

A CASE STUDY OF THE USE OF RESPONSE TO INTERVENTION IN A PUBLIC
SCHOOL DISTRICT

BY

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By Linda J. Davidoff

This dissertation is dedicated to my parents, Robert and Lore Davidoff, who instilled in me an understanding of the value of education and a work ethic which supports my belief that goals are reachable when paired with a willingness to expend effort.

I also dedicate this work to my sons, Andrew and David, whose unconditional love and support was a guiding force in the completion of my doctoral studies, allowing me to offer them an example of learning as a lifelong endeavor.

Finally, I dedicate this work to all my students and their families whose success and support continues to be the focus of my professional life.

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ABSTRACT OF THE DISSERTATION:
A Case Study of the Use of Response to Intervention in a Public School District
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The educational community has raised several concerns regarding the identification of students with disabilities. Growing numbers of students classified in the Specific Learning Disabilities (SLD) category have prompted much discussion. Available research on SLD classification raises issues regarding the traditional ability/achievement discrepancy model of identification as well as disproportional minority membership in special education. Operational suggestions for remediation of these problems are lacking. With the 2004 reauthorization of IDEA the law now allows the use of Response to Intervention (RTI) in determinations of SLD eligibility. Proponents of RTI claim that it has benefits for decreasing the incidence of special education classification, reducing minority overrepresentation in special education, and providing early identification and intervention for at-risk students. If advocates of the RTI design are correct in their assertions, research on its structure, implementation and benefits are necessary to inform future practice. This dissertation study examines the RTI process, stakeholder perceptions of RTI benefits and challenges, and gains made in reading for students receiving RTI interventions, within one public school district.

This mixed-method, case study included a qualitative sample of 19 staff members serving on the district RTI team and two building RTI teams. Participants included six district administrators, three principals, three general education teachers, two special education teachers, two literacy specialists, two Child Study Team members, and one guidance counselor. Qualitative data collection consisted of individual interviews conducted with all participants, as well as a focus group for the purpose of member

checking. Interview and focus group transcripts were coded and key themes were generated related to the RTI process, staff perceptions of RTI benefits and challenges, and RTI impact on SLD classification within the district. The quantitative sample consisted of records on thirty first, second and third grade students who received RTI interventions. Data were analyzed using Single Sample *t*-Tests, Independent Samples *t*-Tests, a Dependent Samples *t*-Test, and the Mann-Whitney U Test. Quantitative findings indicate that students receiving RTI interventions benefit from the additional support. In most cases, these students had statistically significant mean beginning scores below same grade peers. Their mean gains with RTI interventions were sufficient to produce mean ending scores statistically insignificant in difference from ending benchmarks for their grade. As RTI / multi-tiered intervention models are implemented across the country, this study offers additional data regarding quantitative gains made by struggling students, as well as staff perceptions of the benefits and challenges of RTI as the process functions in one public school district. This data adds to literature in the field and may be assistive to other districts as they draft frameworks for RTI / multi-tiered intervention systems in the future.

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Chapter 1

Introduction

Since the passage of P.L.94-142 in 1975, students with disabilities have had a legal right to a free, appropriate, public education. PL.94-142 is now known as the Individuals with Disabilities Education Act (IDEA). More than 35 years later it continues to protect the educational rights of students with disabilities. Few would question the positive intent of this law. Nevertheless, translating the positive intent into a course of action that accurately identifies which students are in need of such protection has become a national problem (Bradley & Danielson, 2004). The educational community has raised several concerns regarding the classification of students with disabilities.

Statement of the Problem

The rapid increase in the number of students identified for special education and related services has become a serious concern for the educational community. As we consider the growing numbers of special education students, it is difficult not to feel like the Sorcerer's Apprentice in *Fantasia*. We have a problem that is multiplying out of control. According to the U.S. Department of Education, during the 1976-77 school year approximately 8.3 percent of all students were identified as needing special education services. By the 2006-2007 school year 13.6 percent of all students were classified (USDOE/IES, 2008). The addition of traumatic brain injury and autism as IDEA categories in 1990 may account for some increase. Much publicity has been directed toward the rise in numbers of students with autism spectrum disorders (Rosenberg, Daniels, Law, Law, & Kaufman, 2009). Nonetheless, the main factor in rising special

education numbers can be attributed to students classified as Specific Learning Disability (SLD). The DOE report indicates that today SLD accounts for the largest percentage of special education students (USDOE/IES, 2008). This population has grown from 21.5 percent of classified students in the 1976-77 school year to 39.9 percent in the 2006-2007 school year (USDOE/IES, 2008).

A further concern is the current practice of identifying students with learning disabilities using the ability/achievement discrepancy model, sometimes referred to as the “wait to fail” model (Fuchs & Fuchs, 2007). Available research regarding the traditional ability/achievement discrepancy model of identification focuses mainly on its questionable predictive value for academic success without offering an alternative method for identification of SLDs (Stuebing, Barth, Molfese, Weiss, & Fletcher, 2009). Likewise, recent research has indicated positive outcomes of early intervention programs (Simmons et al., 2008). When students must exhibit continued failure before they receive special education services, they forgo effective early intervention programs and end up failing. In addition, the student may experience social and emotional disorders.

An added concern related to identification procedures is the continuing overrepresentation of minority populations in special education. Disproportional identification impacts all minority populations, particularly African American students and English Language Learners (ELL) (Rueda & Windmueller, 2006; Skiba et al., 2008). Available research on disproportional minority membership in special education elucidates the problem indicating that minority students have significantly greater risk ratios for identification in what Parrish (2002) calls the soft disability categories of mental retardation, emotional disturbance and specific learning disabilities (Parrish,

2002; Skiba et al., 2008). These students are also more likely to be segregated (Fierros & Conroy, 2002). However, operational suggestions for remediation of the problem are lacking.

With the 2004 reauthorization of IDEA, the law now allows the use of Response To Intervention (RTI) to determine students' eligibility for SLD. Although there are variable RTI models, the main components of all RTI models include high-quality, effective education for all students in general education, data-driven progress monitoring, and a system of multi-tiered supports for students who fail to respond to instruction within the general education program. Tiered interventions are required to be high-quality, research-based, and delivered with fidelity (Fuchs, Mock, Morgan, & Young, 2003). Proponents of RTI claim that it has benefits for decreasing the incidence of special education classification, reducing minority overrepresentation in special education, and providing early identification and intervention for at risk students (Samuels, 2011; Sparks, 2011). If advocates of the RTI design are correct in their assertions, this model can be efficacious in addressing the overrepresentation of students identified as SLD. Consequently, research on its structure, implementation and benefits are necessary to inform future practice.

Purpose of the Study

The purpose of this research is to study the efficacy of RTI in one public school district. These are the research questions.

- (1) How is RTI used in a public school district?
- (2) What are stakeholder perceptions of RTI advantages and limitations in the SLD classification process?

(3) Does interaction with the RTI process produce measureable gains in reading achievement for at-risk students?

General education teachers, special education teachers, and intervention specialists are the pre-referral staff members who participate in the RTI process. Child Study Team (CST) members are the professional decision makers in the eligibility process for identifying students with SLD. Investment of these stakeholders is a key factor in program success. Understanding the process of RTI, as well as perceptions of participating stakeholders is an important area of study because their attitudes and beliefs will offer insight regarding the structure, benefits and challenges of RTI in this district. Additionally, research examining results of RTI participation on reading achievement will offer documentation of treatment impact for the participating students.

Significance of the Study

The objective of this study is to gather meaningful information that has potential to operationalize RTI as a construct for supporting all students, as a beneficial pre-referral process, and as a viable practice for providing data in the determinations of SLD. The findings and conclusions drawn from this study are intended to contribute knowledge in the field regarding RTI process, perceptions and potential for improved achievement, as well as to offer information that may help inform future practice within the school district studied. It is anticipated that this study will contribute to literature in the field of RTI and may be assistive to other districts as they draft frameworks for RTI / multi-tiered intervention systems in the future.

Chapter 2

Literature Review

An examination of the complex issue of SLD identification and RTI as a possible solution requires a brief history and discussion of the federal definition of SLD. A definition of RTI and description of its structure are presented. Available research related to key issues of SLD and RTI will be offered. Topics to be addressed are (a) ability/achievement discrepancy model, (b) overrepresentation of minority populations, and (c) early identification and intervention. Next, existing field studies and intervention studies will be summarized. Finally, comments will be offered regarding the relationship of existing literature to the focus of this research study.

Specific Learning Disabilities

Although SLD is a classification category addressed in the current Individuals with Disabilities Education Act (IDEA), the structure of this statute maps back to the Social Security Act which was originally passed in 1935, adding provisions for citizens with disabilities in 1956. Social Security offered monetary benefits which could not be provided to all. Therefore the language of the law was clear that having a disability was not sufficient to qualify for disability benefits. The disability was required to significantly impair an individual's ability to function or work; and some disabilities such as alcoholism were excluded from qualification for benefits. In 1975, with the passage of P.L.94-142, the Education of All Handicapped Children Act, the Social Security model consisting of the combination of a documented disability that impairs functioning along with exclusionary factors was adopted (Holdnack & Weiss, 2006). This landmark legislation has since been renamed the Individuals with Disabilities Education Act

(IDEA) and has had several reauthorizations, the last of which was in 2004. The current law provides for students with disabilities in 13 categories. Some categories are medically diagnosed, such as health and orthopedic issues, or visual and auditory impairments, which reduce issues of eligibility confusion. SLD is likely the most controversial of classification categories owing in part to the lack of clarity in its definition.

The number of alternative SLD definitions that have been proposed attests to the enduring problem of finding a single statement describing the SLD condition. The primary objection to the present SLD definition is its inherent vagueness and concomitant lack of rigor when implemented in practice. (Kavale, 2003, Defining SLD, para. 1)

The definition of a specific learning disability has not been significantly changed over the past 35 years. According to IDEA 204 § 300.8 [c] (10) a specific learning disability is defined in the following manner.

Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia (U.S. Department of Education, 2009, IDEA Regulations Part 300/A/§ 300.8 (c) (10)).

Just as in the social security system language, the federal IDEA definition for SLD contains an exclusionary clause. “Disorders not included. Specific learning disability

does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage” (U.S. Department of Education, 2009, IDEA Regulations Part 300/A/§ 300.8 (c) (10) (ii)). Although the law does not define environmental disadvantage specifically, it is taken by educators to mean a lack of exposure to curriculum, which may be due to inconsistent school attendance or substandard educational practices. It is this issue of exposure to quality education that Response to Intervention (RTI) seeks to address.

Response to Intervention

In order to historically situate RTI we must look back to some of the major issues related to special education identification. In 1982, The National Research Council, as a result of an investigation surrounding issues of special education identification concluded that in order to make appropriate eligibility determinations schools must consider (1) the quality of education students receive in the general education classroom, (2) whether special education programs produce measureable gains for struggling students, and (3) whether the assessment process is accurate in identifying students with disabilities (Heller, Holtzman, & Messick, 1982). In accordance with these considerations researchers began to consider evidence-based practice in such forms as standardized achievement tests, teacher observation and curriculum-based measurement (CBM) (Deno, 1985; Fuchs & Fuchs, 1997). Deno held that teachers rarely used results from standardized tests, asserting that they were poorly aligned with classroom content. Determinations based solely on teacher observation, while meaningful, were questionably

valid or reliable. Deno's recommendation was for use of CBM which offered a means to measure student progress as it is aligned with core content curriculum (Deno, 1985).

Two decades later, an Office of Special Education Programs (OSEP) Summit produced white papers that essentially dealt with the same issues as they relate to SLD. In a report published by the National Joint Committee on Learning Disabilities (NJCLD) in 2002, the OSEP Summit white papers were discussed and consensus statements were offered. Two statements are of particular note. The first of these statements, by NJCLD (2002) suggests that "regular education must assume active responsibility for delivery of high quality instruction, research-based interventions, and prompt identification of individuals at risk..." (p. 7), which maps back to the issue of quality education provided in the general education setting. The second consensus statement, "The ability-achievement discrepancy formula should not be used for determining eligibility" (NJCLD, 2002, p. 8) addresses another of the points made by Heller et al. (1982) regarding use of accurate assessment procedures in identifying students for special education.

In July of 2002, the President's Commission on Special Education published a report outlining findings and recommendations for special education going forward. Among other findings the report urges (1) a focus on prevention and intervention rather than waiting for students to fail before providing support, (2) shared responsibility for all students by general and special education regarding all identification, instruction and cost, and (3) focus on evidence-based practices. Under the section discussing assessment and identification, four recommendations are offered, one of which applies directly to this historical discussion of RTI. "Incorporate response to intervention. Implement models

during the identification and assessment process that are based on response to intervention and progress monitoring. Use data from these processes to assess progress in children who receive special education services” (US DOE, 2002, p. 21). This governmental recommendation was offered in preparation for the 2004 reauthorization of IDEA which incorporates RTI language.

The concept of RTI is not a new one. In a way, it is simply what some might call a common sense approach to instruction. The basic idea is to provide high quality education to all and identify students that may be at risk for poor achievement, monitoring them as they participate in general education instruction. Evaluation informs teachers of the students that are not progressing commensurate with peers who are exposed to the same instruction. Students falling behind are then provided with evidence-based interventions and evaluated again to determine the success of the intervention. Those who are still struggling receive more intensive instruction. If after receiving these instructional interventions, the student is still behind, he/she may then be considered for special education eligibility. This process, or one similar to it, likely has been the practice in most schools for the last 30 years. “The notion of providing specialized instruction to students before identification has long been a component of special education identification through the teacher support team model (also known as *student support team*, *mainstream assistance team*, and *student study team*)” (Murawski & Hughes, 2009, p. 268). One difference between loosely framed interventions and RTI is that the primary instruction in the general education classroom, as well as the chosen interventions for targeted students, is intended to be high-quality and research-based (NJCLD, 2005; Hoover & Love, 2011).

Another significant departure from historical pre-referral procedures is the use of a tiered system (Hoover & Love, 2011). “There are many RTI models being implemented in schools and districts across the country. No one model has emerged as the model of choice and the U.S. Department of Education does not recommend or endorse any one specific model” (Bradley, Danielson & Doolittle, 2007, p. 9). There is, however, a basic framework that has been described by the National Joint Committee on Learning Disabilities in a June 2005 report that describes a three tiered model. Tier 1 would provide high-quality, research-based instruction to all students. Curriculum based assessments would identify at-risk students who may not be achieving commensurate with their general education peers, even with differentiated instruction (NJCLD, 2005). Tier 2 supports are comprised of collaboration between staff members to design more intensive research-based instruction and interventions. This instruction may be provided by the general education teacher, other general education staff, or special educators. It may be provided in smaller groups in the classroom or in an alternative location in the school (NJCLD, 2005). At Tier 3, students who are still behind their same-grade peers based on progress monitoring, may be referred for a comprehensive evaluation to determine their eligibility for special education and related services. The data collected for students during the RTI process at Tier 1 and Tier 2, is intended as one of multiple sources to be used by the Child Study Team in making determinations of eligibility for special education services (NJCLD, 2005). Other RTI models suggest elimination of Tier 2 intervention and movement directly to Tier 3 intensive intervention for some students (Vaughn, Denton, & Fletcher, 2010), or call for a fourth tier, offering struggling students individualized interventions at Tier 3 and holding off with referrals until Tier 4. “The

argument for four tiers is that both small-group (Tier 2) and individualized interventions (Tier 3) should be attempted prior to determination of special education eligibility” (Reschly, 2005, p. 511).

Regardless of the model used, the guiding principle of RTI is to support the needs of all students and to have documentation when a student fails to respond to high-quality, research-based intervention in order to inform decisions about special education eligibility (Hoover & Love, 2011). “Effective intervention leads to more meaningful identification by accelerating the progress of many low achievers, thereby eliminating them from consideration as disabled (Fuchs, Fuchs & Stecker, 2010, p. 302). Historically, the pre-referral process has had variable bearing on determinations of eligibility, giving weight primarily to an ability / achievement discrepancy (McKenzie, 2009). Through the 2004 reauthorization of IDEA, lack of response to intervention became legitimized in the determination of SLD with the following language found in 20 USC 1414(b) (6).

(A) In General . . . [W]hen determining whether a child has a specific learning disability as defined in Section 1401 of this title, a local educational agency shall not be required to take into consideration whether a child has a severe discrepancy between achievement and intellectual ability in oral expression, listening comprehension, written expression, basic reading skill, reading comprehension, mathematical calculation, or mathematical reasoning.

(B) Additional Authority. In determining whether a child has a specific learning disability, a local educational agency may use a process that determines if the child responds to scientific, research-based intervention as a part of the evaluation procedures.... 20 USC 1414(b) (6)

Additionally, the reauthorization allows for up to 15 percent of IDEA Part B funds to be used for early intervention initiatives (NJCLD, 2005). These changes in the federal code signaled the government's awareness of issues related to historical practices for determining eligibility in the category of SLD. We turn now to three of the key issues in the matter of determining eligibility of SLD.

Key Issues

Ability/achievement discrepancy model. The accepted understanding of SLD is an unexpected deficit in one of the specified areas of identification in the law (Carreker & Joshi, 2010). Traditionally, the field has measured expected or predicted achievement using standardized IQ measures. These measures of potential for any specific student may be based on a variety of tests, as well as a specific focus on some scores over others within one measure. Several studies (Fiorello, Hale, McGrath, Ryan, & Quinn, 2001; Hale, Fiorello, Kavanaugh, Hoepfner, & Gaither, 2001; Roberts et al., 2000) criticize the use of a statistically averaged global or Full Scale IQ measure as a predictor of school achievement. They explain that such research has led to revision of major IQ measures where individual Index scores are acceptable as predictive measures based on emphasis of specific cognitive strengths and weaknesses. In a 2010 study examining perceptions of school psychologists regarding the use of cognitive assessment in identification of reading disabilities, the majority of psychologists assert that there is utility to Full Scale IQ scores. Nonetheless, they report that they use specific subtest scores as well as index-level analysis to provide information beyond a Full Scale IQ score (Machek & Nelson, 2010). Concerns with achievement measures have been raised as well. Although research has indicated that when measuring reading success, the areas of importance are word

attack, fluency and comprehension (Torgesen et al., 2001; Vellutino et al., 1996), educators sometimes focus on only one of these areas as a measure of reading achievement.

The important question, however regarding the ability/achievement discrepancy model is whether such a discrepancy in any way accurately predicts which low achievers have a SLD. Caffrey & Fuchs (2007) find a difference in reading success with respect to guided inquiry, and inductive reasoning in students with mild mental retardation as opposed to those categorized as SLD indicating that IQ may relate to learning responses of different groups of learners (Caffrey & Fuchs, 2007). However, in a meta-analysis by Hoskyn & Swanson (2000), and others by Stuebing et al. (2002) and Stuebing, Barth, Molfese, Weiss, & Fletcher (2009), findings indicate that “there was, at best, weak validity for differentiations of poor readers based on IQ scores” (Stuebing, et al., 2009, p. 32). In an inquiry conducted by Francis et al., (2005), data from a previous longitudinal study was used to examine discrepancy as opposed to low achievement as variables in the stability of students within these groups. Their results indicated that over time students identified in one group no longer fit the definition for that group. Their conclusion was that “the cut points are inherently arbitrary, and the underlying groups are essentially not captured by these definitions” (Francis et al., 2005, p. 104). While a 2006 study indicated that general IQ is an accurate predictor of responsiveness to reading interventions (Fuchs & Young, 2006), an additional meta-analysis interpretation “did not support the hypothesis that IQ is an important predictor of response to instruction” (Stuebing, et al., 2009, p. 31). These persisting discrepancies in prevailing research should have led us to question the use of an ability/achievement discrepancy as a supposedly accurate model

for identifying students with SLD. This approach, however, has been used for over 30 years, which must lead us to question whether we have been identifying the correct students, and if there are trends that should be examined (Ysseldyke, 2005). Proponents of RTI would argue that in light of the research, a move away from use of the ability/achievement discrepancy model and toward a lack of response to intervention model is warranted.

