementing different progress-monitoring screening measures in order to have an accurate identification for at-risk and students with learning disabilities.

Results from the Stecker et al. (2005) study showed that the use of CBM and other methods of progress monitoring alone would not enhance students' achievement; yet there was significant growth when teachers used CBM along with modifying the instructional program when data indicated students were struggling. The results also showed that progress monitoring assisted teachers in visualizing the students' needs which helped to improve identification of students who had learning disabilities.

Further support for Response to Intervention was shown in a multi-year study conducted by VanDerHeyden et al. (2007) that examined and evaluated the

implementation of a systematic research-based RTI model (known as System to Enhance Educational Performance [STEEP]) on its process of referral, identification, and evaluation of students' outcomes in a school district. The study collaborated with five elementary schools (grades 1 through 5 in the same district) to implement a multiple-baseline design. This design was organized systematically including assessment and intervention provided in consecutive years from April 2002 to April 2004. Furthermore, the study examined the outcomes for non-responding students and at-risk students who responded to a short-term intervention.

VanDerHeyden et al. (2007) also ensured integrity of the STEEP procedures by providing a checklist that "specified each observable step of the class wide screening" (p. 237) to each trained observer. Results of this study showed that, when STEEP data were included in the team decision-making process, fewer evaluations were determined and evaluated students were more accurately qualified for services. In addition, the results showed a greater percentage of students who qualified for special education services tended to be male students rather than female and minority students. Finally, this study indicated that Response to Intervention was a successful means with which to decrease the amount of time devoted to unnecessary testing for eligibility. Furthermore, because less time was used to test students, the cost for school districts was reduced. Finally, results indicated that the district-wide implementation of STEEP for 1 year reduced the referrals to special education from 6% to 3.5% of elementary students.

The previous studies provided thoughtful contributions to the Response to Intervention field that could lead other schools and educators in how to make decisions to improve the quality of education for all students. From these research studies on

Response to Intervention, educators could learn better instruction methods for using research-based interventions and utilizing those interventions. Moreover, the strength of the intervention and the integrity, with which the intervention was provided for all students, would enhance the outcomes of student performance. Finally, the amount of time needed to determine if the intervention was sufficient prior to the students' referral would help to further intervention or special education services.

Response to Intervention Studies Concerning Reading

A significant amount of research was geared toward the effectiveness of Response to Intervention in helping students improve their ability in core subjects. Multiple studies have examined different reading and math interventions used in the RTI process. Much of the research showed a positive trend toward the use of reading interventions within the RTI process to greatly improve reading ability among students. Studies conducted by Bott (2010), Bryant et al. (2008), Harwood (2011), McIntosh, Graves, and Gersten (2007), Tucker (2010), and Vaughn et al. (2009) indicated the effectiveness of a variety of reading interventions. These studies showed that students' ability to read improved through fluency, correct words per minute reading, and reading accuracy.

The study by Vaughn et al. (2009) examined the benefits of providing more intensive instruction in reading to improve students' academic reading skills and to meet grade-level expectations. The study followed two methods: experimental and quasi-experimental. Students who met the benchmark (higher responders) did not receive further intervention; whereas, students who did not meet the benchmark (lower responders) received 26 additional weeks of intervention in the third tier of the RTI process. During the study, the researchers used progress monitoring in conjunction with

standardized assessments to document reading growth. The results of this study showed a statistically significant effect for the interventions in place.

Further support for using interventions in an RTI process was detailed in a study conducted by Harwood (2011). This research investigated the effectiveness of specific reading programs within the RTI process. Harwood compared two reading interventions--*Read Naturally* and *Voyager*--between two schools using the RTI process; both *Read Naturally* and *Voyager* had been implemented in the participating schools as a Tier-II intervention. The study's primary focus was to examine which intervention was a more effective approach and which showed more student growth in reading fluency and words per minute. The results showed that both intervention programs were successful in improving reading fluency, accuracy, and words per minute read. However, there was no significant statistical difference between the two intervention programs.

These studies showed a strong indication that, as long as a research-based intervention was in place, there should be little concern over the type of intervention, provided student growth was evident. The success of the *Rally to Read* intervention program as described by Bott (2010) was another study that showed positive and effective interventions could be easily adopted by other schools and school districts within an RTI process. Bott (2010) used mixed method, quasi-experimental research to study the effectiveness of the *Rally to Read* intervention program in a Tier-III setting. After comparing two schools, one that used the intervention and one that did not, the intervention showed positive effects academically and behaviorally. Students who received intervention services showed more growth in reading fluency, reading comprehension, and timed-reading scores over the control group.

McIntosh et al. (2007) described, through a descriptive study, the teaching practices of first-grade teachers of English Language Learners (ELL) in multiple-language classrooms to determine if intervention practices could be described in the context of Tiers-II and III instruction in the RTI model. The study showed that a version of Response to Intervention in which teachers incorporated intensive small group instruction parallel to a whole group instruction was beneficial for English learners, especially for students who were labeled with learning disabilities.

Evidence from the study showed it was important to provide both special education and general education teachers with knowledge and preparation about the implementation of the RTI model. This study held strong implications for further research into RTI. Moreover, this study emphasized that Response to Intervention had a strong value for all students who were struggling readers including ELL students. This was especially important since the focus of Response to Intervention had revolved primarily around special needs students and not ELL students, thereby, broadening the educational horizon for all students. Finally, this study showed promise of improving identification of students with special needs before they failed.

Response to Intervention Studies Concerning Math

Although several studies focused on the benefits of reading interventions, one study (Bryant et al., 2008) focused on improving mathematical skills for students who were at risk of failing. The study examined the effect of Tier-II interventions using a quasi-experimental design. First-grade students who were at risk in mathematics were provided an intervention in math: 20 minute sessions for 4 days during a 23-week period. In this study, fidelity of implementation was measured through project coordinators and a

project consultant. The goal of the study was to observe a tutor during the sessions. Results indicated that the intervention had a positive effect on first-grade students in mathematics. Results encouraged implementing Response to Intervention for students with mathematical difficulties or at-risk students to provide early identification simultaneously with appropriate intervention.

These studies were important contributions to the field; they investigated using early intervention process, specifically Response to Intervention, to look at core academic interventions and how those interventions supported students. These studies looked closely at the difference between high and low responders of Response to Intervention and investigated reasons why students responded differently to the interventions. Finally, the studies provided an important contribution to understanding the effectiveness of Response to Intervention by examining how students responded to different levels of intervention, how intense the intervention was, and how long the intervention was in place.

Response to Intervention Studies Concerning Behavioral Issues

The RTI process has also been examined as a method to support behavioral issues found in the classroom. Research has suggested a link between academic ability and academic support having an effect on students' behavior in the classroom. Students often struggle with adaptive behaviors, such as study skills and social skills, and external and internal behaviors, such as anxiety and aggression (Fairbanks, Sugai, Guardino, & Lathrop, 2007; Harms, 2010; Nussbaum, 2010). Fairbanks et al. (2007) furthered this thought regarding the RTI process: "A social behavior model of RTI promises to be an extension and new application of the already substantial research base regarding positive

behavioral interventions, Functional Behavior Assessment (FBA), and early intervention" (p. 289).

Two studies (Fairbanks et al., 2007; Harms, 2010) measured the effect of an RTI model to support behavioral needs. To study how well Response to Intervention supported student behavior, both studies examined the number of Office Discipline Referrals (ODRs). Harms (2010) further examined the relationship between reading interventions and behavioral issues. To examine this relationship, the researchers used indicators of *Basic Early Literacy Skills* (*DIBELS*) and the *School Wide Information System* (*SWIS*) to measure average major discipline referrals. Results indicated that schools showed significant growth between the first and the second year as well as continued improvement year-to-year. Furthermore, the researchers concluded that the combination of behavior and reading checklists were more effective than the behavior predictors alone. This study supported the hypothesis that academic improvement helped to support behavioral issues.

Fairbanks et al. (2007) supported the use of a RTI process to help improve student behavior. The researchers used a Check-In and Check-Out (CICO) behavioral-intervention system that increased structure, prompts, feedback, and focused on specific skills. The researchers found that, with increased and direct support, this intervention helped to improve student behavior in the classroom. Fairbanks et al. (2007) concluded that Response to Intervention could be utilized as a model to increase social behavior support in the classroom as well as reducing problem behaviors.

In a similar study, Nussbaum (2010) examined a different behavior and academic intervention known as Brain Gym. This study showed similar results to the studies

conducted by Harms (2010) and Fairbanks et al. (2007). The study conducted by Nussbaum focused on the teacher evaluations of problem student behaviors using the *Behavior Assessment System for Children* (*BASC-II*). Behaviors such as leaderships, study skills, aggression, hyperactivity, anxiety, and attention problems were evaluated in a Tier-1, class-wide intervention. The researchers found this intervention was very effective in supporting classroom behavior at the primary grade level.

Studies Concerning Educators' Perspective Regarding Response to Intervention Model

To fully investigate the benefits of implementing Response to Intervention in schools, it was important to study the perspectives of Response to Intervention from the standpoint of educators, district level and state level employees, and state directors. By examining the views of the effectiveness of Response to Intervention, schools nationwide would be better prepared to implement this model and to train professionals on the aspects of Response to Intervention. Several studies (Brown, 2011; Dupuis, 2010; Greenfield et al., 2010; Hoover et al., 2008; Robinson, 2010; Werts, Lambert, & Carpenter, 2009) indicated that, although there was knowledge about the RTI process, educators and policy makers did not have a clear grasp of procedural steps or guidelines in implementing or using Response to Intervention. It was clear from these studies that, without a clear vision and a lack of guidelines to use Response to Intervention, educators would struggle to implement this process successfully. Hoover et al. (2008) supported this sentiment: "Regarding RTI as a potential replacement for the discrepancy model, caution must be exercised before we implement RTI as a sole means for determining learning disabilities" (p. 10).

Werts et al. (2009) conducted a study to understand the perceptions of district-level special education administrators concerning their use of personnel in implementing the RTI process and to understand their opinions on continuing the use of the discrepancy model to identify students with disabilities. Differential results were seen in the data collection from the participants' perceptions and opinions on practices related to Response to Intervention in North Carolina public schools. Special education directors had information about using Response to Intervention as a method of identifying students with disabilities, but there was little consensus on the procedural steps for implementing an RTI process. In general, with regard to the collection of data and judgment of responsiveness, the respondents indicated that this should be the responsibility of multiple people.

In a similar study, Hoover et al. (2008) investigated, through a descriptive study, the national perspective of special education state directors in all 50 states including Distract of Columbia regarding the current efforts of Response to Intervention implementation. The results indicated that almost all states were either on the verge of implementing or they were using the RTI model. Moreover, the results emphasized more training was needed regarding the RTI process, especially in regard to progress monitoring, collecting data, and making decisions based on the data. Furthermore, there were concerns regarding the identification of students with learning disabilities by replacing the discrepancy model with Response to Intervention as a new method for identification. The results indicated that further research should be conducted regarding the implementation of this multi-tiered model.

A further study by Dupuis (2010), using a mixed-method design, evaluated teachers' perspectives regarding the implementation of Response to Intervention and special education rates over time. Participants in this study were regular education teachers, special education teachers, and special area teachers from three elementary schools. A finding of the study pointed out that the shift of current paradigms toward implementing a successful RTI process was an important step at the elementary level. Results also showed that a good indicator of successful Response to Intervention was the school climate and collaboration between the administration and teachers by implementing a problem-solving approach.

In general, the results of the previous studies included in this study provided different views with regard to the practices and implementations of Response to Intervention. Although many of the studies were limited in the sample size and demographic sample, the studies indicated that Response to Intervention was a successful means of identifying and providing interventions to students who were at risk academically and behaviorally, particularly for students with disabilities. These studies also indicated several promising methods that could be used as Response to Intervention interventions for reading, math, and behavioral concerns. This was a critical point; to improve the fidelity of Response to Intervention, interventions must be research-based before they could be used in the classroom.

Overall, the view of educators and administrators reflected that Response to Intervention showed promise of being a more cost-efficient and more reliable means of referring students to special needs services. Response to Intervention also showed promise in decreasing the number of students who were misidentified as having special

needs and who merely struggled from lack of support or poor teaching methods while increasing the number of accurate special education labels for students.

Concerns and Criticisms of Response to Intervention

Many concerns regarding the use of Response to Intervention stemmed from the Learning Disabilities of America's (LDA; 2010) White Paper. This paper posed several concerns with the use of Response to Intervention in schools and the idea that the model should replace the more traditional achievement-discrepancy model for the identification of students with special needs. The White Paper presented several important criticisms regarding RTI's effectiveness for those students who had special needs, specifically those who had learning disabilities.

One serious criticism of Response to Intervention presented by the expert panel of the White Paper (LDA, 2010) was the effectiveness of identifying students with special needs. The panel indicated that the definitions of specific learning disabilities could change, making the use of Response to Intervention for identification impractical. The panel recommended that educators should continue to use the current definition which should not be changed to fit with the idea that Response to Intervention could identify students with special needs because they were low achieving. In other words, educators should continue to follow the current definitions for various special needs by testing whether or not a student struggled in at least one psychological process (Berkeley et al., 2009; LDA, 2010; Mather & Kaufman, 2006). The panel continued to write that using Response to Intervention as a means for identification alone was not sufficient nor accurate enough to determine learning disabilities because several reasons besides learning disabilities could account for low achievement in students. Moreover, Response

to Intervention also could not describe why students did not always respond to an intervention.

A study conducted by Schatschneider et al. (2008) supported the White Paper's (LDA, 2010) concerns about using Response to Intervention as a method of identification for students. Schatschneider et al. suggested that, although the theory behind Response to Intervention was to prevent students from failing before identification, the RTI model shared a similar approach to identifying students with special needs as did the more traditional achievement-discrepancy model. Both the achievement-discrepancy model and RTI model allowed students to fail; in the case of Response to Intervention, however, this failure was when students did not respond to an intervention. Schatschneider et al. continued that the achievement-discrepancy model yielded strong specificity in identification of students with learning disabilities as compared to Response to Intervention, which only yielded a marginal specificity. Mather and Kaufman (2006) agreed with the results of the study conducted by Schatschneider et al. (2008): "RTI can tell us both '*what*' and '*how well*' students have learned, but it does not answer the diagnostic question of '*why*' the student is experiencing difficulty" (p. 831).

The expert panel from the White Paper (LDA, 2010) mentioned a further concern regarding the use of RTI; it could not be used as a stand-alone tool for students with or without learning disabilities. The panel argued that Response to Intervention was not the best method in supporting students who had learning disabilities or even for all students in a classroom setting. Because Response to Intervention only provided more intensive instruction, it was not suited to those students who needed individualized instruction.

Other concerns presented by various researchers (Berkeley et al., 2009; LDA, 2010; Mather & Kaufman, 2006; Schatschneider et al., 2008) was the lack of empirical research that supported Response to Intervention. There was little research in what interventions should be used, how well Response to Intervention determined a student's disability, what methods of progress monitoring should be used, what training methods for teachers should be used, or the efficacy of Response to Intervention compared to the efficacy of other methods currently in place in schools. "Given this criticism and fact that RTI models have been proposed as a better alternative, it is disconcerting that there appear to be no published studies that assess the reliability of an RTI approach" (Schatschneider et al., 2008, p. 314).

Since Response to Intervention was still a relatively new method, which was more often discussed from a theoretical point of view than implemented in schools, it still had many limitations. Fuchs et al. (2010) provided insight to the major limitations of Response to Intervention. They indicated that the model was still a complex topic and that the success of Response to Intervention depended on accurate information. Generalizations were not helpful to those who practiced Response to Intervention unless definite information was provided about what did and did not work. Fuchs et al. also mentioned that the IDEIA (2004) and NCLB (2002) did not share identical models and did not provide educators with clear instructions on supporting students with special needs. "These laws are changing our conceptions about the meaning of special education and are the source of confusion and frustration among general and special educators as they attempt to implement the various provisions" (Fuchs et al., 2010, p. 265).

Because Response to Intervention was still in its infancy, there was an argument against using the model for the identification of students with learning disabilities due to the unreliable quality of teacher instruction, differentiated effectiveness of the instruction, and the use of a reliable intervention. Schatschneider et al. (2008) pointed out that this issue did not only affect the identification of students with learning disabilities, but it also contributed to a second concern posed by the expert panel of the White Paper (LDA, 2010)--there was little consensus on how Response to Intervention should be used and what interventions should be implemented. Furthermore, the panel of the White Paper (LDA, 2010) agreed with the concerns of Schatschneider et al. (2008): there was little, if any, consensus of how to effectively implement the RTI process, what measurements should be utilized for achievement (progress monitoring), or which instructional and intervention methods should be used.

This further complicated implementing Response to Intervention and made it a universal model of intervention across the United States. The LDA (2010) White Paper supported this claim by stating that there was little agreement on how Response to Intervention was used and what interventions could be implemented within the multi-tiered model. The panel for the White Paper continued to write that there was no single curriculum or instructional method across the United States to allow Response to Intervention to be consistent.

Another serious limitation to successfully implementing Response to Intervention fell upon educators and school administrators. Currently, these studies ensured that anyone who implemented Response to Intervention was well-trained and was held accountable for upholding the process. Werts et al. (2009) indicated that future research

into Response to Intervention needed to examine the importance of training and how training should be retained. Harlacher et al. (2010) touched upon another point: "Educators should monitor that program to determine whether they are implementing it with fidelity or implementing it as intended" (p. 32). By implementing Response to Intervention correctly, educators could look more closely at how well the implementations were working rather than blaming the students.

Conclusion

In conclusion, Response to Intervention has been shown to significantly improve the identification of students with special needs when used in conjunction with more traditional aptitude achievement tests. Response to Intervention also significantly reduced the time from assessment to the actual receipt of instructional services and eliminated the wait-to-fail phenomenon characteristic of traditional assessment methods. Moreover, it was important for educators to monitor the student's academic progress during the different tiers of RTI implementation; the multi-tiered model was meant to prevent students from failing late in their education. This suggested an important new avenue for future research. Moreover, further research should investigate the effect of Response to Intervention implementation with students in the secondary school as there was a lack in the literature concerning this aspect.

Fuchs et al. (2010) described a study done by McLaughlin (2010) in which researchers studied special needs in an effort to reduce the amount of students who received special education. The study found that Response to Intervention helped to reduce the number of students who needed special needs services by 70%. This result

showed great promise for the implementation of Response to Intervention in schools across the United States.

CHAPTER III

METHODLOGY

Introduction

The purposes of this concurrent embedded mixed-method design were to (a) describe the implementation of Response to Intervention (RTI) and (b) understand the role of Response to Intervention at the fourth-grade elementary school level on the academic performance in a single district by collecting data from various sources. This study examined both qualitative and quantitative data. The rationale behind using a concurrent embedded mixed-method design was to gain detailed information on the RTI process and to triangulate the data from both methods by focusing on the primary qualitative data with the support of the secondary quantitative data, QUAL/quan, as suggested by (Creswell, 2009; see: Figure 1).

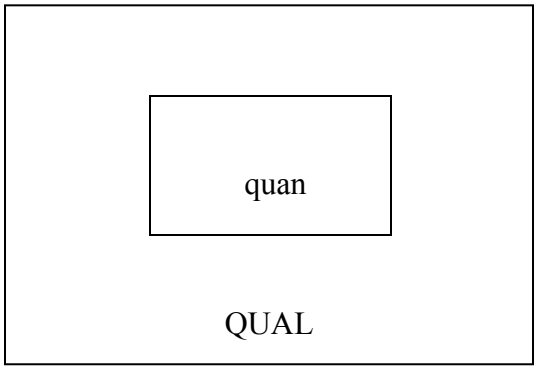

Figure 1. Concrete embedded mixed-method design

Creswell (2009) wrote, "This model is used so that a researcher can gain broader perspectives as a result of using different methods" (p. 214). He continued, "A researcher is able to collect the two types of data simultaneously, during a single data collection phase. It provides a study with the advantages of both quantitative and qualitative data" (p. 215). Moreover, according to Lewis-Beck, Bryman, and Liao (2004), a "mixed design is a term that sometimes has been loosely applied to any research plan involving both QUALITATIVE and QUANTITATIVE variables" (p. 650). Using both qualitative and quantitative variables allowed the researcher to examine the various elements behind the RTI process.

In the qualitative phase, a case study method was utilized by collecting data in the form of interviews, observations, and corresponding data collection. In the quantitative phase, an Applied Behavioral Analysis (ABA), single-case design was used to examine the quantitative data. The quantitative data examined student data based on student progress monitoring data. The researcher analyzed and graphed the students' data to determine a trend of student performance when provided with RTI intervention services. The researcher analyzed these data for students at the fourth-grade level (individual students were not identified nor could their identities be determined). These data were collected for 6 to 8 weeks.

The ultimate goal of this study was to gain in-depth information on how Response to Intervention was implemented district-wide and the effects of this implementation. To address this goal, the research aimed to provide an understanding of (a) how elementary-level schools in one district structured the RTI processes in relation to each tier in reading and math performance; (b) how schools made decisions about student movement from

tier to tier; (c) the results that were experienced as a consequence of using the three-tiered RTI model; (d) how various school professionals interacted with each other during these processes; and (e) how school professionals were prepared to implement Response to Intervention at each tiered level in their school.

Research Questions

This study aimed to answer the following research questions:

Q1 How do school practitioners (special educators, general educators, and interventionist) implement Response to Intervention at each multi-tiered level in the Response to Intervention model?

Q2 How are the practitioners prepared to implement Response to Intervention at each multi-tiered level in their school?

Q3 How has student progress in reading and math been affected by the implementation of Response to Intervention at the second and third tiers?

In general, the research questions were developed to explore and investigate in detail about the nature of implementing Response to Intervention in a single district. Each question was constructed to investigate different elements of RTI implementation in the school district. The first question--"How do school practitioners (special educators, general educators, and interventionist) implement Response to Intervention at each multi-tiered level in the Response to Intervention model?"--provided in-depth information of the practitioners' understanding about the implementation of Response to Intervention from their own experience and practices. The second question--"How are the practitioners prepared to implement Response to Intervention at each multi-tiered level in their school?--explored the practitioners' professional development that the state or the district provided to them to develop their knowledge and practices regarding implementing Response to Intervention. The third question--"How has student progress

in reading and math been affected by implementation of Response to Intervention at the second tier and third tier?"--investigated the progress of individual fourth-grade students in their reading and math performance after implementing Response to Intervention.

Setting

This study was conducted in a school district located in the Rocky Mountain Region, which the researcher was called Buckingham School District (a pseudonym). The town of Buckingham had roots in agriculture but had rapidly evolved in recent decades into a community where employment was distributed largely among retail outlets, community services, technology, light industry, and a suburban population of commuters employed in larger cities in the surrounding area. Its permanent resident population was primarily composed of Caucasian; the largest minority was comprised of Hispanics with a seasonal population of migrant workers who served the surrounding ranch and farm country. The estimated annual household income in 2009 was $80,563. The school district for this community served approximately 4,300 students, of which 2,300 were of elementary age. Due to the demographics and the strong educational background of the Buckingham School District, the schools within the district provided the researcher with an optimal setting for studying the implementation of Response to Intervention. The latter students were served in five schools (see Tables 1 and 2).

Table 1

Demographics of Buckingham School District

	2008-2009		2009-2010		2010-2011	
	%	N	%	N	%	N
Ethnicity						
American Indian or Alaska Native	0.96	38	0.98	40	0.46	20
Asian	1.92	76	1.89	77	1.24	54
Black	0.88	35	0.71`	29	0.41	18
Hispanic	11.7	464	12.32	503	14.02	612
Two or More Races					2.50	109
White	84.54	3,352	84.10	3,433	81.28	3,547
Total	100.0	3,965	100.00	4,082	100.00	4,364
Gender						
Female	47.94	1,901	48.12	1,960	48.12	2,100
Male	52.06	2,064	51.98	2,122	51.88	2,264
Total	100.00	3,965	100.00	4,082	100.00	3,464
Background						
Economically Disadvantaged	17.78	705	17.88	730	20.35	888
Gifted and Talented	9.33	370	6.57	268	4.17	182
Limited English Proficient/English Language Learner	2.22	88	2.35	96	2.31	101
Students with Disabilities	10.39	412	9.48	387	9.58	418
Total	100.00	3,965	100.00	4,082	100.00	4,364

Table 1 (continued)

	2008-2009		2009-2010		2010-2011	
	%	N	%	N	%	N
By Grade						
Charters	9.89	392	10.07	411	10.33	451
Pre-Kindergarten	3.46	137	2.92	119	3.09	135
Kindergarten	7.79	309	7.74	316	7.81	341
Grade 1	8.15	323	8.50	347	7.97	348
Grade 2	8.27	328	8.23	336	8.34	364
Grade 3	7.74	307	8.33	340	8.02	350
Grade 4	7.08	320	7.69	314	8.02	350
Grade 5	7.74	307	8.23	336	7.63	333
Grade 6	7.41	294	7.57	309	8.52	372
Grade 7	7.06	280	7.67	313	7.79	340
Grade 8	7.69	305	6.88	281	7.81	341
Grade 9	7.47	296	7.23	295	6.03	263
Grade 10	6.78	269	6.88	281	6.85	299
Grade 11	6.20	24	6.20	263	6.42	280
Grade 12	6.15	244	5.93	242	10.33	248
Total	100.00	3,965	100.00	4.082	100.00	4.364

Table 2

Percent of Highly Qualified Educators in Accordance with No Child Left Behind Data in Buckingham School District

Classes	2008	2009	2010
Percent Without Highly Qualified Teacher	0.57	0.00	0.00
Percent With Highly Qualified Teachers	99.43	100.00	100.00
Target Percentage	100.00	100.00	100.00
Target Made	No	Yes	Yes

Gaining Access

Mertens (2010) pointed out that it was important to identify the "persons who have the power or grant access" (p. 329). Prior to the study, the procedures were reviewed by the university's Institutional Review Board (IRB) and by the district (see Appendix A). Prior to beginning this study, it was necessary to seek initial permission from the school district and the participants (see Appendix B) selected for the study.

This study stemmed from a pilot study which was conducted by AlSuliman and Jackson (2011). This study was previously approved by both the university's IRB and by the district. The pilot study intended to provide a basic understanding into how teachers used student performance to make intervention decisions, how various school professionals interacted with each other during RTI processes, and what interventions were typically used at different intervention levels within a school. In this pilot study, five individuals were interviewed about the RTI implementation process in Buckingham School District: three experienced elementary school principals, three special education director, and one Response to Intervention administrator.

The pilot study determined several key themes and perceptions regarding the RTI process that helped to contribute to the current study: participants' perceptions on school philosophy and Response to Intervention, everyday intervention practices within and across tiers, decision-making criteria regarding tier to tier transitions, and collaboration processes between general and special education. In general, the findings from this pilot study showed that (a) interventions should be immediate when warranted by the data and that they should change based on data; (b) there was an underlying expectation that Response to Intervention could reduce special education placements; (c) there was an expectation that collaboration between all faculty members in a school would occur; (d) in Tier-II and Tier-III intervention practices, specific and directed interventions were applied in reading and in math; (e) movement down tiers was dependent on insufficient rate of improvement in measured progress given the services provided within a specific tier and movement up from tier to tier was also based on rates of measured progress; and (f) collaboration varied between the tiers, but in general, collaboration increased with movement from Tier I, to Tier II, to Tier III.

From this pilot study, several concerns appeared that helped lead to the current research study. First, the pilot study did not adequately provide information as to how social and behavioral needs were handled in the RTI process. Second, different buildings within the district might have used different criteria for determining the placement of a student and the growth of the student, especially with regard to students with social/behavioral needs. Third, a concern was addressed among participants that interventions might only have been determined by scientific evidence and not based upon teacher experience and knowledge of the student's needs. Finally, there was an apparent

lack of state funding, training, and resources allocated for RTI services. As part of the approval process for the current study, the researcher had several meetings with the special education director in Buckingham School District regarding the completion of this study.