Overrepresentation of minority populations. An additional identification issue attributed to traditional use of the discrepancy model is that of overrepresented minority populations in special education (Beratan, 2008). Skiba et al., (2008) report that the U. S. Department of Education statistics leave no doubt about trends in overrepresentation of minority populations in special education as a whole. As previously mentioned, the discrepancy evaluation process relies heavily on psychological assessments. In addition to their questionable predictive value as discussed in the research above, there has been much debate regarding cultural bias in IQ testing. Harry et al. (2002) asserts that “bias is self-evident in that the tests inevitably reflect the cultural knowledge base and cognitive and linguistic orientations of their creators” (p. 74). There is little concern about cultural or ethnic bias in classification of low incidence eligibility categories such as deaf, blind, or orthopedically impaired students. These disability areas are generally obvious or medically diagnosed. However, high incidence categories such as emotionally disturbed, specific learning disability or mild cognitive impairment rely not only on psychological assessment but also on subjective determinations. State and federal definitions in these categories are less discrete, and therefore at risk of personal bias or institutionally subjective pressures. Department of Education statistics, such as those described by

Skiba, et al. (2008) indicate that students of color, particularly boys of color, are indeed disproportionately classified in these high incidence eligibility categories. Once classified, decisions are made regarding service, and although the law is clear that programs are to be delivered in each student's least restrictive environment, it is left to the discretion of the IEP team and case manager as to what that might be. Removal from a general education setting, where students with disabilities have little or no access to typically developing peers or core curriculum content is considered to be the least beneficial of service delivery models by most special educators, parents and certainly IDEA. However, Fierros and Conroy (2002) state, "Nationwide, the percentage of black students who receive their special education supports and services in restrictive educational settings is substantially higher than the percentage of similarly situated white students" (p. 41).

An additional population that is frequently overrepresented in special education is English Language Learners (ELL). "ELLs were 27 percent more likely than English-proficient students to be placed in special education in elementary grades and almost twice as likely in secondary grades" (Artiles, Rueda, Salazar & Higuera, 2002, p. 119). The explanation for this may be related to cultural bias in general, and more specifically teachers' impatience with providing adequate immersion time in order for ELLs to gain mastery of the language. In a study done by The University of California Linguistic Research Institute, Hakuta et al. (2000) reported that, "oral proficiency takes 3 to 5 years to develop, and academic English proficiency can take 4 to 7 years" (p. 3). It is rare that teachers allow this amount of time in general education settings, even with ESL and basic skills service, before making referrals to Child Study Teams for special education evaluations. Once the decision is made for a comprehensive evaluation, the Child Study

Team must determine if a bilingual evaluation is required. In some cases this choice is made, however, quite regularly evaluations are done in English (Rinaldi & Samson, 2008). This occurs even when there is question as to the language in which the ELL may be thinking. Choices of evaluation tools further complicate determinations. The majority of school psychologists are most comfortable using a Wechsler Intelligence Scale for Children (WISC), which is generally the preferred IQ assessment tool. It does, however, provide four major indices, three of which are either heavily language loaded, or require at least a competent understanding of directions offered verbally. There are other nonverbal tools such as the Universal Nonverbal Intelligence Test (UNIT) or Comprehensive Test of Nonverbal Intelligence (CTONI) which can assess cognitive abilities without the use of language; however, there is no standard of practice requiring school psychologists to use such a measure. If low IQ, achievement, or language processing scores are obtained, students are generally classified for special education.

Special education eligibility determination for ELLs is a complex undertaking (Klingner, Baca, & Hoover, 2008). The areas of disability that seem to be most difficult to determine for ELLs are mild cognitive impairment, where too much weight may be placed on inaccurate IQ scores, SLD where a discrepancy model is used and there is no proven perceptual handicap causing low achievement, and communication impairments where evaluators incorrectly attribute receptive, expressive, or pragmatic language problems to deficits in language processing as opposed to lack of English proficiency (Abedi, 2006). Assumptions are made that if the student uses English at school, he or she has the proficiency required to learn at the pace of others in the class. In discussing the use of IQ scores, Klingner & Harry (2006) state, “An overemphasis on IQ test scores can

lead to inaccurate decisions about bilingual students' abilities and needs, particularly for students who come from homes where their native language is spoken" (p. 2248).

Research studies examining the use of RTI with ELLs (Linan-Thompson et al., 2006; Linan-Thompson et al., 2007) have been conducted anticipating more positive and less biased outcomes. Findings indicate that provision of high-quality interventions produce similarly successful results with ELLs and students whose first language is English.

Additionally, both groups of students who showed growth with the interventions also maintained gains over time, reducing the likelihood of future identification for special education (Linan-Thompson et al., 2007).

Early identification and intervention. Current research, as described above indicates that intervention may ameliorate issues of overrepresentation of minority populations. Additional studies, where minority students are not target populations of research also show promise in reducing SLD classifications. One such longitudinal study conducted by Simmons et al. (2008) indicates that early reading intervention is particularly important. They found,

...the majority of children identified as at risk in the beginning of kindergarten responded early and positively to intervention. On average, absolute performance levels at the end of kindergarten positioned students for trajectories of later reading performance that exceeded the 50th percentile on the majority of measures. Moreover, changes in at risk status that occurred early were generally sustained over time. (p. 158)

An additional study (Vaughn, Linan-Thompson & Hickman, 2003) found that early intervention was successful for a portion of second graders studied, however, not all.

They agreed, however, that providing interventions early is most likely to offer positive outcomes. A study conducted with kindergarten students examined the benefits of beginning reading interventions immediately in kindergarten as opposed to waiting until midyear while reading readiness skills are taught. Results indicated that the kindergarteners who began reading interventions immediately upon entering kindergarten made better gains than the students who received the same supplementary instruction after a one semester delay (Cooke, Kretlow, & Helf, 2010). Tier 1 interventions offered through RTI address this issue of provision of early support for all students which has been documented as beneficial (Greenwood et al., 2011).

Beyond the issue of when to offer interventions, the question of how much and in what ways, will clearly have an impact on successful outcomes. The common wisdom is that when something is proven to be good, more of a good thing will prove to be better. That is not necessarily so with provision of interventions. Wanzek and Vaughn (2008) reported on how varying amounts of time in reading interventions for poorly responding students influence achievement. They found that although one 30 minute intervention for 50 days was helpful, doubling the amount of intervention had little increased effect on improving reading. This raises questions regarding the appropriate number of interventions offered within a tier, as well as whether there is a need for tertiary interventions beyond Tier 2 within the structure of RTI. Certainly the quality of interventions provided and the fidelity with which they are implemented has an impact on success rates (Stecker, Fuchs, & Fuchs, 2008). Both interventions and assessments must be validated by research as reliable and well matched for the purposes that they are employed. Even when all variables are positively accounted for, not all students will

thrive. A longitudinal study (Vellutano et al., 1996) found that while many students with reading difficulties can be positively supported with high-quality interventions, there are some “whose reading difficulties may be caused by basic phonological coding deficits that may well be of a constitutional origin” (p. 41). This brings us full circle with the federal definition of SLD referencing a disorder of a basic psychological process. A student’s lack of response to intervention may signal such a problem, but can in no way diagnose the processing disorder or offer instructional strategies to remediate the problem (Reynolds & Shaywitz, 2009). “...nonresponsiveness should not be viewed as a diagnostic criterion. Nonresponsiveness is an outcome that may or may not be caused by SLD. Thus, the RTI model cannot stand alone as the primary means to identify SLD” (Kavale et al., 2003, RTI and SLD Classification, para. 1). At this time we know little about whether RTI reduces the incidence or severity of SLD and whether it is more reliable in correctly identifying students with SLD (O’Connor & Klingner, 2010).

Studies

RTI may not be the panacea for all previously mentioned problems; however there seems to be hope that it can be assistive. Nevertheless, the pace of educational reform and systemic policy change can be viewed by some as protracted (Tyack & Cuban, 1995). RTI models are relatively new in the educational landscape. Due to lack of federal mandate regarding utilization of RTI, and divergent commitment by states regarding implementation, the body of research is lacking. Described here are recent field and intervention studies.

Field studies. Although there is a scarcity of field studies (Carreker & Joshi, 2010), recently researchers have begun to investigate the impact of RTI on individual

students. A 2010 case study of a single student, already classified as having a specific learning disability was conducted by Legere and Conca. They tracked the student's reading achievement for a period of one year. He was offered supports by both general education and special education personnel daily within a three tiered approach. Their findings indicated that with flexible supports, targeting specific skill deficits, and utilizing multiple professionals this student made considerable growth (Legere & Conca, 2010). Wanzek and Vaughn (2009) investigated differing RTI results in three case studies. This three year longitudinal study examined the outcome of increasingly intense interventions in the three cases. Although one of the students made substantial gains in reading achievement, the other two made little growth under the same conditions. Their assertion is that there is likely to be a small subgroup of students, who even with the most intense interventions will not produce gains large enough to meet grade-level expectations (Wanzek & Vaughn, 2009). In a two year longitudinal study of 203 kindergarten students receiving Tier 1 interventions conducted by Al Otaiba et al. (2011) researchers sought to discern the predictive value of growth in kindergarten for reading achievement at the end of first grade. They found that students who were on the steepest learning trajectory in kindergarten were least likely to maintain that rate of growth by the end of first grade. They attributed that to the possibility that those students may have been least prepared for school and therefore initially had the most ground to make up. These students fell behind in first grade when compared to their peers who made slower but steady improvement through their kindergarten year. Their conclusion was that achievement with Tier 1 interventions in kindergarten is less predictive than growth tracked in later grades (Al Otaiba et al., 2011). The fact that success with primary Tier 1

interventions in early childhood may be an unreliable predictor of later reading success in no way negates the benefits gained through early intervention (Greenwood et al., 2011). Large-scale RTI implementation studies are just beginning to become available although they may not all refer to their systemic structure as RTI. Lembke, McMaster, and Stecker (2010), discuss program models funded by grants from the Department of Education, Office of Special Education Programs. These programs in Pennsylvania, Oregon and Minnesota primarily address progress monitoring systems and their impact on effective decision making within the RTI process (Lembke, McMaster, & Stecker, 2010).

Secondary school RTI models are limited. This may be due to scheduling difficulties, how tiers are designed, or the types of interventions that hold promise for secondary students (Fuchs, Fuchs & Compton, 2010; Vaughn & Fletcher, 2010). Two such studies were located. Vaughn et al. (2010) conducted a middle school investigation, offering professional development to teachers in the areas of vocabulary and reading comprehension. This heightened awareness was then translated to practice as a Tier I intervention for all students. At-risk students were assigned to a control group who received nothing beyond Tier I, or a treatment group that received an additional Tier II intervention. Results indicated that there was no statistically significant difference in skill improvement between the groups; however, the investigators explained that the school was providing additional interventions beyond those offered through the study which may have skewed the results. In a high school study done by Sansosti, Noltemeyer and Goss (2010), principals were surveyed to determine how important they thought intervention practices were at the high school level and also if such practices were available in their schools. Although the principals determined intervention to be

important, they indicated that interventions were not currently available in most of their schools and would require considerable reform within the schools to implement (Sansosti et al., 2010).

Myers, Simonsen, and Sugai (2011), conducted a study using an RTI model for teacher professional development. The purpose of the study was to evaluate increasing levels of professional development support in raising instances of teacher use of praise. Results indicated improved teacher behavior, responding to differentiated levels of professional development. As positive teacher behaviors increased, positive student behaviors followed (Myers, Simonsen, & Sugai, 2011). In studies conducted by Nunn and Jantz (2009) and Nunn, Jantz and Butikofer (2009), issues of RTI and teacher efficacy were explored. These researchers designed measures for efficacy beliefs and effectiveness scales with findings indicating utility of these measures. When studying correlations between RTI involvement and issues of teacher efficacy, results indicated that involvement with and implementation of RTI impacts teacher efficacy beliefs.

Duhon, Mesmer, Atkins, Greguson and Olinger (2009) conducted a field study focused on quantifying intervention intensity within an RTI model. Their goal was to go beyond the issue of whether students require special education by spotlighting how much intervention a student requires for success, regardless of placement. As expected, they found that while some interventions were beneficial for all students, the complexity of intervention frequency and intervention intensity is more difficult to measure in relationship with individual requirements for longitudinal success (Duhon, Mesmer, Atkins, Greguson & Olinger, 2009). A final field study conducted by Torgesen (2009), investigated outcomes of RTI practices in Reading First schools. Findings disclosed a

dramatic decrease in classification of students with learning disabilities. Torgesen (2009) cautions that although it is possible that the RTI instructional model accounts for this change, another explanation may be feasible. He warns that students may be referred less frequently in these schools, because teachers are more confident in their abilities to address reading issues with the advent of Reading First training and instructional options (Torgesen, 2009).

Intervention studies. Another small group of RTI intervention studies was located. One study (Vaughn et al., 2009) examined early reading intervention for first and second grade students. Interventions were provided based on specific skill competencies required for successful reading rather than use of a published, standardized teaching protocol. Increasing supports were offered based on tier assignment. Findings signify improvement for most students with early intervention in the areas of word recognition and comprehension. No significant oral reading fluency gains were found. Additionally, teachers viewed lower responding students as less academically competent than higher responding students (Vaughn et al., 2009). A different intervention study (Koutsoftas, Harmon & Grey, 2009), addressing phonemic awareness was conducted with low-income preschool students. Trained teachers or speech-language pathologists offered a Tier II scripted intervention twice a week for six weeks. The intervention was deemed efficient, delivered with fidelity, and found to be beneficial for a large portion of subjects (Koutsoftas, Harmon & Grey, 2009). No claims are made regarding generalizability to other students. Although most reading intervention studies have been conducted with elementary age students, one middle school study evaluated the feasibility of utilizing peer tutoring as a Tier 2 intervention. Dufrene et al. (2010) found that the four students

studied made gains in reading fluency through peer tutoring and that the tutors were able to deliver the program with a high degree of integrity (Dufrene et al., 2010).

A few RTI intervention studies related to math achievement were identified. One such study by Fuchs et al. (2008) explored the effects of preventative tutoring on problem solving abilities of third-grade students. Distinction was made between those students who had only math difficulties and those with both math and reading difficulties. Tier I instruction was conceptualized as conventional math instruction related to word problems. Tier II schema-broadening, preventative tutoring was offered, using scripts and specific teaching materials three times each week for a twelve week period. Educational implications were for future inclusion of the Tier II intervention based on positive effect sizes on measures of improvement (Fuchs et al., 2008). A second math intervention study investigated effects of fact retrieval tutoring on third graders with only math difficulties and with both math and reading difficulties (Powell, Fuchs, Fuchs, Cirino, & Fletcher, 2009). Two different interventions were offered at Tier II. Their findings indicate that students with both math and reading difficulties benefitted less from fact retrieval tutoring than did students with only math difficulties. No significant advantage was found for one intervention over the other (Powell, Fuchs, Fuchs, Cirino, & Fletcher, 2009). Reading seems to have been the first and most consistent content area addressed by RTI (Fletcher & Vaughn, 2009). Nonetheless, the above mentioned studies exemplify that other content areas are addressed by school districts that have designed functional RTI models.

Opinions in the educational community about RTI are likely to be varied until it has solid empirical evidence to prove its worth. To date, there has been little case study

research that describes how RTI is currently being used in public schools, how stakeholders perceive its value in addressing the issues presented here, the challenges that they face in implementation, or whether it offers measurable gains in reading achievement for at-risk students within their school district. Therefore, the purpose of this study is to supply data, which contributes to filling the gaps in existing research in these areas.

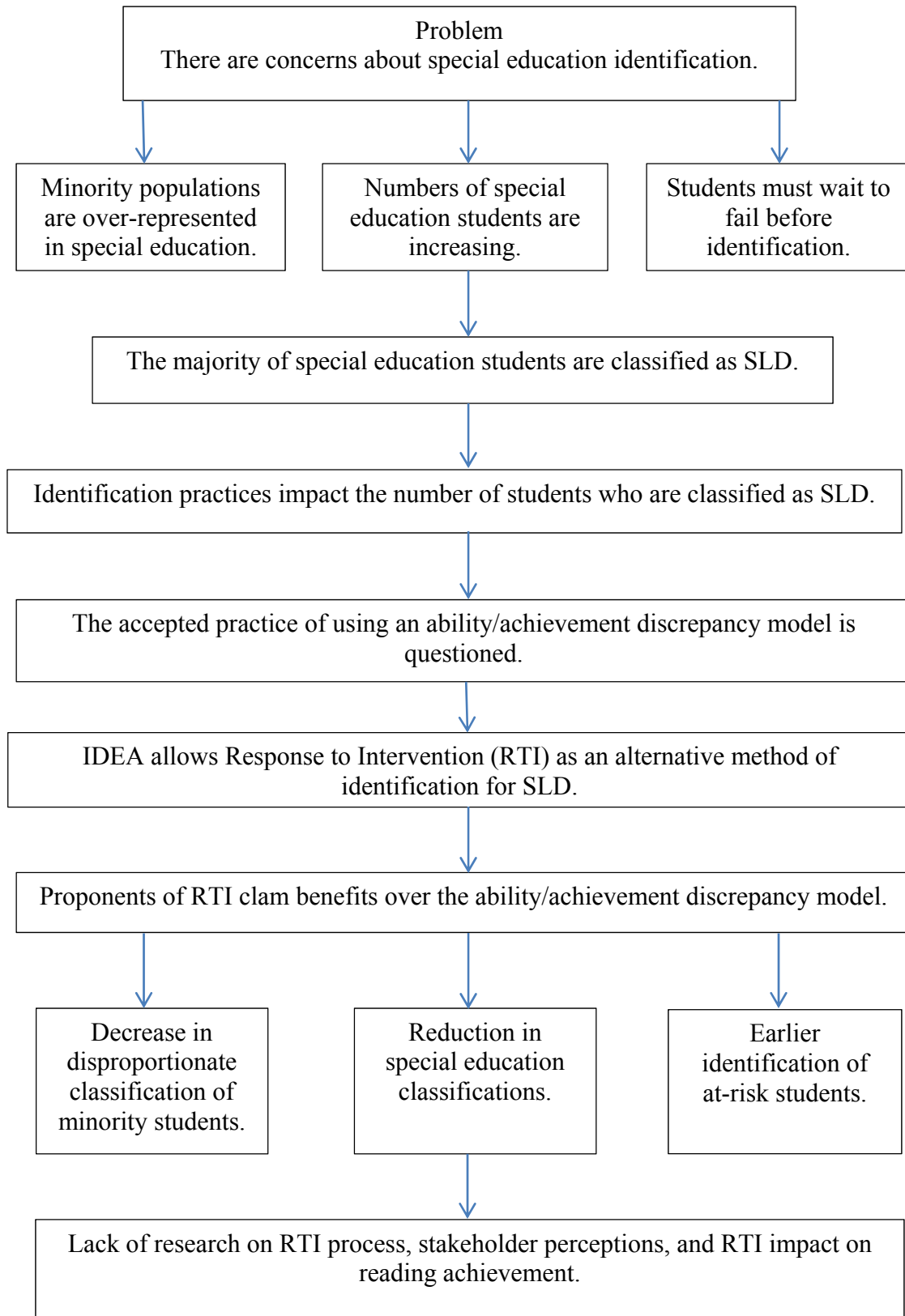
Chapter 3

Methodology

Logic Model for This Study

This logic model grows from the selected problem of study. It is constructed with a logical flow from the global problem as it funnels through a line of reasoning or events becoming increasingly more specific and leading to research questions designed to examine the specific problem of interest. The problem addressed in this study relates to concerns within the field of education associated with special education identification. The numbers of special education students are growing and the majority of students are classified under the classification category of SLD. Identification practices impact the number of students classified under this category. Traditional practices for determining SLD eligibility have been researched and found lacking in consistently identifying students with SLD. Additionally, federal law, in the form of the 2004 IDEA reauthorization allows schools to use students' lack of response to interventions provided through an RTI model to assist in making SLD eligibility determinations. Since the use of RTI is relatively new within the educational landscape it is important to study aspects of RTI that will assist in determining if it shows promise in addressing the problem identified in this study related to special education identification. This logic model funnels to the research questions chosen for this study. Figure 1 depicts the logic underlying the rationale for this case study.

Figure 1: Logic for a Case Study of the Use of RTI in a Public School District



Research Design

This study examines the process of RTI, stakeholders' perceptions of its benefit in attaining reading achievement, and how RTI contributes to the documentation for SLD determination. Gains in reading achievement for students participating in RTI interventions are also examined. The outcomes of the study are best determined using a mixed method case study format. According to Cresswell (2007) when a researcher seeks a detailed understanding of a well bounded case or cases, a case study is a good approach. "A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2008, p. 18). A case study provides a case description and offers themes that evolve from study of the specific case. These outcomes result from analysis of multiple sources collected within the case. Case studies have historically been used in social science areas such as psychology, anthropology and sociology. The case of study may be an individual, one site or group, or multiple sites or groups. Within case study, the intent of analysis determines the specific type. Stake (1995) explains an instrumental case study as one where the case is purposefully selected with the intent to examine a specific issue or concern. In this instrumental case study the bounded case is staff and students in one school district using the RTI model. Qualitative information gathered from professionals who interact with the process of RTI offer data that is rich in understanding of both the implementation and efficacy of the process. Quantitative data collected on a sample of students who participate in the RTI process were analyzed to determine if there was growth in reading achievement. The decision to

use mixed-methods, incorporating both qualitative and quantitative inquiry is required to answer the different types of research questions posed in this study (Patton, 1990).

Setting.

Response to Intervention has not been implemented in all school districts in the United States (Samuels, 2011). The federal government has left the decision to the states to determine if and how RTI will be used. In states where RTI is not required at the state level, each local school district is permitted to determine whether it will be used, the timeframe for implementation, and a specific RTI design. Currently, the state of New Jersey permits both severe discrepancy and RTI in making determinations of SLD eligibility (Zirkel & Thomas, 2010). There has been no state mandate as to timelines requiring implementation of an RTI process. For this reason most districts in the state of New Jersey have continued with the status quo.

Criterion for site selection of this study was based on the knowledge that RTI has been in use in the school district for at least one year. Additional criteria include (1) a recognized 3-tiered approach with a formal data collection design; and (2) RTI has been in place long enough that student growth can be tracked, and staff has formulated opinions about the program.

This study was conducted in the Eastern American Regional School District (EARSD) (pseudonym). “Anonymity is used to protect the real case and its participants” (Yin, 2008, p. 181). This central New Jersey school district currently serves the two boroughs of Morsedale and Whitney and the much larger Whitney Township, an area of nearly 60 square miles with a population exceeding 20,000. EARSD was regionalized in 1965, when the voters of the region approved a plan to consolidate their schools. Six

schools (pseudonyms used) comprise the district. Four of them are K-5 elementary schools: Madison Elementary has 301 students, Jefferson Elementary has 448 students, Lincoln Elementary has 475 students and Taft Elementary has 428 students. There is one middle school; Adams which has 952 students. The Washington High School has 1225 students. For the purposes of this study, staff members at Lincoln Elementary School and Jefferson Elementary School will participate. Lincoln Elementary school, built in the 1920s is one of the oldest schools in the district, has been historically preserved, and services students in the more rural areas of the district. Jefferson Elementary School was built most recently in 2002, and boasts some environmentally friendly features such as geothermal heating and cooling systems.

EARSD is categorized by the state of New Jersey as a higher socio-economic area. The state rates all public school districts' relative wealth and socio-economic status by District Factor Group (DFG) ranking. The rankings range from "A" to "J", with "A" being most economically disadvantaged and "J" being the wealthiest. EARSD is ranked by the state of New Jersey in the "I" group, ranking it as one of the wealthier districts in the state. The New Jersey Department of Education offers data on 2009-2010 revenues and per pupil expenditures for EARSD. When comparing state average revenues to district revenues, NJDOE reports that on average districts in the state receive 51% of their funding from local sources and 40% of their funding from the state. In contrast, EARSD receives 88% of its revenue from local sources and only 6% from the state. In the 2009-2010 school year the average per pupil expenditure across the state of New Jersey was \$15,538. The per pupil expenditure for the same school year in EARSD was \$17,074.

Regarding achievement, EARSD also ranks high. Using SAT scores as a comparative measure, EARSD historically ranks higher than similar high achieving New Jersey school districts. The district reports that in the 2009-2010 school year, EARSD scores on the SAT exceeded state and national averages by 200 points. 2009-2010 NJDOE statistics for Lincoln Elementary School report class sizes comparable to the state average. 12.5% of their student population are students with disabilities. Lincoln Elementary School has a significantly lower mobility rate than average with the state average being 10.5% and Lincoln Elementary School only 1.3% indicating a relatively stable attendance area. Lincoln Elementary School reports 0% of students with limited English proficiency. 98% of their population speaks English with a very small sample speaking Polish, Japanese, Spanish, Hungarian, or French. Examination of statewide assessments at third grade reveals 2009-2010 New Jersey Assessment of Skills and Knowledge (NJASK3) scores in Language Arts Literacy well above state averages. Where state scores rate 40.2% of third graders partially proficient, Lincoln Elementary school has only 21% of students falling below the proficiency mark in Language Arts Literacy. The reported state average is 54.2% proficient and only 5.6% scored advanced proficient. In contrast the Lincoln Elementary School third graders scored 72.8% proficient and 6.2% advanced proficient on the same measure. Comparisons for the mathematics portion of the same assessment show even greater disparity between state averages and the scores at Lincoln Elementary. State averages in Mathematics on the NJASK3 in 2009-2010 were 21.7% partially proficient, 41.1% proficient, and 37.2% advanced proficient. At Lincoln Elementary School scores on the same measure were

9.9% partially proficient, 37% proficient, with the majority of their students, 53.1%, scoring advanced proficient.

Jefferson Elementary School also has class sizes comparable to the state average and only 3.9% mobility rate where the state average is 10.5%. They report students with disabilities as 13.7% of their population and 1.1% of the population as students with limited English proficiency. 93.6% of the school population speaks English with 2.1% speaking Mandarin and less than 1% speaking other languages such as Telugu, Japanese, Spanish, French and Korean. 2009-2010 NJASK3 scores at Jefferson Elementary School are also well above the state averages. In Language Arts Literacy reported state averages were 40.2% partially proficient, 54.2% proficient, and 5.6% advanced proficient. Third grade students at Jefferson Elementary School scored 19% partially proficient, 60.3% proficient, and 20.6% advanced proficient. In Mathematics where state averages were 21.7% partially proficient, 41.1% proficient, and 37.2% advanced proficient, the Jefferson Elementary School third graders scored only 7.9% partially proficient, 20.6% proficient, and an impressive 71.4% advanced proficient on the same measure. Although both schools' test scores are well above state averages, when considering areas for improvement, it is noted that scores on Math exceed those for Language Arts Literacy within the district. This is likely one of the factors in the EARSD choice to begin RTI interventions in the area of reading.

EARSD began using RTI in Jefferson Elementary school as a pilot during the 2009-2010 school year; it is currently in the third year of implementation. The other three elementary buildings began using RTI during the 2010-2011 school year. Although a firm schedule is not available, all schools in the district are expecting to implement RTI

within the next few years. EARSD has purchased AIMSweb, a data management system. The website provided by Pearson offers the following description. “AIMSweb is a benchmark and progress monitoring system based on direct, frequent and continuous student assessment. The results are reported to students, parents, teachers and administrators via a web-based data management and reporting system to determine response to intervention” (“What is AIMSweb?” para. 1). EARSD handles universal screening of students, provision of evaluation probes for progress monitoring, and graphic representation for data display through AIMSweb.

Subjects.

Staff. The participants for the qualitative portion of this study were chosen via criterion sampling. This method relies on selection based on participants who meet predetermined significant criterion in order to provide meaningful data for in-depth analysis (Patton, 2002). Criterion sampling is a good choice when the study requires all participants to have experienced the subject to be examined (Cresswell, 2007). Selection criteria for participation in this study include involvement in either the District RTI Team or the school level RTI Review Committees. The District RTI Team consists of seven members. They are the Director of Pupil Services, the Director of Curriculum, the Supervisor of Elementary Special Education, the Supervisor of Secondary Special Education, the Supervisor of English, the Supervisor of Math, and a building principal. The function of this committee is to lead the RTI initiative, set a timeline for implementation, provide uniform interventions across the district, and organize professional development in RTI related areas. At the school level a general education teacher, a special education teacher, a Child Study Team member, the principal, a

guidance counselor, a literacy specialist, and the general education teacher of the at-risk student constitute the RTI Review Committees. The function of school teams is to input data into the AIMSweb system, print graphs to assist in progress monitoring of at-risk students, make recommendations for available interventions, determine movement between tiers, and make recommendations for comprehensive Child Study Team evaluations when needed.

Each member of the RTI Review Committee interacts with students in a different way. General education teachers, special education teachers and literacy specialists participate in delivery of instruction and provision of interventions, providing whole group, small group, or individual lessons. Guidance counselors may offer social/emotional support or suggestions to teachers. In some cases they are the professional who records notes of meetings and may have responsibility of making parental contacts. Principals provide leadership, oversight and logistical support within the process. Child Study Team members offer intervention suggestions and use data gathered from RTI assessments in making decisions regarding the need for comprehensive evaluations to determine special education eligibility. Child Study Team members may represent several disciplines such as certified school psychologists, school social workers and learning disabilities teacher-consultants. There were no exclusionary criteria within these participant categories; however, on the teams studied only the learning disabilities teacher-consultants participated. It was expected that there would be a range of years of professional experience among the staff subjects and for the participants in this study the years of educational experience ranged from five to thirty-three. Participants were assigned to support students spanning ages three to twenty-one.

This heterogeneity of participants provides a “maximum variation sampling” (Patton, 2002). “This strategy for purposeful sampling aims at capturing and describing the central themes that cut across a great deal of variation” (Patton, 2002, pp. 234-235). Although such variation within a sample is unnecessary in describing stakeholder perceptions of a program, there is a decided advantage in data analysis. Maximum variation sampling allows for common themes that cut across diversity of job description and professional experience, to be identified as meaningful patterns. It also allows for multiple perspectives on an issue (Cresswell, 2007). Central themes and consensus of perceptions that arise from a heterogeneous sample indicate common experiences and meaningful patterns (Patton, 2002). The number of subjects in this study was 19. The participant staff subjects, their committee, job title, years of experience, gender, and age of students serviced are displayed in Table 1.

Table 1

<i>Staff Subjects: N= 19</i>					
Name (Pseudonym)	RTI Committee	Job Description	Years of Experience	Gender	Age of Students Serviced (years)
Olivia	District	Supervisor of Elementary Special Education	11	Female	3-11
Joanne	District	Supervisor of Secondary Special Education	15	Female	13-21
Greg	District	Supervisor of Language Arts	8	Male	5-18
Danielle	District	Director of Curriculum and Instruction	28	Female	3-18
Quentin	District	Supervisor of Mathematics	10	Male	5-18
Umberto	District	Middle School Principal	13	Male	11-13
Diane	District	Director of Pupil Services	33	Female	3-21
Thomas	Lincoln	Special Education Teacher	11	Male	7-11
Debra	Lincoln	Learning Disabilities Teacher-Consultant	21	Female	3-12
Delia	Lincoln	General Education Teacher	18	Female	5-7
Edward	Lincoln	Elementary School Principal	12	Male	3-10
Carol	Lincoln	Literacy Specialist	28	Female	5-7
Betsy	Lincoln	Guidance Counselor	18	Female	5-11
Kathy	Jefferson	Special Education Teacher	5	Female	6-9
Fran	Jefferson	Literacy Specialist	25	Female	5-9
Nancy	Jefferson	Learning Disabilities Teacher-Consultant	30	Female	5-11
Bridgette	Jefferson	General Education Teacher	18	Female	6-8
Laura	Jefferson	General Education Teacher	11	Female	6-7
Travis	Jefferson	Elementary School Principal	12	Male	5-11

Students. Participants for the quantitative portion of this study were selected via purposeful random sampling. Purposeful random sampling occurs when participants are randomly selected from a pool of qualified cases. This sampling method was chosen in order to increase credibility of results. “The credibility of systematic and randomly selected case examples is considerably greater than the personal, ad hoc selection of cases selected and reported after the fact – that is, after outcomes are known” (Patton, 2002, p. 241). Records were reviewed on 30 students (N=30). The students whose records were reviewed were selected randomly from the pool of all students that have received RTI interventions. Selection was purposeful requiring that participants met specific criteria. Specified criteria for participation were that students must attend one of the elementary schools chosen for study and have participated with the RTI process. Participants were chosen from Jefferson Elementary School. This building is in the third year of implementation of the RTI model and therefore has a greater number of students who have participated in the RTI process over time. The likelihood that students have moved through several tiers at this building is greater, offering richer longitudinal data for analysis. Experts vary in their recommendations of intervention duration, ranging from eight weeks (Bradley et al., 2007) to 15 weeks (Fuchs & Fuchs, 2007). In order to review records of students who have had a reasonable round of intervention, those who have not had at least eight weeks of a Tier II intervention were excluded. Based on information gathered from a district administrator as well as the principal from this school, the pool of students who have interacted with the RTI process is not yet very large. For this reason a sample size of 30 was targeted spanning grades one through three. In contemplation of data analysis, statistical theory was considered regarding sample size. The central limit

theorem explains that as long as a sample is reasonably large, even means of populations which are not normally distributed will follow normal distributions with the expected bell shaped curve. According to Coladarci, Cobb, Minium and Clarke (2008), “25-30 cases is [*sic*] usually sufficient” (p. 206). The student subjects selected for records review, their beginning grade of RTI intervention, ending grade of RTI intervention at the time of the study, tier of intervention support, and ethnicity are reported in Table 2.

Table 2

Student Subjects: N= 30

Name (Pseudonym)	RTI Beginning Grade	RTI Ending Grade	RTI Tier	Ethnicity
Kelly	2 nd	3 rd	Tier 2	White
Mary	2 nd	3 rd	Tier 2	White
Eddie	2 nd	3 rd	Tier 2	White
Lucy	2 nd	3 rd	Tier 2	White
Xavier	2 nd	3 rd	Tier 2	White
Terry	2 nd	3 rd	Tier 3	Black
Debbie	2 nd	3 rd	Tier 3	White
Nancy	2 nd	3 rd	Tier 3	White
Everett	2 nd	3 rd	Tier 3	White
Ben	2 nd	3 rd	Tier 3	White
Tom	1st	2nd	Tier 2	White
Brad	1st	2nd	Tier 2	White
Evelyn	1st	2nd	Tier 2	White
Lily	1st	2nd	Tier 2	Asian
Travis	1st	2nd	Tier 3	White
Harry	1st	2nd	Tier 3	White
Brittany	1st	2nd	Tier 3	White
Olivia	1st	2nd	Tier 3	White
Nathan	1st	2nd	Tier 3	White
Joelle	1st	1st	Tier 2	White
Bruce	1st	1st	Tier 2	White
Daniel	1st	1st	Tier 2	White
Darla	1st	1st	Tier 2	White
Beverly	1st	1st	Tier 2	White
Darlene	1st	1st	Tier 2	White
Lester	1st	1st	Tier 3	White
Bobby	1st	1st	Tier 3	White
Kristen	1st	1st	Tier 3	White
Elliot	1st	1st	Tier 3	White
Boyd	1st	1st	Tier 3	White

Data Collection.

The qualitative data collected in this study were chosen, examined and described through an analytical framework approach. An analytical framework approach to description is structured by keeping in mind the intended framework for analysis during fieldwork in order to gather the needed descriptive ingredients of the case for analysis (Wolcott, 1997). An analytic framework can take the form of a case study protocol that outlines the project objectives, questions, field procedures, and outline for data use or presentation (Yin, 2008). Patton (2002) explains that analytic framework approaches may be utilized to describe important processes or to illuminate key issues. Since the process of RTI, key issues related to its benefits and challenges, and its measurable impact on student reading achievement are at the core of this inquiry, an analytic framework approach was used in the study design. This approach began with carefully constructed research questions focused on the predetermined issues of inquiry. Case selection and subject selection were critical in assembling the analytical framework. Yin (2008) warns that careful identification of a case or cases is crucial in order to avoid the pitfall of discovering that the chosen case is not appropriate to address the purpose of a study or to answer the chosen research questions after data has been collected. I addressed this by using the above referenced inclusionary and exclusionary criteria for case selection as well as subject selection. Once assured that the selected case and the selected subjects would provide needed information that would map back to the research questions, data collection decisions could be made. These decisions also aligned with the analytical framework of the study. Sources of evidence were chosen with the goal in mind of collecting data that would be assistive in answering the research questions. This

task was primarily accomplished for the first two research questions, comprising qualitative data collection, by use of the standardized interview guide and the focus group interview guide which query the required topics for analysis. Interviews are appropriate for this purpose as they are targeted and focus directly on case study topics (Yin, 2008). The final research question requiring quantitative data collection was accomplished through records review. Yin (2008) lists strengths of records review as being unobtrusive, stable, exact, and allow for broad coverage. In the case of this study, records review was certainly unobtrusive as I accessed them online through a data management program. Actual test scores were used which were stable, exact and spanned two years of time.

Interviews. Each of the 19 staff participants was interviewed using a standardized open-ended interview approach (Appendix A). A standardized open-ended interview seeks to gather information on the same topics from each respondent by asking the same questions worded exactly in the same way. Standardizing the questions minimizes the possibility of bias and the problem of obtaining inconsistently comprehensive information across interviews. This method was selected in order to maximize consistency of inquiry and limit the influence of investigator participation (Patton, 1990). All interviews were conducted one-on-one at the participants' work location save one which was conducted by telephone at the request of the interviewee. Interview lengths ranged from 28:34 to 1:06:51, for a total of 13.68 interview hours. All interviews were audio recorded and then transcribed for data analysis. With the analytical framework in mind, interview questions were designed to elicit participant perceptions of the process, benefits and limitations of RTI, and how RTI impacts SLD classification in their district.

Careful consideration was given to the wording of questions in an effort to minimize assumptions and reduce interviewer effects.

Field notes. In addition to the recorded interviews field notes were kept. The purpose of this practice was to capture impressions of the interviews, and the settings. Field note documentation is appropriately suited to describe the level of participant comfort in answering questions and knowledge base of the topic. Additionally, field notes can record enthusiasm as professionals discuss their interaction with the RTI process. Although audio recordings of the interviews allowed for verbatim responses, taking field notes offered a descriptive setting within which to situate the interviews. Additionally, as a researcher, it was necessary to closely follow the standardized interview protocol in order to offer consistency to the study. Planned probes were offered in order to stimulate responses to the standard questions. However, interviewer impressions, insights, and beginning thoughts on data analysis were best recorded through field notes. It is appropriate and expected that the researcher develop impressions, insights and judgments while making notes (Patton, 1987). During the interview researcher notations were recorded on an interview protocol in expanded form to allow space for recording interview comments as well as notes. After the interview, field notes were created in order to record mental images and thoughts from each interview for review during data analysis. Field notes were analyzed descriptively and reflectively (Patton, 1987). Descriptive analysis focused on representations of settings, dialog, and activities discussed. Reflective analysis centered on researcher thoughts about methods, emergent patterns, and impressions of interview experiences.

Focus group. One focus group, comprised of a subset of interview participants, was conducted. The focus group participants were chosen by stratified purposeful sampling. Heterogeneity across district and school committees as well as heterogeneity across job descriptions was considered in subject selection. The purpose of this sampling method was to capture impressions through major variation in selection (Patton, 2002). The focus group served a different function than the individual interviews. While the interviews were intended to gain insight on individual impressions of RTI procedure and evaluative perceptions on its usefulness, the focus group offered collaborative insight. As stakeholders conversed in a group, general consensus regarding major issues surrounding RTI began to emerge. This information served as an additional source of data collection and contributed in data analysis by further identifying key elements in the program's implementation (Patton, 1990). The focus group was scheduled after all individual interviews were completed and initial analysis had begun. The focus group was comprised of five participants. Final selection and number of focus group participants was opportunistic or voluntary, dependent on the participants willing to offer additional time for this study. Table 3 describes the focus group participants. A focus group interview guide to lead the discussion was prepared based on information that was gathered from the individual interviews. Broad questions were offered and participants responded both to the questions posed and comments made by others. Data collected during this focus group were included in the analysis of findings. Additionally, emergent patterns or themes from preliminary data analysis were offered for discussion. This information was shared as a means of member checking to ensure that data had been authentically represented. The focus group interview guide follows in Appendix B.