Rationale for Selection

Although the choice of this particular district was partially controlled by convenience in terms of locality and its working relationship with the University of Northern Colorado (UNC), it was the researcher's intention from the start to choose a district that had readily endorsed the RTI model as a district-wide set of practices. Buckingham School District matched the researcher's criteria as this district has been implementing Response to Intervention in its elementary schools for about three years. The Director of Special Education in Buckingham School District was committed to the process from its inception. All five of the schools serving elementary students had RTI steps in place when the researcher approached the district for this study.

In addition to the implementation of RTI, Buckingham School District used a formative assessment system, AIMSweb ®, in all of the district's elementary schools. The AIMSweb ® system provided tools for assessing, summarizing, and displaying K-8 student performance data in early literacy and numeracy, oral reading and reading comprehension, math computation, written expression, and other skill areas by utilizing research-based instruction. A three-tiered assessment model was used in AIMSweb ® to characterize a student's assessment needs: Benchmark (Tier I) mandated universal screening for all students three times per year; Strategic Monitor (Tier II) required

monthly monitoring and Progress Monitor, once every 2 weeks; and (Tier III) called for intensive assessment with regard to individual goals.

Aligned with the state as a whole, the elementary schools in Buckingham School District relied on the State's growth model to assess overall academic progress with respect to the state's student assessment program. This growth model used median scores of student progress in reading, writing, and mathematics; reported across multiple years and calculated separately for students within different scoring ranges on the state tests, as a means for schools to make long-range decisions about whether a student was catching up, keeping up, or moving up academically.

Two schools were selected from Buckingham School District upon the recommendation of the Special Education Director and the Teacher on Special Assignment (TOSA). The two elementary schools, Green Elementary and Red Elementary (both names are pseudonyms), were selected because they both had implemented Response to Intervention for at least three years. Furthermore, the two elementary schools were similar in several aspects including building size, high level of implementing Response to Intervention, and student demographics.

Research Design

The goal of this study was to gain in-depth understanding of the Response to Intervention implementations from the practitioners. To reach this goal, it was important to collect and examine both qualitative and quantitative data from several resources to achieve thick and enriched findings. According to Lewis-Beck et al. (2004) and Mertens (2010), an embedded mixed-method design involved both quantitative and qualitative methodology to help the researcher provide information, answer questions in a research

study, and to provide information related to the research questions. Therefore, this study implemented a concurrent embedded mixed-method design. Patton (2002) and Stufflebeam (2001) described several advantages to using both quantitative and qualitative data during a research design. One such advantage was that they complemented and supported each other through the use of several data sources. The collection of different data sources helped to validate and cross-reference findings and ensured dependable feedback. The embedded mixed-method approach was "a holistic perspective; and enhancement of the validity, reliability, and usefulness of the full set of findings" (Stufflebeam, 2001, p. 40).

In the qualitative phase, a case-study method was utilized by collecting data in the form of interviews and observations of general education teachers, special education teachers, and interventionists who were responsible for implementing the RTI model, in order to understand the participants' epistemology regarding its implementation. Documents and corresponding artifacts were also collected.

In the quantitative phase, a single-case design was utilized. When examining single-case data, a common procedure, known as a visual inspection of graphs, was utilized to plot the students' data. Alberto and Troutman (1999) recommended a number of different methods for examining trends, all of which served dual purposes of showing the magnitude of changes and reducing noise in the data. Based on Alberto and Troutman's work, the researcher chose to summarize the data, by taking the averages of three data points for each individual student. These points summarized the beginning and the middle of the previous academic year and the beginning of the academic year for the duration of the data collection. The data examined the progress monitoring for 26

students receiving RTI services at Tier II and Tier III in reading and math in the fourth grade. The data points were collected by the district using the AIMSweb® system, which monitored the progress of students in reading and math; these data points served to support and triangulate the qualitative phase of the study.

Qualitative Phase of the Study

The qualitative methodology phase was used because it acquired descriptive, detailed data that were collected directly from the participants. The findings were presented by the voice of participants and interpretation were based on their different answers and points of views. According to Creswell (2009), qualitative researchers used research data and information from participants to address or describe the problem.

This phase of the study was classified as a case study. Merriam (1998), and Patton (2002) described a case study as a bounded system of analysis. These authors also mentioned that a case study might focus around an individual (such as a teacher or student), a group of individuals, a school, a setting (such as a classroom), or program (such as Response to Intervention). Merriam (2010) pointed out, "A qualitative case study is an intensive, holistic description and analysis of a single instance, phenomenon, or social unit" (p. 27).

In this study, the phenomenon examined the role of Response to Intervention (RTI) in improving students' academic performance. The unit of this study was the fourth grade; which encompassed practitioners who were responsible for Response to Intervention and students who were served in this model.

Participants and sampling. In qualitative research, as Merriam (1998) described, the sample was mostly non-random, purposeful, and small. She continued,

"Purposeful sampling is based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned" (p .61). To achieve a purposeful sample, the qualitative phase of this study utilized an intrinsic case-studies sampling design suggested by Mertens (2010). Mertens (2010) wrote that this method of sampling focused on the "evaluation of specific programs, . . . achieving a thorough understanding of that particular case" (p. 323).

To have an appropriate case study (Merriam, 1998), it was important to establish specific criteria that would "guide case selection and then select a case that meets those criteria." (p. 65). Therefore, each participant was selected, per the recommendation of the TOSA for the Department of Instruction in the Buckingham School District, based on the following criteria to ensure the quality of the sample and to make sure the participant selection was non-random and purposeful:

1. The participants would have experience in implementing Response to Intervention in the district.

2. The participants had, at one time, been a member of a problem-solving team during the RTI process.

Using the above criteria, the researcher selected 1 special education teacher, 1 general education teacher, and 1 interventionist from each school. These 6 practitioners of Response to Intervention from two different elementary schools were selected based upon their experience in implementing Response to Intervention. In the event that more than 6 practitioners met the criteria, then the TOSA would choose the 6 practitioners who had the most experience. However, if fewer than 6 practitioners were available based on the criteria, the researcher would interview those persons who were available.

The participants included general educators, special educators, and interventionist. Each participant was interviewed and observed as part of the case study data collection. The participants, selected by the TOSA, each had experience in education and knowledge of implementing Response to Intervention. The first participant, Mrs. Nilsson, had her Master's degree in elementary education and reading and had been working in education for 16 years. Of those 16 years, she had been teaching for 13. This was Mrs. Nilsson's seventh year working at Green Elementary School and was currently the literacy specialist. As the literacy specialist, she was involved in the RTI process and the components throughout the RTI process, including providing assessments, identifying students who were below grade level in reading, placing students on a literacy plan, and providing services to support students in reaching the desired grade level.

The second literacy specialist and interventionist, Mrs. Swanson, had a Master's degree in reading and had been working in education for 19 years. This was her first year at Red Elementary School. She provided reading intervention to the students from kindergarten through the fifth grade. She specialized in various research-based interventions including Read Naturally.

Mrs. Eden was the special education resource teacher at Red Elementary School. She had been in the field of education for 27 years, with this being her 21st year of teaching special education. During her 21 years in teaching special education, she also had had some experience teaching students who had more significant needs. She has had experience working with students with autism as well as students with learning

disabilities. She has been in the Buckingham district teaching in resource classes for 10 years.

Mrs. Larry has been teaching special education for about 13 years and has been working in education for 16 years altogether. She had a Master's degree in hearing impaired and generalist in special education. This was her third year at Green Elementary School. She was currently working with students who had a variety of needs, such as autism, specific learning disabilities, and intellectual disabilities.

Mr. MacArthur was a fourth-grade general education teacher. This was his 10th year of teaching and education and was his second year at Green Elementary School. He has bachelor's degree was in elementary education. He had spent the majority of his teaching experience teaching fourth grade. Mrs. Thomson had a Master's degree in literacy and in curriculum and instruction. She currently was working as a fourth-grade general education teacher at Red Elementary School. She has been working in the education field for 12 years and this is her 10th year of teaching. For the past 2 years she had been working as literacy specialist at Red Elementary School.

Qualitative instruments. In the qualitative phase, the researcher used a combination of semi-structured interviews, ethnographic observations, and review of documents collected from the district, participating schools, and participants. This allowed for an in-depth collection of data. The interviews provided the researcher with an in-depth perspective on the process and effect of Response to Intervention from each participant. The observations served to triangulate the data, as the researcher investigated how the observations correlated to what each practitioner described during the interviews. Patton (2002) pointed out, "Field notes are descriptive. They should . . . record such

basic information as where the observation took place, who was present, what the physical setting was like, what social interaction occurred, and what activities took place" (p. 303). The review of documents further substantiated and triangulated the interview results.

Interviews. In the qualitative phase of the study, the primary method of data collection occurred through interviewing the participants. These interviews followed semi-structured interview protocols developed by the researcher (see Appendix C). The following interview questions were reviewed and used in the previous pilot study:

- How does your school interpret the RTI process?
- At each tier, what are the typical criteria that have to be met for students to receive an intervention?
- At each tier, what interventions are typically applied for students and how is the success or failure of an intervention determined?
- At each tier, what is the relationship between the general education personnel and the personnel of other specialties in the intervention process?

Additional questions were developed based on the results of the pilot study as follows:

- How have you been prepared for the collaboration process required for RTI services?
- What other forms of preparation have you received to assist you in implementing RTI services?
- How did the training affect the methods in which you implement while providing RTI services?

- What types of support did the district provide for you to implement the RTI process?
- For students who are still receiving interventions in the RTI model after 6 months, are you providing different interventions or instruction or are you doing the same thing?

The Special Education Director and the Response to Intervention Coordinator from the Buckingham School District reviewed and provided feedback for each interview question that was developed after the pilot study. The interviews were scheduled during the ninth month of the study. The researcher interviewed participants from Green Elementary and Red Elementary in the Buckingham School District.

From each school, the researcher interviewed 3 practitioners including a general educator, a special educator, and an interventionist. Each interview lasted from 45 minutes to 1 hour; the participants chose a comfortable time and place for the meeting. If the participants chose to be interviewed during work hours, the researcher worked with the principal of the school to ensure any classroom time would be covered. With permission from the participants, the interviews were digitally recorded and the recorder stored in a secure cabinet. At this point, the researcher transcribed the interviews into a written document.

These interviews were an important part of the data collection--they served to help triangulate the results of the research study. Moreover, Merriam (1998) suggested that, in order to ensure the validity of the research, member checks should be conducted. She wrote, “Taking data and tentative interpretations back to the people from whom they were derived and asking them if the results were plausible” (p. 204). Therefore, the

researcher established a member check procedure wherein the transcribed interviews were relayed back to the participants for their review. In this way, the participants were free to add or edit information from the original interviews if there were errors in the research. After the member check, the transcribed interviews were used in the findings of the case study. All data and information presented in the case study were anonymous.

Observations. With permission of the participants who were interviewed, the researcher observed general instructional practices within the RTI model and assessment procedures in the classroom. These observations took place in various settings in which the researcher observed the participants during benchmark testing, progress-monitoring sessions, in the general education classroom, during small group instruction, and during team meetings. Each setting helped the researcher collect data and understand the role the participants had at specific points of instruction during the RTI process and when giving interventions to students.

During the ethnographic observations, the researcher used field notes; and observations forms that would guide the research during each of these observations. Furthermore, these observation forms assisted the researcher in understanding the participants' active role in the RTI model. Three observation forms were provided by the Buckingham School District and were used by the district to observe practitioners. The first observation form followed the directions for the Reading CBM Administration and Scoring of Reading Curriculum Based (R-CBM), which measured the oral reading fluency. The second and third observation forms (The MAZE Standard Administrative Directions and the Math Concepts and Applications M-CAP Directions) directly

evaluated the practitioners' administration of the MAZE and M-CAP testing procedures (see Appendices D, E, and F).

In addition to the afore-mentioned observation forms, an observation checklist was created by the researcher, based upon Creswell (2009) and Merriam (1998) recommendations, and was developed to record the different essential components within the RTI model including the benchmarks phase, progress monitoring sessions, and the use of explicit instruction. This observation form was developed for the purpose of recording essential information (i.e., setting and time and to maintain objectivity during the observations; see Appendix G).

Documents and corresponding data. The researcher collected any corresponding documents that would support and triangulate the findings of the research study. Documents included schedules of correspondence between the researcher and the participants, Response to Intervention or teaching schedules from the participants, schedule of test dates or progress monitoring dates, district documents regarding RTI interventions, or transcripts from team meetings. The researcher collected visual data including charts or graphs that generally illustrated the model and other general artifacts pertaining to the RTI model.

Quantitative Phase of the Study

Based on the recommendation of Mertens (2010), the single-case design was used in the quantitative phase of this study to examine the effect of Response to Intervention on the 26 students' progress on reading and math performance. Moreover, this design method "can be used to test the effectiveness of specific instructional strategies . . . such as . . . academic achievement, social behaviors" (Mertens, 2010, p. 207).

By employing a visual inspection of graphs, the researcher was able to determine "the *levels* of performance in the phases, [and] the *trends* in performance" (Alberto & Troutman, 1999, p. 210). In other words, the researcher was able to evaluate student performance in comparison to the aimline and was able to report the trends in student performance as they received intervention services in Tier II and Tier III. Furthermore, the researcher utilized this method in order to show the magnitude of changes in the quantitative data by taking the averages of three data points at the beginning of the past academic year, the middle of the past academic year, and at the end of the current year at the time of the study.

The purpose of this quantitative phase was to describe the effect of Response to Intervention on the students' academic performance. The researcher examined the effects of Response to Intervention implementations and interventions by analyzing the collective progress of students in the fourth grade. These students received interventions in the Tier II and Tier III levels of the RTI model. The progress-monitoring data were used in this study to examine the overall effectiveness of Response to Intervention and its interventions.

Participants and sampling. Data from this phase supported and triangulated the data from the qualitative phase by examining if student progress supported the literature on Response to Intervention and the practitioners' perspectives and opinions on the effectiveness of the model. The data originated at the program level, and individual students were not identified nor could their identities be determined. These data were de-identified by the district. The researcher examined the effects of RTI implementations and interventions by examining trends in the progress of the students, using the de-

identified data provided by the district. The students' data, which covered several months, both before and during the period of the research, helped the researcher understand in greater depth the impact of Response to Intervention and its interventions.

The quantitative phase of this study examined the following:

1. AIMSweb® benchmark assessments in Reading Curriculum Based (R-CBM), reading comprehension (R-MAZE), and math concept and applications (M-CAP). The benchmark tests were administered by the school and were delivered to the researcher near the end of the study.

2. Progress monitoring data in (R-CBM), (MAZE), and (M-CAP) from AIMSweb® were collected every 2 weeks by the district.

3. These identified students were enrolled in the district for at least two academic years.

Quantitative instruments. In this phase, the researcher used baseline data from the AIMSweb® assessment tool. The baseline data were represented by student achievement levels during the benchmark (screening) tests that were administered three times per year. The benchmark tests identified the initial scores from different areas (reading and math) prior to the students receiving interventions. These benchmark data determined the students' goals for improvement. The repeated measures, which were considered progress-monitoring data points, track individual student progress. Progress-monitoring data were collected using the AIMSweb® assessment tool. Three AIMSweb® assessments were used: the Reading Curriculum Based (R-CBM), the Maze Curriculum-Based Measurement (Maze-CBM) and the Mathematics Concepts and Applications (M-CAP) (see Tables 3 and 4 for district information on AIMSweb®).

The Reading Curriculum Based (R-CBM) was a standardized reading assessment for grades K-8. The R-CBM helped educators evaluate general reading achievement and comprehension by having a student read a grade-level passage aloud for one minute. During the testing timeframe, the educator recorded the number of correct words per minute and the number of errors. The student data were then analyzed to see how many correct words per minute the student could read.

The Maze-CBM was a standardized reading-assessment tool used by educators in the Buckingham School District. Maze-CBM was research-based and provided information regarding students' reading skills, especially in assessing reading comprehension skills. Maze-CBM used a multiple-choice cloze task students complete while reading silently (AIMSweb®). This tool assessed students from grades 1 through 8 and measured reading comprehension independently of the curriculum while meeting professional standards for reliability and validity (AIMSweb®--R-MAZE).

The M-CAP examined general mathematical problem-solving skills of students between grades 2 and 8. The M-CAP test took 8 minutes and could be administrated in large groups, small groups, or to individual students. "Based on the National Council of Teachers of Mathematics (NCTM) Principles and Standards," this test "contains 33 probes per grade: three for benchmarking all students, and an additional 30 for monitoring the effectiveness of interventions" (AIMSweb®). Finally, the M-CAP baseline assessment for fourth grade includes six domains: number sense, operations, patterns and relationships, measurement, geometry, data, and reliability.

Table 3

2011-2012 Buckingham School District Assessment Matrix for Benchmark and Progress Monitoring Testing

Grade Level	Benchmark/Universal Screeners	Progress Monitoring	Diagnostic Assessments	Outcome/ Summative Assessments
Elementary School	*AIMSweb Early Numeracy (Kdg-1st Gr) *AIMSweb Early Literacy (Kdg-1st Gr) *AIMSweb R-CBM (1st Winter-5th), MAZE (3rd-5th) *AIMSweb M-CAP (2nd-5th) & M-COMP (1st winter-5th)	*AIMSweb *Lexia *ALEKS *Fry Word List	*DRA-2 Developmental Reading Assessments	*3rd -5th Grade-TCAP *End of unit assessments *5th Grade Math Placement Test (Administered May 9th-13th)
Dates for Assessment Windows	<u>AIMSweb Window</u> *Fall Benchmark August 24th -Sept. 9th *Winter Benchmark January 5th- 20th *Spring Benchmark April 23rd- May 4th <u>District Writing Assessment</u> August 22nd-29th April 23rd- May 4th	*Every 2 weeks for elementary students *1-2 times a month for secondary students	*As needed	<u>TCAP (CSAP) Window</u> 3rd Grade Reading: Feb. 27th-March 7th 3rd Grade writing and Grades 4-10: March 12th-April 6th <u>ACT</u> April 24th Make-up- May 8th <u>CELApro</u> January 3rd-31st

Table 3 (continued)

Grade Level	Benchmark/Universal Screeners	Progress Monitoring	Diagnostic Assessments	Outcome/ Summative Assessments
	Acuity Window			CoAlt (CSAPA)
	Form A: September 6th-September 23rd			February 2nd- March 23rd
	Form B: October 31st-November 18th			
	Form C: January 4th- January 20th			

Table 4

2011-2012 Buckingham School District Assessment Matrix for Benchmark Testing by Grade Level

Grade Level	Fall Benchmark (August 24th-September 9th)	Winter Benchmark (January 5th-20th)	Spring Benchmark (April 23rd-May 4th)
Third-Fifth Grade	~ R-CBM = Reading Curriculum Based Measurement ~ MAZE= Comprehension ~ M-COMP=Math Computation ~ M-CAP=Math Concepts and Applications	~ R-CBM = Reading Curriculum Based Measurement ~ MAZE= Comprehension ~ M-COMP=Math Computation ~ M-CAP=Math Concepts and Applications	~ R-CBM = Reading Curriculum Based Measurement ~ MAZE= Comprehension ~ M-COMP=Math Computation ~ M-CAP=Math Concepts and Applications

Research Procedures

The researcher followed the following procedures during the qualitative and quantitative phases of this study (see Table 5 for a detailed schedule):

1. Prior to the research, the researcher contacted the Special Education Director of the Buckingham School District to determine the two schools that would be most appropriate for this study. The researcher thoroughly examined and reviewed the district's Response to Intervention manual and corresponding documents to better understand the district's involvement in the RTI process. Initial permission was received from the special education director.

2. The researcher applied to the Institutional Review Board (IRB) at the university to obtain approval for the pending study.

Table 5

Research Procedure, Data Collection, and Timeline Schedule

Timeline	Task and Data Collection	Purpose
Month 1 and 2	Selected district for the study	Sampling conducted research participants
	Review of selected districts' profiles and documents,	Secure access
	Piloted interview protocols, demographic questioners, and observation checklists	Ensure that research question and related sub-questions are addressed
Month 3 and 4	Proposal defense, IRB approval, permission from district to conduct study	Ethical issues will be approved
Month 5	Submit the proposal to the graduate school	
Month 6 and 7	Schools Closed for Summer Vacation	
Month 8	Interviews	Collect data from qualitative phase
		Interviewing six practitioners: general education teachers, special education teacher, and interventionist
End of month 8 -- beginning of month 9	Observations	Collect data from qualitative phase: Response to Intervention (RTI) implementation in the two schools in the following setting:
		Benchmark testing sessions
		Collaborative problem-solving team meetings.
		Intervention sessions in the RTI Tiers I, II, and III.
		Progress monitoring

Table 5 (continued)

Timeline	Task and Data Collection	Purpose
Month 10	Student data collection	Receive and analyze data in the quantitative phase: Students' progress in Tier II and Tier III from AIMS web assessment: RCBM, MAZE and CAP.
Month 9 -- beginning of month 11	Data analysis and findings	Writing chapter: 4 and 5
Middle of month 11		Doctoral defense

3. Participants were provided with a letter explaining the study and participant requirements (see Appendix B).

4. The researcher initiated interviews with each participant. Further steps were detailed in the qualitative procedures.

5. The researcher commenced the qualitative phase of the study and conducted ethnography observations (benchmark, collaborative problem-solving team meetings, intervention for Tiers I, II, and III, and progress monitoring).

6. The researcher commenced the quantitative phase of the study by triangulating data from the qualitative phase. Further steps were detailed in the quantitative procedures.

Qualitative Procedures

1. The researcher visited two different elementary schools within the Buckingham School District as recommended by the Special Education Director.

2. The researcher contacted the TOSA for Department of Instruction to arrange a meeting with each selected participant. From each school, there were three

participants--a general education practitioner, a special education practitioner, and an interventionist.

3. The researcher worked with each participant to create a schedule for interviews (see Appendix H) and observations (see Appendix I). Each participant was interviewed and observed; the observations provided information on how benchmarks and progress monitoring were conducted, what types of interactions among team members occurred, and how interventions were provided to students. During the ethnographic observation period, the researcher used field notes and observation forms to guide the observations.

Quantitative Procedures

For the quantitative phase, the researcher received data from the TOSA. These data recorded benchmark and progress-monitoring scores from the AIMSweb® assessments. Prior to receiving the data, the TOSA de-identified the students to preserve the anonymity of the students' identity.

From de-identified students, AIMSweb® benchmark assessments and progress-monitoring data from the past academic year (the year prior to this study) were gathered from each case from the district and analyzed to support the current results.

From the same de-identified students, AIMSweb® benchmark assessments data in the areas of R-CBM--Reading Curriculum Based, MAZE--Reading Comprehension, and M-CAP--Math Concepts and Applications were gathered at the beginning of the study. During the study, progress-monitoring data were collected by the district and delivered to the researcher after the de-identified students had at least three data points from AIMSweb® in the following areas: R-CBM--Reading Curriculum Based, MAZE--

Reading Comprehension, and M-CAP--Math Concepts and Applications. Corresponding data such as field notes and intervention materials were collected.

Data Collection and Analysis

Analysis of Qualitative Data

The goal of the data analysis in the qualitative phase of the case study was to gather in-depth information from various sources (Merriam, 1998). The sources included in this phase were derived from a combination of interviews, observations, and documents. Each source served to provide detailed information regarding the different aspects of RTI implementation in one district. Due to the complex nature of organizing data from several sources, Patton (2002) suggested, "Qualitative software programs facilitate data storage, coding, retrieval, comparing, and linking [data]" (p. 442). Patton continued, "The challenge of qualitative analysis lies in making sense of massive amount of data" (p. 432). Therefore, the researcher used the NVivo9 qualitative software to organize, manage, and analyze the data collected in this study.

Data collected from interviews, observations, and documents were stored in the NVivo9 database software program. According to Lewis-Beck et al. (2004), NVivo9 "is a software program designed for computer-assisted qualitative data analysis" (p. 748). The researcher utilized NVivo9 to facilitate the coding and organizational processes of the database. The researcher chose to use NVivo9 for the data analysis process for accessibility reasons; the University of Northern Colorado used this software in the statistics department.

Themes and Sub-themes

Merriam (1998) and Patton (2002) indicated that building classification through the use of categories and sub-categories, or themes, was an important segment of data analysis in qualitative research. These themes were typically built using "continuous comparison of incidents, respondents' remarks, and so on, with each other" (Merriam, 1998, p. 179). Kenney (2011) added that these themes were "labels that assign meaning to descriptive or inferential information collected within a study" (p. 93). Moreover, all of these themes should be logically connected to the data, should address the goal of the study, and answer the research questions.

As a first step of data analysis, the researcher created themes and sub-themes using elements collected from the literature review, the pilot study, and the core principles of RTI. Several components must be acknowledged to promote the success of Response to Intervention in schools. Emerging literature recognized that universal screening, progress monitoring, research-based interventions, and collaboration were all necessary to make Response to Intervention a useful method to identify students who had special needs and to promote academic achievement of all students in schools (Barth et al., 2008; Berkeley et al., 2009; CDE, 2008; Feifer, 2008; Mellard et al., 2009; *Response to Intervention [RtI]District Handbook*, 2011). As each of these elements related to the success of Response to Intervention, these elements were used in the coding process when analyzing the data (see Table 6).

Table 6

Initial Themes Established Based on the Literature, Pilot Study, and Response to Intervention (RTI) Framework

Initial Themes		
Themes	Sub-Themes	Purpose
The Process of RTI Implementation	1. Interpretation of RTI at the three tier levels 2. Behavior interventions in RTI	To gain information from the participants regarding the practices used in schools, district wide, on which instructions and interventions were used. This theme provided an in-depth understanding of the process of implementing RTI. What do participants believe was correct implementation of RTI?
RTI Evaluation and Identification	1. Universal Screening 2. Progress Monitoring	To identify the use of universal screening and progress monitoring during the RTI process in order to place students in appropriate RTI intervention tiers. To determine RTI evaluation and identification methods and to clarify the determination criteria.
Collaboration		To acquire insights as to how the participants collaborate with each other while making decisions regarding each student in each tier level.
Professional Development		To explain what type of training or professional development each participant received or delivered for the RTI process.

The following describes the rationale of the main themes and the corresponding sub-themes that were chosen to analyze the data and to help the researcher answer the research questions posed in this study. The first, second, and third themes--The Process of Response to Intervention Implementation, Response to Intervention Evaluation and Identification, and Collaboration--would help to answer the first research question: "How do school practitioners (special educators, general educators, and interventionist) implement Response to Intervention at each multi-tiered level in the Response to Intervention model?"

The first theme (Process of Response to Intervention Implementation) covered the Interpretation of Response to Intervention at the three tier levels, which were an important aspect of implementing interventions during the RTI process. In the Response to Intervention Evaluation and Identification theme, the first sub-theme (universal screening) addressed whether or not a student should receive Tier I, Tier II, or Tier III RTI intervention services. The next sub-theme in this area (progress monitoring) examined the ongoing affect Response to Intervention had during the process and also provided important information in the data analysis. The third theme (Collaboration) acquired insights as to how the participants collaborated with each other while making decisions regarding each student in each tier level.

The fourth theme (Professional Development) answered the research question: How are the practitioners prepared to implement Response to Intervention at each multi-tiered level in their school? This theme helped the researcher examine the training and professional development of practitioners regarding the RTI model and helped the

researcher describe how training prepares these persons for implementing Response to Intervention in the schools.

Analysis of Quantitative Data

This quantitative phase helped answer the third research question: How has student progress in reading and math been affected by the implementation of Response to Intervention at the second tier and third tier? Data were collected from students who were receiving RTI services that were provided from the program level and included AIMSweb® benchmark data (collected during the study and from students' previous academic school year), AIMSweb® benchmarks, and progress-monitoring data in reading and math. Practitioners in the school district conducted the benchmark assessments and progress monitoring; these data were documented and archived by the school district. The TOSA then collected the data and delivered it to the researcher. The researcher observed the practitioners administrating the benchmark tests and the progress monitoring. After the researcher received data for the de-identified students from the TOSA, the researcher began to analyze the *visual inspection graphs* in order to determine the students' performance trends on R-CBM, MAZE and M-CAP.