Table 3

<i>Focus Group Participants: N= 5</i>					
Name (Pseudonym)	RTI Committee	Job Description	Years of Experience	Gender	Age of Students Served (years)
Diane	District	Director of Pupil Services	33	Female	3-21
Laura	Jefferson	General Education Teacher	11	Female	6-7
Travis	Jefferson	Elementary School Principal	12	Male	5-11
Betsy	Lincoln	Elementary Guidance Counselor	18	Female	5-11
Kathy	Jefferson	Special Education Teacher	5	Female	6-9

Records review. A review of records was conducted on 30 students that have interacted with the RTI process. The records reviewed were test scores in the area of reading. AIMSweb data management system provides formative assessments that are outcome based. In the area of Early Literacy there are 4 measures. They are Letter Naming Fluency (LNF), Letter Sound Fluency (LSF), Phoneme Segmentation Fluency (PSF), and Nonsense Word Fluency (NWF). These pre-reading measures are used at the kindergarten level. In addition to the Early Literacy Measures, AIMSweb offers Curriculum-Based Measurement in Reading (R-CBM) which addresses issues of reading fluency. Although all measures are accessible to the district, at this time the EARSD has chosen to administer only the R-CBM to all students. Some students, based on need were administered various early literacy measures, however, since these measures were available on only a few of the students they were not used in this study. Three yearly universal screenings of the R-CBM are available on all students in order to establish progress toward grade specific fall, winter, and spring benchmarks. These assessments

are the ones used by the EARSD in making RTI determinations. The scores are available on the web and were accessed electronically for data analysis in this study. Pseudonyms were used in order to maintain confidentiality of information.

Data Analysis.

Qualitative data analysis. Qualitative data analysis was approached through a combination of deductive and inductive coding. Deductive coding is a “top down” approach. It moves from general to specific concepts and data are analyzed according to an existing framework. Using an analytic framework approach necessitated design of data instruments so as to produce general categories aligned with themes outlined in the research questions. To this end both processes and questions approaches were utilized (Patton, 2002). For the process approach, questions regarding the RTI process in use in EARSD were queried and examined. In the questions approach responses to interviews were organized question by question, providing a cross-case content analysis. Cross-case content analysis is a method of comparing nested cases, beginning by comparing individual responses in order to analyze patterns of responses for the district case as a whole (Patton, 2002). Interviews were the primary data source; therefore the primary data analysis source was the interview transcript. As interviews were conducted and additional data was available, comparisons of responses to specific questions was made. The focus group transcript completed the data set, with analysis of responses added to the interview data. Once main emergent categories were determined through deductive coding, the remaining data were analyzed using inductive coding. Inductive coding is, by contrast, a “bottom up” process. It involves discovering patterns and themes that emerge out of the data with no preconceived framework to guide the analysis (Patton, 2002). Here I was

able to consider all responses with an open mind and no preconceived expectation of results.

The analysis technique consisted of coding of participants' statements, extracted from 492 pages of written, verbatim transcripts. Data were coded and organized based on types of participant responses using the software program Atlas.ti 6.2. The unit of analysis was one thematic concept as opposed to single words, sentences or paragraphs. Because I used a theme as my coding unit the text chunks varied in length. Open codes were assigned to portions of data as I coded the first transcript. Once the first transcript was coded, a code list was constructed. I developed definitions and coding rules to assist in consistent coding throughout the transcripts. I reviewed the transcript to insure that codes developed later in the transcript were not missed in earlier portions. As I began open coding with the next several new transcripts the need for a few new codes became evident, requiring that I add them to the code list with definitions and coding rules. I then revisited previously coded transcripts in order to search for data chunks that align with newly developed codes. In some cases the same data chunk was assigned more than one code. This reminded me to reexamine and refine the coding rules I had established. With each revision, previously coded transcripts were reviewed to update for accuracy. The coding process was recursive in nature, requiring many revisits between transcripts as information in one transcript either matched patterns from others or necessitated a new code. Using this method I coded all the data. I reviewed all the coded transcripts in order to assure consistency of coding between all transcripts and saturation of coded chunks. Saturation occurs when all the data have been coded, there are sufficient data chunks for

each code, patterns have developed, and no new codes continue to emerge (Miles & Huberman, 1994).

The Atlas.ti 6.2 software was assistive in listing all data chunks by their assigned code. I used this feature to print packets of quotes by their individual codes. Excerpts with relationships were linked as code families. This occurred inductively through several steps. First, the very specific coded quotes were identified for similarities in response. These were sorted physically into piles. Once all quotes were sorted through constant comparison, they were labeled by code or theme (Corbin & Strauss, 2008). Finally, the themes were considered for relationship to one another. Through this “bottom up”, inductive coding, key descriptive factors were developed. Their purpose was to communicate meaningful findings related to the deductively coded categories aligned with the research questions relating to RTI process, staff perceptions of RTI benefits and challenges, and perceptions of RTI as it relates to SLD. The descriptive categories constructed in this data analysis provided the information to move to the interpretive phase of developing assertions or conclusions in the final discussion (Patton, 2002). Categories are shared in the form of a graphic table in the results chapter in order to provide a visual representation of the synthesis of data.

Quantitative data analysis. Quantitative data analysis was required for records that were reviewed. A purposefully random sample of 30 students was selected for analysis. The fall and spring Universal Screenings available through AIMSweb were utilized for this purpose. Universal Screenings are one minute timed tests of oral reading fluency. Student scores are based on the number of words read correctly during the minute. Means of beginning scores, gains, and ending test scores were analyzed for all 30

students receiving RTI interventions. A Single Samples *t*-Test was used to compare starting and ending mean differences and gains for the sample groups to the benchmarks. Beginning and ending benchmarks are scores calculated by the EARSD as cut scores for their population at each grade level. These benchmarks are the targets all students within each grade are expected to achieve in order to be considered as having made adequate progress. Expected benchmark gains are calculated from the beginning and ending benchmark scores for each grade. Standard deviations are known for each group analyzed but in the case of benchmark scores standard deviations are unknown and must be estimated. For comparing individual groups to the benchmark, a *t*-Test is used “whenever the unknown population standard deviation must be estimated” (Witte & Witte, 2010, p. 274). The *t*-Test replaces a *z*-Test in which the population standard deviation is known (Witte & Witte, 2010).

In contemplation of data analysis, statistical theory was considered regarding sample size for the entire sample of student records. The central limit theorem explains that as long as a sample is reasonably large, even means of populations which are not normally distributed will follow normal distributions with the expected bell shaped curve. According to Coladarci, Cobb, Minium and Clarke (2008), “25-30 cases is [*sic*] usually sufficient” (p.206). In order to examine the overall mean gains made by all 30 students who received RTI interventions a Dependent Samples *t*-Test using repeated-measures or paired-samples design was chosen. Using dependent rather than independent samples provides the statistical benefit of a smaller standard error (Coladarci et al., 2008). These tests analyzed the significance of differences between mean scores prior to RTI interventions and after interventions as well as examined gains made by the total sample.

Once the statistical *t*-Tests were run, effect size and power were calculated using G*Power 3.1.3 statistical software. This software calculates Cohen's *d*, a measure of effect size. Effect sizes share the same range as standard deviation (-3.0 to 3.0), with smaller sizes considered less meaningful (Coladarci et al., 2008). Cohen's guidelines for *d* are accepted as $\leq .20$ = small, $.50$ = medium, $\geq .80$ = large, ≥ 3.00 = very large (Coladarci et al., 2008; Witte & Witte, 2010). The G*Power 3.1.3 statistical software then calculates power based on the effect size and sample size. Power scores can range from 0 to 1.0. A score of 0.8 is generally considered a powerful result in statistical testing (Coladarci et al., 2008; Witte & Witte, 2010; Vogt, 1999). The purpose of calculating effect size and power is to determine the significance of findings and to address the possibility of type II error. Type II error refers to the error of retaining a false null hypothesis (Coladarci et al., 2008). In the case of this study, the null hypothesis assumes that there is no difference between gains made by all students and gains made by students who participate in RTI interventions.

In addition to data analysis conducted for the total sample of 30 students, analysis was conducted on subsets of the sample in order to examine grade level results, tier level results, and length of intervention results. Once the sample of 30 students was partitioned into subset groups the sample size became smaller. When sample sizes are small there may be a greater spread among sample means (Coladarci et al., 2008). This small sample size of subset groups led to investigation of whether parametric or nonparametric tests would be most appropriate for subset data analysis. In most cases parametric tests such as the *t*-Test are used for the purpose of comparing the difference between two groups or the difference between a group and a benchmark (Witte & Witte, 2010). When considering

the use of parametric tests in data analysis, there are two conditions which must be met. First, scores for groups must be normally distributed (Coladarci et al., 2008; Witte & Witte, 2010). Through use of the SPSS Statistics 19 software a Kolmogorov-Smirnov Test was performed for all subset groups. A Kolmogorov-Smirnov Test is used to determine “whether two distributions differ and whether two samples may reasonably be assumed to come from the same distribution” (Vogt, 1999, p. 151). All groups in this study were determined to have normal distributions. The second condition to be met in use of parametric tests is that groups used for comparison must not have a combination of unequal sample size and unequal variance (Witte & Witte, 2010). Either condition is acceptable but both together would render a *t*-Test inappropriate. Through use of the SPSS Statistics 19 software a Levene Test was performed for all subset groups. The Levene Test is a test for homogeneity of variance of scores in distributions (Vogt, 1999). All but two pairs of groups to be compared satisfied this second condition. Witte & Witte (2010) indicate that when these conditions are met, a parametric test such as a *t* or F test is most appropriate to use for data analysis. “Under these circumstances, the *t* and F tests are more powerful, that is, they are more likely to detect a false null hypothesis because they minimize the probability of a type II error” (Witte & Witte, 2010, p. 450). For this reason a *t*-Test is used to compare all but two pairs of group scores.

In the case of the two required tests where the conditions for parametric testing were not met, gains and ending scores of 1st grade students receiving Tier II RTI interventions are compared to 1st grade students receiving Tier III RTI interventions. Although both groups were normally distributed, they had a combination of unequal sample size (N=6; N=5) and unequal variance. In these two cases use of the

nonparametric Mann-Whitney U Test is indicated. “Use the Mann-Whitney U...only under appropriate circumstances, that is, (1) when the original data are ranked (ordinal) or (2) when the original data are quantitative but do not appear to originate from normally distributed populations with equal variances” (Witte & Witte, 2010, p. 450). The Mann-Whitney Test utilizes median scores as opposed to mean scores (Crichton, 2000; Hart, 2001). “This test is the non-parametric equivalent of the two-sample *t*-Test” (Vogt, 1999, p. 168). It combines scores of the two groups, ranks them, determines median scores based on those rankings and tests if the medians are significantly different by calculating a U statistic. No assumption of normal distribution is required and it is an appropriate test for small sample sizes (Zimmerman & Zumbo, 1990; Witte & Witte, 2010).

Finally, a descriptive analysis of each subset group is offered. Tables describe each student’s beginning score and ending score with benchmark scores listed for comparison. This type of descriptive analysis is in keeping with a mixed method study in order to provide more qualitative information in conjunction with the quantitative statistics. It provides an opportunity to look more closely at progress of individual students.

Reliability and Validity / Trustworthiness and Transferability

Reliability and validity are measures generally associated with quantitative research. The concept of reliability refers to freedom from measurement error from one use of the tool to the next, where validity addresses the extent that a tool accurately measures what it claims to measure (Vogt, 1999). The quantitative portion of this study addresses reliability by use of the same type of test scores (Universal Screenings) for all student records and by analyzing each record using appropriate and researched statistical

tests to make comparisons. Validity in this study is addressed by clearly identifying the skill to be measured and assuring that the test used for assessing progress actually measures the identified skill.

Reliability as a formal construct in qualitative research is somewhat elusive since qualitative inquiry is specific to the context examined and generally gathered through methodology that can be viewed as subjective. The assumption is that each experience is unique; however, it is still important to structure a case study in such a fashion that each participant is presented with a common research experience in order to address reliability. Although the ability to replicate findings is not guaranteed, the ability to replicate the research study is addressed by detailed documentation of research procedures. In this study, the interview protocol was carefully constructed in an effort to offer questions that capture participants' perceptions in a neutral and consistent manner. Possible probe questions were prepared in advance in order to minimize the deviation of interview protocol. This assured some degree of reliability of the measures. Keeping in mind the analytical framework of the study, interview and focus group questions were designed to elicit responses that would address the research questions. This offers a measure of validity in that the data collection tools were designed to measure the stated areas of interest in the study. Maintaining a chain of evidence as described by Yin (2008) allows a reader to follow this study from the research questions through data collection methods and steps of analysis to findings discussed.

Perhaps when considering qualitative research better terms to use than reliability and validity might be trustworthiness and transferability. Trustworthiness according to Guba (1981) depends on addressing such features as credibility, transferability,

dependability and confirmability. Credibility in this study has been considered by the use of well recognized research methods, inclusion of different types of informants from different sites, iterative questioning in interviews to establish consistency of responses, and member checking. Although complete transferability of results is not possible in qualitative research based on the contextual nature of the inquiry, this study has used thick description of the setting, the subjects and the design of the study to allow other researchers to adequately compare the context of this study with theirs in making determinations of transferability. Dependability is built into this study by use of overlapping methods of data collection and description of data collection and analysis methods to assist in understanding the methodology of the study.

Finally, confirmability is addressed through researcher reflexivity. Patton (2002) describes reflexivity as "...understanding and depicting the world *authentically* in all its complexity while being self-analytical, politically aware, and reflexive in consciousness" (p. 494). As is the case with most research, I have chosen the topic of RTI and its use in eligibility determinations of specific learning disabilities because I have an interest and an opinion on the topic. Having been a Child Study Team member for the majority of my 37 years as a special educator, I cannot help but bring personal beliefs and possible biases to the purpose and nature of this study. In the interest of full disclosure, I must admit that I had preconceived notions or a loosely formed hypothesis of what findings may develop from this study. I expected that RTI would be used primarily as a structured form of pre-referral support. I anticipated that stakeholders would likely perceive RTI as helpful in reducing the number of referrals for special education evaluations and feel that it offers information regarding students' strengths and weaknesses; however they may not believe

that RTI data alone can identify a specific learning disability and that comprehensive evaluations are required for that purpose. I expected findings to indicate that an RTI model using high-quality, research based interventions delivered with fidelity would benefit all students. My intent, however, was to put all assumptions and biases aside as much as possible. In order to compensate for any impact that researcher role may have, the above mentioned validity procedures were strictly adhered to, maximizing the trustworthiness of findings. As a professional in the field of special education, complete objectivity regarding the topic of study was impossible. Nonetheless, as a researcher it was my goal to preserve trustworthiness. This was achieved by reflective consideration of any possible personal bias and discussion of my perspective in the report of findings and conclusions.

Confirmability was also supported through discussion of the study's limitations and triangulation. Triangulation refers to the practice of using different methods, theories, or sources to corroborate findings (Cresswell, 2007; Patton, 1990). It is defined by Cresswell and Miller (2000) as the "...search for convergence among multiple and different sources of information to form themes or categories in a study" (p.126). This study employs two types of triangulation; methodological triangulation and data triangulation. Methodological triangulation is achieved through the use of both qualitative and quantitative research methods. Here, participant perceptions of the value of RTI in increasing student reading achievement are corroborated by quantitative measurement of reading gains for students participating in RTI interventions. Yin (2008) encourages qualitative researchers to "...collect information from multiple sources but aimed at corroborating the same fact or phenomenon" (p. 116). He proposes that

triangulation of data sources can address construct validity in qualitative research by offering multiple sources of evidence (Yin, 2008). Data triangulation in this study was achieved through the use of standardized open-ended interviews, a focus group interview and analysis of field notes. Thick, rich description of themes as well as the setting and participants from which the themes emerge is offered. Member checking during the focus group was used to confirm the accuracy of information gleaned from interviews. In addition, emergent themes were discussed in order to check credibility of interpretation.

Chapter 4

Results

Qualitative Findings

The substantive statements identified in the transcripts were coded based on the research questions and produced four main categories: (1) RTI process, (2) RTI benefits, (3) RTI challenges, and (4) RTI and SLD. Table 4 shows the key factors related to each of these categories. Only key factors that are primary in these categories are included in the table. If factors are not included in the table, they may have been mentioned by respondents but were not considered to be primary to the categories. Primary factors were those that appeared most often in the coded transcripts.

Table 4

Key Factors of Four Emergent Categories

<u>RTI Process</u>	<u>RTI Benefits</u>	<u>RTI Challenges</u>	<u>RTI and SLD</u>
1. Staff Roles	1. Availability of Data	1. Scheduling Issues	1. Purpose of RTI
2. Tier Structure	2. Improved Communication	2. Staffing Issues	2. RTI 2004 Federal Mandate
3. Data Use	3. Advantages Beyond the Traditional Pre-Referral Process	3. Individualization Issues	3. RTI Data Use in SLD Eligibility Determinations

RTI process.

RTI staff roles. Information regarding participant understandings of the RTI process in EARSD was considered from several perspectives. Within the category of RTI process, issues of *RTI staff roles*, *RTI tier structure* and *RTI data use* emerged from the data. *RTI staff roles*, refers to the understandings voiced by interviewees regarding who

the decision makers and the service providers are within the RTI process. The notion of who should have responsibility for RTI decisions, intervention implementation, and monitoring of fidelity may lead to role confusion which has been identified as an issue in the past (Baker, Fien, & Baker, 2010; Gessler Werts, Lambert, & Carpenter, 2009). When staff members are not clear in their roles, the smooth functioning of the RTI process may be compromised. This study identified a lack of agreement regarding who were the permanent members of the school RTI committee. All interview participants agreed that the principal, LDT-C and the guidance counselor were members. Some mentioned the special education teacher, additional Child Study Team members and an intervention specialist. It is quite possible that some of the confusion in identification of RTI Team members comes from a lack of common language regarding the job title of the intervention specialist. This member of the RTI Team was alternately referred to as the basic skills teacher, the literacy specialist, the RTI teacher and the intervention specialist. For purposes of continuity here I will refer to this member as the RTI teacher. Unrelated to this confusion, there were at least three interviewees (a special education teacher, a general education teacher and an RTI teacher) who were identified as members of the RTI Team by administrators who reported participation in progress monitoring meetings only when their own students are discussed.

An additional RTI staff role issue involves which staff members are providing RTI interventions. Interviewees reported that at Tier I, the general education classroom teacher is the primary provider and that support is generally provided by a basic skills teacher. Tier II and Tier III support may be provided by a basic skills teacher or a special education teacher. Several interviewees voiced concern that there is little consistency

regarding staff interactions with students. Students may be offered assessments by one person, Tier II instruction by a second, and Tier III instruction by yet a third person.

When queried about staff involvement in the RTI process, Debra, a veteran Child Study Team member shared her concern regarding this lack of consistency. She also implied that this issue may be due to early stages of RTI implementation. “We have lots of teachers involved...we have some teachers doing Tier II, some doing III, some teachers doing probes that don’t see the children for anything else but a weekly probe. So it’s all a hodgepodge here, but it’s because we’re new.” A similar description of shifting staff responsibilities for delivery of RTI interventions was voiced by Kathy, a special education teacher. She is a relatively new educational professional with only five years of experience. I was interested in discerning if her lack of experience would allow her to identify possible challenges that staffing shifts in delivery of service may cause for at-risk students. Her concerns were comparable to those of the more experienced educational professionals. Kathy described the delivery of RTI interventions in third grade in her school. “Myself [*sic*] and the reading support teacher split [the job] between those four classes. So I’d have two classes and she has two classes. We split the Tier II and then we have a basic skills teacher and another reading support teacher who are doing the additional twenty minutes for Tier III.”