Reading Curriculum Based (R-CBM). The R-CBM test used a meaningful general curriculum based passage to collect data on a student reading fluency, reading growth and development, and reading comprehension. During the test, the student was required to read a passage for 1 minute while the instructor recorded the number of words read correctly and the number of errors made in the passage. During the R-CBM test, the instructor also noted information about the students' reading ability and how accurately the student read. This testing process was repeated three times with three different

reading passages, each passage worth 1 minute. Educators' used R-CBM for both benchmark testing and progress monitoring. The purpose of R-CBM in benchmark testing was to screen for and identify students who were at risk in reading and may need reading intervention. The benchmark testing could be conducted throughout the school year. The purpose of using R-CBM for progress monitoring in the three tier levels was to determine improvement and success of an intervention and to assist educators in writing IEPs if the student did not show progress.

Maze Curriculum-based Measurement (MAZE-CBM). The MAZE test was useful in identifying at-risk students by assessing and monitoring reading ability. The MAZE reading test examined both comprehension and students' general reading achievement skills. It also used a cloze reading sample in which the student must select the word that would be most meaningful and relevant to the passage. Students had 3 minutes to complete the task of reading the story and choose the correct words within the passage.

For each student who was receiving intervention services in Tier II and Tier III and whose progress was monitored, through MAZE (every 2 weeks), progress was measured through individual student goals. The educational team (special education teachers, general education teachers, and interventionists) examined what each student should accomplish in a given amount of time. During progress monitoring, individual student progress was recorded and measured to determine if the student was reaching the desired goal. Student improvement was determined by whether or not the student was meeting or exceeding his or her individual goals while receiving interventions. If the student showed progress, then the intervention was considered successful; whereas, if the

student did not show growth, then the student may receive stronger interventions (Tier III) or may be considered for an IEP.

Math Concepts and Applications (M-CAP). The M-CAP examined various mathematic domains and was useful for screening and progress monitoring. In the 8-minute test, the M-CAP examined students' ability to complete problems pertaining to number sense, mathematical operations, patterns, measurement, geometry, and data and probability. Similar to the R-CBM and MAZE testing, M-CAP used a student's specific goals to determine student progress when collecting data for progress-monitoring purposes. For each individual student who was receiving interventions, a goal (or aim line) was determined and student progress toward the set goal was measured on a frequent basis. In the Buckingham School District, progress-monitoring data were collected every 2 weeks. These data helped to determine if the interventions were successful or if the student needed different intervention services. The scores from these data helped the researcher support the data from the qualitative phase by measuring student growth. In the presence of student growth, the researcher could determine that Response to Intervention was successfully meeting its goals.

Validity and Reliability

While conducting a research study, the researcher examined and considered possible concerns to the validity and the reliability of the study. According to Merriam (1998), Mertens (2010), and Patton (2002) to conduct appropriate research, it was important that the researcher pay close attention to the study's procedures and its components. Furthermore, the method in which data were collected and analyzed was important to the final presentation of the findings.

Validity

In an embedded mixed-methods study, it was important to examine the validity of both the qualitative and quantitative aspects of the research. Creswell (2009) pointed out that researchers should "consider the types of validity related to the quantitative component… validity related to the qualitative strand . . . and any validity issues that might arise that relate to the mix methods approach" (p. 220). He defined validity as checking for the "accuracy of the finding by employing certain procedures" (p. 190).

Creswell (2009), Merriam (1998), and Mertens (2010) identified several issues related to validity: the use of triangulation, member check, and rich description of the findings, the presentation of discrepant information, peer examination, long-term observation, and an external auditor. In addition, researcher bias was a large component of the validity of the study. The researcher considered each of these issues throughout the study.

One of the issues described by (Creswell, 2009; Merriam, 1998; Mertens, 2010) addressed triangulation using several methods--interviews, observations, artifacts, and data. The researcher confirmed the accuracy of the findings by using a member check by sending a report of the final transcription to participants to make sure the data represented the participants' initial views in detail.

Rich description of the findings and the presentation of discrepant information provided a sense of reality of the experience to the reader and helped provide detailed information about the theme and the setting. Furthermore, presenting contradictory information provided credibility by expanding upon the findings. These methods helped

provide validity by not narrowing the findings. The researcher presented in-depth information about the setting, the themes, and any details that contradicted the findings.

The researcher addressed the concern of peer examination by consulting with an expert review panel consisting of the doctoral committee members at the university. This peer examination helped to improve the validity of the study by providing feedback on the "findings as they emerge" (Merriam 1998, p. 204).

Researcher Bias

Merriam (1998) described researcher biases as "clarifying the researcher's assumptions, worldview, and theoretical orientation at outset of the study" (p. 205). Creswell (2009) assured that "good qualitative research contains comments by the researchers about how their interpretation of the findings is shaped by their back-ground, such as their gender, culture, history, and socioeconomic origin" (p. 192). The researcher's intention was to investigate the phenomenon of Response to Intervention, its implementation practices, and the advantages of using the multi-tiered model. Since the researcher came from a background that was focused on researching the benefits of Response to Intervention in schools, she may have used this knowledge to incorporate the model and transfer its implementation to Saudi Arabia. Thus, she might have biases toward the advantages of Response to Intervention.

To address the issues of the researcher's subjectivity and biases, the researcher established validity practices throughout this study to avoid any potential biases. First, the researcher established a coding system for the data to analyze the findings. Second, the researcher's advisor and doctoral committee members reviewed the findings of the study to ensure that the data followed the coding system and did not contain potential

biases. Finally, the researcher presented contradictory findings along with support for the RTI phenomenon.

Reliability

Reliability within a study was defined as the ability for the study to be repeated by other researchers. From a quantitative perspective, if the study was repeated, it should yield similar results when examining a similar population. From a qualitative perspective, however, obtaining similar results is challenging as human sciences were not static (Merriam, 1998). Merriam (1998) stated, "Reliability in traditional sense seems to be . . . a misfit when apply to qualitative research [and] suggest thinking about . . . the consistency of the results" (p. 206). Moreover, it was important that a reader of the study agreed that the data made sense. As this was a mixed-method study, the researcher strived to conduct a study that was reliable--the data aligned with the study and the procedures of the study could be replicated in future research. Creswell (2009) indicated that the "researcher's approach is consistent across different researchers and different projects" (p. 190).

There were several processes to ensure the reliability of the study and to make sure the results were trustworthy based on the data (Creswell, 2009; Merriam, 1998). Of these processes, establishing an audit trail showed how the researcher collected the data and how the findings were established. To maintain an audit trail, the researcher collected artifacts, recorded and checked transcripts for accuracy, and collected communications between the researcher and participants including emails, letters, and schedules (Creswell, 2009). These artifacts were recorded in NVivo9 which maintained an organized record of the procedures and assisted in the reliability.

A second process to ensure reliability as well as validity was the triangulation process. Merriam (1998) wrote that "using multiple methods of data collection and analysis… strengthens reliability" (p. 207). To triangulate the data in the case study, the researcher utilized several methods to collect the data including interviews, observations, artifacts, and students' quantitative data. Using several methods and sources to establish the reliability and validity led to a holistic understanding of the phenomena--in this case, the implementation and effects of Response to Intervention.

Ethical Considerations

As the researcher's primary data collection stemmed from interviews and observations, the researcher took into consideration ethical concerns described by Creswell (2009) and Merriam (1998). A researcher should consider several potential risks "such as, physical, psychological, social, economic, or legal harm. . . . Also, the researcher needs to consider the special needs of vulnerable populations, such as minors" (Creswell, 2009, p. 89). With particular regard to qualitative studies, which was a large component of this study, Merriam (1998) wrote, "Ethical dilemmas are likely to emerge with regard to the collection of data and in the dissemination of findings" (p. 213). Merriam continued that an interviewer should consider the questions presented in order to avoid questions that may be harmful. To address this issue, the researcher used pseudonyms for the participants to avoid sharing information that participants may see as damaging or personally harmful.

In general, there were no foreseeable risks because the data sources were anonymous, participation was voluntary, and the data were kept secure. This research determined perceptions of how Response to Intervention was implemented in elementary

schools and the perceived consequences of this implementation. Moreover, the research provided indications into how teachers used student performance to make intervention decisions including (a) how a student's school history impacted this process and (b) what interventions were typically used at each tier level.

First, the researcher asked permission from the participants to interview and observe them as well as to use audio recordings during the interviews. Informed consent was obtained from all persons involved in this study. Consent forms were provided to the district, general education teachers, special education teachers, and interventionists. Each consent form provided information on the purpose of the study, the procedures for the study, the type of data that were collected, and the time of the study. During the interview process, participants were allowed to choose the most comfortable setting and time to be interviewed.

Conclusion

Response to Intervention (RTI) has been referred to as a preventive multi-tired model of early screening and monitoring and provides specific intervention based on students' needs. To help ensure that Response to Intervention was carried out with fidelity and high quality instruction, special educators should work collaboratively with other team members such as general education teachers, interventionist, psychologists, and speech language pathologists to approach any problems. The aim of this research was to gain information regarding the implementation of Response to Intervention and to provide a rich description from the perspective of practitioners from both qualitative and quantitative resources by using a mixed method research design. It was the researcher's

intention to provide insight into the RTI process for the benefit of educational settings, RTI practitioners, and future research of RTI processes.

CHAPTER IV

RESULTS

This study examined the nature of implementing the multi-tired Response to Intervention (RTI) model at the fourth-grade level from two elementary schools at Buckingham School District. An embedded mixed-method design was adopted for this study. Quantitative and qualitative data were used in this study in order to receive a rich description of the RTI phenomena and also to provide a triangulation of the data for the study. This study addressed the following research questions:

Q1 How do school practitioners (special educators, general educators, and interventionist) implement Response to Intervention at each multi-tiered level in the Response to Intervention model?

Q2 How are the practitioners prepared to implement Response to Intervention at each multi-tiered level in their school?

Q3 How has student progress in reading and math been affected by the implementation of Response to Intervention at the second and third tiers?

In order to answer to the research questions, this chapter begins with a review of the settings and the data gathering processing used in this study. This is then followed by three sections devoted to the analysis of the data in relation to the three research questions. Lastly, final review of the data as a whole is presented as a chapter summary.

The Settings and Data Collection Processing

At the start of the study, and prior to the data collection phase, the researcher attended an AIMSweb® training. The training, which was provided by the district and

facilitated by the Teacher On Special Assignment (TOSA) and the reading interventionist, discussed the various AIMSweb® assessments including MAZE, R-CBM, M-CAP, M-COMP, and the methodology and data interpretation of each assessment.

The researcher then began formally gathering the data for the qualitative phase, which utilized a series of interviews regarding the RTI model. The researcher asked each participant a series of questions pertaining to their interpretation and experiences on the components of Response to Intervention and how they had been prepared to implement Response to Intervention. The researcher, following the recommendation of the TOSA, selected a total of six participants based on the condition that each participant had experience in implementing Response to Intervention. The TOSA assisted the researcher by facilitating and coordinating each interview. The researcher specifically interviewed two fourth-grade general education teachers, two special education teachers, and two reading interventionists. Each interview lasted from 40 to 50 minutes in length and were digitally recorded and transcribed to aid in the data collection. Moreover, the researcher conducted a member-check in order to ensure the reliability of the interview data.

Following the interviews, ethnography field notes were complied to record the actual RTI practices within the schools. The researcher conducted field observations during hours recommended by the practitioners. Corresponding data collected from the district and observations were collected and analyzed in order to triangulate the data collected from the qualitative and quantitative phase. Observations took place in several RTI settings in both schools. The researcher observed practitioners who had been involved in the research during benchmark testing, team meetings, a general education

setting (considered a Tier I setting), a Tier II setting (reading intervention), a Tier III setting in the special education resource room, and progress-monitoring sessions. In both schools, the researcher observed practitioners in the following settings during RTI implementation:

- During the fourth-grade benchmark testing, the researcher observed six times over the span of three hours;
- During data dialogue team meetings, the researcher observed five different meetings over the span of nine and half hours;
- During the Tier I setting, the researcher observed seven settings for seven hours;
- During the Tier II setting, the researcher observed six settings for three hours;
- During the Tier III setting, the researcher observed seven settings for three and a half hours;
- During the progress monitoring setting, the researcher observed seven settings for 70 minutes.

After the completion of the qualitative phase, the researcher received benchmark and progress-monitoring data on the de-identified students from the TOSA. The researcher was informed that, in both schools, benchmark and progress-monitoring data for different skills was recorded through the AIMSweb® system. A description and analysis of the quantitative data will also be discussed later in this chapter for Question 3.

During the course of the observations, the researcher noted that, in both schools, the RTI assessments were implemented in similar settings. Both the progress-monitoring

and the benchmark testing were conducted either individually or in a whole-class setting. Furthermore, the classroom teacher or the interventionists and the special education teachers proctored each test.

In both schools, the interventions were conducted during a universal intervention block period to ensure that all students would receive the core curriculum without being pulled out of general education to "catch-up" with academic needs. Within this specified intervention time, the researcher noted that the students were distributed to a designated location to receive Tier I, Tier II, or Tier III intervention services. For those students receiving Tier I interventions services, students remained in the classroom to continue working on lessons related to the core curriculum while the remaining students traveled to classrooms designated for the provision of Tier II or Tier III interventions. Each designated room was laid out in a manner to best benefit the instruction. In both schools, students who were receiving Tier II and Tier III interventions worked in rooms that had a linking door between the reading intervention room and the special education resource room so that the practitioners could easily communicate with one another to facilitate collaboration.

Findings in Relation to Research Question 1

To answer the first research question, the researcher developed themes and sub-themes based upon data gathered from interviews, observations, and corresponding data. The researcher used NVivo9 to categorize and organize the data into themes and sub-themes. Three themes emerged when answering the first research question: "How do school practitioners (special educators, general educators, and interventionist) implement Response to Intervention at each multi-tiered level in the Response to Intervention

model?" The three main themes were: the Process of Response to Intervention Implementation, Response to Intervention Evaluation and Identification, and Collaboration (see Figure 2). In the following section, each of these three themes will be analyzed in detail.

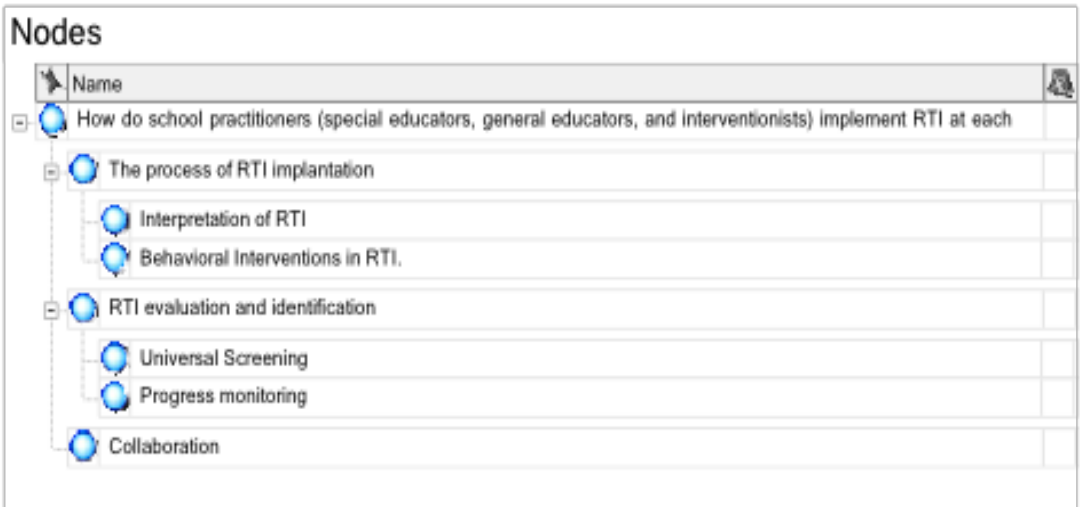

Figure 2. Illustration of themes and sub-themes for the Research Question 1

Process of Response to Intervention Implementation

Interpretation of Response to Intervention. Overall, participants agreed about the RTI framework and what it looked like when applied in schools. However, the participants' interpretation and understanding of the specific components of Response to Intervention were not consistent. For instance, the two districts had different procedures for progress-monitoring data collection. Moreover, the structure of the data dialogues varied between the schools in their organization, scheduling, and the manner in which information was presented to practitioners. In addition, the participants were in consensus that Response to Intervention was a multi-tiered model in which students received core curriculum; documentation and data collection were part of the RTI model;

and each tier of Response to Intervention was unique in its implementation. However, these comments from the participants suggested that Response to Intervention was not a new phenomenon; instead it was a concept that had been evolving. Historically, the concepts behind Response to Intervention, such as progress monitoring, benchmarking, and providing interventions, have been used in schools; but until recently, these concepts have not been named or mandated by policy. Mrs. Nilsson stated, "Before RTI . . . we were already providing services. We were [using] progress monitoring. . . . I think RTI brought just a nice visual and framework for everybody. That kind of solidified it you know a little bit more." Mrs. Thomson agreed that Response to Intervention was becoming a more formalized and understood process, "I think this is something we've probably been doing for a while and it just kind of has a name with it now."

With new policies, and under Individuals with Disabilities Education Improvement Act of 2004, Response to Intervention has been evolving and changing into a more formal model backed by research. The participants agreed that Response to Intervention was a continually changing model due to continuing research. "I think it's [RTI] a pretty paradigm shift for teachers" (Mrs. Nilsson). Mrs. Eden aligned with the idea that Response to Intervention was changing, as she indicated, "I think it is evolving and becoming clear." Due to the continual changes made to the RTI model, there ere still challenges and questions about the interpretation and implementation of Response to Intervention. As Mrs. Thomson indicated, "I think that every year . . . you're constantly learning new things and trying new things so you always have unanswered questions."

Participants agreed that Response to Intervention was becoming a more coherent process. Mrs. Eden pointed out that, "People are interpreting it more as a process and not

just a panic." Overall, the participants felt that Response to Intervention was a continuing process and educators were attempting to become uniform in terms of implementing Response to Intervention. As Mrs. Larry illustrated, "It's still a process here. We're still trying to implement it . . . and we're really trying to work out the kinks." Mrs. Nilsson further stated, "We've been trying a lot of different approaches in order to get buy-in from teachers and have them understand the process."

In order to support the success of students, the participants agreed that the model had many beneficial qualities that served to improve students' performance. According to Mr. MacArthur, the tiered approach held a great advantage to identifying students with disabilities and helped to prevent at-risk students from failing. "In the general sense, it's our tiered approach just for identification of struggling students. You know it's just a way for us to not wait for students to fail" (Mr. MacArthur). Mrs. Swanson agreed that students, in general, were better supported through the RTI model, "They're no longer just going to fall through the crack and go back to general education."

Another advantage to the Response to Intervention was the increased amount of communication between professionals, students, and parents. Mrs. Swanson commented, "I think it forced us as buildings to really look at what we do well, what's working and what do we need to change to meet the needs of all students." On this point, Mrs. Thomson elaborated how Response to Intervention involved persons other than practitioners of Response to Intervention, "Another good point is it gets parents on board and communicating with parents right away and so you build that relationship and that collaboration with parents." Finally, the participants noted the flexible manner of the RTI model, "Because kids don't specifically have to have some kind of a label to receive

extra help if they need help. They don't need an IEP to get help with reading fluency . . . RTI . . . help[s] students in any way" (Mrs. Thomson). Mrs. Eden continued, "Providing interventions at the same time . . . allows for that fluid movement back and forth."

Although the participants described several advantages of the RTI model, some expressed concerns about the increased amount of paperwork, the need to interpret more data, increased need for training, and "making sure that we're meeting the needs of the students" (Mrs. Swanson). Mrs. Larry and Mrs. Thomson agreed that the "added paperwork of documentation and progress monitoring and holding people accountable" (Mrs. Larry) and "there tends to be quite a bit of paperwork and organization and data management that goes along with it" (Mrs. Thomson). Mr. MacArthur followed, "It [is] a heavier load. It doesn't feel like a terrible burden . . . but it still is [more] on your plate." Mrs. Swanson raised an additional concern regarding the implementation of RTI,

> [It is] applied differently in every building. . . . Because I think our buildings are unique. . . . We all have common state goals and common district goals, but the clientele we serve is not always exactly the same from building to building. . . . I think you have to do what fits you and your staff.

In general, the participants shared a positive perspective and interpretation of the RTI model and its implementation. Mrs. Larry summarized, "I think overall I think it's [RTI] been very positive." "My final thought would be that RTI is just really helping students not fall between the cracks. [RTI is] a process that so far I feel is has been beneficial to me, to students, to the school setting" (Mr. MacArthur).

The researcher found that all of the participants agreed that the RTI model worked as a multi-tiered system wherein students who needed support were provided specific interventions based on their tier. As Mrs. Nilsson demonstrated,

> We use it as the triangle of servicing [for] the kids . . . everyone gets Tier I . . . then those students that are identified as Tier II, they get additional instruction . . . then there are Tier III kids that are resource or special education [students] that need more intensive interventions.

> Mrs. Nilsson continued to discuss the distribution of the RTI multi-tiered model, 80% are the bottom [tier] they're in the green and they're performing at grade level . . . then there's the yellow [tier] and they're like 10% to 15% . . . then the top is special education and that 5% to 7%.

This description of the RTI model was based upon the State's RTI model. The participants also described how, even though students received different and specific interventions, every student was instructed in the core curriculum. In this matter, Mrs. Swanson stated, "We try to keep our students all in the core curriculum because we know in order to close that gap they have to be exposed to what the grade-level expectation is as well." Mrs. Eden agreed that instructing all students in the core was beneficial, "[We] do not take kids out of core instruction for reading or math . . . so nobody [is] missing out." In both schools, as observed by the researcher, the core curriculum instruction for all students took place in a 1-hour block of time. Then, after a 10-minute recess, students received intervention instruction for Tier II, Tier III, or continued working on supplemental activities in the Tier I environment.

While describing the framework of Response to Intervention, the participants agreed that data were the determining factor for placing students into the different tiers. Mrs. Swanson explained, "We look at the RTI process as looking at the data and so we look at kids who are not meeting grade-level expectations." There was consistency among the participants that, "If they're dropping or maintaining [based on the data] . . . after 6 months hopefully there's some new interventions" (Mr. MacArthur) during Tier II or in Tier III interventions. Additionally, if the interventions were not successful than

there would be another level of intervention for an additional 6 months. Mrs. Swanson continued upon the idea of how long an intervention should last, "For some children after that 6 months [of intervention and what] we're doing is working . . . we're going to keep doing that until we've hit the success mark that we deemed appropriate."

While the researcher observed Mrs. Eden providing Aimsweb®, she described one student that had been receiving services in Tier I, Tier II, and in Tier III for around one year. After the researcher completed the observation, Mrs. Eden described how she used data to determine if the interventions had been working for that student. She noted that she had examined data from AIMSweb® and a set of standardized achievement tests to help provide a body of evidence to consider the student eligible for special education. Mrs. Eden continued to describe that a third piece of evidence for eligibility was a gap analysis. She continued to explain to the researcher that, with the data evidence, she would begin the process for referring the student to special education, beginning with a parent meeting.

As Response to Intervention contains three different tiers, the participants described how they interpreted the implementation of the model in each tier specifically. Firstly, in Tier I, all participants agreed that Tier I was for everyone, it was a "universal [instruction where] . . . everybody's receiving the same thing" (Mrs. Thomson). Specifically, Tier I functioned as a general education environment wherein everyone received the core curriculum. To emphasize this point, Mr. MacArthur commented that, "Tier I it's just going to be just the regular classroom."

The participants also agreed that Tier I not only functioned as a general education classroom teaching the core curriculum but also as an area to assess students who were at risk in Tier I. Mr. MacArthur stated,

> I'm going to see . . . any students who are below the baseline . . . and we're just looking for the at risk students. [It] doesn't necessarily mean that we'll move them into a Tier II but just looking for those students who are slipping gradually.

In this regard, Mrs. Thomson continued to describe the Tier I intervention process, "I may have . . . 30 minutes of literacy block . . . the literacy [teacher] might come in to help support . . . she might take them out for about 30 minutes. But they get core instruction from me." Along with the practice of students receiving core instructional time with the general education teacher and receiving support from interventionists, the participants described that Tier I could also function in small groups to ensure that the students were receiving maximum support. In this regard, Mr. MacArthur stated, "[We do] other supplemental instruction to bring into the classroom to get them some extra practice on it." He continued to illustrate that in Tier I teachers "[are] looking at small groups within the classroom, one-on-one with me if possible. Looking at extended time or a modified level of instruction. And to keep them at a pace that makes them successful."

The researcher's observations concurred with the participants' description of the RTI model, particularly in regards to Tier I. The students were all receiving core curriculum in classrooms. Furthermore, the researcher observed that the students followed instructional time as the participants described; the core curriculum was consistently delivered to all students and interventions were delivered during a universal intervention time period. This schedule was consistent across the fourth-grade population (see Figure 3; Appendix J). In Tier I, the researcher also observed that teachers, in both

schools, provided the core curriculum in reading, math, and writing; each teacher gave instruction and then students started group activities. The teachers worked with students in small groups, primarily with students who needed more support.

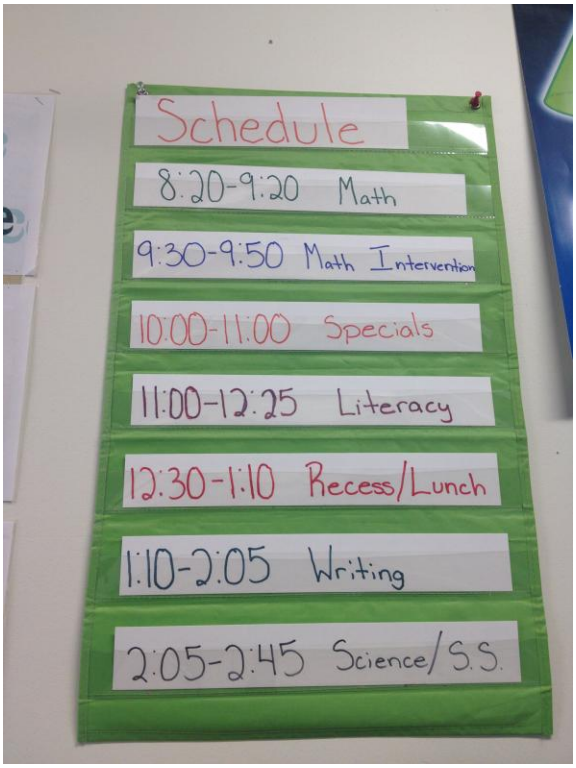

Figure 3. Fourth-grade schedule

The participants continued to describe the advantages of simultaneously teaching the core curriculum in the classroom and providing support through the special education teachers or interventionist using accommodations/modifications and re-teaching the core skills. Mr. MacArthur detailed how the support from the interventionist or special education teachers occurred in the Tier I level,

> [In] math I would keep student[s] in here and then we'd have a math intervention time. They would be pulled out for that math intervention time for that extra help. We'll have a break for recess and then from 9:30 a.m. to 9:50 a.m. is an intervention time. The Tier I students [stay] in here, I would be doing my own

> instruction [in] math fluency, with [the] Tier II. And then the Tier III would be pulled out and get that specific focus in there. (Mr. MacArthur)

Mrs. Thomson described the advantages of the intervention time and reinforcing the skills, "We call like a double dip." She continued, "What we would like to do is see that if whatever strategies or whatever skills we're working on within the classroom it's taught again at their instructional level from the specialist."

The participants described the nature of the instruction that Tier I utilized for all students. They all aligned together which research-based instructions were used in the general classroom, "We use Treasures" stated Lori. Mr. MacArthur and Mrs. Nilsson also agreed, "The classroom teachers at Tier I use Treasures from McGraw Hill" (Mrs. Nilsson). Mr. MacArthur continued, "[We use] Scott Foresman [for] mathematics. We also use the Treasures basal for reading and Step up to Writing."

During the Tier I instruction of the core curriculum, the general education participants described how they provided accommodations as they taught the core curriculum. Mrs. Thomson stated, "I would teach whole class and I would make sure that I was constantly checking in with those students . . . providing them any accommodations that they might need." She continued that, in addition to the accommodation, she would utilize re-teaching, "After the whole class lesson is taught then pull them back or check in with them if I need to re-teach it to them." The researcher observed that, like Mrs. Thomson described, students in Tier I continued working on activities to supplement what they learned creating a "re-teaching" experience.

Among the participants, Mrs. Thomson detailed an important aspect to the Tier I phase, "Parent communication is a huge criteria that you have been speaking with the parents and they're understanding what services or what you are doing for their child in

the classroom." She concluded that, "Tier I interventions have to be tried within the classroom first. . . . You have to show that you have been working with that child and interventions have been placed in the classroom first before they're moved."

The researcher observed that students, at both Tier II and Tier III, would move to an appropriate intervention site during the intervention time period. During this period, teachers would provide extra support to all students, regardless of their ability. In describing Tier II, participants agreed that services were generally provided for the students outside the regular classroom. As Mr. MacArthur said, "It depend[s] like they would do some class time in here with those kind of interventions . . . but also . . . would be pulled out." Mrs. Larry agreed, "Tier II . . . we pull out." When pulling students out for interventions, Tier II services were provided for the students who were not showing sufficient improvement in the regular classrooms. In general, the interventionist provided the interventions, as Mrs. Thomson stated, "Tier II typically could be [provided by] a literacy teacher specialists." Mr. MacArthur pointed out those students at Tier II "who are not making the adequate progress and move them into something a little bit more extensive instructionally in small group settings." Mrs. Nilsson highlighted that, "10% to 15% of the school" were pulled into Tier II interventions.

According to the participants, students at the Tier II level typically received several different interventions to support their basic skills and to promote their performance. The participants primarily discussed the interventions for reading for Tier II. All the participants agreed that there were several types of research-based interventions provided by the district. One of the common interventions used in Tier II

was "a program called *Treasure Chests*[1] from McGraw Hill. . . . It covers all the five dimensions of reading and it basically parallels with the classroom" (Mrs. Nilsson). Mrs. Larry also stated, "For Tier II we use *Treasure Chests*." In addition to *Treasure Chests*, the participants described the *Read Naturally*[2] intervention program, "We also use *Read Naturally* . . . which is a fluency based program" (Mrs. Nilsson). Mrs. Swanson also supported the use of *Read Naturally*, "Tier II or Tier III services would be applied and intervention [are] R*ead Naturally* [or] *Treasure Chest* which goes along with our reading which is called *Treasures*[3]" (see Figure 4; Appendix: K).

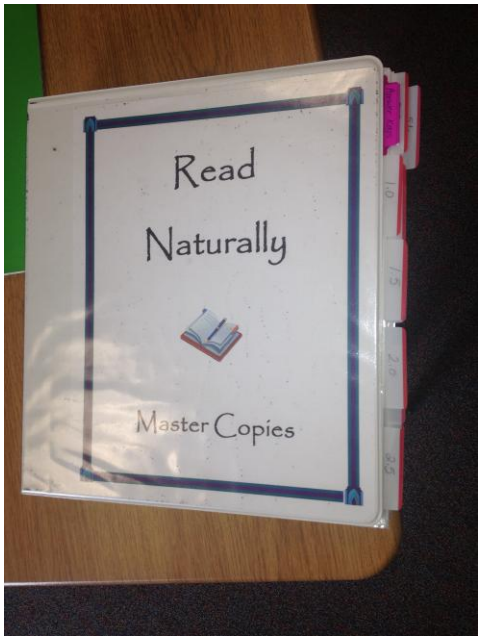

Figure 4. *Read Naturally* Teacher Manual

[1] *Treasure Chests* is a comprehensive reading intervention program for English Language Learners. Published through McGraw Hill.

[2] *Read Naturally* is a research-based instruction, which targets reading skills including, comprehension, fluency, vocabulary, phonemic awareness for grades k-12. The program also utilizes different levels that correspond to reading grade levels. For example if a student is working on *Read Naturally 3.0*, this means the student is reading third-grade level material.

[3] *Treasures* is a research-based reading comprehension and language arts program for grades K-6. Published through McGraw Hill.

Mrs. Nilsson also spoke of using,

> *Reading A-Z*,[4] which is a level program where there're level books and we go through and work on comprehension [and] fluency. We [also] have *Lexia*, which is a computer program. Those [are] probably the main ones. This year I'm going to try a comprehension tool kit. I haven't used that before but I wanted to focus more on comprehension instead of just fluency. (See Figure 5)

Mrs. Swanson aligned with Mrs. Nilsson that reading was, "Geared more toward fluency and comprehension usually. . . . I'm treated what's called visualizing/verbalizing which is a great program to build comprehension for students who don't make pictures in their heads." Although the participants focused mainly on reading interventions, Mrs. Larry pointed out that "For math we use at a Tier II *Key Math*."

Figure 5. *Reading A-Z* Program Materials

In regards to what interventions services the students were receiving, the researcher's observations aligned with what the participants described. In Tier I, the interventions typically followed the core curriculum and used activities and strategies from different resources. In contrast, the researcher observed that the interventionists followed prescribed interventions and followed a manual. The researcher observed the

[4] *Reading A-Z* follows the core curriculum standards for the state and provides comprehensive reading and language arts materials. The program incorporates reading fluency, reading comprehension, vocabulary growth, and phonological awareness.

reading interventionist following a manual carefully before delivering instruction to the students. The researcher noted that this practice occurred throughout Tier II and Tier III intervention instruction. The researcher continued to observe similar patterns packages. Additionally, students receiving interventions at Tier II were divided into smaller groups, typically a high-risk group and a lower-risk group. The high-risk group received *Read Naturally* (*RN*) in both schools. The lower-risk group received *Treasure Chest* interventions (based on the *Treasure* curriculum).

Most of the participants agreed that interventions should last for about six months in order to determine if the intervention was successful or if the type of intervention should be changed. On this note, Mr. MacArthur indicated, "During the intervention time which is completely separate from the core curriculum, then they might be pulled out and work on fluency, patterns, multiplication, division, just whatever it might need to be. That's more specific to that student." Mrs. Nilsson continued upon Mr. MacArthur's thought that interventions should be provided for 6 months before a decision was made. She mentioned, "If they [students] aren't making progress then we do recommendations to either change the intervention or if we have high concerns, then we'll move them to Tier III . . . sometimes they are in here all year." Furthermore, the participants agreed that decisions should be based on "open communication of teachers and the specialist to figure out where the students are and analyzing the data" (Mr. MacArthur).

The participants described how they made decisions regarding student progress by examining the data and conducting a data dialogues. Mrs. Swanson detailed where student improvement was typically seen during the intervention process for Tier II, "Sometimes it's more in the intervention first, because that's really what you're focused

on. And then you see this core. But sometimes you see it transfer to all the levels right away." Mrs. Nilsson aligned with Mrs. Swanson and also provided additional information about typical student progress; "We usually set their aim lower up to [the] 40 percentile. [so] we do see quite a few [students] that make their aim. Mrs. Swanson then continued, "It really depends on the kid. Like some of the kids we have great success and we can exit them or send them back to a Tier I intervention."

In addition to the participants' description of the practices in Tier II, the researcher gleaned additional descriptive data during her observations at Green Elementary School. The purpose of dividing the students into high- and low-risk groups was to (a) provide the most meaningful intervention and, (b) by keeping the student-to-teacher ratio smaller, than the students were more likely to get the needed help and support. Moreover, by using the *Treasure Chest* program, the lower-risk students were essentially receiving a "double-dipping" of the general curriculum. In contrast, the higher-risk group, that had the *Read Naturally* program, was receiving interventions meant to support the acquisition and mastery of basic skills. Finally, within these groups (at both schools), the reading interventionist instructed the high-risk students while the paraprofessionals provided interventions for the low-risk students. The practitioners also provided these interventions at a lower grade level (typically third-grade material) to support skill mastery.

As the participants described, Tier III was composed of "The students who have the most severe needs for learning or for behavior" (Mr. MacArthur). Moreover, all the participants agreed that these students were the "top 5% or bottom 5% of the population

[and they] need the most intense and longer duration of interventions to get them where they need to be" (Mr. MacArthur). Mrs. Swanson aligned with Mr. MacArthur,

> Tier III is the most intense tier it usually involves a very . . . prescribed intervention. Their skill deficit is so great that we have to go back and sometimes fill in some of those basics and that's going to take us more time and more intensity than one of the tiers would.

Due to the intensive nature of Tier III and the need for increased time and support, the students who received Tier III interventions typically were pulled out and received interventions in a small group. Mrs. Larry described the details of the Tier III setting, "[In] Tier III we pull out . . .groups are anywhere between two kids to six kids." She continued, "Rarely have I had to do any one-on-one with. They just kind of fit into the group system." Although the Tier III interventions were largely in a small group setting, the participants described how it was preferable to provide the students with as much one-to-one instruction as possible. To help achieve this goal, many participants provided one-to-one interventions for students within the small group setting. Regarding this point Mr. MacArthur detailed, "We will hopefully get the one-on-one help they need but with limited teachers it will still be a very small group." Within the small group instruction, Mrs. Larry and Mrs. Swanson described the interventions students typically received during Tier III. Mrs. Larry stated, "[In] Tier III [we] use *Triumphs*[5], *Lips*[6] . . . *Lexia*[7] *and Read Naturally*." She continued, "use *Touch Math*[8] at the Tier III level."

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[5] *Triumphs* is an intervention program for grades K-6. This program utilizes additional reading to build upon the core curriculum. Published by McGraw Hill.

[6] The *Lips* program is a reading program designed to improve reading, spelling, and speech for students with special needs. Published through Pearson.

[7] *Lexia* is a research-based reading intervention program specifically geared for use in general and special education environments and for intervention services in the RTI model.

Following Mrs. Larry's response, the researcher observed that the intervention programs varied between the two schools. In Green Elementary School, the special education teacher used *Read Naturall*y for the reading intervention. Furthermore, each student received the *Read Naturally* instruction based on his or her own level. To ensure that each student received support in his or her own level, a paraprofessional was present to assist students on an individual basis. In Red Elementary, the researcher observed that the Tier III intervention was *Triumph*; a program based on concepts found in the core curriculum, although the content differed. The goal of the *Triumph* program was to align instruction with instructional level of the students to the fourth-grade core curriculum.

In regards to the math interventions in Tier III, the researcher noted the intervention process also varied between schools. In Red Elementary School, the special education teacher provided the math intervention (basic skills) to the students in a small group setting. In Green Elementary, the students were also received interventions via small group; however, the paraprofessionals provided intervention services. Furthermore, the paraprofessionals used a modified (matched to the student level) core curriculum activity. Although the interventions varied slightly, in both schools, the special education teacher and the paraprofessional alternated between the groups of students every day in order to allow the special education teacher to observe all students and still be able to work in small groups.

According to the participants, even with intensive instruction, many of the students often were referred to special education. Mr. MacArthur mentioned, "Tier III [consist of] students who are continually dropping and not finding any growth in those

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[8] *Touch Math* is a research-based program geared towards pre-K through third-grade students and is utilized as an intervention program.

subject areas." Mrs. Larry agreed, "If they don't show that progress and then we then I look to see if it's an actual learning disability at that point." While most participants agreed that Tier III primarily served students who were identified on an IEP. Mrs. Swanson stated, "That's kind of how it's been shaped but it's not necessarily special education. I think we've moved them . . . toward special education. [but] it kind of helps us to determine [if] we need to investigate further."

In regards to progress monitoring and determining the effectiveness of interventions, Tier III functioned in a very similar manner to Tier I and in Tier II. Like the prior two tiers, participants continued progress monitoring for 6 months before considering further decisions. Mrs. Nilsson mentioned, "We [are] running records . . . a lot of informal observations, conversations with the classrooms to see how they're doing in assessments [and] then the progress monitoring . . . every 2 weeks . . . but we set that trend line a little bit lower." Mrs. Larry continued upon this point, "Within a 6-month period, we would hope they've either moved back down to the Tier II . . . or [have] been identified with learning disabilities."

In general, the researcher did observe many of the practices the participants described. Firstly, most of the interventions were indeed provided in small groups of five to six students. Secondly, most of the students in Tier III were on an IEP. Finally, the students in Tier III did receive some behavioral interventions. Although unmentioned by the participants during the interviews, the Tier III practitioners in both schools used positive behavior support with students. The researcher observed that students were allowed to take rewards from a "treasure box" upon evidence of participation, positive attitude, and general positive behavior.

Behavioral interventions in Response to Intervention. During the course of the interviews, the participants mentioned how behavioral interventions fit into the RTI model. Overall there was a strong agreement that,

> There's such a wide variety of behaviors and personalities . . . you have so many levels of students and so many different things that each student needs to work on . . . I feel like the behavior does kind of fall by the wayside but . . . I guess I've never really looked at RTI as a behavioral process. (Mr. MacArthur)

Mrs. Swanson provided additional insight as to why behavior were not necessarily considered in the RTI model, "The only time [behavior] really falls more into RTI is when it impacts the academic . . . but sometimes that escalates and so we increase the intensity in the service. . . . So we do follow the RTI model with bad [behavior]." In this regard, Mrs. Larry added, "There are some kids that have been receiving behavior interventions but . . . they need that continued support."

Although the participants did not feel that behavioral problems formally fit within the RTI framework, there still was a school-wide framework similar to Response to Intervention that addressed the varying intensity of behavioral problems. In essence, based on the participants' descriptions, behavioral problems were considered in a manner that paralleled the RTI model. There were different levels of behavioral interventions: *Positive Behavioral Intervention Support (PBIS), a Check In-Check Out* system and behavioral intervention plans for individual students. As this parallel structure was so similar to the RTI model, the participants described overlap between the three tiers in the RTI model and the behavior interventions that supported each tier. To further illustrate each behavioral intervention, the participants described how the various behavioral support plans related to the multi-tiered RTI framework. These support plans, *PBIS*,

Check In-Check Out and individual behavioral plans, were implemented in "levels" similar to those utilized in the RTI model.

Mrs. Eden pointed out that, "Tier I behavioral interventions typically are the classroom . . . reward system. Our school has . . . *PBIS* . . . we actually matrix that . . . that's the whole school expectation. . . . So that's kind of school-wide Tier I." Mr. MacArthur further detailed how *PBIS* worked to support all students' behavior, "We have our tokens and students can get rewards, school-wide rewards." "But then if [behavior] gets more intensive, we do have like a *Check In-Check Out* program for kids that need Tier II or Tier III type of intervention" (Mrs. Larry).

In this regard, Mrs. Eden illustrated Tier II as a "*Check In-Check Out* [system] . . . maybe seven to eight students for the whole school meet with us [and the] school psychologists and they come up with . . . goals." Mrs. Thomson added more detail about how the *Check In-Check Out* system worked, "It starts with communication with parents and setting up some kind of an intervention and documenting what you're doing." She added, "We don't have any formal tool like AIMSweb® to see if it's actually working but I think just documenting . . . the observations and stuff to use for progress monitoring."

Mrs. Eden further illustrated, "The teachers who do *Check In-Check Out* look at each student's progress. [They ask] should we continue *Check In-Check Out*, is this working for them or not? Our principal and counselor/psychologist also look at all the referrals that come." Finally, in the event that students need more behavioral support, Mrs. Eden concluded, "[In] Tier III, those students typically who are on an IEP . . . have a

behavior intervention program. So those are really individualized and a little more involved."

Response to Intervention Evaluation and Identification

Universal screening/benchmark. The primary tool used in the Buckingham School District to collect benchmark and progress-monitoring system was the AIMSweb® system. During the course of the interviews, all participants agreed that the data collected from AIMSweb® was an important factor to assess the students' levels and which students were academically at-risk. Furthermore, they described how AIMSwebs® provided informative cut points for the district based on norms (see *Figure 6;* see Appendix L). In general, "We don't necessarily have a cut point, but we have some guidelines that AIMSweb® gives us [cut points]" (Mrs. Swanson). As an example, Mrs. Swanson continued, "So the 10th percentile is considered extremely below grade level . . . then the 25th percentile would be . . . average or slightly below average." For reading and math, Mrs. Nilsson detailed that AIMSweb® "have norm charts [and] norm reference charts and so they develop the cut points for us. . . . AIMSwebs® does the math too." Mrs. Larry continued, "[They] change every year." "The cut points you know obviously will be different. But the norms are the same and so for the math. So we use the same process" (Mrs. Nilsson).

The participants described that these cut points provided from AIMSweb® served to provide educators with initial benchmark data to determine student needs. Mrs. Larry then identified the role of the benchmark and progress-monitoring data, "We start out with those benchmarks and then if they're below grade level then we start Tier I and then move them up after you know watching that progress monitoring." In order to determine

which students needed interventions, AIMSweb® benchmark scores indicated which percentile each student was performing at. For example, if a student "is at or below the 10th percentile that may indicate Tier III [level] and then the 11th to the 23rd percentile may be leaning towards Tier II and then the 25th to the 75th percentile [is Tier] 1" (Mrs. Eden). Mrs. Eden continued to describe that, when considering which tier for which a student was qualified for, educators examined:

Fall 2012-2013 National Norms

RCBM	1st	2nd	3rd	4th	5th
90	32 to 67	89 to 115	117 to 143	135 to 160	151 to 177
75-50	7 to 31	36 to 88	60 to 116	85 to 134	95 to 150
25	3 to 6	18 to 35	39 to 59	62 to 84	75 to 94
10	0 to 2	0 to 17	0 to 38	0 to 61	0 to 74
MAZE	**1st**	**2nd**	**3rd**	**4th**	**5th**
90	4 to 6	9 to 12	18 to 22	19 to 22	24 to 29
75-50	2 to 3	3 to 8	9 to 17	11 to 18	13 to 23
25	1	2	6 to 8	7 to 10	9 to 12
10	0	0 to 1	0 to 5	0 to 6	0 to 8

Figure 6. National norms chart.

> What the needs are and how that's impacting that student. [However] there are [also] soft cut points . . . technically the 12th percentile or below would be a cut point to say. You know what maybe this child needs more intensive intervention. . . . [But] the closer to 25th percentile like if they're 23rd, 24th percentile kind of bubble kids.

During the researcher's observation, one of the observed general education teachers described to the researcher how the fourth-grade students should be receiving scores on the R-CBM reading fluency and the MAZE reading comprehension test that were indicative of adequate progress. The teachers described that these tests helped to

determine cut points for intervention services. Both general education teachers and interventionists helped determine what support a student needed to use this information. In on other words, the same test information used by interventionist to determine a need for an intervention were used by the general educators as evidence of progress in relation to instruction. All students needed score in the 40th percentile or higher to be "at grade level." In M-CAP, students should have scored a 16 to be in the 40th percentile and in MAZE, a score of 18. These scores were based on AIMSweb® and national norms for 2012-2013 (see Figure 6; see Appendix L).

Furthermore, the participants described how they quickly discerned which students were at which percentile and how they were distributed between the RTI tiers by color-coding each tier. In Tier I, "We start with the benchmarks [but] if they are red or yellow [they are] at risk or some risk" (Mrs. Nilsson). Mrs. Eden supported Mrs. Nilsson, "I have [students] an IEP because they are . . . significantly below grade level. And . . . our data they would come out in the red zone or below the 10th percentile." Mrs. Swanson continued Mrs. Nilsson's point, "[cut points] so the 10th percentile is considered extremely below grade level. Then the 25th percentile would be . . . average or slightly below average."

Although AIMSweb® was the primary tool for measuring student's ability, the participants described, "I think the benchmarks screening . . . [AIMSweb®] is one piece of information. So if students don't read [a] certain amount of words per minute or don't get a certain score on a math, that's a concern" (Mrs. Eden). Mrs. Swanson added that AIMweb® data provided typical criteria for measuring student progress. However, other measures were used by the district, "We usually look at . . . [the state's] Transitional

Assessment Program we'll look at how they're performing in the classroom. . . . And we look at AIMSweb®. . . . Those three things are pretty standard across the tiers" (Mrs. Swanson).

The researcher observed that both schools used the AIMSweb® benchmark tests to determine the initial cut points for the students. Although the benchmark assessment was provided universally to the students, the researcher observed that the R-CBM test was provided differently between the two schools. In Green Elementary School, the regular education teacher had students came into the room individually for the RCBM testing, each student was cycled through for the 3-minute testing period to establish baseline data. However, in Red Elementary School, a testing team, composed of retired volunteer teachers, proctored the assessments for the students. The researcher was informed that same teacher would provide the same benchmark test three times in the academic year for each student in order to have consistency and validity and accuracy.

Progress monitoring. In order to establish accurate progress-monitoring data through the AIMSweb® system, the participants illustrated the frequency of testing the students and how the progress-monitoring data represented the students' performance. The researcher observed practitioners proctoring the progress-monitoring tests in different settings at both Red Elementary and at Green Elementary schools. In one setting, at Green Elementary, the researcher noted that, in Tier I, the general education classroom teacher proctored the M-COMP and M-CAP assessments for the whole class. I n this setting, however, two students were tested differently; one took M-CAP in Tier II while the other received M-COMP testing at the fifth-grade level (GIFTED/Talented). The teacher described that he wanted a better understanding of all students, even though

they were not receiving any intervention. On another note, the researcher observed that, during the testing time, all practitioners involved in proctoring the AIMSweb® assessments were positive and they rotated the room checking for progress and for quality of the testing procedures.

In a second setting, also at Green Elementary, the Tier II reading interventionist provided the R-CBM and MAZE assessments in a resource room. However, for the R-CBM test the interventionist administered the test for only one reading passage. Moreover, the MAZE test was given in small groups. The researcher also observed that, in both schools, the Tier III progress-monitoring process was similar to Tier II progress-monitoring procedures; the special education teacher provided the R-CBM and MAZE tests to students in the resource room. However, in Green Elementary, the teacher's assistant proctored the M-CAP assessments for students who were in Tier III. The teacher's assistant provided the progress-monitoring tests in small groups and read the directions very clearly prior to the test. Finally, the researcher observed that, in both schools, some students read at grade level while others read below grade level in Tiers II and III.

According to the participants, using progress-monitoring data helped to show if the interventions were successful, show student progress, and help determine if students should move to another tier within the RTI model. Mrs. Larry illustrated, "We [conduct] progress monitoring just to see if they're making any kind of progress then we'll determine whether it's working or not." Mrs. Eden added,

> We need to do a gap analysis, and through the intervention history, we have to document . . . and show what interventions these students have been getting. . . . This is what has been done up to now and we're showing that without special education or Tier III they will not make any progress.

The participants agreed that using the progress-monitoring data were ultimately beneficial for students as it helped to ensure students were receiving the most appropriate intervention. Mrs. Swanson stated, "If we're seeing a decline or no significant change, we may look at a different intervention or we could also look at increasing the time that this student is receiving services." Mr. MacArthur aligned with this point, "If their scores are continual [y] growing . . . where they need to be at the end of the year, obviously we're keeping them where they at."

In addition to ensuring that students received the correct support services, Mrs. Larry described how goals were determined based on the AIMweb® data,

> We actually have a graph that shows a line of where they are and where they should be . . . that trend line [is] . . . compared to the other kids . . . you can see that gap and hopefully you see their line closing that gap. And so we just kind of watch that really closely just to see if they're trend line is going the way we want to see it. . . . And if they're not then we look at changing that intervention.

All the participants affirmed that tracking the data with progress monitoring occurred every 2 weeks. They also agreed that progress monitoring measured the instructional level of each student based on the initial benchmark scores. As Mrs. Eden pointed out, "We track their data at grade level as well as instructional level . . . for eligibility for special education, we use grade level." Mrs. Swanson commented, "We progress monitor every 2 weeks, sometimes more frequently depending on the tier." Mrs. Thomson supported Mrs. Swanson's thought, "If we wanted more data on a student if we were trying to move along the process and we really needed to figure some things out, then it could be done once a week."

While the participants agreed that AIMSweb® was the primary tool for progress monitoring, Mrs. Eden added that she provided "standardized assessments along with

curriculum-based measurement to say this student is at or below the 12th percentile which indicates a significant need and discrepancy in their skills . . . which would make them eligible for special education services." On the importance of using progress monitoring, Mr. MacArthur stated, "Now everyone's [using] the same testing initially to see where students are at. [It] helps me to see apples to apples instead of . . . trying to compare my class with this other class who did a different test." Mrs. Thomson agreed with Mr. MacArthur about the importance of progress monitoring, "You have the data to support what is actually happening versus just teacher feeling and your belief on things."

Collaboration

The third theme, Collaboration, did not include any sub-themes. Therefore, this discussion of the qualitative data will consider this theme (indivisible) on its entirety or as a whole. Collaboration was an essential component of the multi-tiered model in order to ensure all of the elements of Response to Intervention were met. Furthermore, it was important for professionals to collaborate to ensure the needs of the students were met during RTI implementation. As Mrs. Swanson stated, "Without [collaboration and conversations] you're just two separate islands not working towards a common goal. So you're always talking, you're always looking at data together." The participants agreed that the RTI team reached beyond educators and extended to interventionists, school psychologists, speech pathologists, grade-level representatives, and the TOSA. As Mrs. Nilsson pointed out, "The RTI team will have a . . . fourth . . . grade-level representative . . . they're general education. Then I'm[9] on it, special education, the school psychologist, [and] the speech pathologist is on it. So you have all the specialists." Mrs. Swanson provided additional information about how the RTI team could vary between schools.

[9] The reading interventionist.

Mrs. Swanson, from Red Elementary, commented, "Last year in this building, they [had the] Student Intervention Team (SIT). They met about weekly. . . . Sometimes it was to do some training for the team."

The various team members, as described by the participants, interacted in different settings in order to improve communication and collaboration between each other. One of the most important pieces of collaboration that occurred between the team members was the event of data dialogues. These dialogues occurred several times during the year after benchmark testing. Mrs. Eden defined the purpose of the data dialogues, "We take a look at the numbers and then we have intervention dialogues. . . . So we're talking about skill needs . . . just to see where we are . . . and we would just plan co-teaching lessons." The researcher observed that, although the purpose of the dialogues was universal, the setting in which the dialogues took place differed between the school buildings. Mrs. Swanson matched the researcher's observations, "I think we all have the similar understanding but I think how we all go about it looks differently in every building."

The meetings at Red Elementary School took place over three separate sub-meetings. In the first meeting, the general education teachers for fourth grade, the principal, and the assistant principal attended. The second meeting included the special education teachers for fourth grade and the reading interventionist. The third meeting included the general education teachers, the reading interventionist, the special education teachers, and the principal. However, in Green Elementary School, the researcher observed one data dialogue meeting which included the principle, general education

teachers for fourth grade, special education teachers for fourth grade, the reading interventionist, and the school psychologist.

As Mrs. Larry pointed out, the purpose of the dialogue meetings was to "go over that benchmark data and make those decisions with the input of general education and the specialists. It's just kind a make sure everybody is on the same page." Mrs. Nilsson continued, "So every month we'll be talking about these kids and progress and what needs to happen." She also explained the role of the grade-level representatives.[10] "Those grade-level representatives will bring to the meetings concerns that the teachers have. Then if we just have specific concerns about a kid we just go talk to the teacher as needed" (Mrs. Nilsson).

In addition to the data dialogue meetings, "There's always as needed [meetings]" (Mrs. Eden) and open collaboration. Mrs. Thomson emphasized that there "has to be a lot of communication, a lot of collaboration; sharing data, . . . talking scores, what's working and . . . what isn't [working]." The participants further described how some of the collaboration occurred on a daily basis. They agreed that everyone on the team helped with decision making and examining what worked in the classroom and what did not. As Mrs. Larry illustrated,

> I'm on the team and I'm helping with the decisions and just helping the teachers you know what interventions and at what point and helping them read the data and the documentation so that when if it ever does get to the point that we're looking at identifying that student.

Mrs. Swanson continued to note, "And then once they come to Tier II or Tier III we have ongoing conversations about here's what we're working on, here's what I'm seeing, are you seeing any of this in the classroom." Mrs. Larry, in this regards, described that,

[10] At Green Elementary.

> I help with ideas for Tier I interventions things like that . . . when they get to a Tier III I'm much more involved but I also do help with intervention ideas . . . at all the tier levels . . . so that's kind of where we have the relationship between the general education teachers and . . . they need to go [to] the next step to actually making some changes with the help of RTI team.