Consideration is already being given to the possibility of amending this procedure for next year. Edward, one of the elementary school principals interviewed, voiced concern that with so many staff members working with the same student it is possible that there is not one designated teacher who fully understands the student’s learning style, strengths and educational needs. Although Edward is not a novice educational

professional, he is relatively new to his administrative role. My impression was that he views his role as a school leader to be more than just the building disciplinarian and academic overseer. He was animated in discussing his visions for improved achievement for all of the students in his school. Edward shared his thoughts on the diversity currently existing with staff / student interaction remarking, “Does it make sense to have one teacher provide Tier II and Tier III instruction at the same grade? Perhaps, so that there can be a teacher that really knows their children and their needs. Right now we’ve got teachers that might be providing instruction to multiple groups and it’s really hard just to manage all of that.”

The final staff role issue that was regularly commented upon was that of who was monitoring fidelity of intervention delivery. Without interventions delivered as they are intended in a standardized manner, there can be little assurance that students are all receiving the same support (Snell, 2009). The consensus of respondents was that the interventions are indeed being delivered with fidelity. Administrators and Child Study Team members report spending quite a bit of time in the classroom observing intervention lessons. The principals have been tracking trends in the data that might alert them to a group of students, all taught by the same teacher, who may be falling behind. Additionally, all teachers received staff development in the district adopted intervention and a trainer from the publishing company is scheduled to visit classrooms to observe lessons taught by the teachers for the purpose of monitoring fidelity of delivery.

Tier structure. Within the RTI process, understandings of the *tier structure* forms another key factor. *Tier structure* refers to the organization of RTI at each of the tiers with regard to size of groups, number of students within groups, interventions offered,

amount of time spent on interventions, the location of the intervention, and the method of evaluation used. All respondents agreed that the district is using a three tiered model, and all agreed that the content area addressed through RTI is reading. Foundations is provided at Tier I in the general education classroom with the whole class on a daily basis for 30 minutes. Foundations is published by Wilson and is described by this publisher as a “K-3 phonological/phonemic awareness, phonics and spelling program for the general education classroom” (Wilson Foundations, 2012). Tier II students receive an additional 30 minutes of intervention 5 days a week. This intervention is referred to by staff as a “double dose” of Foundations. Students at Tier II are pulled from the classroom in small groups ranging from 3 or 4 to as many as 10 students to review the Foundations lessons already covered at Tier I in their classroom. Tier II groups are comprised of students from several classrooms so the “double dose” lesson for the group will be the lesson last covered by the slowest paced classroom in the group. Tier III students are offered either 2 or 3 additional 20-30 minute sessions of intervention throughout the week in a small group setting outside of the classroom. As with Tier II, these groups range in number of students but with similar size of groups. Some respondents indicated that the number of sessions per week at Tier III may be determined based on factors beyond student need, such as availability of staff, size of intervention groups, or scheduling conflicts. Evaluation of all students is addressed through AIMSweb Universal Screenings in the fall, winter, and spring. Students who are participating in RTI Tier II or Tier III interventions are also intermittently assessed using probes provided through AIMSweb. Both the Universal Screenings and probes are measures of words per minute fluency.

Scores are based on number of words correctly read during the one minute timed assessment.

All interview participants were aware of the main intervention program purchased by the district. They all mentioned the Foundations program as the intervention used at Tier I in the general education classroom. They also agreed that the Foundations program as a “double dose” was provided for students receiving Tier II intervention. When queried regarding other materials that may be used at Tier II all agreed that only Foundations materials are used. Tier III interventions may include Foundations as well. There were several people who mentioned the Read Naturally program or the Stephanie Harvey Comprehension Toolkits as available for use at Tier III; however, interviewees report no other materials that have been purchased and adopted for use consistently at Tier III. Read Naturally is a computer based program that offers reinforcement in essential components of reading, identified as phonemic awareness, phonics, fluency, vocabulary, and comprehension (Read Naturally, 2012). Stephanie Harvey Comprehension Toolkits are described by the publisher as toolkits to support understanding of nonfiction texts by focusing on monitoring comprehension, activating and connecting to background knowledge, asking questions, inferring meaning, determining importance, summarizing and synthesizing (Heinemann, 2012). Teachers report that they are free to use any materials that they deem appropriate for students at Tier III.

Delia, a general education teacher supplies Tier III interventions to first grade students. When asked what materials she uses to deliver this support she responded, “Those kids that are in Tier III really have to learn how to put that [Foundations skills] in

practice, so I run reading groups, just guided reading groups, and we just keep reading as much as we can. For Tier III, it's my bag of tricks. ...anything that I can think of at the time that might work, or just strictly reading and fluency." Fran, a veteran general education teacher currently working as a literacy specialist providing interventions to kindergarten, first and third graders, spoke about trying to focus on specific practice activities that support the Foundations program in building fluency. She described her interventions thusly, "This year we're doing double dose Foundations lessons with our Tier II children and then children who are at Tier III, we're reinforcing the Foundations and then doing some additional kind of focus work – I do some word work with sight words, some additional reading ... and I will do some one minute reads with them to build fluency." When Edward, an elementary principal, was asked about the specific interventions used at Tier III within the district he shared this impression. "There seems to be, I don't want to say some inconsistencies regarding that, but I think we've got a clearer vision of what Tier I and Tier II instruction look like." Responses to the question of Tier III interventions within the district were consistent across job description, years of experience and ages of students receiving intervention. The general agreement is that although interventions at Tier I and Tier II are quite standardized, Tier III is more fluid based on individual needs but also less consistent based on individual teacher skill sets and absence of current district directive.

Data Use. A final key issue within the area of RTI process is that of *data use*. Data use refers to the ways that RTI data is used by the RTI team in the school. The school district has purchased AIMSweb, which is a data management system. It is web based and has assessments, probes and the ability to disaggregate data in various ways. It

offers graphic representations of student progress, depicting scatter plots with target trajectory lines for individual students. Initially, data is used to determine which students are considered to be at-risk. At the kindergarten level, the pre-reading screenings of Letter Naming Fluency and Letter Sound Fluency are administered and at first, second, and third grade Universal Screenings are administered in the fall, winter and spring. Probes are available for use and considered by most to be an attractive feature of the data management program. Diane is a special education administrator who is a great advocate of RTI and the possibilities it offers for all students. She was involved in the design of RTI within the EARSD and wanted to insure that decisions in RTI would be data-driven. As Diane described considerations made during adoption of data management programs she stated, “The AIMSweb gave us an opportunity to do lots of probes, which I like better than other systems we looked at because I think this way the teacher is free to check and double-check. And that, I think, is a good characteristic.”

While some said that these probes are offered to Tier II students on a biweekly basis and to Tier III students on a weekly basis, others indicated that the schedule for probes is less predictable. All interviewees agreed that the Universal Screening assessments were consistently administered, however, there was little agreement regarding benchmark cut points used to determine which students were at-risk of reading failure and required Tier II or Tier III interventions. Of all people interviewed, several differing responses such as, “the most needy”, “the lowest 5%”, “the lowest 10%”, “those near the bottom”, and “I’m not exactly sure” were obtained.

When discussing the AIMSweb national norms, several interviewees remarked that EARSD is a high performing district and that use of the national norms would be

ineffective in identifying students who are at-risk within their population. For this reason, student scores are compared to benchmarks based on district norms. Olivia, a member of the District RTI team and a special education administrator voiced her awareness of the academic expectations specific to EARS. “We’re a high-achieving district. I’ve often been the advocate of making sure that our kids aren’t curriculum disabled...we might have a kid that is struggling within our curriculum, but we could move him to another district right down the road, and he probably would be doing just right, just fine.” Diane spent some time in our interview talking about the fact that parents frequently choose to move into a school district that offers higher expectations for students and that they expect high achievement as a given. “It’s true in so many performance areas within our district, that what we’re expecting our students to do is just not the average. And I don’t know that it should be, but for the kid who is average, suddenly they’re an underachiever or a low achiever.”

With regard to data use, all agreed that the Universal Screenings, although important, were not the only determining factor in making decisions for students. Teachers share scores on the Developmental Reading Assessments (DRA) (a reading comprehension measure), the Slosson Word Lists (a sight vocabulary measure), and the Johnston Spelling Inventory (a leveled spelling inventory). Additionally, they share functional information regarding daily observations of reading behavior. Students already classified for special education are removed from the list of students to receive Tier II or Tier III interventions although they do participate with Tier I interventions in the general education classroom.

Data is also used to determine movement between tiers. Monthly RTI progress monitoring meetings are held. All students receiving Tier II or Tier III intervention are discussed at these meetings. The most recent assessment information is viewed on scatter plots and trajectory lines. Staff use these tools to determine whether adequate progress has been attained in order for students to meet their target goals. A description of use of data during the progress monitoring meeting was offered by Delia. "...so through AIMSweb their progress is monitored. They have a progress monitoring tool which will say whether or not they're gaining the amount of words per week that they need to be gaining. If they fall above the line, and they're gaining more than what they need to be gaining, we might consider pulling back some of their intervention. If they're falling below that line, we can increase it." When asked about adding interventions at Tier II beyond Foundations, all interviewees responded that any additional interventions recommended would necessitate a move to Tier III. There are, at this time, no students who get multiple interventions at Tier II. As an elementary school principal, Edward sees the need to be creative in using data to determine a move between tiers but remarks that data use for this purpose is limited by other factors. "We brainstorm possible interventions. Ultimately, we're a public school and there are restrictions, so we've got a limited amount of staff and limited amount of time in the day. But we try to be outside-of-the-box thinkers and creative, and targeting instruction to meet kids' needs."

Individual respondents mentioned several other uses for data, beyond progress monitoring. One said that based on what skills the intervention globally supports; it is possible to determine an area of academic weakness. For instance, the Foundations program that is used at Tier II offers support in phonetic analysis. It works on sounds and

decoding skills. If a student is making little progress with Tier II intervention then staff can discern that decoding is an area of weakness for this student. Beyond a general area of weakness, one respondent described using the data for item analysis of errors. Laura, an energetic and thoughtful general education first grade teacher was pointed in explaining her understanding of ways that RTI data can be used to inform her instruction in the classroom. “AIMSweb tracks how many words the kids read correctly. One of my students right now is reading fifteen words correctly which is not so good this time in first grade. I need to know what words she is reading correctly and which words is she not reading correctly and what kinds of mistakes is she making. So it’s used on a big scale to track the data...so then we can see progress being made, but on a little bit of a smaller level we’re looking deeper into it to make instructional planning.”

Data can also be used administratively to track trends within a classroom, within a grade, or within the school. Several interviewees mentioned the use of data to indicate the need for a referral to the Child Study Team, based on little or no progress. Some members of the building RTI teams mentioned using the data to communicate progress to parents when students are moved between tiers to add or reduce intervention service. Finally, members of the district RTI team remarked that the RTI data is useful in documenting to parents the interventions that have been attempted for their child as well as the outcome for that student.

RTI benefits.

Comments shared by respondents regarding use of RTI in the school were emphatically positive. All indicated that they felt the addition of RTI to be beneficial for the school community as a whole. Key factors that emerged from comments when asked

about the value of RTI relate to the aforementioned *availability of data, improved communication, and advantages beyond the traditional pre-referral process.*

Availability of data. As staff members commented on the positive aspects of RTI several mentioned feeling more secure in their decisions due to the new *availability of data*. Availability of data refers to the ways in which staff members benefit from RTI data which was previously unavailable to them before the EARSD adopted a data-driven RTI framework. Since No Child Left Behind (NCLB) mandates statewide assessments beginning at third grade, teachers of first and second graders previously felt the lack of quantitative information regarding their students' reading achievement. They report that RTI data fills this gap.

Newly available RTI data also replaces well meaning, but unquantifiable "gut feelings" shared by teachers. Betsy is an elementary school guidance counselor. Her responsibility on the RTI committee within her school includes making contact with parents regarding their child's need for Tier II or Tier III RTI intervention or the need for a Child Study Team referral after RTI supports have been offered. This obligation places Betsy in the position of having to communicate skill deficits with parents. Betsy shared that availability of RTI data is highly assistive in these situations, remarking that, "The classroom teachers have also begun to look more closely at the data than they might have before...because we go with gut instinct sometimes about a lot of things, and that's great but we need some of this other information too. At least if I was going to make an argument for why somebody needed to be referred, it has to be more than just, you felt it in your little finger." Travis is another elementary school principal in EARSD. He spent a good deal of time with me during the interview and presented as a highly involved

administrator in the daily workings of the school he oversees. He clearly values the expertise and commitment of his teachers and was vocal in the pride he feels about his staff and students. Travis has young children of his own and made comments during our interview that illuminated his ability to step back from his administrative position and view issues from a parent's perspective. This balance of respect for all stakeholders coupled with accountability issues is evident in his comment regarding the availability of data as a significant benefit of RTI. "This isn't a gut call- this is real...your good teachers-their guts are usually right, however, that doesn't get it done when we're faced with the legal end or the code for classification."

Staff members consistently remarked on the helpful graphic representations of data available through AIMSweb. They described the scatter plots that depict a student's scores with a line of best fit for meeting the benchmark goal superimposed. One benefit in having this explicit visual seems to be a better perception of a student's individual academic performance patterns. Another is this common understanding which allows for a functional use of time in the monthly monitoring meetings. In general, the available data is viewed by staff as an accurate predictor of at-risk students. Carol, a veteran literacy specialist with almost thirty years of experience remarked that availability of data is meaningless if it is not viewed as accurate when compared to functional observations of reading behavior. Carol shared her impression of staff perceptions regarding RTI data. "We are finding that the universal assessment is a pretty true indicator of many of the children who do have needs."

Availability of data through the RTI model also allows staff to monitor progress frequently in a structured fashion. When data is collected on a regular basis and there is a

common language and a vehicle for discourse, student progress or lack thereof is likely to be addressed in a timelier manner. Bridgette is a general education teacher of a multi-age first and second grade classroom. Her students are “looped”, meaning that she remains their teacher for two years. This immersion with a stable group of students gives her the opportunity to delve deeply into the academic strengths and weaknesses of her students. She shared some frustration that in the past, she may have identified students as needing some type of support but they were required to wait for longer periods of time before receiving intervention. Bridgette appreciated the availability of RTI data in this respect. “It’s making the services more readily available...making it a lot easier once they’re getting that really quick and speedy intervention.”

Improved communication. By far, the most discussed benefit of RTI was the feature of *improved communication*. Improved communication refers to the benefits that staff members report regarding communication with other staff members, parents and students. Communication and collaboration between all stakeholders improves outcomes for students (Hoover & Love, 2011; Lipson, 2011; Murawski & Hughes, 2009). All respondents remarked that they see value in the staff collaboration that is supported by the RTI design. They perceive all opinions to be valued in opposition to the sometimes followed assumption that special educators or literacy specialists are the only experts on student performance. Delia, a general education teacher shared this comment. “I do know the one thing that I do appreciate, and do feel is being done very well in this particular school is the discussions that we are having about these children.” As a school principal, Edward appreciates having a vehicle for communication and collaboration in making decisions for students. “I really value the time and the input and the expertise of others.

So the counselor's input is beneficial. The RTI teacher, the classroom teacher... We really work together in order to come up with a clear plan."

The formal vehicle for staff collaboration is a monthly progress monitoring meeting. These meetings occur first thing in the morning for four days within one week each month. All students receiving Tier II or Tier III interventions are discussed. Edward described how these progress monitoring meetings are run. "We dedicate five minutes per child, and we focus specifically on the data...At these meetings we make a distinction that we focus solely on performance and how they're responding to the intervention. But once again, we provide a voice for every member of the RTI team, and collaboratively we come up with recommendations regarding changes in intervention, whether it is adding intervention or scaling back." Members of the RTI team reflect that these meetings are well planned and are quite productive. Carol is reassured that her voice will be heard regularly in her efforts to adequately support her at-risk students. "I really like the way the meetings are run. Within a half hour we've discussed, let's say, five or six children...It's like a great scaffold...we are literally visiting these children every month." All staff indicated that collaboration with their peers reassures them that students' needs will be better met and allows staff to focus on the skill sets that they bring to that endeavor.

Additionally, communication in the RTI model offers benefits to parents. Several interviewees remarked that having data to share allows their communications with parents to be less subjective. Data makes it easier to explain deficits and parents can more readily frame meaningful questions. It also provides objective information when parents worry that their child may not mesh well with a particular teacher's personality or

teaching style. This point was raised by Umberto. He is a middle school principal and participates on the district RTI committee. When originally asked to participate in this study, Umberto shared that EARSD began the RTI initiative in the elementary schools and they were just beginning to offer RTI interventions in the middle school. He feared he may not have a great deal to share. On the contrary, Umberto was able to outline the RTI process at the middle school level and it became evident that he is highly involved in the data collection and vision for RTI at his school. He is frequently the person in his building communicating with parents regarding their student's academic needs and remarked that aspects of RTI have improved that communication. "I think it eliminates the fact that some parents, sometimes, for whatever reason...there may be some perceived personality clash between the student and the teacher...it kind of helps you cut through the fog when you can just say, 'Okay, well here are the numbers'."

Communication of RTI information allows staff to concisely describe performance to parents and offer support to struggling students. This is viewed as a significant benefit by the majority of respondents. Diane, as a high level special education district administrator sometimes is called upon to communicate with parents who question whether the interventions provided to their child offer sufficient benefit. She stated, "It's not the touchy-feely, 'Well, I think it's working.' Here it is, it's working and I have the data to show it. That's a very powerful tool; a very powerful tool."

In addition to parents, students are reported to benefit from the communication that RTI encourages. Teachers report that students are more comfortable asking for help in class. They are aware of their progress and quite motivated to improve their skills. Thomas, a special education teacher who participates on his building RTI team remarked

of one of his groups that he discussed with me. “They are working hard - they want to - my three definitely try every day. They always want to beat their score.” Students are reported to exhibit this motivation both in school and at home. Betsy, the guidance counselor responsible for contacting parents to discuss RTI intervention support and movement between tiers at one elementary school shared, “The biggest difference that I’m noticing from when I talk to [parents] is, all the people who’ve said, ‘Well, my son or my daughter never picked up a book, never, ever wanted to read, and now will pick up books and will try to read.’ Even if they still need intervention. Even if I’m calling to tell them, ‘I think we should move them to Tier III’, they still recognize that there is progress that’s being made. And the kids feel more empowered and more comfortable, and feel like they’re gaining skills that help them to read.”

Advantages beyond the traditional pre-referral process. Although availability of data and improved communication were commented on most frequently as RTI benefits, *advantages beyond the traditional pre-referral process* in several aspects were noted. Advantages beyond the traditional pre-referral process refer to benefits noted by respondents when comparing the overall process of RTI with the pre-referral process previously used in EARS. Several staff members noted earlier identification of at-risk students. This earlier identification allows teachers to provide support more quickly than in the past. Diane, as a district administrator sees RTI as a tool to view assessment of reading achievement as an iterative process rather than the static methods used in the past. This allows for responsive decisions to be made early when changes are needed. “[RTI is] much more timely than formalized testing. You know you can only do so many formalized tests with the time and expense, but this, because of the multiple probes and

the constant monitoring...you get so much closer. So you don't have to wait for three months for that plateau. You could do it, and change, and move on." As a general education teacher, Delia has had concerns about past practice of using yearly statewide assessments as identifying markers for at-risk students. "The concerns are coming out a lot earlier...perhaps, maybe some of these children will need Child Study Team evaluations and we will have that information at a much earlier time in their young lives, in learning literacy, as opposed to waiting for the standardized test scores at the end of third grade."

With the addition of RTI interventions at Tier I, and specifically because the district has made the determination that general education teachers are responsible for increased focus on struggling students, all teachers are held more accountable for student gains. The RTI model requires documentation of attempted interventions with type and dates of implementation, which in previous pre-referral processes was regularly absent. In the past, when teachers documented interventions they frequently ran through a checklist trying to remember which interventions they attempted and timeframes of implementation because there were few ongoing records and less regular meetings scheduled. An additional advantage of the monthly RTI meetings and regular progress monitoring, absent from traditional pre-referral processes, is the flexibility to change interventions. On a monthly basis, interventions can be adjusted based on student gains. Finally, the RTI model has the considerable advantage over traditional pre-referral models of being able to avoid comprehensive evaluations for some students. The use of high-quality, researched-based materials for all students, elevates the quality of education for all students. Tier I interventions offer the minimal support of one 30 minute

Foundations lesson to students who may need nothing more in order to thrive. Absence of these conditions in past pre-referral models created a learning environment that raised questions regarding the possibility of handicapping conditions for some students. Edward remarked that RTI identifies not just the non-responders but also the responders to instruction. “Not only does it identify our children that might benefit from a referral, but it also sometimes rules out children that no longer need to go that route.”

RTI challenges.

As with any new initiative, RTI comes with its unique set of challenges. Although respondents were clear that the benefits of RTI outweigh its difficulties, creating an open dialog of RTI challenges can only refine what is already viewed as a useful process. Three key factors viewed as areas of challenge are *scheduling issues*, *staffing issues*, and *individualization issues*.

Scheduling issues. Hierarchically, *scheduling issues* are viewed as the most significant challenge in the implementation process of RTI. Scheduling issues refer to difficulties in RTI implementation caused by shortage of time or arrangement of time blocks for RTI interventions or RTI tasks. All respondents remarked, repeatedly about the difficulties that scheduling creates within what they view as an overall successful experience. This was the case for both Tier II as well as Tier III interventions. Some discussed problems related to the time of day that interventions are provided. When groups are scheduled during a nonacademic activity such as art or music, sometimes students must miss these classes. When RTI Tier II or Tier III intervention groups are scheduled immediately after a special class like physical education, the teachers sense that students are sometimes tired, over stimulated, and less focused. Sometimes

interventions are offered when the general education class is having recess. This creates a motivational issue for some students participating in interventions. Additionally, interventions offered at the end of the school day for very young children are viewed by several of the respondents to be a challenge. Delia provides RTI interventions late in the afternoon and shares, “I just find that the scheduling piece in this particular building is almost disastrous...I take those children at the end of the day, and those are first graders, and by two o’clock they’re sort of done...I think we would have a little bit different percentage rate of success and maybe accuracy if those kids were receiving services at a different time.”

An additional scheduling challenge relates to the fact that students are removed from the classroom for blocks of time during the day. The school district, in making a commitment to RTI as an important initiative, has requested that general education teachers not introduce any new material in all content areas while students are out of the classroom for Tier II or Tier III interventions. According to respondents, this has resulted in some content areas not being taught as regularly as they might otherwise have been. It also creates a scheduling issue since students from one classroom may be leaving at several times during the day based on when interventions are offered for various groups. Danielle is currently a high level district administrator in the EARSD. She draws upon her significant experience as an educator in various teaching positions to understand that students will always miss something when they leave the classroom for intervention. “We don’t pull them out of reading, but they might be pulled out of science or social studies, which is where a lot of the non-fiction reading takes place, which they need, or they’re pulled out of specials, which for some of those kids, that’s the joy of their day.” Thomas,

a special education teacher was empathetic to the scheduling challenges that general education teachers face. “General education teachers have to schedule their day around, ok; well so-and-so is going to miss this period. I can’t teach anything new, but I’ve got so much stuff to do...how much catch-up work can you do?”

Beyond scheduling issues with students, there are staff RTI duties that require additional time within the school day. Time must be scheduled to allow for data management, such as entering data into the AIMSweb system, tracking that data for changes from previous scores, and printing graphs for meetings. Assessments that are critical to the RTI process are administered regularly and time must be built into the school day for those. Staff collaboration, viewed by respondents as a major benefit of RTI also requires time. General education teachers and RTI teachers providing interventions must have a flexible enough schedule to allow for discussions of observations which may be critical to student progress.

Staffing issues. Somewhat intertwined with scheduling problems are *staffing issues*. Staffing issues refer to problems created by insufficient numbers of staff members to successfully implement all aspects of RTI or inconsistent use of staff within the RTI framework. When a school has sufficient staff, some of the scheduling issues can be alleviated. An example of this is the Tier I intervention offered within the general education classroom. Additional staff would allow Tier I services on a daily basis. Debra, a Child Study Team member shared a benefit that additional staff might provide. “Right now, the push-in for Tier I is only two to three times a week, and we’d like to do it every day...we’re not able to do that right now.” At Tier II and Tier III additional staff would keep numbers of students in groups smaller. Reports of some group sizes by respondents

were larger than they would have liked them to be and in some cases entered into decisions of whether to place a student who may benefit into such groups. Betsy remarked, “If somebody else needs to move into Tier III, then you have to start to think about, well, who else needs to go in? What’s the right number of students to be in before it becomes a less effective intervention? I mean, if we have twelve kids in Tier III...”

Arranging homogeneous groups based on student learning styles and deficit areas seemed also to be an issue impacted by insufficient staffing because when students’ needs are similar, RTI teachers felt that they were better able to maximize the time for interventions. Laura shared, “It gets harder and harder the more you individualize the interventions because of staffing and scheduling...there’s only so much time in the day and so many people to provide the instruction.” Additionally, stability of groups was mentioned as a concern that can be addressed by additional staff. While regular RTI monitoring is viewed as a benefit, it results in ongoing shifting of students within intervention groups. Every time a new student is added, the teacher must spend some time determining that student’s levels, needs, and compatibility with already existing students in the group. Regarding this instability of intervention groups, Delia said, “My biggest difficulty in teaching the children is that my groups are constantly changing. So I started off with five, then I went to seven, now I’m at ten. In my class, I could have five different levels where the kids are at in a half hour period to try to get them to read fluently.” Additional staff at Tier II and Tier III would also allow students to receive more than one intervention. This would be appropriate for students who may need additional support in areas other than reading fluency, such as vocabulary or

comprehension. At this time, if a student requires additional support in more than one area at Tier II, movement to Tier III is required in order to provide both interventions.

A final staffing issue seems to be inconsistent use of staff for RTI responsibilities. At Tier I, the district policy is for the general education teacher to take responsibility for the lowest achieving students with the RTI Tier I teacher supporting the more advanced students. As reported by respondents, that is not occurring in all general education classes. In some cases, the RTI teacher is viewed as having expertise in remediation of reading deficits not possessed by the general education teacher and so she is assigned to work with struggling students. At all tiers, the AIMSweb assessment probes are administered by varying staff members. Students may be assessed by a teacher that is not their general education teacher or their RTI teacher. Unfamiliarity with an adult may impact accuracy of data collected. Lastly, inconsistent use of staff is noted in provision of RTI interventions. At Tier II and Tier III, there seems to be little consistency regarding which professionals deliver interventions. The RTI teacher may be an available general education teacher, a basic skills teacher or a special education teacher. This is less of a concern at Tier II, where the intervention is quite controlled with the “double dose” of Foundations; however, at Tier III interventions are less structured. The RTI teacher draws on their individual expertise and here it may be important to consider professional skill sets of staff when determining which staff members should deliver Tier III interventions.

Individualization issues. The final category of RTI challenges refers to *individualization* of student needs and services related to expectations and supports. Although all interviewees appreciated the need for benchmarks within the RTI data, some questioned whether the target benchmarks are appropriate for all students. Thomas, as a

special education teacher is particularly sensitive to the fact that for various reasons students should be expected to learn at different rates. “How do we get the goal? Not every student is going to reach that goal. Unfortunately, it’s just not going to happen...so is the benchmark of 120 [words] attainable for a student who is not making any progress? Can we lower it to maybe the 75th percentile?” Some respondents expressed a desire to individualize the target goals based on individual students. Others wanted more flexibility to individualize the amount of intervention offered at each of the tiers. Most were disappointed by the lack of ability to individualize supports for specific deficit areas. Edward is considering how a more individualized model may look. “[We’re] talking about sort of creating various flow charts based on typical children...so a child that struggles with fluency, this is what their Tier II and Tier III might look like. A child who struggles with comprehension, you know things of that nature too. [A]nd then, even breaking down fluency into various subcategories.” I asked if he was thinking about designing Tier II interventions based on deficit areas as opposed to everybody being lumped together with the same intervention. Edward responded, “Absolutely, because that doesn’t do much for a child.” This would be a considerable undertaking and would require much additional planning regarding scheduling and staffing. It would also require that the district purchase additional programs to address skill support beyond the Foundations program already in use. The purchase of new programs would require a large commitment of staff development to insure that the new programs could be delivered with fidelity. Such fidelity is a requirement if RTI is to be considered in determinations of eligibility for specific learning disabilities (SLD).

RTI and SLD.

The final category that emerged as meaningful based on interviewee responses relates to the interaction between RTI and Specific Learning Disabilities (SLD). Key factors within this category are the *purpose of RTI*, the *IDEA 2004 federal mandate*, and *RTI data use in SLD eligibility determinations*.

Purpose of RTI. Throughout the interviews, respondents offered unsolicited comments regarding their perceptions of the *purpose of RTI*. In some cases comments had no relationship at all to issues of SLD. For one staff member, RTI's purpose was only to identify the lowest and highest achieving students. Others view it as a replacement for basic skills support. One general education teacher said, "We use it in lieu of what we used to do as basic skills or literacy support." Another interviewee explained the purpose of the RTI process as a means to get students back into classrooms rather than to offer support over long periods of time.

Other respondents made closer connections between the purpose of RTI and SLD classification. One administrator viewed the purpose of RTI as a means to reduce special education referrals. "Ultimately, one of the thoughts behind RTI is that it's going to reduce the number of children that need special services by providing very intensive intervention early, and that's something that I would certainly hope to see too, that our numbers start to dwindle." Early intervention was mentioned as a primary purpose of RTI by Fran, with reference to an alternative to the traditional discrepancy model. "Hopefully it's going to allow things to happen a little faster... The model in the past has been, the kid's really got to fail, then we look at them. I think, hopefully, that focus is changing a little and we're really not going in after the damage is already done." Betsy focused on

yet another purpose of RTI. “Right now we’re using it really to assess fluency as an early indicator of potential learning problems, the thought being that if we can intervene early, we could potentially stave off any future learning issues. And also, we don’t have to wait for the discrepancy to become so large that the kids are so far behind, that then classification almost seems like an inevitability.” While some see RTI as a model that intervenes and possibly can replace the eligibility process, one literacy specialist views the purpose of RTI only as the process that leads to special education classification. “I would say the RTI is the precursor to the Specific Learning Disabilities, but they still have to be seen by the team and tested.”

IDEA 2004 federal mandate. As staff consider the purpose of RTI it seems that they cannot completely understand its function without being aware of its context within the law. For this reason I asked all interviewees about their understanding of the *IDEA 2004 federal mandate* regarding RTI. The IDEA 2004 federal mandate refers to language in the reauthorization of that law allowing for the use of lack of response to scientifically-based intervention in the determination of eligibility for specific learning disabilities classification. Of nineteen people interviewed five had some knowledge of the law. One indicated that the law requires the documentation of a lack of response to intervention but does not require that it be used to determine eligibility. Another respondent had knowledge that up to 15% of IDEA funding may be used for intervention, but no mention was made that the interventions must be research-based and delivered with fidelity. Two respondents seemed to have a more comprehensive understanding of language in the federal code. Debra’s response was representative of that knowledge. “I understand the federal mandate that, of course the aptitude /achievement discrepancy model still exists,

but the federal mandate is that we also need to not only look at that, but to look at the RTI process, which is the research-driven program, that we are using these programs with fidelity, and that there should be two ways that we can classify a child with a learning disability. Not ... and not that they're abandoning the aptitude/achievement discrepancy, but that we can also use, if they fail to respond to these interventions that are done, like I said, with fidelity, and that it's a research-based program...so we have some options with classifying kids." The other people interviewed had no knowledge at all about the federal mandate. They offered responses such as, "I'm not really familiar with it. Maybe you could give me a little background and I'll tell you how much of it I know." "I really don't know all the ins and outs of that legislation." "I, honestly, I don't know what the federal mandate is." It is somewhat expected that people with differing job descriptions would have differing amounts of information about the law, however, it is noted that in this case, those who were most directly involved with providing student interventions had no understanding at all that RTI is addressed in federal law.

RTI data use in SLD eligibility determinations. The final key factor within the category of RTI and SLD is *RTI data use in SLD eligibility determinations*. This refers to the ways that RTI data is used once RTI teams question that a student may have a handicapping condition and require comprehensive evaluations. Comprehensive evaluations are required by law in order to determine a student's eligibility for special education and related services. There are several different types of comprehensive professional evaluations, such as educational evaluations conducted by a Learning Disabilities Teacher-Consultant, psychological evaluations conducted by a School Psychologist, social-emotional evaluations conducted by a School Social Worker, or

speech-language evaluations conducted by a Speech-Language Specialist. Results indicate that the RTI data is being used primarily to document a student's lack of progress. Thomas described this line of reasoning. "We've already been trying this since October and we're not seeing growth that we're hoping to see...if this kid's doing Tier II and Tier III eight times a week...that's a good time to maybe refer him to Child Study Team...I think if there is not a lot of progress happening with the student."

When asked about other ways that the data may be used, for instance to identify deficit areas within particular student skill sets, all agreed that the data does not assist in identifying specific skill deficits. Debra's response is representative of the participants. "...not from the data...all I know is how many new words a child reads correct per week; and I look at how large the gap is, but it's just numbers to me...with AIMSweb [assessments], all you're required to do is just put a slash through the word if it's not read correctly." Diane questioned whether the Child Study Team would find RTI data assistive in choosing specific test batteries when designing the comprehensive educational evaluation if students received RTI interventions and made unsatisfactory progress. As an administrator, she seems to be looking forward toward use of this data once RTI is more established in the district. "How we're using that data is evolving, and I think it is pointing to which tests they pull off the shelf. I don't know that LDT-Cs would be willing to admit that at this point, but I do think that there's an element of that. It helps the diagnostic process of what didn't work." Although the respondents found no other use for the RTI data at this time, they all agreed that having that data is assistive in determining the need for a comprehensive evaluation.

The definition of a SLD indicates that the deficit in an academic area is a result of a “disorder of a basic psychological process” (U.S. Department of Education, 2009, IDEA Regulations Part 300/A/§ 300.8 (c) (10)). I was interested in exploring whether interviewees perceived the RTI data as a meaningful source of information to discern the nature of such a disorder. Responses indicated agreement that the RTI data is not used for this purpose. Several of the respondents did not know the answer, responding in such ways as, “I don’t know. Maybe a Child Study Team member might be a better person to ask that question.” Some attempted to provide a response, but it was clear that they didn’t understand the meaning of a basic psychological process. The respondents whose job description would offer the best understanding of this issue firmly felt that the RTI data is not assistive in this very important issue of classification. When pointedly asked if the data contributes to an understanding of a student’s disorder of a basic psychological process, their responses were, “I don’t feel that it has. This is an instructional piece.” “The data itself has not.”

I asked interviewees if they perceived a change in the classification process with the use of RTI. Some said that they thought the use of RTI data may be speeding up the process of classification. Others felt that it may be reducing the number of referrals made for comprehensive evaluation. All respondents shared that there have, as yet, been no classifications made solely on RTI data. Although the opinion is that there is a place for the use of RTI data in the eligibility process, at this time there is no policy within the district regarding its use in place of, or in conjunction with the ability/achievement discrepancy model. At present, RTI has not changed the eligibility process for SLD in this district.

Quantitative Findings

Records were reviewed on 30 students who received RTI interventions at Jefferson Elementary School. They were chosen through purposeful random sampling and scores on the AIMSweb Universal Screening Assessment were used in the data analysis. Students included in this study were 1st, 2nd, and 3rd graders. Some students received only Tier II RTI interventions; others received additional Tier III RTI interventions. The demographics of the student sample for this study are reported in Table 5.

Table 5

<i>Student Demographics</i>		
Student Status	N	Total N = 30
2 nd - 3 rd Grade RTI Interventions	10	
Tier II	5	
Tier III	5	
1 st - 2 nd Grade RTI Interventions	9	
Tier II	4	
Tier III	5	
1 st Grade RTI Interventions	11	
Tier II	6	
Tier III	5	

Additional demographic information related to ethnicity was also collected. Past research indicates that ethnic minority students are disproportionately identified as at-risk for low academic achievement and ultimately overrepresented in special education (Beratan, 2008; Skiba et al., 2008). For this reason, ethnicity information of all students attending Jefferson Elementary School was gathered and compared to ethnicity of the 30 students receiving RTI interventions in order to determine whether ethnic minorities are overrepresented in this sample. Of the 30 students receiving RTI interventions at

Jefferson Elementary School 28 of them are White, 1 is Asian, and 1 is Black. There is no American Indian or Alaskan Native, Pacific Islander, Hispanic, or Multi-Ethnic student in the sample population. Within this sample of students receiving RTI interventions there is no overrepresentation of ethnic minority groups. Table 6 reports the ethnic populations represented at Jefferson Elementary School, the ethnicities of the sample population and the percentages of each ethnic group in the sample as compared to the same ethnic group within the population of the school.

Table 6

Ethnicity - Jefferson Elementary School Population / RTI Sample Group

Ethnic Group	Jefferson Elementary School	Percentage of Population	RTI Sample Group	Percentage of Sample
American Indian or Alaskan Native	0	0.00%	0	0.00%
Asian	136	30.36%	1	3.33%
Pacific Islander	1	0.22%	0	0.00%
Black	18	4.02%	1	3.33%
Hispanic	12	2.68%	0	0.00%
White	281	62.72%	28	93.33%
Multi-Ethnic	0	0.00%	0	0.00%
Total	448		30	

Findings for grade 2 through grade 3 (2 years of RTI intervention).

All 2nd and 3rd grade RTI students. In making determinations about running parametric statistical tests such as a *t*-Test, several factors must be considered. First, comparisons of this group's scores are made to the benchmark scores determined by the school district. Standard deviations are known for the group but in the case of benchmark scores standard deviations are unknown and must be estimated. For comparing individual groups to the benchmark a *t*-Test is used because the population standard deviation is unknown (Witte & Witte, 2010, p. 274). The *t*-Test replaces a *z*-Test in which the population standard deviation is known. Next, in making determinations about running parametric statistical tests, sample size is a significant consideration. Small sample sizes sometimes lead to non-normal distributions. In order to run parametric tests, groups must have normal distributions. The sample size for this group is 10. A Kolmogorov-Smirnov Test was performed which determined that the groups for comparison are normally distributed. Finally, equal variances are also required in order to run a parametric *t*-Test. Levene's Test of homogeneity of variance was performed and the groups do not have unequal variances. "When the original data are quantitative and populations appear to be normally distributed, with equal variances, use the *t* and *F* tests" (Witte & Witte, 2010, p. 450). Having met all conditions required to use a parametric test, a Single Sample *t*-Test for students who received RTI interventions for a two year period during their 2nd and 3rd grade years was performed comparing their mean beginning scores, mean gain, and mean ending scores with the beginning benchmark scores, expected gain, and ending benchmark scores of the population. For 2nd and 3rd grade students receiving Tier II or Tier III RTI interventions there was no statistically significant difference from the

beginning benchmark scores, expected gain of the population or the ending benchmark scores.

In addition to running statistical tests, descriptive tables are presented. Table 7 describes the beginning Universal Screening scores for the 10 students in this sample group, their ending Universal Screening scores and lists the corresponding benchmarks for comparison. Universal Screenings are one minute timed tests of oral reading fluency. Student scores are based on the number of words read correctly during the minute. Beginning and ending benchmarks are scores calculated by the EARSD as cut scores for their population at each grade level. These benchmarks are the targets set for all students within each grade to achieve in order to be considered as having made adequate progress. Expected benchmark gains are calculated from the beginning and ending benchmarks for each grade.

It is important to note that although some of the sample students had beginning scores that were equal to or better than the beginning benchmarks set by the district; these students were selected for RTI interventions based on other factors. Contributing factors may have been other classroom assessments such as the DRA, Johnston Spelling Inventories, and Slosson Word lists previously described, as well as teacher reports of reading behavior. Of the 10 2nd and 3rd grade students receiving RTI interventions, 5 of them met or exceeded the ending benchmark for 3rd grade. For this group, the average gain was 69.40 which is slightly greater than the expected benchmark gain of 64.00 set for all students between the beginning of 2nd and end of 3rd grade. Of the 5 students who did not meet the benchmark, 2 made gains greater than the expected benchmark gain of 64.00, but due to particularly low starting scores, they did not meet the benchmark.