In the third and final meeting, the researcher observed all the practitioners, except the assistant principal, were able to attend as a group. The general education teachers (fourth grade), the special education teachers (fourth grade), the reading interventionist, and the principal discussed the gaps in information from the first and second meeting. In general, the third meeting was very organized; the special education teacher and the reading interventionist took the lead and helped to define the responsibilities of all the teachers in each RTI tier. Furthermore, there was in-depth discussion as to what interventions should be used for the students in all the tiers. As well as describing the different interventions for students, the special education teacher and the interventionist suggested that all of the interventions should double-dip with the core curriculum to ensure that the students did not miss anything from the core. Finally, there was general consensus that the teachers collaborate and share anything taught in the core curriculum (particularly in math) to ensure that double dipping could be achieved during intervention time.

Participants believed that Response to Intervention should begin in the general education classroom, and the collaboration process should be continued with the team members in order to improve RTI implementation, as Mr. MacArthur emphasized, Response to Intervention was "definitely it starts in the general education classroom . . . but I think again it just you know the collaboration between all three is important." In this regards, Mrs. Thomson reported that Response to Intervention "starts with the

general education teacher. I think it starts in the classroom . . . because you have that child for the majority of the day and . . .those interventions have to start here [the classrooms]". Mrs. Thomson carried on the same point that, "Special education teacher and the literacy teacher is there to help support."

Overall, the participants felt that the collaboration within the schools was both essential and strong. However some of the participants raised some concerns that challenged the collaboration component. Mr. MacArthur noted, "I'm looking the relationship between general education [and] I think . . . no matter who's working with the student, consistent open communication, open dialogue, and working together to always see where the student is going to be at." Mrs. Nilsson raised a strong point regarding the overall beliefs of the increased need for collaboration, "I think for teachers it's sometimes an added piece . . . it's an added obligation." In a final concern, many of the participants described how successful collaboration and implementation of Response to Intervention required an increased amount of training. As Mrs. Swanson explained, Response to Intervention is "trying to shift more to the general education teacher but there hasn't been enough training and support for that end."

Synopsis of Research Question I

In summary, three main themes were raised from the first question: Process of Response to Intervention Implementation; Response to Intervention Evaluation and Identification; and Collaboration. Generally, the participants interpreted the RTI model and its processes in the three-tired levels. They also described the research-based interventions that they used with the students especially in Tier II and in Tier III (e.g., *Read Naturally* and *Triumphs*). Moreover, the participants described in detail the

benchmark and progress-monitoring assessments during the different settings. In addition, they emphasized the collaboration between the general education teachers, special education teachers, and reading interventionist in RTI model.

Findings in Relation to Research Question 2

Research Question 2 explored "How are the practitioners prepared to implement Response to Intervention at each multi-tiered level in their school?" To answer the second research question, the same analysis procedures were used as in Question 1. However, this analysis suggested two themes, Professional Development and Training. The overlap between these was substantial and they could not be clearly separated out. Hence, the analysis of the data to answer Question 2 treated the data as a coherent whole. The results are discussed in detail in the next section (see Figure 7).

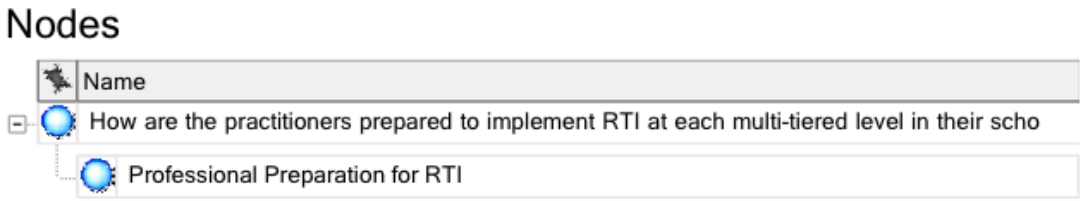

Figure 7. Illustration of themes and sub-themes for Research Question 2

Professional Preparation for Response to Intervention

The type of training and who provided the training differed greatly among the participants and the school buildings. The one common factor in terms of training, within the district was the presence of the TOSA. The participants agreed that the TOSA mainly provided training on the essential components of Response to Intervention including

AIMSweb®, different types of research-based interventions, and how to utilize strategies for the different tiers in Response to Intervention. In regards to the quality of training, some of the participants agreed that they were sufficiently prepared for the implementation of Response to Intervention even though they felt that district-level training was not the cause for their preparedness level. Mrs. Eden elaborated the support for training that was provided in Red Elementary School,

> I think it comes back to the building level . . . because we spoke up. . . . We knew what we wanted to do as a school and so we said that we're all in this together . . . at this school we have the same budget as we did 3 years ago . . . unfortunately every building just varies.

Mrs. Nilsson continued describing how the training differences between buildings effected the implementation of Response to Intervention, "I know some schools are more ahead of us and some are not as far as we are along in this RTI process. Everybody's kind of moved at their own speed and done their own thing."

As Mrs. Eden pointed out, the request for training began at the building level and Buckingham School District responded to the schools' requests and then provided training on Response to Intervention. Mrs. Nilsson emphasized that the district needed to ask the schools, "How's it going? What do you need? What's working? What's not working?" She continued, "I think that [training] really has to come from a district level first. And I think we're going backwards . . . RTI was just kind of thrown at everybody. And we knew it was important and saw the benefits of it." Although the training did not come directly from the district level initially, the participants agreed that when the training for Response to Intervention began, the district assigned a TOSA to provide training for the process. Mrs. Larry concurred, "Having that TOSA as support, you know has been main thing." Mrs. Eden continued, "So when we asked [the TOSA], they gave

us what they wanted" and "[The TOSA] was really good last year about sending out, "Here's the courses being offered.' And then I mean it's no cost to you except your time to attend" (Mrs. Swanson).

The participants continued to describe some of the training that the TOSA would provide. Overall, the participants were pleased with having support from the TOSA and the training was helpful. Mrs. Eden stated that the TOSA "would bring in speakers. So the district would actually bring people in instead of me having to go out and seek . . . at no cost to us." Mrs. Swanson also supported the benefits of having the TOSA providing training to prepare general educators for Tier I,

> For the last 2 years I've served on the district RTI committee. . . . We have had ongoing conversations about how to build those Tier I interventions and strategies. . . . And that was run by [the] TOSA. . . . I continued to improve what I know about RTI and how I implement services and interventions.

Despite the support for the TOSA and the training the TOSA provided for the district, Mrs. Nilsson mentioned that there were still gaps in the training. "[The TOSA] helped a lot. [But there hasn't been] a lot of preparation, I mean I don't think the district has done a whole lot." The other participants agreed that, while the TOSA was supportive, they still needed to supplement their training. Many of the participants received additional training on their own through college courses, through the state level, books, and workshops. Others described how they were fortunate to have previous experience from former districts or were able to consult each other about Response to Intervention within each school.

The various experiences the participants had in their supplemental training varied depending on how much personal experience they had, the amount of collaboration among professionals, and how much time they had dedicated to learning about RTI. Mrs.

Nilsson described, "[I] didn't really have formal trainings. The training that I did myself [was] through my own books." Mrs. Swanson stated, "I think most of my training has come through my special education background. Having already been a special education teacher for many years, so much of that is similar." She continued to note that collaboration was a familiar process. Mrs. Thomson reflected, "I think it [training] comes from administrators and literacy specialists . . . staff meetings of professional development within the school teaching us . . . interventions . . . [and from] my master's classes [and] having that time to collaborate with my fellow teachers." Mrs. Swanson and Mrs. Eden both described taking online courses, "[the state] offers on-line courses that are free" (Mrs. Swanson), "I've done online classes, workshops at the state level [and] at the national level" (Mrs. Eden). On the same point, Mrs. Nilsson added, "I did go to a workshop [and] seminar [which the] district paid for it but [I've done] a lot of kind of just doing it on my own. I got book [and] read the book. . . . but that's about it." In general, the participants aligned that the district provided on-going training on the components of Response to Intervention but without consistency. In this regards, Mrs. Swanson summarized that the training was "kind of ongoing . . . through our district committee meetings and then just professional development, you can secure it from time to time so it's more ongoing then just like a one shot deal."

Whether training was provided at the district level, by the TOSA, or the participants sought additional training, they described a variety of training experiences. In general, many of the participants received at least some training on the RTI model and AIMSweb® and corresponding data analysis. As the participants described what training they had received, Mrs. Nilsson specifically demonstrated the quality of the training.

> They have one little training [during] summer. the RTI coordinator was the support for us. we had a book and we just kind of went over the book. I just remember seeing the [RTI] triangle. So not a lot of items and I think as specialists we grab onto things like that. It was a starting point for us. . . . But then again there goes the support after that. So it was like, "Here you go. Here's your grade book. Read it. Do it." And then everybody was kind of on their own. (Mrs. Nilsson)

Mr. MacArthur illustrated his experience with training, "We've had a few trainings [on RTI process]. . . . [it] has just kind of given me a model, a guideline to follow. Some trainings have been very beneficial. Others . . . doesn't really apply to me." Mrs. Larry also had mixed experiences on the benefits of the training she received,

> What programs they use is the main [training] because our district will select programs. The trainings that I got specifically on [those] programs . . . and how to read the data [have] really helped me with methods of how to service kids . . . but . . . I've had such limited training.

Due to the amount and quality of training that they received, the participants, especially those from general education, had mixed feelings on how prepared they were for implementing Response to Intervention. Most of the participants felt able to implement Response to Intervention while others felt that they were ill prepared to implement the model because of insufficient training. Mr. MacArthur, for instance, felt prepared on using AIMSweb® to collect data but did not feel fully prepared to use Response to Intervention,

> I feel pretty confident in putting the data in the computer. Looking at the graphs, looking at the you know looking at their score you know finding out how they compare to Green Elementary population versus state versus national scores. So I feel pretty confident in using the AIMSweb® computer database . . . to figure out my scores and look at where they're at comparatively. . . . Truthfully sometimes I feel like I'm not fully prepared. We have had an initial training on the AIMSweb® and . . . how to administer those tests to students. [but] you know for this RTI process but there's always more to it. (Mr. MacArthur)

Mrs. Thomson, on the other hand, did feel she was prepared for implementing Response to Intervention, "As a district we had some professional development. Then within the schools [we] just setting up the norms as a school. This is what our process is. This is what our plan is." She continued to say,

> We could always use more. But I feel like I have a pretty good grasp on how it works but I'm thinking as a if I were a brand new teacher I don't know if I would. I don't know at what point they're taught how we go through this process. Just because RTI is something so new that I really I think it comes from the administrators and the specialists within the school or district teaching us these things. (Mrs. Thomson)

The participants all mentioned that, despite the fact they received training, there were still numerous gaps. They expressed that they needed more training in specific areas including behavioral intervention, reading interventions, processes of implementing Response to Intervention consistently, and research-based interventions. Moreover, the participants agreed that training for Response to Intervention must be ongoing to accommodate the constant evolution to the process. Mrs. Swanson noted,

> I don't think you ever get enough with RTI. I think you always need more because it's changing, it's not a constant, always changing and improving. There's no one perfect RTI model out there. It's based on what you know as a building and how you continually shape it to make that process better.

Mrs. Larry continued upon this, "Overall RTI needs more training. . . . I think most people are on board with the concept but actually implementing it and how to implement it is just something we still just need more guidance and support." During the benchmark and progress-monitoring assessment phase, the researcher observed that the test was provided in accordance to procedure and the participants seemed confident. However, when they provided the benchmark and progress-monitoring directions before the start of the assessment, reading directions were not consistent between the teachers.

The researcher also observed that, in both schools, progress monitoring for math in Tier II (MCAP) and MCOMP (math computation) was present, but it was unclear as to who held what role in providing progress monitoring. The researcher heard comments like, "Mmm! Let me go back and check with my team in Math." Furthermore, the educators could not provide any clear indication as to who was supposed to be providing the progress monitoring in Tier II. The researcher observed that the educators struggled to decide how well the students had progressed with interventions and, therefore, could not easily determine if a student should continue in Tier I or be moved to Tier II. The researcher took steps to better understand how the progress-monitoring data were being utilized in math and spoke with school psychologist (who was in charge of Math intervention).

A general, increase in RTI training was not the only aspect of training the participants wanted to have in the district. Mr. MacArthur stated, "We haven't had much in behavioral. We've had a few things on the academic . . . but behaviorally we haven't had any [training]." He continued, "Learning more interventions within the classroom [and having] more ammunition to work with the students before I send them to a Tier II [is important]." In terms of having more training for interventions, Mrs. Thomson aligned with Mr. MacArthur, "We need more interventions, we need more ideas on how to teach writing. . . . I think just giving the ideas on how the system works and what interventions to use within the classroom and how to make them work in a whole class [is needed]."

Another major concern the participants raised about training was the overall inconsistency they had received. "I think it [training] needs to be district-wide. Mandated

district wide. So that everybody hears the same message at the same time and knows the exact same things to do" (Mrs. Nilsson). Mrs. Larry emphasized on this point and aligned with what Mrs. Nilsson stated. As a special education specialist, she noted how she would like to see all general education teachers prepared to implement Response to Intervention, which could be achieved by consistent training. She said, "What would really help is more preparation for general education teachers . . . and that would help the process." Mrs. Nilsson explained her frustration about why training was critical to implement Response to Intervention well, "You can't just kind of say, 'here it is. Here you go have fun with it.' I think there needs to be continual conversations and collaboration and support along the way." Mrs. Thomson summarized many of the concerns regarding the gaps in training that many of the participants shared,

> We all still question specifically what is Tier I, what is Tier II, what is Tier III. How long do [we do] an intervention . . . I think if I were a newer teacher or just had stayed in the classroom, I don't feel like the district has given us enough information on it. I think there's still a lot of up in the air about I don't know. . . . The academic piece versus the behavior piece. And the gifted side, the gifted and talented students. They're very much part of this part of RTI too.

The participants agreed that the gaps in the training should be addressed regardless of the budget and regardless of the amount of time training takes. They felt that it was the district's responsibility to ensure that adequate training be provided. Mrs. Larry explained that the lack of training was due to, "money and . . . time. I think it's asking teachers to take more time for things. I think, especially administration, worries about putting more on our plate. . . . Even though the training would help." Mrs. Nilsson further elaborated, "I'm guessing it's money. But you pay a lot of money to bring somebody in to train everybody. [But] I think it's worth the money. I think this district lacks in professional development, altogether."

During the data dialogue meetings at Red Elementary School, the researcher observed the practitioners discussing the components of Response to Intervention, especially in regard to which interventions should be utilized. At one point during the data dialogue meetings, the teachers began to ask what types of interventions should be used. Despite the many concerns regarding the gaps in training, Mrs. Swanson mentioned that it was important to the general education teachers that, "[doing] the most strategies and interventions that you can without adding more to their plate or something that's going to be time consuming. So making it very effective but short and simple as well." She added, "I also know how overwhelmed classroom teachers are with the amount of things they do. So sometimes it's best to train staff that can take it back and disseminate to the teachers in their building." In other words, classroom teachers often found that learning about using a plethora of interventions was difficult, and they needed steep training time. This individual was suggesting that a solution to this problem was to provide training to interventionists on good classroom practices and have them take these back to their buildings and to their respective teachers.

Moreover, the researcher observed in the third data dialogue meeting that the principal needed to remind teachers how the RTI model should look. The principal mentioned that there were more students in Tier II and Tier III combined than in Tier I; which was less than the ideal 80%. During the meeting, the principal addressed this by stating, "If the students were less than 80% in Tier I, you are overwhelming the special education teachers and the interventionists in general as they will have more students on their caseload." These issues observed by the researcher corresponded directly to some

of the concerns about professional development that were raised by the participants during the interviews.

Synopsis of Research Question 2

In general, one theme was identified from Question 2 that discussed the preparation for Response to Intervention. The participants discussed the types of trainings they had received from the district or from other sources. For instance, some of the participants took it upon themselves to read books or go to online sources to learn more information about the RTI processes and the implementation of Response to Intervention. However, for all of the participants, the greatest resource for training and information regarding Response to Intervention came from the TOSA. Despite the fact that the training was beneficial and helped to increase their knowledge of Response to Intervention, all of the participants agreed that they needed additional and ongoing training due to the continual changes to the model.

Findings in Relation to Research Question 3

To answer the final research question, "How has student progress in reading and math been affected by the implementation of Response to Intervention at the second and third tiers?," the researcher received data from Red Elementary School and Green Elementary School for 26 students at the fourth-grade level. Of the data collected, the researcher received data from 11 students at Green Elementary School and 15 at Red Elementary School. The researcher received these data from the TOSA. Moreover, the identity of these students was censored to keep the identity of the students anonymous. For the purpose of describing specific data from these de-identified students, each student was provided with an identifying number.

To analyze the quantitative student data, as described in Chapter III, the researcher used Applied Behavioral Analysis (ABA). This analysis was based on the trend lines established from the de-identified students' progress-monitoring data that were collected from the TOSA. For the ABA, the researcher visually inspected graphs and then clustered the data together to see what trends emerged. For the purpose of analyzing these data, it was essential to have complete data sets from the de-identified students. A complete set of data were defined as follows:

- The student must have a benchmark score recorded from AIMSweb® for the beginning of the current academic year.
- The student must have at least three progress-monitoring data points from the current academic year recorded from AIMSweb®.
- The student must have a benchmark score and progress-monitoring data points recorded from AIMSweb® during the previous academic year.

Only data from 11 de-identified students met these qualifications, 7 from Green Elementary School and 4 from Red Elementary School (see Table 7). The de-identified students whose data were analyzed also received interventions from the Tier II and Tier III RTI levels. At the time of the data collection, three students from Green Elementary School were receiving Tier II interventions and four students were receiving Tier III interventions. Four students from Red Elementary School were receiving Tier II interventions. However, due to the incomplete data sets, no student from Red Elementary School received Tier III interventions. The remaining 15 collected data samples were incomplete data sets.

Table 7

Breakdown of Complete and Incomplete Data Sets

	Red Elementary School	Green Elementary School	Total
Incomplete Data	11	4	15
Complete Data	4	7	11
Total	15	11	26

The students receiving interventions in Tier II and in Tier III worked on different skills. Therefore, the progress-monitoring data also reflected the different growth in their skills. The students' progress-monitoring data showed trend lines from M-CAP, R-CBM, and MAZE. The data, which were analyzed by the researcher, showed that students had progress-monitoring scores in multiple areas (M-CAP, R-CBM, and MAZE). Furthermore, some students were receiving interventions from both Tier II and Tier III. The researcher also noted that one student showed growth in one area (e.g., in M-CAP progress monitoring) but did not show growth in another area (e.g., in MAZE progress monitoring).

Analysis of Data

In the following section, the researcher describes the trends of the completed data sets in the relevant progress-monitoring data for the individual students during the time in which they were receiving either Tier II and/or Tier III intervention services. The researcher focused the analysis on the 11 complete data sets retrieved from the TOSA. To describe the trends in each complete set of data, the researcher examined the data for patterns of growth, regression, or non-growth (i.e., evidence that a student plateaued).

While analyzing the data, the researcher only found patterns of growth and non-growth, no case from the complete data showed regression.

To determine these patterns of change, the researcher took the averages of each de-identified student's progress-monitoring data from the scores starting from the previous academic year to the current academic year. To find these averages, the researcher pulled three data points at the beginning, three points in the middle, and three points at the end from the collected progress-monitoring data. The researcher then compared the resulting averages of student progress from the beginning of the previous academic year to the middle and then at the end point of data collection.

Pattern of Growth

In the following section, the researcher summarized the patterns of growth for students who received interventions in Tiers II and III at the beginning of the researcher's data collection. The pattern of growth described for each student varied according the intervention received and which AIMSweb® progress-monitoring test was provided.

The researcher compared the averages of the student progress-monitoring data with that of the aim line set by AIMSweb® for the fourth grade. For the students who received the R-CBM progress-monitoring tests, the aim line for fourth-grade students during the current year was to have a reading fluency of 128 words per minute. If a student was not proficient and did not meet this aim line, then he or she was placed into an intervention. The scores recorded by AIMSweb® reflected the number of words per minute read by the student. With the MAZE test, the aim line for fourth-grade students during the current year was 18. In the previous year, the aim line was 14. The M-CAP

aim line score for fourth-grade students for the current year was 16; while for the previous year the aim line was 14.

In Tier II, seven students showed evidence of growth using grade-level measurement while receiving interventions in Tier II. Of these seven students, one student in Tier II received reading comprehension interventions (*Read Naturally* with an emphasis on comprehension) and was administered the MAZE progress-monitoring assessment. Six other students in Tier II received reading fluency interventions (*Lexia, Read Naturally*, and/or *Treasure Chest)* and were provided the R-CBM progress-monitoring assessments.

The first student, who showed a pattern of growth throughout the progress-monitoring data, received interventions at the Tier II level. Starting at the beginning data set, the student received interventions at Tier II; the intervention programs were *Lexia* and *Treasure Chest*. This student continued to receive Tier II services at the ending point of data collection; the intervention program was *Read Naturally*. While receiving the interventions, the student showed a pattern of growth. The beginning average point was 47, the middle average point was 59, and the ending average point was 72 (see Figure 8).

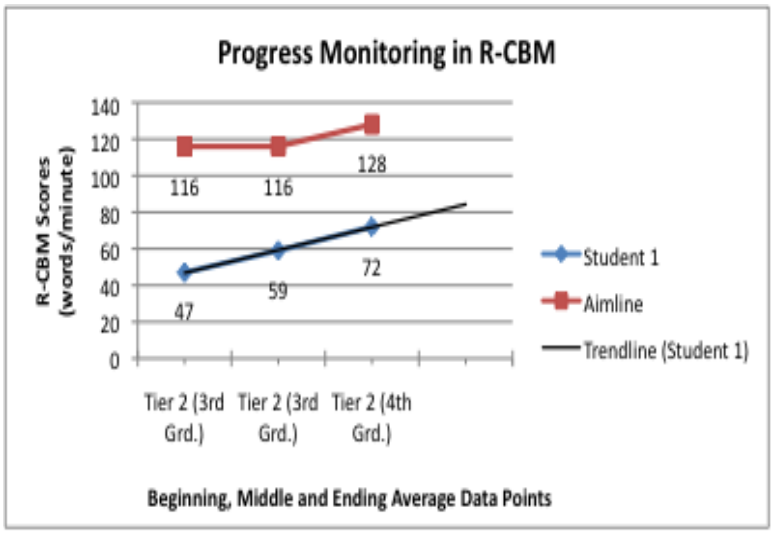

Figure 8. R-CBM progress-monitoring data for student 1.

The second student also showed a pattern of growth throughout the progress-monitoring data. Starting at the beginning data set, the student received interventions at Tier II; the intervention programs were *Lexia* and *Treasure Chest*. This student continued to receive Tier II services at the ending point of data collection; the intervention program was *Read Naturally*. While receiving the interventions, the student showed a pattern of growth between the beginning and the middle data points but showed a slight dip in scores in the end data point. In general, however, the student showed a pattern of growth. The beginning average point was 53, the middle average point was 71, and the ending average point was 61 (see Figure 9).

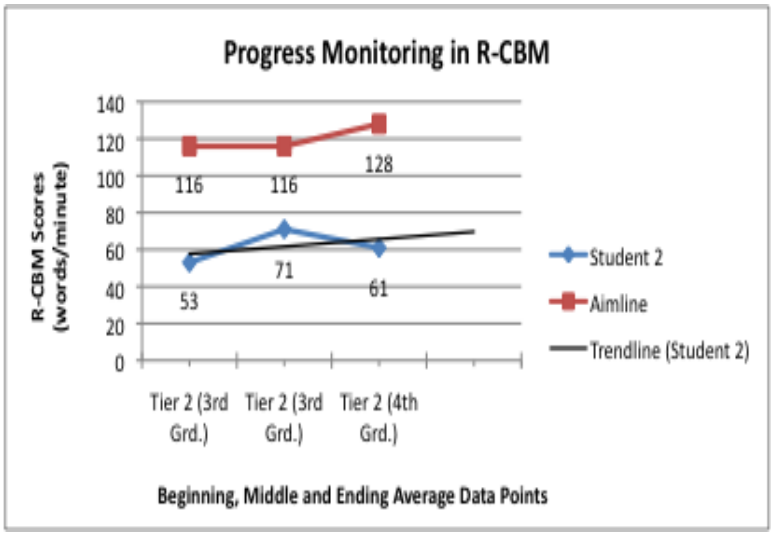

Figure 9. R-CBM progress-monitoring data for student 2.

The third student, who showed a pattern of growth throughout the progress-monitoring data, received interventions at the Tier II level. Starting at the beginning data set, the student received interventions at Tier II; the intervention programs were *Lexia* and *Treasure Chest*. This student continued to receive Tier II services at the ending point of data collection; the intervention program was *Read Naturally*. While receiving the interventions, the student showed a pattern of growth. The beginning average point was 40, the middle average point was 78, and the ending average point was 76 (see Figure 10).

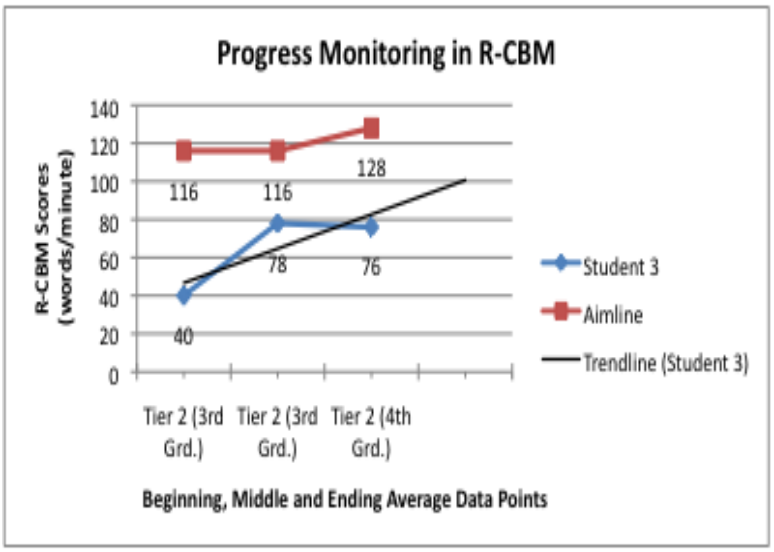

Figure 10. R-CBM progress-monitoring data for student 3.

The fourth student, who showed a pattern of growth throughout the progress-monitoring data, received interventions at the Tier II level. Starting at the beginning data set, the student received interventions at Tier II; the intervention programs were *Lexia* and *Treasure Chest*. This student continued to receive Tier II services at the ending point of data collection; the intervention program was *Read Naturally*. While receiving the interventions, the student showed a pattern of growth. The beginning average point was 49, the middle average point was 55, and the ending average point was 75 (see Figure 11).

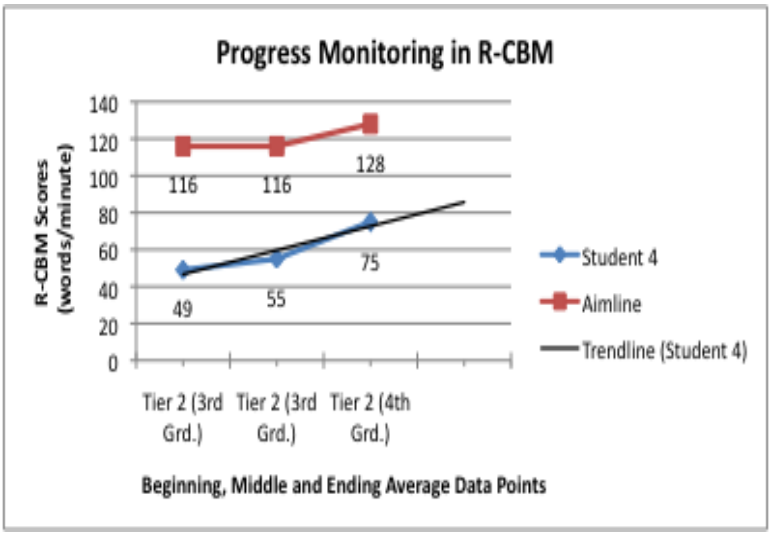

Figure 11. R-CBM progress-monitoring data for student 4.