Table 7

All 2nd and 3rd Grade RTI Students / Population Benchmarks

Student	Starting Score/ Benchmark	Ending Score/ Benchmark
Kelly	43.00	125.00*
Mary	56.00	140.00*
Eddie	69.00	134.00*
Lucy	53.00	125.00*
Xavier	57.00	141.00*
Terry	50.00	97.00
Debbie	34.00	107.00
Nancy	34.00	99.00
Everett	62.00	114.00
Ben	44.00	114.00
Benchmark	55.00	119.00

*met or exceeded the benchmark

2nd and 3rd grade Tier II RTI students. A Kolmogorov-Smirnov Test was performed which determined that the groups for comparison are normally distributed. Levene's Test of homogeneity of variance was performed and the groups do not have unequal variances. Having met the conditions for use of a parametric test, a Single Sample *t*-Test for 2nd and 3rd grade students who received Tier II RTI interventions was performed comparing their mean beginning scores, mean gains, and mean ending scores to the beginning benchmarks, expected gains, and ending benchmarks of the population. There was no statistically significant difference between the mean beginning scores of the Tier II RTI group and the beginning benchmarks. There was, however, a statistically significant difference between the mean gain of the Tier II RTI group and the expected gain of the population $T(4) = 3.51, p < .05$. Power and effect size were calculated using G*Power 3.1.3 statistical software. The effect size was determined to be 1.57 which corresponds to a large effect size and the power was determined to be .89 which is

considered significantly powerful. This greater mean gain made by the Tier II RTI group led to a statistically significant higher ending score for this group $T(4) = 4.03, p < .05$. This was a large effect size (Cohen's $d = 1.80$) with Power = .85. Table 8 reports the mean beginning scores, mean gain, and mean ending scores for 2nd and 3rd grade Tier II students, as well as the beginning benchmark, expected gain, and ending benchmark for the 2nd and 3rd grade population.

Table 8

2nd and 3rd Grade Tier II RTI Students / Population Benchmarks

Group Status	n	Mean Starting Score/ Benchmark	SD	Mean Gain/ Expected Gain	SD	Mean Ending Score/ Benchmark	SD
2 nd and 3 rd Grade Tier II RTI Students	5	55.60	9.32	77.40*	8.53	133.00*	7.78
2 nd and 3 rd Grade Population	N/A	55.00	N/A	64.00	N/A	119.00	N/A

*significant difference, $t < .05$

There were 5 students receiving Tier II RTI interventions in the 2nd and 3rd grade sample group. Table 9 describes the beginning Universal Screening scores for this sample of students, their ending Universal Screening scores and lists the corresponding benchmarks for comparison. Universal Screenings are one minute timed tests of oral reading fluency. Student scores are based on the number of words read correctly during the minute. Beginning and ending benchmark scores are scores calculated by the EARSD

as cut scores for their population at each grade level. These scores at each grade are the targets for all students within the grade to achieve in order to be considered as having made adequate progress. Expected benchmark gains are calculated from the beginning and ending benchmark scores for each grade. Of the 5 2nd and 3rd grade students receiving Tier II RTI interventions, all 5 of them met or exceeded the ending benchmark for 3rd grade. For this group, the average gain was 77.40 which is considerably greater than the expected benchmark gain of 64.00 set for all students between the beginning of 2nd and end of 3rd grade.

Table 9

2nd and 3rd Grade Tier II RTI Students / Population Benchmarks

Student	Starting Score/ Benchmark	Ending Score/ Benchmark
Kelly	43.00	125.00*
Mary	56.00	140.00*
Eddie	69.00	134.00*
Lucy	53.00	125.00*
Xavier	57.00	141.00*
Benchmark	55.00	119.00

*met or exceeded the benchmark

2nd and 3rd grade Tier III RTI students. A Kolmogorov-Smirnov Test was performed which determined that the groups for comparison are normally distributed. Levene's Test of homogeneity of variance was performed and the groups do not have unequal variances. Having met the conditions for use of a parametric test, a Single Sample *t*-Test was performed comparing the mean beginning scores, mean gains, and mean ending scores of 2nd and 3rd grade students who received Tier III interventions to the beginning benchmark, expected gain, and ending benchmark of the 2nd and 3rd grade population. Although the mean beginning score of these Tier III RTI students was below

the beginning benchmark for the population, the difference in these scores is not statistically significant. Likewise, the mean gain for this group of 2nd and 3rd grade students receiving Tier III RTI interventions is less than the population expected gain, but the difference is not statistically significant. The slower mean gain for the Tier III RTI students resulted in a statistically significant lower mean ending score for these students when compared with the ending 3rd grade benchmark $T(4) = -3.56, p < .05$. Power and effect size were calculated using G*Power 3.1.3 statistical software. The effect size was determined to be 1.59 which corresponds to a large effect size and the power was determined to be .76 which is considered moderately powerful. Table 10 reports the mean beginning scores, mean gain, and mean ending scores for 2nd and 3rd grade Tier III students, as well as the beginning benchmark, expected gain, and ending benchmark for the 2nd and 3rd grade population.

Table 10

2nd and 3rd Grade Tier III RTI Students / Population Benchmarks

Group Status	n	Mean Starting Score/ Benchmark	SD	Mean Gain/ Expected Gain	SD	Mean Ending Score/ Benchmark	SD
2 nd and 3 rd Grade Tier III RTI Students	5	44.80	11.80	61.40	11.37	106.20*	8.04
2 nd and 3 rd Grade Population	N/A	55.00	N/A	64.00	N/A	119.00	N/A

*significant difference, $t < .05$

Next, students receiving Tier III RTI interventions at the same grade level are considered descriptively. There were 5 students receiving Tier III RTI interventions in the 2nd and 3rd grade sample group. Table 11 describes the beginning Universal Screening scores for this sample of students, their ending Universal Screening scores and lists the corresponding benchmarks for comparison. Universal Screenings are one minute timed tests of oral reading fluency. Student scores are based on the number of words read correctly during the minute. Beginning and ending benchmarks are scores calculated by the EARSD as cut scores for their population at each grade level. These benchmarks at each grade are the targets for all students within the grade to achieve in order to be considered as having made adequate progress. Expected benchmark gains are calculated from the beginning and ending benchmark scores for each grade. Of the 5 2nd and 3rd grade students receiving Tier III RTI interventions, none of them met or exceeded the ending benchmark for 3rd grade. For this group, the average gain was 61.40 which is less than the expected benchmark gain of 64.00 set for all students between the beginning of 2nd and end of 3rd grade. This smaller gain did not allow any of the students to meet the benchmark, but it is noted that 2 of the 5 students in this group made better gains than the expected benchmark gain of 64.

Table 11

2nd and 3rd Grade Tier III RTI Students / Population Benchmarks

Student	Starting Score/ Benchmark	Ending Score/ Benchmark
Terry	50.00	97.00
Debbie	34.00	107.00
Nancy	34.00	99.00
Everett	62.00	114.00
Ben	44.00	114.00
Benchmark	55.00	119.00

*met or exceeded the benchmark

Comparison of 2nd and 3rd grade Tier II and Tier III RTI students. A

Kolmogorov-Smirnov Test was performed which determined that the groups for comparison are normally distributed. Levene's Test of homogeneity of variance was performed and the groups do not have unequal variances. Having met the conditions for use of a parametric test, an Independent Samples *t*-Test was performed to compare mean beginning scores, mean gains, and mean ending scores of the students receiving Tier II RTI interventions to those of the students receiving Tier III RTI interventions in 2nd and 3rd grade. There were no statistically significant differences in the mean beginning scores for 2nd and 3rd graders who received Tier II RTI interventions and 2nd and 3rd graders who received Tier III RTI interventions. However, there was a statistically significant difference in the mean gain of these two groups. The 2nd and 3rd grade students who received Tier II RTI interventions had a mean gain that was greater than the same grade students receiving Tier III RTI interventions $T(8) = 2.52, p < .05$. Power and effect size were calculated using G*Power 3.1.3 statistical software. The effect size was determined to be 1.59 which corresponds to a large effect size and the power was determined to be .60 which is considered moderately powerful. These larger gains made by students

receiving Tier II RTI interventions led to a statistically significant higher ending score than was achieved by the students receiving Tier III RTI interventions $T(8) = 5.36, p < .05$. This was a very large effect size (Cohen's $d = 3.39$) with Power = 1.00. Table 12 reports the mean beginning scores, mean gains, and mean ending scores of all 2nd and 3rd grade students receiving RTI interventions.

Table 12

Comparisons of Tier II and Tier III 2nd/3rd Grade Students

RTI Intervention Group	n	Mean Starting Score	SD	Mean Gain	SD	Mean Ending Score	SD
Tier II	5	55.60	9.32	77.40*	8.53	133.00*	7.78
Tier III	5	44.80	11.80	61.40	11.37	106.20	8.04

*significant difference, $t < .05$

Findings for grade 1 through grade 2 (2 years of RTI intervention).

All 1st and 2nd grade RTI students. A Kolmogorov-Smirnov Test was performed which determined that the groups for comparison are normally distributed. Levene's Test of homogeneity of variance was performed and the groups do not have unequal variances. Having met the conditions for use of a parametric test, a Single Sample t -Test for students who received RTI interventions for a two year period during their 1st and 2nd grade years was performed comparing their mean beginning scores, mean gain, and mean ending scores with the beginning benchmark scores, expected gain, and ending benchmark scores of the population. For 1st and 2nd grade students receiving Tier II or

Tier III interventions the mean beginning score was markedly below the mean beginning score of the population and statistically significant $T(8) = -5.77, p < .05$. Power and effect size were calculated using G*Power 3.1.3 statistical software. The effect size was determined to be 1.92 which corresponds to a large effect size and the power was determined to be 1.00 which is considered significantly powerful. Students who received Tier II or Tier III interventions had a statistically significant greater mean gain when compared with the expected gain of the population $T(8) = 2.72, p < .05$. This was a large effect size (Cohen's $d = .91$) with moderate Power = .66. This greater mean gain for students receiving RTI interventions led to a non-significant difference between their ending scores and the ending benchmarks for the population. Table 13 reports the mean beginning scores, mean gain, and mean ending scores of all 1st and 2nd grade RTI students and the benchmarks for the population.

Table 13

All 1st and 2nd Grade RTI Students / Population Benchmarks

Group Status	n	Mean Starting Score/ Benchmark	SD	Mean Gain/ Expected Gain	SD	Mean Ending Score/ Benchmark	SD
1 st and 2 nd Grade RTI Students	9	12.00*	2.60	90.11*	16.68	102.11	15.77
1 st and 2 nd Grade Population	N/A	17.00	N/A	75.00	N/A	92.00	N/A

*significant difference, $t < .05$

The sample size of all 1st and 2nd grade students receiving RTI interventions was 9. Table 14 describes the beginning Universal Screening scores for these 9 students in this sample group, their ending Universal Screening scores, and lists the corresponding benchmarks for comparison. Universal Screenings are one minute timed tests of oral reading fluency. Student scores are based on the number of words read correctly during the minute. Beginning and ending benchmarks are scores calculated by the EARSD as cut scores for their population at each grade level. These benchmarks at each grade are the targets for all students within the grade to achieve in order to be considered as having made adequate progress. Expected benchmark gains are calculated from the beginning and ending benchmarks for each grade. Of the 9 1st and 2nd grade students receiving RTI interventions, 6 of them met or exceeded the ending benchmark for 2nd grade. For this group, the average gain was 90.11 which is considerably greater than the expected benchmark gain of 75.00 set for all students between the beginning of 1st and end of 2nd grade. Of the 3 students who did not meet the benchmark, 1 made gains greater than the expected benchmark gain of 75.00, but due to a particularly low starting score, she did not meet the benchmark.

Table 14

All 1st and 2nd Grade RTI Students / Population Benchmarks

Student	Starting Score/ Benchmark	Ending Score/ Benchmark
Tom	15.00	101.00*
Brad	12.00	115.00*
Evelyn	16.00	104.00*
Lily	11.00	90.00
Travis	12.00	82.00
Harry	14.00	83.00
Brittany	8.00	99.00*
Olivia	10.00	128.00*
Nathan	10.00	117.00*
Benchmark	17.00	92.00

*met or exceeded the benchmark

1st and 2nd grade Tier II RTI students. A Kolmogorov-Smirnov Test was performed which determined that the groups for comparison are normally distributed. Levene's Test of homogeneity of variance was performed and the groups do not have unequal variances. Having met the conditions for use of a parametric test, a Single Sample *t*-Test for 1st and 2nd grade students receiving Tier II interventions was performed comparing their mean beginning scores, mean gains, and mean ending scores with the benchmarks of the population. For students receiving Tier II interventions there were no statistically significant differences from the beginning benchmark scores, expected gain or ending benchmarks.

There were 4 students receiving Tier II RTI interventions in the 1st and 2nd grade sample group. Table 15 describes the beginning Universal Screening scores for this sample of students, their ending Universal Screening scores and lists the corresponding benchmarks for comparison. Universal Screenings are one minute timed tests of oral reading fluency. Student scores are based on the number of words read correctly during

the minute. Beginning and ending benchmarks are scores calculated by the EARSD as cut scores for their population at each grade level. These benchmarks at each grade are the targets for all students within the grade to achieve in order to be considered as having made adequate progress. Expected benchmark gains are calculated from the beginning and ending benchmarks for each grade. Of the 4 1st and 2nd grade students receiving Tier II RTI interventions, 3 of them met or exceeded the ending benchmark for 2nd grade. For this group, the average gain was 89.00 which is considerably greater than the expected benchmark gain of 75.00 set for all students between the beginning of 1st and end of 2nd grade. The only student who did not meet the benchmark in this group made gains that exceeded the average gains expected for all students between the beginning of 1st grade and the end of 2nd grade. She missed the benchmark by only 2 points.

Table 15

1st and 2nd Grade Tier II RTI Students / Population Benchmarks

Student	Starting Score/ Benchmark	Ending Score/ Benchmark
Tom	15.00	101.00*
Brad	12.00	115.00*
Evelyn	16.00	104.00*
Lily	11.00	90.00
Benchmark	17.00	92.00

*met or exceeded the benchmark

1st and 2nd grade Tier III RTI students. A Kolmogorov-Smirnov Test was performed which determined that the groups for comparison are normally distributed. Levene's Test of homogeneity of variance was performed and the groups do not have unequal variances. Having met the conditions for use of a parametric test, a Single

Sample *t*-Test for 1st and 2nd grade students receiving Tier III interventions was performed comparing their mean beginning scores, mean gains, and mean ending scores with the benchmarks of the population. The 1st and 2nd grade students receiving Tier III RTI interventions had a statistically significant lower mean beginning score than the beginning benchmark for the population $T(4) = -6.08, p < .05$. Power and effect size were calculated using G*Power 3.1.3 statistical software. The effect size was determined to be 2.72 which is a large effect size and the power was determined to be .99 which is considered significantly powerful. The mean gain of this group was not significantly different from the expected gain of the population, nor was there a statistically significant difference in the mean ending scores of 1st and 2nd grade Tier III RTI students to the ending benchmark. Table 16 reports the mean beginning scores, mean gain, and mean ending scores of 1st and 2nd grade RTI students receiving Tier III interventions and the benchmarks for the population.

Table 16

1st and 2nd Grade Tier III RTI Students / Population Benchmarks

Group Status	n	Mean Starting Score/ Benchmark	SD	Mean Gain/ Expected Gain	SD	Mean Ending Score/ Benchmark	SD
1 st and 2 nd Grade Tier III RTI Students	5	10.80*	2.28	91.00	21.85	101.80	20.44
1 st and 2 nd Grade Population	N/A	17.00	N/A	75.00	N/A	92.00	N/A

*significant difference, $t < .05$

There were 5 students receiving Tier III RTI interventions in the 1st and 2nd grade sample group. Table 17 describes the beginning Universal Screening scores for this sample of students, their ending Universal Screening scores and lists the corresponding benchmarks for comparison. Universal Screenings are one minute timed tests of oral reading fluency. Student scores are based on the number of words read correctly during the minute. Beginning and ending benchmarks are scores calculated by the EARSD as cut scores for their population at each grade level. These benchmarks at each grade are the targets for all students within the grade to achieve in order to be considered as having made adequate progress. Expected benchmark gains are calculated from the beginning and ending benchmarks for each grade. Of the 5 1st and 2nd grade students receiving Tier III RTI interventions, 3 of them met or exceeded the ending benchmark for 2nd grade. For this group, the average gain was 91.00 which is considerably greater than the

expected benchmark gain of 75.00 set for all students between the beginning of 1st and end of 2nd grade. The 2 students who did not meet the benchmark in this group made smaller gains than the average gains expected for all students between the beginning of 1st grade and the end of 2nd grade explaining their inability to meet the benchmark.

Table 17

1st and 2nd Grade Tier III RTI Students / Population Benchmarks

Student	Starting Score/ Benchmark	Ending Score/ Benchmark
Travis	12.00	82.00
Harry	14.00	83.00
Brittany	8.00	99.00*
Olivia	10.00	128.00*
Nathan	10.00	117.00*
Benchmark	17.00	92.00

*met or exceeded the benchmark

Comparison of 1st and 2nd grade Tier II and Tier III RTI students. A

Kolmogorov-Smirnov Test was performed which determined that the groups for comparison are normally distributed. Levene's Test of homogeneity of variance was performed and the groups do not have unequal variances. Having met the conditions for use of a parametric test, the final test performed for 1st and 2nd grade students was an Independent Samples *t*-Test. This test was performed to compare the 1st and 2nd grade students who received Tier II interventions to the 1st and 2nd grade students who received Tier III interventions. There was no statistically significant difference in mean beginning scores, mean gain, or mean ending scores between the 1st and 2nd grade students receiving Tier II and Tier III interventions.

Findings for grade 1 (1 year of RTI intervention).

All 1st grade RTI students. A Kolmogorov-Smirnov Test was performed which determined that the groups for comparison are normally distributed. Levene's Test of homogeneity of variance was performed and the groups do not have unequal variances. Having met the conditions for use of a parametric test, a Single Sample *t*-Test for students who received RTI interventions for a one year period during their 1st grade year was performed comparing their mean beginning scores, mean gain, and mean ending scores with the beginning benchmarks, expected gain, and ending benchmarks of the population. For 1st grade students receiving Tier II or Tier III interventions the mean beginning score was markedly below the mean beginning score of the population and statistically significant $T(10) = -7.86, p < .05$. Power and effect size were calculated using G*Power 3.1.3 statistical software. The effect size was determined to be 2.37 which is a large effect size and the power was determined to be 1.00 which is considered significantly powerful. There was no statistically significant difference in the gains made by the 1st grade students who received Tier II or Tier III RTI interventions and the expected gains of the 1st grade population. Likewise, there was no statistically significant difference in the mean ending scores of 1st grade students who received RTI interventions and the ending benchmark. Table 18 reports the mean beginning scores, mean gain, and mean ending scores of 1st grade students who received either Tier II or Tier III interventions and the beginning benchmarks, expected gain, and ending benchmarks of the 1st grade population.

Table 18

All 1st Grade RTI Students / Population Benchmarks

Group Status	n	Mean Starting Score/ Benchmark	SD	Mean Gain/ Expected Gain	SD	Mean Ending Score/ Benchmark	SD
1 st Grade RTI Students	11	7.18*	4.14	48.90	25.90	56.09	24.66
1st Grade Population	N/A	17.00	N/A	36.00	N/A	53.00	N/A

*significant difference, $t < .05$

The sample size of all 1st grade students receiving RTI interventions was 11. Table 19 describes the beginning Universal Screening scores for the 11 students in this sample group, their ending Universal Screening scores and lists the corresponding benchmarks for comparison. Universal Screenings are one minute timed tests of oral reading fluency. Student scores are based on the number of words read correctly during the minute. Beginning and ending benchmarks are scores calculated by the EARSD as cut scores for their population at each grade level. These benchmarks at each grade are the targets for all students within the grade to achieve in order to be considered as having made adequate progress. Expected benchmark gains are calculated from the beginning and ending benchmarks for each grade. Of the 11 1st grade students receiving RTI interventions, 4 of them met or exceeded the ending benchmark for 1st grade. For this group, the average gain was 48.91 which is greater than the expected benchmark gain of 36.00 set for all students between the beginning of 1st and end of 1st grade. Of the 7

students who did not meet the benchmark, 2 made gains greater than the expected benchmark gain of 36.00, but due to a particularly low starting scores, they did not meet the benchmark.