The fifth student, who showed a pattern of growth throughout the progress-monitoring data, received interventions at the Tier III level at the beginning point of data collection. At the end point of data collection, this student had moved to Tier II. Throughout the data collection, the student received *Read Naturally* as an intervention service for both Tier III and Tier II. While receiving the interventions, this student showed a pattern of growth. The beginning average point was 60, the middle average point was 94, and the ending average point was 85 (see Figure 12).

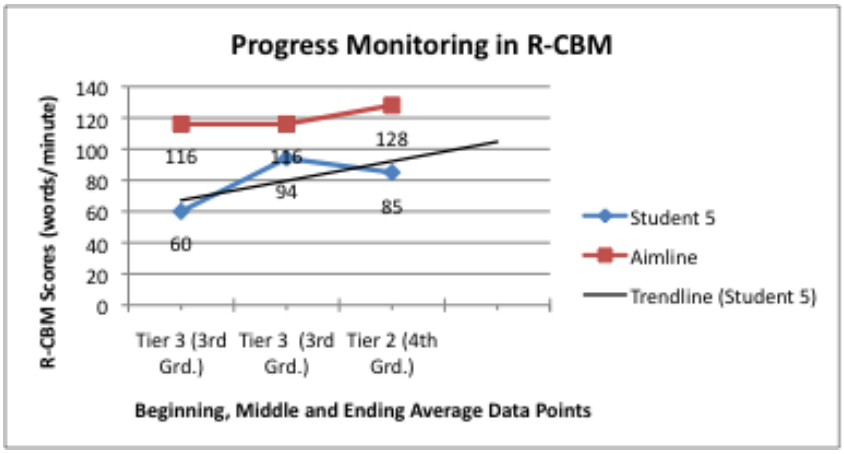

Figure 12. R-CBM progress-monitoring data for student 5.

The sixth student, who showed a pattern of growth throughout the progress-monitoring data, received interventions at the Tier II level. From the beginning data set through the end data set, this student received interventions at the Tier II level and was provided interventions with the *Read Naturally* program. While receiving the intervention, the student showed a general pattern of growth; however, there was a dip between the middle data point and the end data point. The beginning average point was 60, the middle average point was 90, and the ending average point was 77 (see Figure 13).

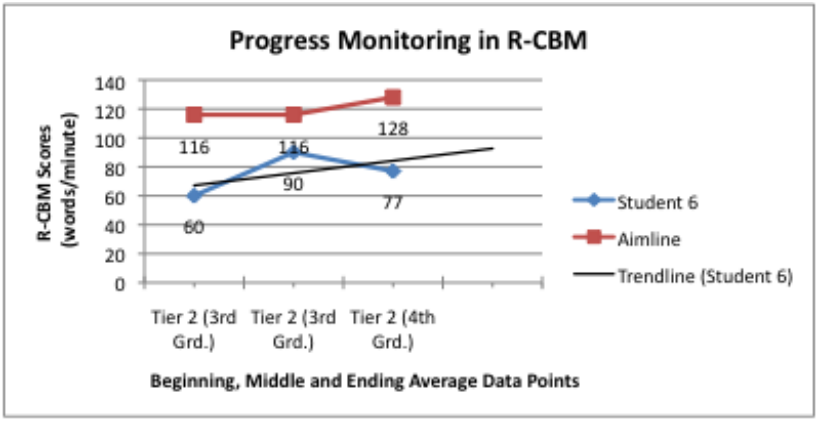

Figure 13. R-CBM progress-monitoring data for student 6.

The seventh student, who showed a pattern of growth throughout the progress-monitoring data, received interventions at the Tier II level. At the beginning data point, the student received intervention services in Tier I; this student had small group instruction with general education classroom teacher. At the ending data collection point, the student received Tier II intervention services through *Read Naturally* with a focus on reading comprehension. The student received progress monitoring through the AIMSweb® MAZE assessment. For this student, the beginning average point was 10, the middle average point was 15, and the ending average point was 16 (see Figure 14).

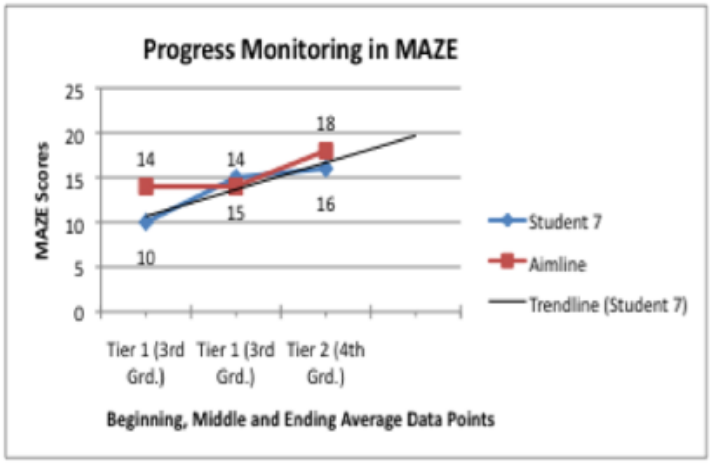

Figure 14. MAZE progress-monitoring data for student 7.

For students receiving Tier III interventions, the researcher found that there was only one student to show a pattern of growth. This student received intervention for reading fluency and was administered the R-CBM assessment. At the beginning data point, this student received intervention services in Tier II; at the ending data point, the student received intervention services at the Tier III level. This student received intervention services in reading fluency and was scored using R-CBM. During Tier II, this student received interventions through *Lexia* and *Read Naturally*. During Tier III, this student received interventions through *Read Naturally*. This student's average R-CBM scores were: 54 at the beginning point, 95 at the middle point, and 89 at the end point (see Figure 15).

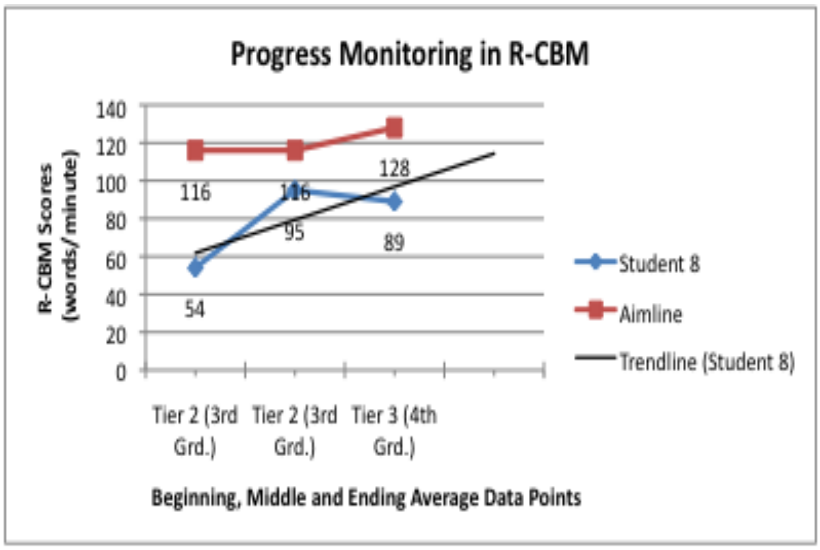

Figure 15. R-CBM Progress-monitoring data for student 8.

Student Who Showed a Pattern of Non-growth

In the following section, the researcher will discuss the patterns of non-growth of students who were receiving Tier III intervention services at the beginning of the researcher's data collection. The researcher determined that a pattern of non-growth indicated that the student made no progress or had a slight or minimum amount of growth. There were two students who showed a pattern of non-growth. One student showed this pattern in two skill areas, reading comprehension and math. The other student showed this pattern in reading fluency.

The first student received interventions at the Tier II level at the beginning data points than moved to Tier III in the end data points. While receiving Tier II interventions, the student received *Lexia* and *Read Naturally* as intervention services. While in Tier III, the student received *Read Naturally* intervention. This student was

scored with the R-CBM tests. The beginning average point was 41, the middle average point was 53, and the ending average point was 52 (see Figure 16).

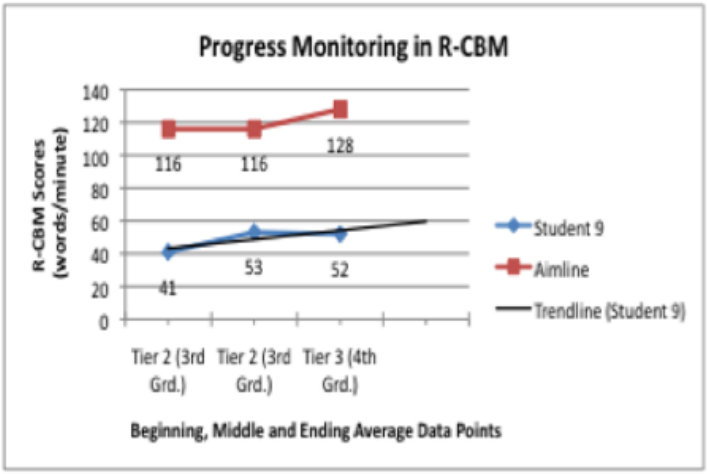

Figure 16. R-CBM progress-monitoring data for student 9.

Student received interventions for reading comprehension and math application. This student received intervention services in Tier II; at the ending data point the student received intervention services for both skills at the Tier III level. First, this student was scored using MAZE. In Tier II, this student received *Lexia* and in Tier III he/she received *Read Naturally* intervention services. This student's average MAZE scores were 9 at the beginning point, 10 at the middle point, and 15 at the end point (see Figure 17).

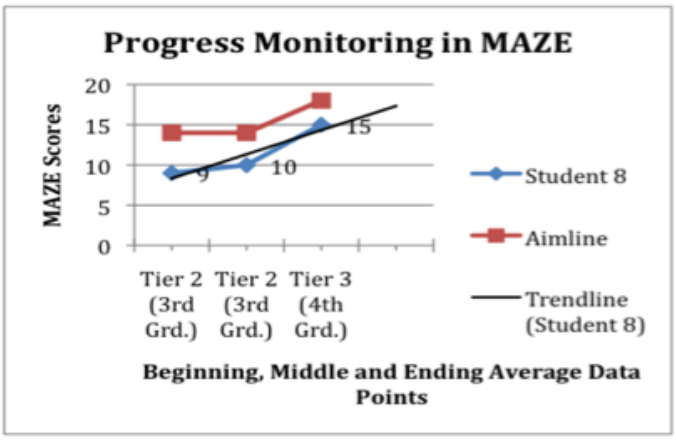

Figure 17. MAZE progress-monitoring data for student 8.

Second, this student also received math interventions and was scored with M-CAP. During Tier II, this student received interventions through small math group instruction. In Tier III, this student received intervention services through small group and direct instruction for 5 days a week. This student's average M-CAP scores were 3 at the beginning point, 4 at the middle point, and 6 at the end point (see Figure 18).

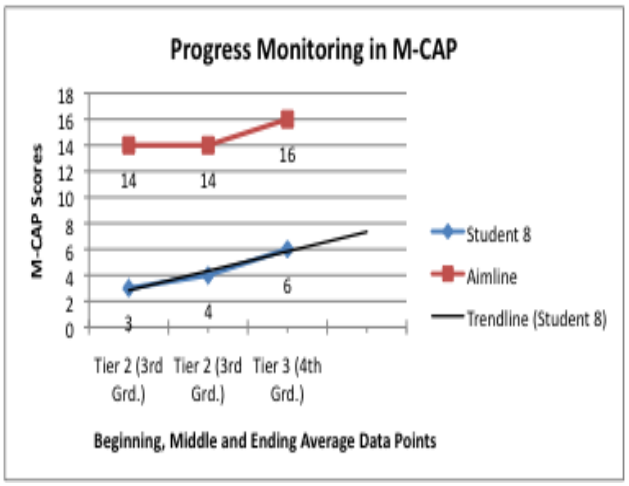

Figure 18. M-CAP progress-monitoring data for student 8.

Below Grade Level

While analyzing data, the researcher noted that there were two students whose progress monitoring was below grade level. Both of these students were receiving interventions at the Tier III level at the beginning data point and received Tier III interventions at the end data point. Additionally, both students received interventions for reading fluency and reading comprehension. These two students were tested with R-CBM and MAZE. Furthermore, both students received instruction with *Read Naturally* at the beginning of the data collection. At the point of the ending data collection, both students continued to receive *Read Naturally* interventions in a small group setting. For the R-CBM test, the first student had the following averages: the beginning average point was 28, the middle average point was 47, and the ending average point was 36. This student showed slight growth for the below grade level test (see Figure 19).

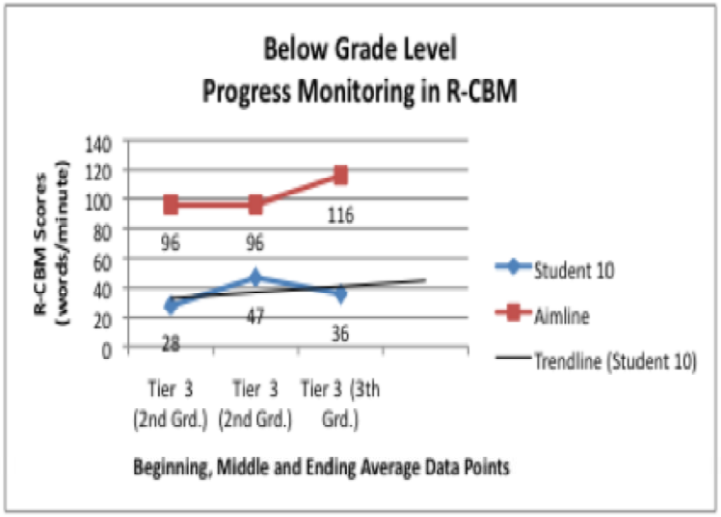

Figure 19. R-CBM progress-monitoring data for student 10.

For the MAZE test, the first student showed a pattern of non-growth and had the following averages: the beginning average point was 7, the middle average point was 5, and the ending average point was 5 (see Figure 20). While analyzing this student's data, the researcher noted that the student's first progress-monitoring point was an outlier compared to the other progress-monitoring scores (see Appendix M).

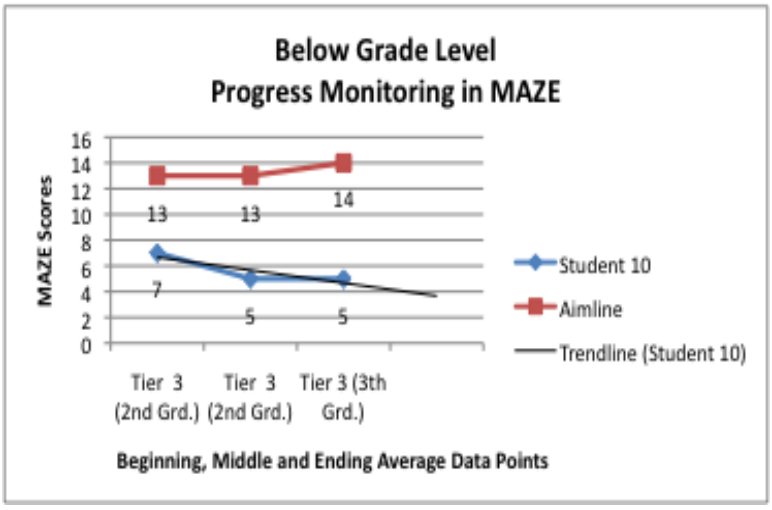

Figure 20. MAZE progress-monitoring data for student 10.

For the R-CBM test, the second student had the following averages: the beginning average point was 30, the middle average point was 55, and the ending average point was 54. This student showed growth for the below grade level test (see Figure 21).

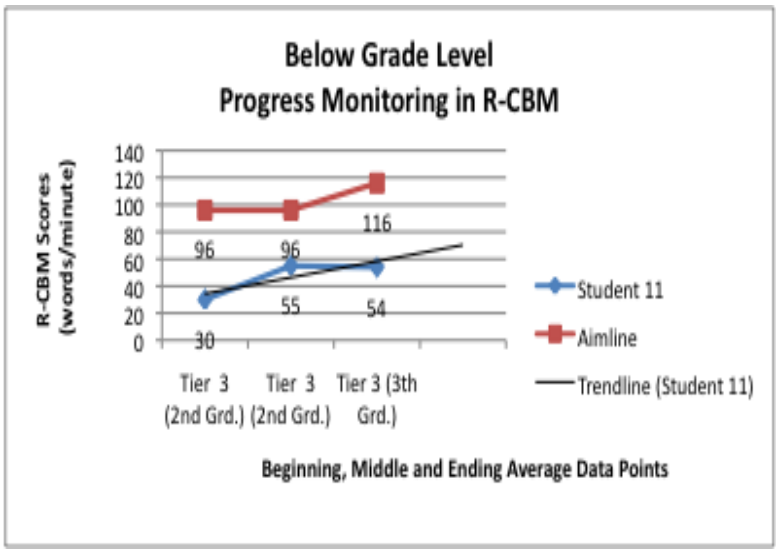

Figure 21. R-CBM progress-monitoring data for student 11.

For the MAZE test, the second student had the following averages: the beginning average point was 5, the middle average point was 10, and the ending average point was 10, showing growth for the below grade level tests (see Figure 22). This student showed a pattern of growth for MAZE given the below grade level progress-monitoring testes.

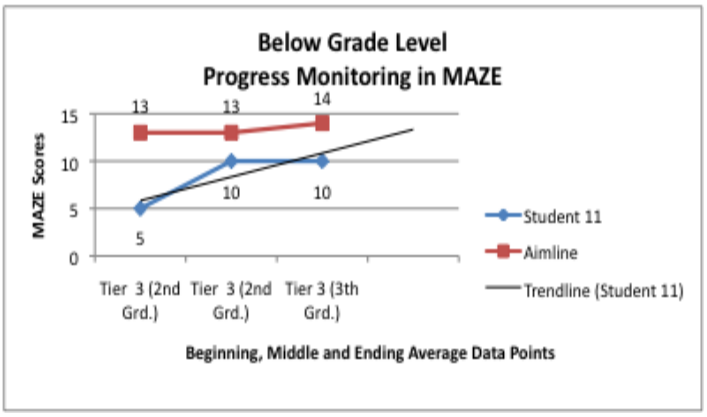

Figure 22. MAZE progress-monitoring data for student 11.

Synopsis of Quantitative Data

The researcher was struck with the appearance of the two general patterns displayed by the de-identified students. In general, there were 10 students who were making progress in the measured skills. There were other students who showed variation but tended to display neither a downward nor an upward trend. Seven students who showed a pattern of growth received interventions in Tier II; the majority of these students received interventions for reading fluency and was progress monitored with the AIMSweb® R-CBM test. One student showed growth with the AIMSweb® MAZE reading comprehension test. From Tier III, there was only one student who showed a pattern of growth on R-CBM. Furthermore, in Tier III. there were two students who were receiving interventions and progress monitoring below grade level. These students received progress monitoring in R-CBM and MAZE. In general, three students showed a pattern of non-growth, having patterns that varied little. In Tier III, one student showed a non-growth pattern in MAZE and in M-CAP. The other student showed a non-growth pattern in R-CBM. Additionally, there was one student who received progress monitoring below grade level in Tier III. This student showed a pattern of non-growth in MAZE for reading comprehension.

Summary

At the conclusion of the study, the researcher found four major themes from the qualitative phase: Response to Intervention Implementation; Response to Intervention Evaluation and Identification; Collaboration; and the Participants' Preparation for Response to Intervention. Within these themes, the participants discussed the overall implementation of Response to Intervention which included the multi-tired model,

research-based interventions, progress monitoring and data collection, and the effect of collaboration on the RTI model. Additionally, for Research Question 2, the participants described what training or professional development they had received and what training they felt were lacking. In the quantitative phase of the research, the researcher found two general patterns of change on the de-identified students' data. These patterns were growth and non-growth (plateau). Many of the students who showed a pattern of growth received interventions in Tier II. Students who showed a pattern of non-growth were general in Tier III.

CHAPTER V

INTRODUCTION

This study examined the "real time" application of Response to Intervention (RTI) processes in two elementary schools at the fourth grade level, focusing in particular on Tiers II and III. The significance of this study was that it offered an understanding of the role of educators as direct participants in a multi-tiered RTI model. This study was also important in that it extended information to current literature on Response to Intervention, since few studies have looked closely at the day-to-day perceptions and activities of educators immersed in the RTI processes.

The study was conducted in a school district committed to the multi-tiered model; two schools volunteered to participate in the study. It utilized an embedded mixed-method design. This design examined both qualitative and quantitative data from two separate phases of data collection. The qualitative phase was the primary phase of the study and focused on gathering data from interviews, observations, and corresponding data related to the RTI phenomena. The participants from the qualitative phase were special education teachers, general education teachers, specialists, and interventionists. The secondary quantitative phase served to provide findings that could be triangulated with the qualitative data; these data were drawn from benchmark testing and progress monitoring with 11 de-identified students; specifically, their scores in MAZE, R-CBM, and M-CAP over a little over a one year period.

In this chapter, the researcher summarizes the findings from Chapter IV, provides a brief discussion on these findings, discusses the limitations of this study, and provides recommendations for practitioners and policy makers. Finally, this chapter highlights the implications for further research.

Summary of the Findings

In this study, three research questions were addressed. With respect to the first question, "How do school practitioners (special educators, general educators, and interventionist) implement Response to Intervention at each multi-tiered level in the Response to Intervention model?," the researcher identified three main themes. The first theme, the Process of Response to Intervention Implementation, described the participants' understanding of the RTI model and the processes within the three tiers. They also described the research-based interventions that were implemented within each tier and how benchmark and progress monitoring were provided to students to evaluate progress. Finally, the participants provided in-depth descriptions of collaboration. In general, the participants interpreted the RTI model as a process that utilized three tiers to support students. They described Tier I as the universal design which served all students through the provision of the core curriculum. They continued to describe Tier II as the first level of intervention when students were struggling in the core curriculum. Moreover, according to the participants' description, Tier III was described as an intensive level of intervention that often served those students who were on an IEP or were yet to be identified for special education. Additionally, they illustrated how research-based interventions were distributed within each level. For example, educators in Tier I focused on the core curriculum using programs such as *Treasures*. In Tier II,

interventions tended to support the core curriculum while simultaneously focusing on specific skills, such as vocabulary and reading comprehension. In Tier II, the participants described using *Read Naturally* and *Treasure Chest* as the primary research-based interventions. Finally, in regards to Tier III, the participants illustrated that the research-based interventions, such as *Triumphs* and *Read Naturally*, worked to target core skills related to the core curriculum.

They also described how progress-monitoring and benchmark scores impacted students' movement between the tier levels. Participants also indicated that collaboration was important and was a dynamic process between the general education and special education teachers and the building administrators and specialists. Participants also expressed a number of concerns: the quantity of paperwork, and the fact that the buildings were different in terms of implementing Response to Intervention.

The second research question, "How are the practitioners prepared to implement Response to Intervention at each multi-tiered level in their school?," explored the professional development and training that practitioners of Response to Intervention received in order to answer this question. While discussing the types of trainings they had received from the district or from other sources, many of the participants felt that training was beneficial to increase knowledge of Response to Intervention. The TOSA provided the majority of RTI training to the participants in the Buckingham School District. All participants agreed that they had received different amounts and types of training; however, they agreed that additional and continuous training was important in order to implement Response to Intervention well since the model was continuously evolving.

Finally, the third research question asked "How has student progress in reading and math been affected by the implementation of Response to Intervention at the second and third tiers?" This question was addressed by examining progress-monitoring data from de-identified students from Tier II and Tier III at the fourth-grade level. From the 11 students' data, some individual students were tested in 3 skills, others in 2 skills, and the remaining in 1 skill. For example, student number 8 showed a pattern of growth in R-CBM but showed a pattern of non-growth in MAZE and M-CAP as illustrated in Chapter IV. In general, there were two general patterns: (a) a pattern of grade-level growth, which was occurring in 10 of the students, and (b) a pattern of non-growth at grade level, which appeared to be occurring in three of the students. To determine these two patterns, the researcher analyzed progress-monitoring data from MAZE, R-CBM, and M-CAP. Finally, there were also two students in which progress-monitoring tests only examined growth below their grade levels.

Discussion

From the findings of this study, the researcher gained insight into the implementation of Response to Intervention. Overall, the findings seemed to support current literature on Response to Intervention, although the researcher found gaps in the implementation. Much of the current literature described Response to Intervention as a multi-tiered model "that encompasses general and special education" (NASDSE, 2006, p. 3). Johnson, Smith, and Harris (2009) continued to describe that Response to Intervention "screens all students to determine who may be at risk . . . monitors student progress at all tiers . . . [and should provide] high-quality, research-based general education instruction and targeted interventions that increase in intensity depending on

student need[s]" (p. 5). Furthermore, for Response to Intervention to be successful, it "requires leadership, collaborative planning and implementation by professionals across the educational system" (NASDSE, 2006, p. 3). From the researcher's observations in the two schools, it seemed that these essential components of Response to Intervention were present. However, while some of these components were followed and considered strengths in the district's implementation of Response to Intervention, the researcher felt that some of these components were not strong and presented challenges for the implementation of the multi-tiered model. Finally, the researcher felt that both the quantity and the quality of training the practitioners' had received on the RTI model had an effect on the overall implementation of Response to Intervention.

From the findings, it appeared that Response to Intervention was not entirely a new model but was currently considered a more structured framework that had been supported by Individuals with Disabilities Education Improvement Act of 2004 and Free Appropriate Public Education (FAPE). Together, Individuals with Disabilities Education Improvement Act of 2004 and No Child Left Behind Act of 2001 represented significant efforts on the part of the Federal Government to ensure that all students be educated fairly and with adequate instruction. In addition to Individuals with Disabilities Education Improvement Act of 2004 and No Child Left Behind Act of 2001, the federal government also demanded that schools provide FAPE to all students with disabilities (McLaughlin, 2010). It would seem, based on the participants' perspective, that many educators, prior to the RTI model, had been using many of the components found in the RTI model informally in the general education environment. As Mrs. Nilsson described the RTI model, "it is a pretty paradigm shift for teachers." Dupuis (2010) supported this

concept, “RTI is a paradigm shift that requires staff to look at struggling students in a different manner” (p. 34).

In general, as presented in Chapter IV, the participants described the RTI model as a multi-tiered system, and they illustrated by their comments a strong grasp on how the students should be distributed within the tiers of the model. According to NASDSE (2006), the RTI model should be divided into three tiers. These tiers included “increasing intensities of instruction that are provided to students in direct proportion to their individual needs” (p. 22). The participants’ descriptions of the RTI model aligned with this general framework of Response to Intervention. Moreover, during the interviews, the participants described how there should be 80% of students at Tier I, 10%-15% of students at Tier II, and 5%-7% at Tier III. This description of student distribution was consistent with National Association of State Directors of Special Education’s framework: Tier I should serve 80% of the school’s population, Tier II should serve 15% of the school’s population, and Tier III should serve 5% of the school’s population.

While the participants in this study were operating on the assumption that the model’s theoretical distribution of students across tiers was consistent with the actual distribution, when their perceptions of the model were contrasted with selected district reported data on students’ distribution between tiers, a notable discrepancy emerged. In both schools, less than 80% of the students were in Tier I, more than 15% were in Tier II, and more than 7% of students were in Tier III (see Figures 23, 24, and 25). This discrepancy was particularly strong from the M-CAP and R-CBM benchmark scores for the first benchmark test in both schools. However, the MAZE benchmark scores showed student distribution close to the ideal RTI framework (see Figure 26).

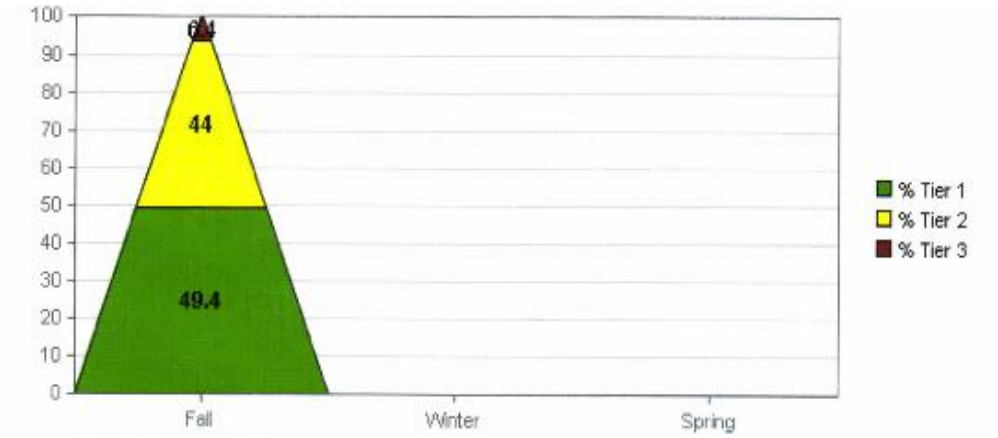

Figure 23. Tier transition report for the mathematics concepts and applications at Red Elementary School.

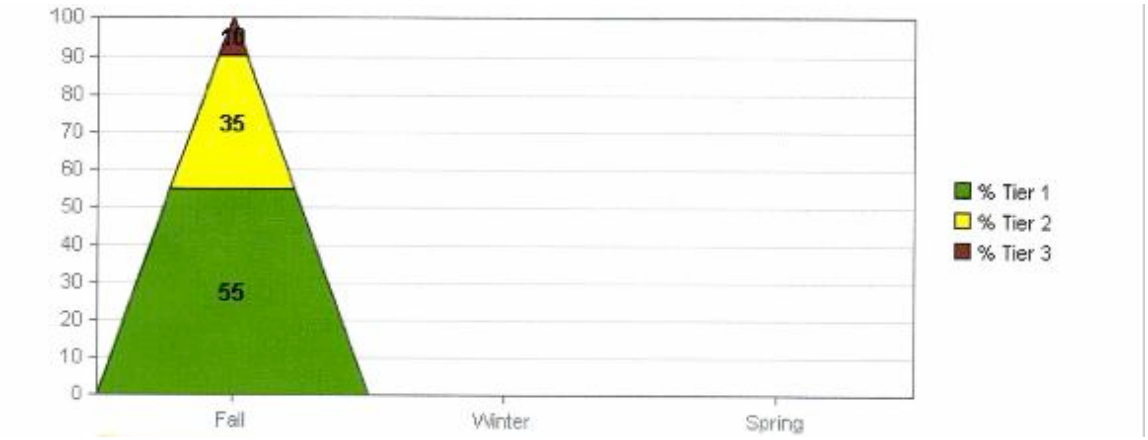

Figure 24. Tier transition report for the mathematics concepts and applications at Green Elementary School.

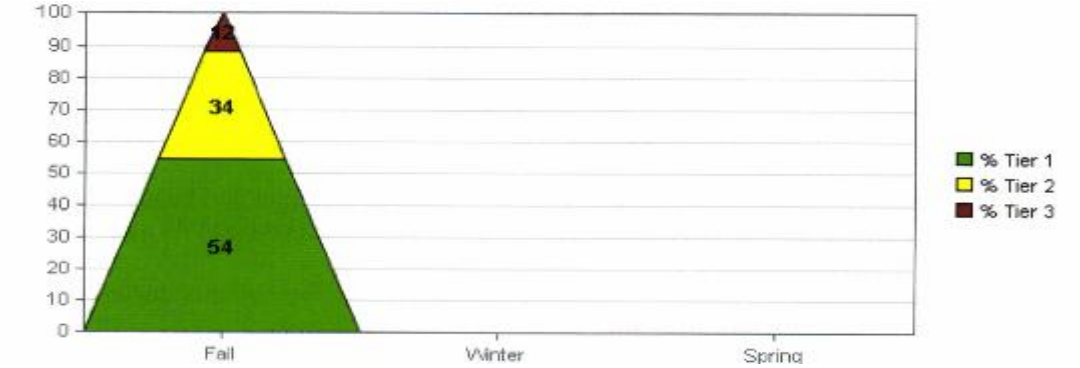

Figure 25. Tier transition report for the reading curriculum-based measurement at Red Elementary School.

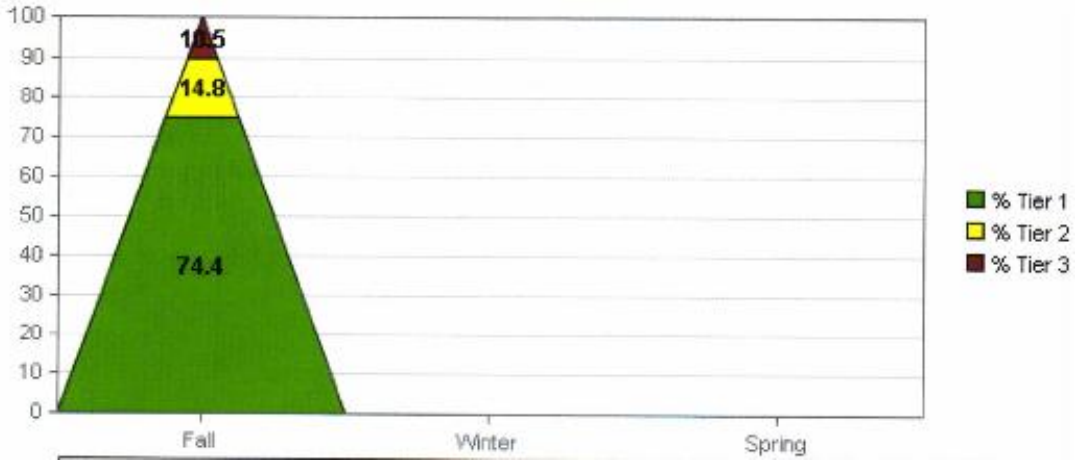

Figure 26. Tier transition report for the MAZE comprehension at Red Elementary School.

While this discrepancy between the theoretical and actual distribution of students may be a function of some presently unknown artifact of the testing process, the lack of consistency between the proportions of students who were actually in the three tiers and what was required by the model as presented by the theoretical literature raised questions in the mind of this researcher about the nature of student progress. A finding of this

study was that most of these students were making progress at an individual level; however, one could ask whether this progress was adequate to maintain the theoretical distribution of students between tiers. The absence of tier-to-tier progress found in this study was concerning in this regard. The larger question related to school effectiveness; Was a school effective when most of the students in Tier II and Tier III were showing progress? or Was effectiveness indicated by preservation of a distribution of students between tiers that matched the theoretical model?

The researcher interpreted this as evidence that Response to Intervention encompassed a lack of difficulty in managing a three tier process when the result of both instruction and interventions did not produce the expected proportional distribution of students. In alignment with the researcher's findings, the principal at one of the schools indicated, "If the students were less than 80% in Tier I, then you are overwhelming the special education teachers and the interventionist. In general, as they will have more students on their caseload." This statement left the researcher with the following questions: "Should RTI be followed quantitatively, by the model, or qualitatively, by the quality of student education?" and "Should the success of RTI be measured on the quantitative point of view or the qualitative point of view?"

Based on the data analyzed, it would seem that there was very limited utility in using the RTI model to address behavioral concerns. Therefore, it appeared that there was an overall lack of research-based interventions that supported behavioral needs that could be utilized in an RTI framework.

Interestingly, within the findings, the researcher noted the framework of Response to Intervention seemed to include additional "sub-tiers" within Tier II and Tier III. These

"sub-tiers" were evident to the researcher while the practitioners were providing interventions to the students. Although all of the interventions documented by the researcher appeared to be research-based interventions, the students received different interventions throughout the tiers. It seemed that the "high-risk" students received different interventions than the "low-risk" students, creating the perception of "sub-tiers." For example, in Tier II, the "low-risk" students would receive the *Treasure Chest* intervention and would receive this instruction from a paraprofessional, whereas the "high-risk" students would receive *Read Naturally* from the reading specialist. While the researcher perceived that the phenomenon of a "sub-tier" could be beneficial for the RTI model, she felt that, because the differentiated instruction was based only on data-point criteria and not the individual students' needs, the students' needs may not have been truly addressed. This led to the following question: "Despite the purpose of Response to Intervention to reduce labeling students, is the consideration of a data-point based on a benchmark score a legitimate method of labeling students? In other words, "Does placing students into intervention services based on the benchmark score truly address the students' academic needs?" or "Should educators consider benchmark scores as only one indication of what individual students need?"

Another unexpected interpretation from the data indicated that, while the participants agreed that the main intervention components (i.e., interventions, accommodations, modifications) should originate at the general education level, the researcher observed the contrary. This led the researcher to believe that, although the participants indicated understanding of this concept, they were unclear who would provide the intervention components. As pointed out by Mrs. Swanson,

> I think it's [RTI] trying to shift more to the general education teacher but there hasn't been enough training and support for that end. So and a lot of times I think they think they have to do something above and beyond and a lot of times they're already doing small grouping or they've already started some kind of intervention. They just don't necessarily realize that.

To the researcher, this lack of understanding meant that there was a need to increase the quality of collaboration and training for practitioners of Response to Intervention, particularly for those who specialized in general education. Mrs. Nilsson supported this idea, "I think professional development is the biggest piece that could make a difference for general education." This interpretation of the data led the researcher to the question: "Would interventions, accommodations, and modifications be more beneficial when they are applied in the general environment (Tier I) from the general education teachers, as described in the RTI model?"

In determining in which tier a student should be receiving interventions, the participants agreed that benchmark and progress monitoring was a key component. According the findings, the researcher felt that benchmark testing served to identify where a student stood academically and determined which tier of intervention a student should receive. Secondly, progress monitoring determined student growth and helped to determine if the intervention was appropriate and if a student should be moved from tier to tier. However, in examining the data, the researcher questioned the overall fidelity of benchmark testing and progress monitoring. According to the current literature, it was essential to implement screening and progress monitoring with fidelity in order to enhance the identification process and provide the best intervention for students (Deno et al., 2009; Griffiths et al., 2009; Hawkins et al., 2008).

When the researcher attended the AIMSweb® training, she observed that the TOSA emphasized that benchmark and progress- monitoring procedures be followed explicitly, including the reading of directions and following set testing times. The researcher noted that the practitioners in the classroom setting followed most of the procedures described by the TOSA. One concern the researcher noted was that not all practitioners proctored the benchmark and progress-monitoring tests with fidelity and accuracy. The researcher noted that the directions for these testing measures were not read in the same manner even though they were required to do so. For instance, some of the participants did not read the directions to the students according the explicit instructions; therefore, the researcher questioned the fidelity of the progress-monitoring and benchmark procedures. Based upon this interpretation, the researcher anticipated that the students' distribution into the tiers (i.e., < 80% number of students in Tier I and the > 15% of students in Tier II) was affected by the fidelity of the benchmark testing. Also, from the data, the researcher observed that there was very little movement between the tiers. For example, several students moved from Tier II to Tier III, while only one student moved from Tier III to Tier II. Moreover, there were no instances of students moving from Tier II or Tier III to Tier I. The researcher noted this as a concern because the intent of Response to Intervention was to, with the use of interventions, improve student ability to the extent that they may move back to the universal level.

It seemed to the researcher that, of the RTI components, collaboration was very strong within the Buckingham School District. Additionally, it appeared that collaboration was the core component in the district's implementation of the RTI model. Fuchs et al. (2010) wrote that No Child Left Behind Act of 2001 suggested that Response

to Intervention was a service-delivery system that promoted early intervention and collaboration work between special and general educators.

From the findings, the researcher noted that collaboration was very strong between the practitioners as indicated through daily interactions and during the data dialogues. The researcher also considered that the data dialogues reflected the idea of the RTI model, as it provided an opportunity for educators to collaborate with one another and discuss the educational progress of students. During one of the data dialogue meetings, some of the general education teachers were seeking guidance for implementing interventions and were asking for more time to accommodate for the increased workload of Response to Intervention. Despite the researcher's interpretation that collaboration was strong in the district, she also felt that the special education teachers and the reading interventionists often led discussion and seemed to be the most dynamic participants. Overall, participants emphasized that Response to Intervention "definitely . . . starts in the general education classroom" (Mr. MacArthur).

Although the participants agreed that the framework for Response to Intervention was better understood and was becoming a "process and not just a panic" (Mrs. Eden), it appeared to the researcher that educators, particularly general education instructors, struggled with the implementation of Response to Intervention. Furthermore, the researcher interpreted that the gaps in quality training led to limited understanding of the process and, therefore, directly affected the implementation of Response to Intervention. The challenges to the implementation of Response to Intervention that the researcher perceived seemed to be a reflection on the need for more training, guidance, and support in implementing Response to Intervention within the Buckingham School District.

In this regard, all of the participants agreed that the RTI model was continually evolving, as Mrs. Eden said, "I think it [RTI] is evolving and becoming clear." Therefore, updated and continuous training was necessary, particularly in using research-based interventions, analyzing the data, and understanding framework of Response to Intervention. In interpreting these data, the researcher felt that the lack of training was effecting the implementation of Response to Intervention. The participants indicated that professional development was limited and lacked intensity. While the participants found the support from the TOSA beneficial, they still sought to acquire more in-depth training for Response to Intervention though the state's professional development recourses and through reading material. Furthermore, the participants who had a background in special education or had a Master's in education felt they had more knowledge pertaining to the RTI model and, therefore, struggled less with the implementation of Response to Intervention. In addition, the participants raised concerns about who was responsible for determining math interventions for students in Tier II. Additionally, it seemed that general educators had the least amount of training for Response to Intervention and, thus, they appeared to struggle when implementing the RTI model. According to Mr. MacArthur, "Truthfully, sometimes, I feel that I am not truly prepared."

Despite the perceived challenges to the implementation of Response to Intervention in the Buckingham School District and the need for more quality training, the researcher felt that Response to Intervention showed a positive impact for students. Even though the data indicated that none of the 26 students moved from Tier II to Tier I and only a few students moved from Tier III to Tier II, the researcher felt that students were improving academically through RTI interventions. From these data, the researcher

anticipated that Response to Intervention worked best to identify students in need of support who were receiving interventions in Tier II and in Tier III. Based on these data, there were several questions that struck the researcher, "Is the rate of growth accelerating?," or "Is it fairly stable?," or "Is it closing the gap?"

The participants illustrated that Response to Intervention was different from building to building and students were placed in different tiers, even when their peers had similar results. While the pattern of growth may be similar between two students, one student may move to Tier III while the other would remain in Tier II. This posed the following question, "How much subjective data have been used to make decisions when placing students in Tier II or Tier III?" This question was supported by the results from the Stecker et al. (2005) study that showed the use of progress monitoring alone would not enhance students' achievement. The results also showed that progress monitoring assisted teachers in visualizing the students' needs, which helped to improve identification of students who had learning disabilities.

In addition to the apparent student growth and observations that all received the core-curriculum, the researcher felt a strong advantage of Response to Intervention was that the model supported inclusion. Moreover, students who had a disability had the opportunity to learn the essential core information from the general education teacher while simultaneously being able to receive needed academic support in accordance to Individuals with Disabilities Education Improvement Act of 2004.

Conclusion

Based on the data, it seemed that participants agreed that Response to Intervention was an important phenomenon that served to prevent students, particularly those with a

disability, from failing. Through the participants' descriptions, it seemed that by using research-based interventions, progress monitoring, and collaboration Response to Intervention was a successful identification and early intervention model to support students academically and prevent students from failing. In order to achieve successful implementation of Response to Intervention, however, the researcher felt that quality training was essential. Moreover, to ensure the fidelity of Response to Intervention, the researcher believed that policy makers within a school district must consider adequate training and support for educators and practitioners. The researcher assumed that it was the district's role to support educators, interventionists, and specialists with the RTI processes, thus, ensuring that the model was followed as intended. This interpretation was supported by Wright (2007), "Even when scientifically valid interventions are selected and matched appropriately to students, these school-base interventions must be monitored to ensure that they are carried out with integrity" (Wright, 2007, p. 11).

Finally, although the researcher felt there were gaps in the implementation of Response to Intervention and the process was continuing to evolve, she had the impression that Response to Intervention was an important framework that kept educators alert. The researcher also assumed that, if educators remained alert to the students' needs, students would not fail before they receive valuable interventions and support.

The researcher observed several unexpected outcomes from the results of the study. First, the researcher noted that, despite the district's implementation of Response to Intervention for 3 consecutive years, it seemed many of the general education teachers struggled to implement Response to Intervention, especially when using interventions.

Furthermore, both schools struggled to utilize Response to Intervention as a model for lesser intervention to more intensive intervention as Fuchs et al., (2012),

> Students in most RTI systems almost always participate in less intensive levels of prevention before gaining access to more intensive levels. In a three-level system, for example, students must appear at risk for inadequate response to primary prevention before becoming eligible for secondary prevention service. (p. 268)

The researcher assumed the reason for the schools' skewed distribution within the RTI tiers (i.e., Tier I had less than 80% of students) might be because the general educators struggled with the implementation of Response to Intervention. They seemed to rely on the special educators to guide the interventions.

Second, the researcher was surprised that, even within the limited data, none of the students showed a pattern of regression. Although there were no patterns of regression, the patterns of growth were still slight. While the researcher felt this might be due to limited quantitative data, this phenomenon raised the question of whether or not students would still succeed without the use of Response to Intervention. The researcher assumed three possible scenarios based upon the outcome of the data: (a) Response to Intervention was an effective and necessary model to prevent students from failing and to close the academic gap; (b) Response to Intervention was not a necessary model, the students would have received the same progress-monitoring scores regardless of the interventions because of strong teaching practices provided by the general education teacher through the core curriculum in the regular classroom; or (c) the improvement the students showed during progress monitoring was due, not to interventions or successful instruction in the core curriculum, but to the students' maturity.

Limitations of the Study

In this study, the researcher noted several qualifications and limitations regarding the methodologies and data collection. First, due to the nature of the study, as Brantlinger et al. (2005) has pointed out, "qualitative research is not done for purpose of generalization but rather to produce evidence based on the exploration of specific contexts and particular individuals" (p. 203). Therefore, this study's conclusions are about the specific schools studied and they cannot be easily generalized to other schools and districts.

As this study was condensed largely to what data could be collected within a single semester, the degree to which these findings would match other periods of time was unknown. The quantitative data, in particular, was limited as the researcher only collected student data covering about a one-year period. Additionally, the data collected spanned a period in which each student changed grade level and experienced a summer break, facts which added complexity to understanding patterns of student growth. Nevertheless, despite changes in grade level and the summer break, the researcher was confident that the provided trend analyses offered reasonable representations of the patterns of growth or non-growth in these students.

The researcher's quantitative data were also limited in that the schools utilized and collected progress-monitoring data somewhat differently, although the same tests were used. After receiving the quantitative data from the TOSA, the researcher noted that the schools collected progress-monitoring samples from the students at different points in the semester. Mrs. Nilsson supported this point,

> I know some schools are more ahead of us and some are not as far as we are along in this RTI process. Everybody's kind of moved at their own speed and done their own thing. . . . But I don't know if it looks the same at every school.

Although useful in gathering insight into the implementation of Response to Intervention, the overall structure of the study was considered a limitation. As the study only examined data from fourth-grade students who attended two schools within a district, the researcher was limited in the quantity of quantitative data. The small sample size between the two schools could only indicate trends within each school. The results of those trends could not be generalized to other schools that implement Response to Intervention. Furthermore, for the qualitative data, the researcher only collected data from practitioners within the district. This was seen as a limitation because the experiences of the practitioners could not be generalized to the experiences of practitioners from other districts. Additionally, it was possible that the experiences the practitioners had were similar as a result of receiving the same training from the district.

Recommendations

Although the data suggested several gaps in the Response to Intervention process, the researcher found that it was an effective and necessary model for educators to follow in order to support students' academic growth. Continued applications of Response to Intervention provided several important contributions to education and should be expanded. Strong implementation of Response to Intervention could lead other schools and educators in providing intervention services based on the students' specific and individual needs. Following analysis of the data within this study, the researcher posed several recommendations in response to these gaps:

1. Future research could include interviews or focus groups with the parents of students who were receiving interventions to gain a broader perspective on the RTI model and the effectiveness of the implementation of Response to Intervention

2. Training in the RTI model should be continuous and systematic to account for the ever-changing information on RTI practices for the benefit of teachers. Continued training would ensure that educators have current information regarding the RTI framework.

3. It is recommended that principals support teachers within their building by holding meetings to train the teachers in current RTI practices and to understand the teachers' needs. Based upon these dialogues, principals should seek further training from the district or state level as necessary.

4. School districts should encourage universal practices for implementing Response to Intervention within each school. Furthermore, in order to ensure Response to Intervention is implemented with fidelity, districts should monitor each school's practices and provide feedback or further training.

5. Higher education schools should be encouraged to teach RTI methodology in order to support training for persons entering the education field. By encouraging colleges to teach RTI methodology, persons entering education could develop a better understanding of the RTI process and ensuring that special education and general education teachers become efficient practitioners of Response to Intervention.

6. Policy makers, both state and nation-wide, are encouraged to adopt standards to support training efforts at the district level and at the university level to train upcoming educators. Policies supporting Response to Intervention practices would help

improve the understanding of the multi-tiered model and, in turn, would provide the best practice to support students. The interpretation of these results led the researcher to examine the future implications for practitioners of Response to Intervention and policy makers.

Implications for Future Research

The interpretation of these results led the researcher to examine the future implications for practitioners of Response to Intervention and policy makers. The researcher felt that there was a need for further research into the implementation of Response to Intervention, how behavior should be included into the RTI framework, and the importance of in-depth quality training and professional development for educators. The researcher recommended the following research questions for further study

1. How would Response to Intervention support students who have behavioral needs under the framework?

2. How does the quality of collaboration effect the implementation of Response to Intervention, particularly with the intervention process?

3. How much time will it take the teachers to close the gap between the interventions and the core curriculum?

4. Is it important to close the gap in order to determine the success of Response to Intervention? In other words, is Response to Intervention working even if students do not reach the aim line or the desired benchmark score for their grade level?

5. Is student progress the best indicator of a functioning Response to Intervention system or should schools be looking more thoughtfully at how students are distributed across the Tiers? Questions about tier-to-tier progress raised in this study emphasized this concern.

6. Is the drop that sometimes occurred in students' benchmark scores due to a summer break or was it connected in some way with the testing and measurement processes used with all students? This question could be addressed through future research via establishing a control group with the

progress of Tier I students compared to the progress of students in both Tier II and Tier III.

7. Are the benchmark and progress-monitoring data collection methods reliable? Is the content accurately reflecting student ability?

8. Is it beneficial to have a universal implementation of Response to Intervention in which all benchmark and progress-monitoring tests are delivered upon the same dates and the cut points for intervention services are universal among all schools?

9. Are the benchmarking and progress-monitoring measures accurately representing the students' ability and academic progress?

Summary

The results of this embedded mixed-method study provided insights into the implementation of Response to Intervention (RTI) and whether implementation was successful. The review of literature and the results of this study provided more information for educators, practitioners for Response to Intervention, and policy makers. This research provided a resource for educators and policy makers who are considering the implementation of Response to Intervention in an elementary setting. In general, Response to Intervention was an effective process as it works to support all students, determines which students are in need of supportive intervention services, and acknowledges students that are thriving in the core curriculum. The results of this study revealed that general education teachers, special education teachers, and interventionists support the implementation of Response to Intervention and its processes. Overall, the quantitative data reflected the successful practices of practitioners engaged in the implementation of Response to Intervention. Moreover, the data showed that students did not fall further behind when they received interventions within the RTI framework. Although Response to Intervention was a relatively new phenomenon and was

continuously changing and evolving, the implementation of the model to support students seems promising. As Mrs. Larry concluded,

> Overall I think [RTI] is been very positive. I think it's a great way of looking at every kid and making sure everybody's making progress and doing what you can for every kid, not just waiting to see the one's that fail and just assume they're in special education…I think it added a negative… for some people but overall I think it was very positive and once it's flowing better … I think it will be a great process.

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APPENDIX A

INSTITUTIONAL REVIEW BOARD (IRB)

UNIVERSITY of
NORTHERN COLORADO
Institutional Review Board (IRB)

April 30, 2012

TO: Maria Lahman
Applied Statistics and Research Methods

FROM: The Office of Sponsored Programs

RE: Exempt Review of *The Nature of Implementing Response to Intervention in Fourth Grade,* submitted by Maha AlSuliman (Research Advisor: Harvey Rude)

The above proposal is being submitted to you for exemption review. When approved, return the proposal to Sherry May in the Office of Sponsored Programs.

I recommend approval.

M. Lahman 5-18-12
Signature of Co-Chair Date

The above referenced prospectus has been reviewed for compliance with HHS guidelines for ethical principles in human subjects research. The decision of the Institutional Review Board is that the project is exempt from further review.

IT IS THE ADVISOR'S RESPONSIBILITY TO NOTIFY THE STUDENT OF THIS STATUS.

Comments: emailed 5-1-12

25 Kepner Hall ~ Campus Box #143
Greeley, Colorado 80639
Ph: 970.351.1907 ~ Fax: 970.351.1934

APPENDIX B

CONSENT FORM FOR HUMAN PARTICIPANTS

IN RESEARCH

UNIVERSITY of
NORTHERN COLORADO

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO

Project Title: The Nature of Implementing Response to Intervention in Fourth Grade
Researcher: Maha ALSuliman School of Special Education
Phone Number: (970) 405-9788
E-mail: maha.alsulaiman@gmail.com

Purpose and Description: The primary purpose of this study is to describe the practices of implementation with Response to Intervention (RTI) model and to understand the role of RTI at the fourth-grade elementary school level on the academic performance of students. You will be asked to answer questions in an interview and will be observed on separate occasions while you are implementing RTI services in the classroom.

During the interview process you will be asked to meet with the researcher during a time that is convenient to you and in a location that is comfortable. These interviews will be recorded with a digital recorder so that the researcher may review and analyze the information. You will be asked a series of 9 semi-structured questions regarding your role in the implementation of RTI. Each interview will be approximately 45 to 60 minutes in length.

During the observations the researcher will observe you in one of five possible settings as follows:

- While providing screening tests
- While providing progress monitoring tests
- While providing intervention services in Tier II or Tier III in a one-on-one setting
- While providing intervention services in Tier II or Tier III in a group setting
- While working with other in a collaborative problem-solving session or meeting

Each observation will last for approximately 60 minutes. At the completion of the interviews and the observations, you will receive a copy of the transcribed interviews so that you may review them for accuracy and completion. Upon reviewing these transcriptions, you may contact the researcher if you feel that the information that you provided is recorded incorrectly so that any inaccuracies may be corrected prior to the completion of the study.

At the end of the study, and upon request, the researcher will share the results of the study. The researcher will take every precaution in order to protect your anonymity. To ensure anonymity, the researcher will use pseudonym. Only the researcher will know the name connected with the given pseudonym. Data collected and analyzed for this study will be kept in a locked cabinet, which is only accessible by the researcher.

Potential risks in this project are minimal. Because no actual names will be announced in this study any information you provide should not affect professional or personal relationships. There is also minimal risk that any person will recognize information you provide and therefore data collected from this study should not affect your professional or personal status. However, if at anytime you feel uncomfortable with the process you may ask to withdraw and any data collected from you will be destroyed and not included in the study.

The population that will most benefit from the results of the study will be educators, policy makers and students who are all involved, directly and indirectly, in the RTI process.

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-2161.

Subject's Signature	Date
Researcher's Signature	Date

APPENDIX C

RESPONSE TO INTERVENTION INTERVIEWS

RESPONSE TO INTERVENTION INTERVIEWS

Name of participant: _____ Date: _____

Name of Interviewer: _____

Bibliographical Information:

1. How long have you been teaching?

2. How long have you been in the education?

3. How long have you been in this school?

Interview Questions:

1. How does your school interpret the RTI process?

2. At each tier, what are the typical criteria that have to be met for students to receive an intervention?

3. At each tier, what interventions are typically applied for students, and how is the success or failure of an intervention determined?

4. At each tier, what is the relationship between the general education personnel and the personnel of other specialties in the intervention process?

5. How have you been prepared for the collaboration process required for RTI services?

6. What other forms of preparation have you received to assist you in implementing RTI services?

7. How did the training effect the methods in which you implement while provide RTI services?

8. What types of support did the district provide for you to implement the RTI process?

9. For students who are still in RTI after 6 month's are you doing something different are you doing the same or what are you doing?

APPENDIX D

READING CURRICULUM BASED (R-CBM)

Administration and Scoring of Reading-CBM

This workbook section covers administration and scoring of R-CBM and what examiners need to do (1) before testing students, (2) while testing students, and (3) after testing students. Ten video-based practice tests for learning how to score are included.

Things You Need to Do Before Testing

Before testing students, examiners must have their Standard Reading Assessment Passages and other testing materials set up in an appropriate assessment environment.

Things You Need Before Testing:

- Standard Reading Assessment Passages.
- A list of students to be assessed.
- Stop Watch (An accurate, non-intrusive timer. Using the "clock on the wall" is inaccurate and inefficient.)
- Clipboard (Helps shield the Examiner Copy from the student and provides a solid surface for scoring).
- Transparencies, Dry Marker, and Wipe Cloth (If it is not necessary to keep a permanent record of a student's R-CBM results, a transparency over the examiner copy that can be erased after scoring saves testing materials).
- Pencil.

Arranging the Testing Environment

Getting accurate reading results depends on how the testing environment is arranged. Although R-CBM testing is conducted 1 to 1, testing environments are modestly flexible. A set-aside place in the classroom can work. It should be reasonably quiet and away from distractions (sinks, water fountains) and preferably include a small table. Alternately, a reading station in the hallway when there is no traffic is suitable. On more large scale, R-CBM testing (benchmark), reading stations in the media center, cafeteria, gym, or empty classrooms will work.

A Number of Things Must be Kept in Mind

- It's About Testing, Not Teaching—The standardized directions should always be used. That means keeping the testing a "test." R-CBM is not to be used as instruction. Students shouldn't practice reading the passages, nor should they have their errors corrected by the examiner during the testing.
- Best versus Fastest Reading—Everything should be done to prepare the student for their "best," not their fastest. Timing should be subtle and not "in the student's face." Examiners should always emphasize "best reading."
- Sit Across from, Not Beside—When we read with students, we sit next to them. When we assess students, we sit *across* from them. We want the students to be looking at what they read, not how we, the examiners, are scoring or what we are doing.

What Students Read

Students always read ***Edformation's Standard Reading Assessment Passages*** such as the one below. The student copy does not have numbers so students can focus on doing their best reading and not get unnecessarily stressed by timing. The passages typically are between 250-300 words long and begin with an informative first sentence. First-grade passages are shorter (about 250 words). All the passages are in the same font style and without pictures, which are distracting during testing.

General Considerations:

- **Emphasizing Words Read Correctly (WRC).** Because R-CBM is rich in information, we may want to count or record everything the student does. As will be seen, there are ways of doing much of this. However, don't lose sight of our goal of obtaining an accurate count of the number of words read correctly.
- **3-Second Rule.** If a student stops or struggles with a word for 3 seconds, tell the student "the word" and mark it as incorrect. We want enough time to observe if the student is using a strategy for unfamiliar words but not too long so the student gets frustrated or gives up.
- **No Other Corrections.** As noted earlier, R-CBM is about testing. Don't correct errors. We want "examiner talk" to be minimum and student reading to be maximum.
- **Discontinue Rule.** If the passage that is read is so hard that the student reads less than 10 words correctly in 1 minute, discontinue administration of any other passages from that level and use this WRC score.
- **Being Polite.** After the examiner is very accurate at scoring, mark where the student ends at the end of 1 minute, but it is polite to let the student finish the sentence before saying "stop." In the interest of time, don't let them finish the story.
- **Speed Reading.** You may encounter some excellent readers who may view R-CBM as a "speed reading test" (i.e., read the passage very fast and without expression) in their first R-CBM testing. When this occurs, interrupt the student, saying

  "This is not a speed reading test. Begin again, and be sure to do your best reading."

- **Interruptions.** If something disrupts testing (bells, dropped passages, timing) discard the passage and administer another.

R-CBM Standard Directions for 1-Minute Administration

1. Place the unnumbered copy in front of the student.
2. Place the numbered copy in front of you but shielded so the student cannot see what you record.
3. Say:
   "When I say 'Begin,' start reading aloud at the top of this page. Read across the page (DEMONSTRATE BY POINTING). *Try to read each word. If you come to a word you don't know, I'll tell it to you. Be sure to do your best reading. Are there any questions?"* (Pause)

   Say:
   "Begin" and start your stopwatch when the student says the first word. If the student fails to say the first word of the passage after 3 seconds, tell them the word, mark it as incorrect, then start your stopwatch.
5. Follow along on your copy. Put a slash (/) through words read incorrectly.
6. At the end of 1 minute, place a bracket ( ]) after the last word and say, "Stop."
7. Score and summarize by writing WRC/Errors.

Familiar Shortened Directions

Substitute...
When I say 'Begin,' start reading aloud at the top of this page.

APPENDIX E

MAZE STANDARD ADMINISTRATIVE

DIRECTIONS

Maze Standard Administrative Directions- Including Cover Sheet and Easy Practice Test

1. Pass Maze taks out to students. Have students write their names on the Cover Sheet so they do not start early. Make sure they do not turn the page until you tell them to.

2. Say to the students:
   "When I say 'Begin' I want you to silently read a story. You will have 3 minutes to read the story and complete the task. Listen carefully to the directions. Some of the words in the story are replaced with a group of three words. Your job is to circle the 1 word that makes the most sense in the story. Only 1 word is correct."

3. Decide if practice test is needed. Say…
   "Let's practice one together. Look at your first page. R ead the first sentence silently while I read it out loud: 'The dog apple, broke, ran after the cat.' The three choices are apple, broke, ran. 'The dog apple after the cat.' That sentence does not make sense. 'The dog broke after the cat.' That sentence does not make sense. 'The dog ran after the cat.' That sentence does make sense, so circle the word ran."

   (Make sure the students circle word ran).

   "Let's go to the next sentence. Read it silently while I read it out loud. The cat ran fast, green, for up the hill. The three choices are fast, green, for. Which word is the correct word for the sentence?"'

   (Students answer fast)

   "Yes, 'The cat ran fast up the hill.' is correct, so circle the correct word fast."

   (Make sure students circle fast)

   "Silently read the next sentence and raise your hand when you think you know the answer."

   (Make sure students know the correct word. Read the sentence with the correct answer)

   "That's right, 'The dog barked at the cat.' is correct. Now what do you do when you choose the correct word?"

   (Students answer "Circle it." Make sure the students understand the task)

   "That's correct, you circle it. I think you're ready to work on a story on your own."

4. Start the testing by saying…
   "When I say 'Begin' turn to the first story and start reading silently. When you come to a group of three words, circle the 1 word that makes the most sense. Work as quickly as you can without making mistakes. If you finish a/ the page/first side, turn the page and keep working until I say 'Stop' or you are all done. Do you have any questions?"
   (Answer student questions)

5. Then say, *"Begin."* Start your stop watch.

6. Monitor students to make sure they understand that they are to circle only 1 word.

7. If a student finishes before the time limit, collect the student's Maze task and record the time on the student's test booklet.

8. At the end of 3 minutes say: *"Stop. Put your pencils down. Please close your booklet."*

9. Collect the Maze tasks.

Maze Standard Administrative Directions-
For Older Students & Students Familiar with Maze Directions

1. After the students have put their name on the cover sheet, start the testing by saying…
   "When I say 'Begin' turn to the first story and start reading silently. When you come to a group of three words, circle the 1 word that makes the most sense. Work as quickly as you can without making mistakes. If you finish a/ the page/first side, turn the page and keep working until I say 'Stop' or you are all done. Do you have any questions?"
   (Answer student questions.)
2. Then say, *"Begin."* Start your stop watch.
3. Monitor students to make sure they understand that they are to circle only 1 word.
4. If a student finishes before the time limit, collect the student's Maze task and record the time on the student's test booklet.
5. At the end of 3 minutes say: *"Stop. Put your pencils down. Please close your booklet."*
6. Collect the Maze tasks.

Maze Standard Administrative Directions-
For Older Students & Students Familiar with Maze Directions

After Maze Testing: Scoring

After students have completed a Maze, we recommend immediate scoring. Our most important task is to determine the Number of Words (Items) Correct. The number of errors are important, but less so. Determining Words Correct is easy. Use your answer key and put a slash (/) through incorrect words.

What is Correct?

An answer is considered correct if the student circles the word that matches the correct word on the scoring template.

What is Incorrect?

An answer is considered an error if the student:

a. circles an incorrect word.
b. omits word selections other than those the student was unable to complete before the 3 minutes expired.

Making Scoring Efficient

1. Count the total number of items up to the last circled word.
2. Compare the student answers to the correct answers on the scoring template. Mark a slash [/] through incorrect responses.
3. Subtract the number of incorrect answers from the total number of items attempted.
4. Record the total number of correct answers on the cover sheet followed by the total number of errors (e.g., 35/2, 45/0)

Prorating

Some students may finish all the items before the 3 minutes is up. To be able to make the most accurate judgment about their progress, the student's score can be prorated to what they would have scored if there were enough items for 3 minutes of student reading. To prorate:

1. When the student finished must be recorded and the number correct counted. For example, the student may have finished in 2 minutes and correctly answered 40 items.
2. Convert the time taken to seconds. 2 minutes = 120 seconds
3. Divide the number of seconds by the number correct. 120/40 = 3
4. Calculate the number of seconds in the full 3 minutes. 3 minutes = 180 seconds
5. Divide the number of full seconds by the calculated value from step 3. 180/3=60

APPENDIX F

MATH CONCEPT AND APPLICATIONS--

MCAP DIRECTIONS

 Math Concepts & Applications

MCAP Directions:

The instructions are carefully worded with simple, age-appropriate language. What you say to the students is in **bold print.**

Say to the students:

For grades 2–6: **We're going to take an 8-minute math test.**

For grades 7–8: **We're going to take a 10-minute math test.**

For all grades: **Read the problems carefully and work each problem in the order presented. Do not skip around.**

If you do not know how to work a problem, mark it with an X and move on. Once you have tried all of the problems in order, you may go back to the beginning of the worksheet and try to complete the problems you marked.

Write the answers to the problems in the blanks. For multiple choice questions, place the letter (A, B, or C) of the correct answer in the blank.

You do not have to show your work, but you may if that is helpful for you in working the problems.

Keep working until you have completed all of the problems or I tell you to stop.

Do you have any questions?

Answer any questions the students may have, hand the students their probes, and say:

Here are your tests.

Put your name, your teacher's name, and the date on each page in the space provided.

Do not start working until I tell you to begin.

Allow the students time to write their information on the probe.

Begin.

If a student asks a question or requests clarification, redirect him or her to the probe and say:

Read the directions again, and work the problem the best you can.

If you still do not understand the problem or are unable to work it, you may move to the next question.

When the appropriate time has elapsed (8 minutes for grades 2–6, 10 minutes for grades 7–8), say:

Stop and put down your pencil.

If a student(s) continues to work, re-state:

Stop working now and put down your pencil.

At this time, the examiner should collect the probe(s) and proceed to scoring.

APPENDIX G

OBSERVATION CHECKLIST

Descriptive Interviews

Date: Date: Time of Observation:
School: Participants:
Setting/Place Observation #:

Observation Type	Tier I	Tier II	Tier II	Progress Monitoring	Benchmark	Team Meetings

Time Interval	Description of Events		Observation of Interactions	Interpretations of Data (subjective observations/comments)	

Additional Comments:

Adopted from Merriam (1998) and Creswell (2009)

APPENDIX H

INTERVIEW SCHEDULES

Schools	Time	Room #	Name	Practitioners
Red Elementary	9:00 a.m.	21A	Mrs. Larry	Special Education teacher
	9:30 a.m.	21B	Mrs. Nicolson	Reading Interventionist
	10:00 a.m.	16	Mr. MacArthur	4th grade teacher
Green Elementary	1:30 p.m.	25B	Mrs. Swanson	Reading Interventionist
	2:00 p.m.	17	Mrs. Thomson	4th grade teacher
	2:30 p.m.	25a	Mrs. Nicolson	Special Education teacher

APPENDIX I

OBSERVATION SCHEDULES

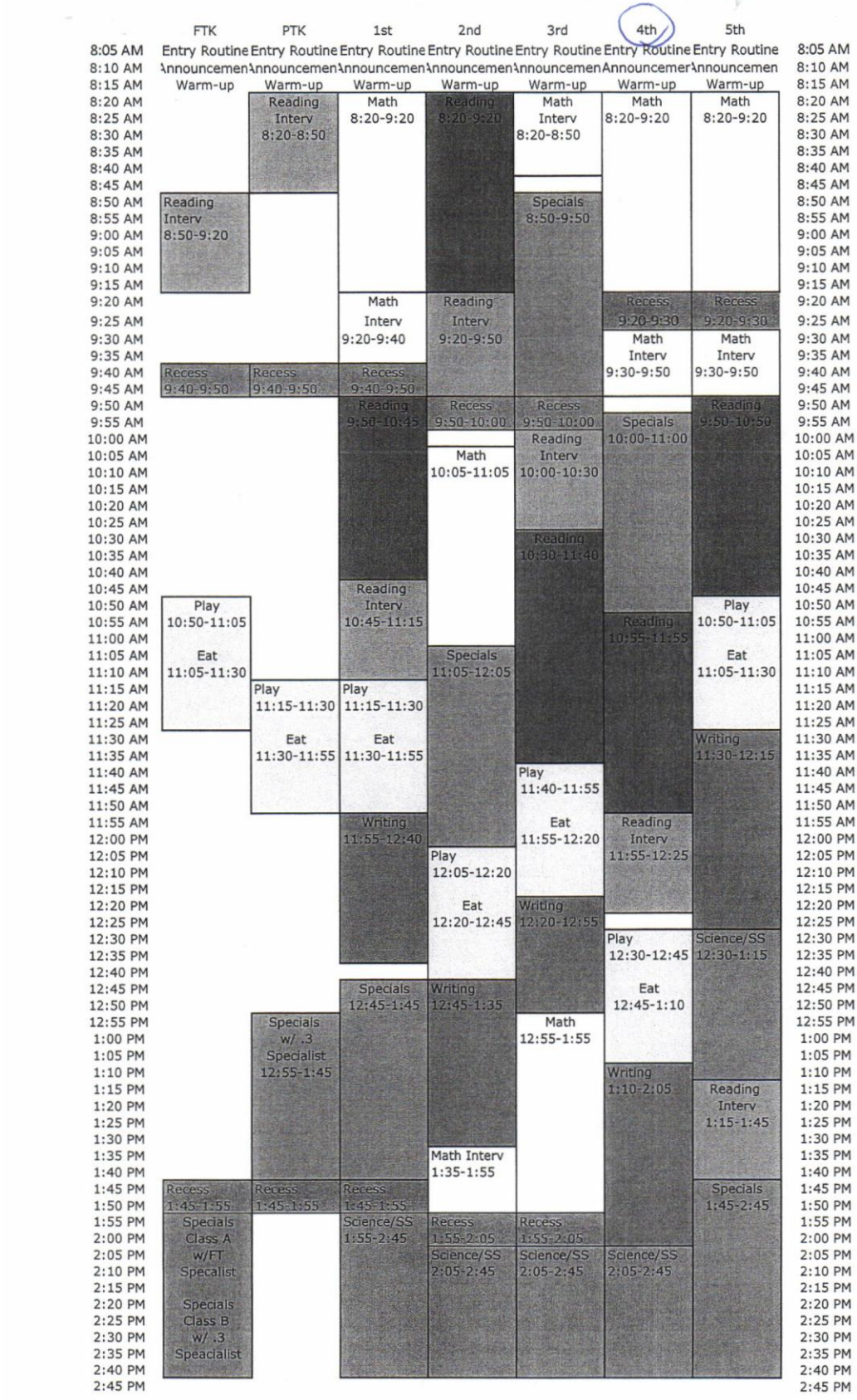
Setting	#	School	Practitioners	Date	Time	Assessment
4th grade Bench Mark	1	Green	Mr. .MacArthur	08/22	8:30	R-CBM
	2	Red	Ms. Volunteer	08/24	8:30	R-CBM
	3	Green	Mr. MacArthur	08/23	10:30-11:00	MAZE
	4	Red	Mrs. Thomson	08/23	12:30-12:XX	MAZE
	5	Green	Mrs. Thomson	08/23	8:30	MCAP
	6	Green	Mr. MacArthur	08/23	9:00-9:30	MCAP
Team meetings	7	Green	Team Meeting	09/05	7:45-10:15	4th grade data discussions
	8	Red	Regular Ed	09/05	11:00-3:00	4th grade data discussions included: Principal, Assistant Principal, and all regular ed. Teachers
	9	Red	Special education Teacher and the Interventionist	09/07	11:05-11:50	Special Education teacher and the Interventionist
	10	Red	Principal, Special Education teacher, The interventionist, and all regular ed	09/13	11:00-11:50	4th grade data discussions included: principal, all regular ed. Teachers, and Special Education teacher, the interventionist
	11	Red	Special Education teacher, The interventionist,	09/14	12:00-12:30	A quick conversation between Special Education and Interventionist

Setting	#	School	Practitioners	Date	Time	Assessment
Tier I	12	Green	Mr. MacArthur	08/29	9:30-10:00	Regular classroom-Math
	13	Red	Mrs. Thomson	09/18	8:20-9:30	Regular classroom-Math
	14	Green	Mr. MacArthur	09/21	8:30-9:20	Regular classroom-Math
	15	Green	Mrs. MacArthur	08/29	11:15-11:55	Regular classroom-Literacy
	16	Red	Mrs. Thomson	09/18	12:45-2:40	Regular classroom-Literacy
	17	Red	Mrs. Thomson	09/19	1:45-2:05	Transition between tiers
	18	Green	Mr. MacArthur	09/24	10:25-11:25	Regular classroom-Literacy
		Green	Mr. MacArthur	09/26	10;25-11:55	Regular classroom-Math
Tier II	19	Green	Mrs. Nicolson	09/20	11:55-12:25	Literacy intervention
	20	Red	Mrs. Swanson	08/30	2:10-2:40	Literacy intervention
	21	Red	Mrs. Swanson	09/18	2:10-2:45	Literacy intervention
	22	Green	Mrs. Nicolson	09/21	11:55-12:	Literacy intervention
	23	Green	Fourth-grade teacher	09/26	9:30-9:50	MATH
	24	Red	Mrs. Swanson	10/09	9:30-9:50	MATH

Setting	#	School	Practitioners	Date	Time	Assessment
Tier III	25	Red	Mrs. Eden	09/14	2:10-2:45	Literacy intervention
	26	Green	Mrs. Larry	09/19	12:00-12:30	Literacy intervention
	27	Red	Mrs. Eden	09/19	2:10-2:45	Literacy intervention
	28	Red	Mrs. Eden	09/20	2:10-2:45	Literacy intervention after the progress monitoring
	31	Green	Mrs. Larry	09/24	11:30-11:50	Literacy intervention
	29	Red	Mrs. Eden	08/30	9:10-9:30	Math intervention
	30	Green	Para-professional	09/21	9:30-9:50	Math intervention
Progress monitoring	31	Red	Fourth- grade teacher	09/28	12:30-2:00	T1: MAZE
	32	Red	Mrs. Swanson	09/14	2:10-2:45	T2: R-CBM & MAZE
	34	Red	Mrs. Eden	09/20	9:10-9:	T3/MCAP,
	35	Red	Mrs. Eden	09/20	2:10-2:40	T3: MAZE &R-CBM
	36	Green	Mrs. MacArthur	09/26	8:20-9:15	T1: MCAP
	37	Green	Mrs. MacArthur	09/26	8:20-9:15	T2: MCAP
	38	Green	Mrs. Nicolson	09/28	11:55-12:25	T2: RCBM
	38	Green	Para professional	09/26	9:30-10:00	T3: MCAP
	39	Green	Mrs. Larry	09/26	11:55-12:25	T3: R-CBM, & MAZE

APPENDIX J

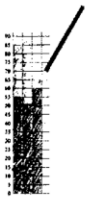
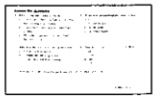
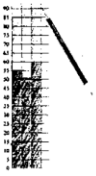
SCHEDULE FOR FOURTH-GRADE CLASSROOM


FTK
PTK
1st
2nd
3rd
4th
5th
Entry Routine
Announcemen
Warm-up
Reading Interv 8:20-8:50
Math 8:20-9:20
Reading 8:20-9:20
Math Interv 8:20-8:50
Math 8:20-9:20
Math 8:20-9:20
Reading Interv 8:50-9:20
Specials 8:50-9:50
Math Interv 9:20-9:40
Reading Interv 9:20-9:50
Recess 9:20-9:30
Recess 9:20-9:30
Math Interv 9:30-9:50
Math Interv 9:30-9:50
Recess 9:40-9:50
Reading 9:50-10:45
Recess 9:50-10:00
Recess 9:50-10:00
Specials 10:00-11:00
Reading 9:50-10:50
Reading Interv 10:00-10:30
Math 10:05-11:05
Reading 10:30-11:40
Play 10:50-11:05
Eat 11:05-11:30
Reading Interv 10:45-11:15
Reading 10:55-11:55
Play 10:50-11:05
Eat 11:05-11:30
Specials 11:05-12:05
Play 11:15-11:30
Eat 11:30-11:55
Play 11:15-11:30
Eat 11:30-11:55
Writing 11:30-12:15
Play 11:40-11:55
Eat 11:55-12:20
Writing 11:55-12:40
Reading Interv 11:55-12:25
Play 12:05-12:20
Eat 12:20-12:45
Writing 12:20-12:55
Play 12:30-12:45
Eat 12:45-1:10
Science/SS 12:30-1:15
Specials 12:45-1:45
Writing 12:45-1:35
Specials w/ .3 Specialist 12:55-1:45
Math 12:55-1:55
Writing 1:10-2:05
Reading Interv 1:15-1:45
Math Interv 1:35-1:55
Recess 1:45-1:55
Recess 1:45-1:55
Recess 1:45-1:55
Specials 1:45-2:45
Specials Class A w/FT Specalist
Specials Class B w/ .3 Speacialist
Science/SS 1:55-2:45
Recess 1:55-2:05
Recess 1:55-2:05
Science/SS 2:05-2:45
Science/SS 2:05-2:45
Science/SS 2:05-2:45

APPENDIX: K)

READ NATURALLY PROGRAM STEPS

Read Naturally® Steps

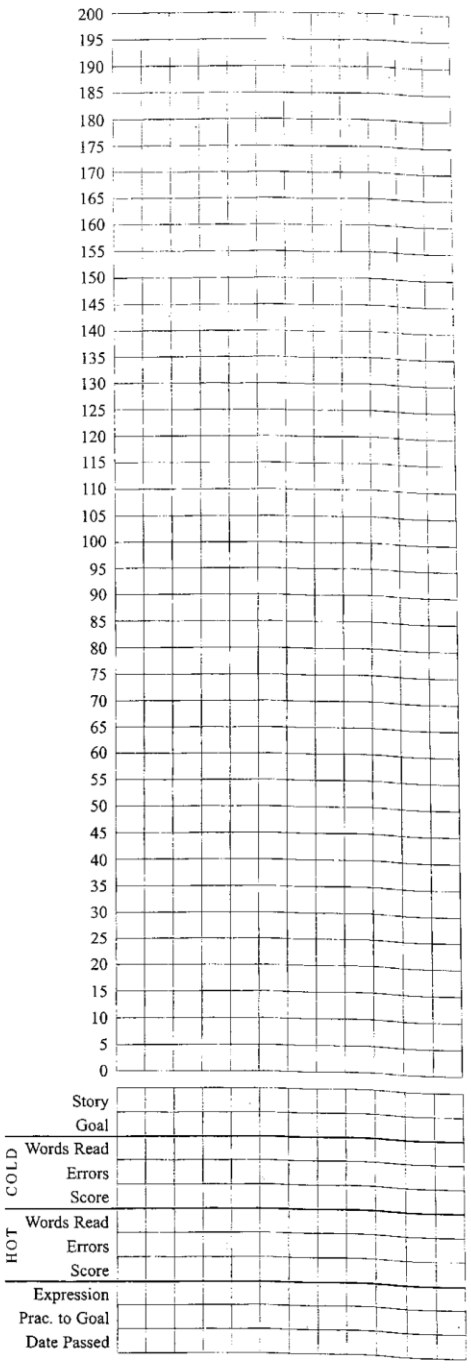
1. Pick a story.  +  or 
2. Read along to learn key words. 
3. Write a prediction. 
4. Do your cold timing.  
5. Graph your score in blue.
6. Read along to learn the story. 
7. Practice reading on your own. 
8. Answer the questions. 
9. Pass the story. 
10. Graph your scores in red. 
11. Write a retell, or practice word lists.

ReadNaturally

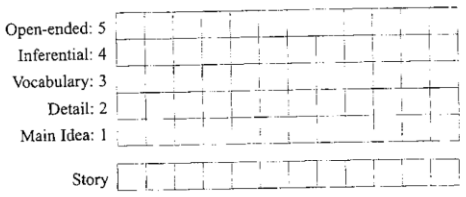
Read Naturally

Fluency and Comprehension/Retell Graph
for Sequenced Levels 1.0–5.0

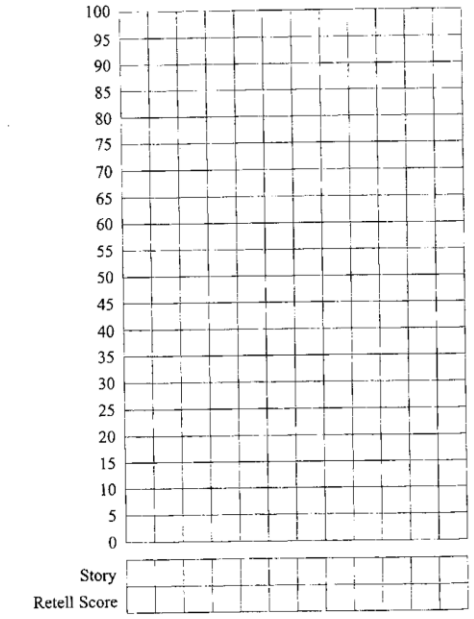
Fluency



Comprehension



Retell



Name _____

Level _____ Start Date _____

APPENDIX: L

SCORES BASED ON AIMSWEB®

40th Percentile Chart for AimsWEB

Oral Counting (OCM)		Number Identification (NIM)
Kdg.	73	56
1st	89	62
Quantity Discrimination (QDM)		**Missing Number (MNM)**
Kdg.	27	14
1st	34	19
Letter Naming (LNF)		**Letter Sound (LSF)**
Kdg.	48	36
1st	58	49
Phoneme Segmentation (PSF)		**Nonsense Word (NWF)**
Kdg.	44	35
1st	52	61
Reading Fluency (R-CBM)		**Comprehension (MAZE)**
1st	56	7
2nd	96	13
3rd	116	14
4th	128	18
5th	143	24
Computation (M-COMP)		**Concepts & Applications (M-CAP)**
1st	36	---
2nd	37	18
3rd	50	14
4th	52	16
5th	28	9

APPENDIX: M

EVIDENCE OF OUTLIER FOR STUDENT PROGRESS MONITORING DATA

Goal Statement

In **36.7** weeks [redacted] will achieve **13** Responses Correct with **3** Errors from grade **2** MAZE - Comprehension. The rate of improvement should be **0.31** Responses Correct per week. The current average rate of improvement is **-0.04** Responses Correct per week.

Date	09/09	09/23	10/07	10/28	11/11	12/02	12/16	01/06	02/03	02/17	03/07	04/06	04/20
Corrects	2	14	3	5	7	9	6	7	5	6	5	4	6
Errors	11	20	13	3	14	9	11	6	11	9	11	5	19
Goal/Trend ROI	0.31/- 0.04												

Grey data points are baseline/goals sessions.
Yellow data points have corresponding program interventions.
M represents missed scheduled dates.

Goal Changes & Intervention Descriptions:

9/9/2011 - Tier 3 - Read Naturally (Baseline Corrects = 2 : Goal Corrects = 13)

small group 5 times a week