Table 19

All 1st Grade RTI Students / Population Benchmarks

Student	Starting Score/ Benchmark	Ending Score/ Benchmark
Joelle	15.00	45.00
Bruce	7.00	85.00*
Daniel	7.00	54.00*
Darla	11.00	50.00
Beverly	11.00	45.00
Darlene	10.00	50.00
Lester	2.00	25.00
Bobby	4.00	91.00*
Kristen	2.00	36.00
Elliot	3.00	100.00*
Boyd	9.00	36.00
Benchmark	17.00	53.00

*met or exceeded the benchmark

1st grade Tier II RTI students. A Kolmogorov-Smirnov Test was performed which determined that the groups for comparison are normally distributed. Levene's Test of homogeneity of variance was performed and the groups do not have unequal variances. Having met the conditions for use of a parametric test, a Single Sample *t*-Test for 1st grade students receiving Tier II interventions was performed comparing their mean beginning scores, mean gains, and mean ending scores with the benchmarks of the population. The students receiving Tier II RTI interventions had a statistically significant lower mean beginning score than the beginning benchmark for the population $T(5) = -5.86, p < .05$. Power and effect size were calculated using G*Power 3.1.3 statistical software. The effect size was determined to be 2.40 which is a large effect size and the

power was determined to be 1.00 which is considered significantly powerful. There was no statistically significant difference between mean gains for this group and the expected gains of the population. There was no statistically significant difference between the mean ending score of 1st grade students receiving RTI Tier II interventions and the ending benchmark for the population. Table 20 reports the mean beginning scores, mean gain, and mean ending scores of 1st grade RTI students receiving Tier II interventions and the benchmarks for the population.

Table 20

1st Grade Tier II RTI Students / Population Benchmarks

Group Status	n	Mean Starting Score/ Benchmark	SD	Mean Gain/ Expected Gain	SD	Mean Ending Score/ Benchmark	SD
1 st Grade Tier II RTI Students	6	9.83*	2.99	45.00	17.20	54.83	15.17
1 st Grade Population	N/A	17.00	N/A	36.00	N/A	53.00	N/A

*significant difference, $t < .05$

There were 6 students receiving Tier II RTI interventions in the 1st grade sample group. Table 21 describes the beginning Universal Screening scores for this sample of students, their ending Universal Screening scores and lists the corresponding benchmarks for comparison. Universal Screenings are one minute timed tests of oral reading fluency. Student scores are based on the number of words read correctly during the minute.

Beginning and ending benchmarks are scores calculated by the EARSD as cut scores for their population at each grade level. These benchmarks at each grade are the targets for all students within the grade to achieve in order to be considered as having made adequate progress. Expected benchmark gains are calculated from the beginning and ending benchmark scores for each grade. Of the 6 1st grade students receiving Tier II RTI interventions, 2 of them met or exceeded the ending benchmark for 1st grade. For this group, the average gain was 45.00 which is greater than the expected benchmark gain of 36.00 set for all students between the beginning of 1st and end of 1st grade. Of the 4 students who did not meet the benchmark in this group, 2 of them made gains that exceeded the average gains expected for all students between the beginning of 1st grade and the end of 1st grade. Although they missed the benchmark, they did so by only 3 points.

Table 21

1st Grade Tier II RTI Students / Population Benchmarks

Student	Starting Score/ Benchmark	Ending Score/ Benchmark
Joelle	15.00	45.00
Bruce	7.00	85.00*
Daniel	7.00	54.00*
Darla	11.00	50.00
Beverly	11.00	45.00
Darlene	10.00	50.00
Benchmark	17.00	53.00

*met or exceeded the benchmark

1st grade Tier III RTI students. A Kolmogorov-Smirnov Test was performed which determined that the groups for comparison are normally distributed. Levene's Test of homogeneity of variance was performed and the groups do not have unequal variances.

Having met the conditions for use of a parametric test, a Single Sample *t*-Test for 1st grade students receiving Tier III interventions was performed comparing their mean beginning scores, mean gains, and mean ending scores with the benchmarks of the population. The students receiving Tier III RTI interventions had a statistically significant lower mean beginning score than the beginning benchmark for the population $T(4) = -9.97, p < .05$. Power and effect size were calculated using G*Power 3.1.3 statistical software. The effect size was determined to be 4.45 which is a very large effect size and the power was determined to be 1.00 which is considered significantly powerful. There was no statistically significant difference between mean gains for this group and the expected gains of the population. There was no statistically significant difference between the mean ending score of 1st grade students receiving RTI Tier III interventions and the ending benchmark for the population. Table 22 reports the mean beginning scores, mean gain, and mean ending scores of 1st grade RTI students receiving Tier III interventions and the benchmarks for the population.

Table 22

1st Grade Tier III RTI Students / Population Benchmarks

Group Status	n	Mean Starting Score/ Benchmark	SD	Mean Gain/ Expected Gain	SD	Mean Ending Score/ Benchmark	SD
1 st Grade Tier II RTI Students	6	4.00*	2.92	53.60	35.45	57.60	35.03
1 st Grade Population	N/A	17.00	N/A	36.00	N/A	53.00	N/A

*significant difference, $t < .05$

There were 5 students receiving Tier III RTI interventions in the 1st grade sample group. Table 23 describes the beginning Universal Screening scores for this sample of students, their ending Universal Screening scores and lists the corresponding benchmarks for comparison. Universal Screenings are one minute timed tests of oral reading fluency. Student scores are based on the number of words read correctly during the minute. Beginning and ending benchmarks are scores calculated by the EARSD as cut scores for their population at each grade level. These benchmarks at each grade are the targets for all students within the grade to achieve in order to be considered as having made adequate progress. Expected benchmark gains are calculated from the beginning and ending benchmarks for each grade. Of the 5 1st grade students receiving Tier III RTI interventions, 2 of them met or exceeded the ending benchmark for 1st grade. For this group, the average gain was 53.00 which is considerably greater than the expected

benchmark gain of 36.00 set for all students between the beginning of 1st and end of 1st grade. Of the 3 students who did not meet the benchmark in this group none of them made gains that exceeded the average gains expected for all students between the beginning of 1st grade and the end of 1st grade. These slow gains resulted in their inability to meet the ending benchmark score for their grade.

Table 23

1st Grade Tier III RTI Students / Population Benchmarks

Student	Starting Score/ Benchmark	Ending Score/ Benchmark
Lester	2.00	25.00
Bobby	4.00	91.00*
Kristen	2.00	36.00
Elliot	3.00	100.00*
Boyd	9.00	36.00
Benchmark	17.00	53.00

*met or exceeded the benchmark

Comparison of 1st grade Tier II and Tier III RTI students. A Kolmogorov-Smirnov Test was performed which determined that the groups for comparison of beginning scores for 1st grade students receiving Tier II and Tier III RTI interventions are normally distributed. Levene's Test of homogeneity of variance was performed and the beginning scores of the two groups do not have unequal variances. Having met the conditions for use of a parametric test, an Independent Samples *t*-Test was performed to compare the mean beginning scores of 1st grade students who received Tier II interventions to the mean beginning scores of 1st grade students who received Tier III interventions. This was the appropriate test because these two groups had normally distributed populations with equal variances. There was a statistically significant difference between the mean beginning scores of these two groups with the Tier II

students achieving higher beginning scores $T(9) = 3.26, p < .05$. Power and effect size were calculated using G*Power 3.1.3 statistical software. The effect size was determined to be 1.97 which is a large effect size and the power was determined to be .83 which is considered adequately powerful. The nonparametric Mann-Whitney U Test was used to compare the gains and the ending scores of 1st graders who received 1 year of Tier II RTI intervention to those 1st graders who received 1 year of Tier III RTI intervention. The Mann-Whitney U Test was used because these two group sizes were unequal ($N = 6, N = 5$) and the variances according to the Levene's Test for homogeneity were also unequal. The Mann-Whitney Test indicated that there was no statistically significant difference in the gains made by these two groups or in their mean ending scores. Table 24 reports the mean beginning scores, mean gains, and mean ending scores of all 1st grade students receiving RTI interventions.

Table 24

Comparisons of Tier II and Tier III 1st Grade Students

RTI Intervention Group	n	Mean Starting Score	SD	Mean** Gain	SD	Mean** Ending Score	SD
Tier II	6	9.83*	2.99	45.00	17.20	54.83	15.17
Tier III	5	4.00	2.92	53.60	35.45	57.60	35.03

*significant difference, $t < .05$

**Although the mean gain and mean ending scores are reported, the Mann-Whitney U Test was used to determine that there were no differences in the mean gains or mean ending scores of these two groups.

Findings for all RTI students (1 or 2 years of RTI intervention).

Mean gain for RTI students. A Kolmogorov-Smirnov Test was performed which determined that the groups for comparison are normally distributed. Levene's Test of homogeneity of variance was performed and the groups do not have unequal variances. Having met the conditions for use of a parametric test, a Dependent Samples *t*-Test was performed to examine the overall mean gain made by all 30 students who received RTI interventions. This test was performed using the benchmarks as a baseline measure of zero. The mean starting difference from the benchmark was compared to the mean ending difference from the benchmark. Students who received RTI interventions had a statistically significant mean gain when comparing the mean beginning score with their mean ending score in this repeated measures design $T(29) = -3.13, p < .05$. Power and effect size were calculated using G*Power 3.1.3 statistical software. The effect size was determined to be .57 which corresponds to a moderate effect size and the power was determined to be .87 which is considered acceptable in most research designs. Table 25 reports the mean gain for all students receiving RTI interventions.

Table 25

Mean Gain For All Students Receiving RTI Interventions

Time of Test	n	Mean Difference	SD
Starting Difference	30	-6.70	7.41
Ending Difference	30	4.37	19.32
Mean Gain	30	11.07*	19.38

*significant difference, $t < .05$

Mean starting and ending differences from benchmarks for all RTI students.

A Kolmogorov-Smirnov Test was performed which determined that the groups for comparison are normally distributed. Levene's Test of homogeneity of variance was performed and the groups do not have unequal variances. Having met the conditions for use of a parametric test, the final test that was performed for all 30 students receiving RTI interventions was a Single Samples t -Test. This test was performed in order to compare the difference between the mean starting score of the sample group to the benchmark, prior to RTI interventions and the difference between the mean ending score of the sample group to the benchmark after having received RTI interventions. Here again the test was performed using the benchmark as a baseline measure of zero. The mean beginning score of the sample group was significantly below the benchmark $T(29) = -4.96, p < .05$. Power and effect size were calculated using G*Power 3.1.3 statistical software. The effect size was determined to be .90 which corresponds to a large effect

size and the power was determined to be 1.00 which is considered significantly powerful. There was no statistically significant difference in their mean ending score from the benchmark. Table 26 reports the mean beginning difference and mean ending difference from the benchmark for all students receiving RTI interventions.

Table 26

Beginning and Ending Differences From Benchmarks For All Students Receiving RTI

Time of Test	n	Mean Difference	SD
Starting Difference	30	-6.70*	7.41
Ending Difference	30	4.37	19.32

*significant difference, $t < .05$

Chapter 5

Discussion

The Eastern American Regional School District (EARSD) is currently in the third year of RTI implementation. This initiative is perhaps, beyond what one might call the nascent stages, but certainly still in early stages of adoption. For this reason it is possible that both stakeholder perceptions as well as quantitative data outcomes may adjust from current findings. Nevertheless, at this time qualitative results of this study indicate that RTI in EARSD is viewed by staff as very beneficial. Quantitative findings of this study support stakeholder opinions that current RTI practices produce gains for students who receive RTI interventions. The following discussion interprets qualitative findings, quantitative findings, addresses limitations of this study and offers implications for future research.

Discussion of Qualitative Results

The discussion in this section answers the first two research questions that were posed in this study. It describes the process used for RTI in EARSD and also elucidates the perceptions of stakeholders in the district. Stakeholder impressions of RTI benefits and challenges are discussed with regard to all students. Also considered are their perceptions of RTI advantages and limitations in the SLD classification process.

RTI challenges.

Scheduling issues. Although respondents felt positively about RTI overall, there was consensus regarding implementation challenges. Scheduling issues were seen as the primary challenge. Respondents were concerned about scheduling difficulties for Tier I support which is designed as a push-in service. RTI interventionists who enter the

classrooms to work with specific groups must do so on a very rigid schedule so that classroom teachers can plan for this portion of their language arts block. When RTI interventionists are off schedule, even by a few minutes, this creates difficulty with maintaining daily schedules and also with consistent pacing of lessons. At Tier II and Tier III where interventions generally are offered as pull-out periods, additional scheduling challenges occur (Mellard, Stern, & Woods, 2011). Due to the very appropriate district directive that no new instruction occur while students are out of the room for their Tier II or Tier III interventions, classroom teachers must schedule blocks of time that are filled with other types of activities, such as review, collaborative group activities or recess. Teachers cannot stop teaching when students leave the room so there will always be some activities that students who receive RTI interventions will miss (Fuchs & Fuchs, 2009a). Teachers understand that reinforcement time, collaborative work with peers and social peer interactions are important for all students but there has been no way, at this point in time, to avoid this scheduling issue.

Another scheduling challenge that teachers face is finding enough time to cover the entire curriculum for which they are responsible. Some teachers remarked that they don't get through as much science and social studies material as they might if all students were in the classroom for a full school day. At this time, students are leaving the classroom for assistance in only the fluency skill area of reading. When students are identified as requiring intervention in other reading skill areas such as phonetic analysis, vocabulary, or comprehension, finding time in the daily schedule to add another intervention will exacerbate this issue. EARSD has indicated a desire in the near future to

add math as a new content area to be supported through RTI. For students who are at-risk for both reading and math failure, scheduling will become increasingly difficult.

Staffing issues. Another RTI implementation challenge identified by respondents was related to staffing. At this time, interviewees reported a variety of staff members who administer RTI interventions. This is the case with many RTI models (Friedman, 2010; Snell, 2009). At Tier I the classroom teachers deliver support to the lowest achieving group. The RTI teacher who pushes into the classroom may be another general education teacher, a basic skills teacher, a reading specialist or a special education teacher. The Tier II and Tier III pull out interventions may be offered by a reading specialist or a special education teacher. Other staff within the building may be used to administer universal screenings and probes. This lack of consistency of staff interactions may be difficult for some at-risk students. Accuracy of data may also be impacted when an unfamiliar staff member is administering screenings or probes. Moreover, available staff impacts the size and stability of Tier II and Tier III intervention groups. Certainly, the smaller the groups, the more time staff can devote to each student during these interventions. Furthermore, as new students are added to RTI intervention groups, the teacher must suspend intervention for a brief time to assess and integrate the new student. This is disruptive to students already receiving the service. When adequate staff is available, new groups can be formed instead of adding incoming students to already existing groups, better preserving stability and flow of established groups. Additional staff would also be assistive in alleviating some of the scheduling challenges.

Individualization issues. A final major challenge of current RTI practice within the EARSD is one of individualization. The concept of individualizing instruction in

order to produce academic skill gains has significant research support (Connor et al., 2010; Greenwood et al., 2011; McDonald et al., 2009). Presently, the district has adopted the Wilson Foundations program for use within the RTI structure. It is offered at Tier I to all students and offered also at Tier II as a “double dose”. Respondents were consistent in commenting that they view Foundations as a good program, but it addresses only the skill area of fluency within reading. Essential core reading content focuses on fluency as well as phonological awareness, phonics, vocabulary and comprehension (Baker, Fien, & Baker, 2010). All respondents agreed that Foundations, as the district adopted intervention, may be enough support for some at-risk students but that others may have little difficulty with fluency, perhaps struggling instead with attaining vocabulary or with word or passage comprehension. At this time the district has not formally designated reading intervention programs that could be used to address reading deficits unrelated to fluency. Moreover, the assessments provided through AIMSweb address primarily oral reading fluency. Students read a one minute passage aloud and the number of words read correctly is recorded. I would suggest that rather than just recording when a student makes an error on a word, staff should record precise errors so that this information may be used for item analysis. When teachers can identify patterns in student errors, they have valuable information to inform their instruction in the classroom (McDonald et al., 2009). Only one of all interviewees indicated that she asks for this information from the staff member administering the assessments. When teachers understand the types of errors made by individual students, they can individualize their instruction to address specific skill deficits.

EARSD response to RTI challenges. The challenges associated with RTI implementation have not gone unnoticed by the EARSD administration. On a building level, one of the principals interviewed indicated that he is working on a solution for providing more consistency of staff in delivery of RTI interventions. The goal is to have at-risk students interact with fewer individuals in provision of all RTI assessments and interventions. Additionally, in order to assist with some of the scheduling issues, a district plan has been approved for the 2012-2013 school year which will build a What I Need (WIN) period into the beginning of the school day. This WIN period will be used for Tier II and Tier III pull-out RTI interventions as well as enrichment for the district's most able learners. At this time, the WIN period is proposed for the four K-5 elementary schools within the district and is anticipated to alleviate at least a portion of the difficulty associated with scheduling. Finally, in an effort to provide better individualization of support through RTI the district is researching additional intervention programs that can be used in conjunction with, or instead of Foundations at Tier II and Tier III. The programs under consideration would support student needs in reading skill areas other than fluency. The district administration's responsiveness to the identified challenges of RTI implementation is recognized by staff stakeholders and engenders buy-in which promotes long term success of the RTI commitment within the district.

Benefits of RTI.

Availability of data. Interview respondents were consistent in identifying meaningful benefits of RTI. A core component of an RTI framework is student assessment and data-driven decision-making (Glover & DiPerna, 2007; Ysseldyke, 2010). The availability of data through the RTI framework was identified as a major

benefit. Regardless of job description, all interviewees remarked that although “gut feelings” are frequently accurate, having data is reassuring when making decisions for students and in providing common criteria and language in student driven discussions. This accessibility of data also allows for more frequent monitoring of student progress. Staff remark that in general accessibility of data enhances their confidence and increases the likelihood that they will be viewed in a more professional light.

Improved communication. Another commonly recognized benefit of RTI in the district is improved communication. Due to the RTI framework, the staff has more opportunities to communicate about individual student progress and is encouraged to do so by administration. This communication is essential in successful RTI models (Reeves, Bishop, & Filce, 2010). Communication between staff and parents is also enhanced by the RTI process (Friedman, 2010). Parents understand that there is a vehicle in place in the district to monitor their child’s reading progress and to intervene when support is required. They can view data graphs to compare the progress of their child with anticipated gains and benchmarks for students in their grade. The RTI process and data allows parents to feel confident that school decisions are supported by objective criterion rather than subjective impressions. Student communication is also enhanced by the RTI framework. Teachers report that students now have a vehicle to discuss their own achievement and are eager to achieve higher scores with each assessment. Parents report that students speak more positively with them at home about their reading experience and choose reading more frequently as a leisure activity in their free time. Many of these insights regarding improved communication through RTI were shared in the form of accounts of memorable experiences recounted by staff and administrators.

Advantages beyond the traditional pre-referral process. In comparing RTI with the traditional pre-referral process formerly in use within EARSD, respondents favorably appraise RTI. They view RTI as a vehicle to deliver improved instruction to all students. The adoption of the Foundations intervention, delivered in all classrooms and supported regularly by the RTI teacher is viewed as offering consistently structured instruction and small group support for all students. It is reasonable to assume that for at least some of these students, this Tier I support is adequate to meet their needs. This basic level of structured instruction was absent in the previous pre-referral process. Furthermore, the RTI process has been assistive in earlier identification of at-risk students. Research has indicated that early identification and support are a major factor in addressing needs of students who are at-risk for academic failure (Cooke, Kretlow, & Helf, 2010; Greenwood et al., 2011). Interviewees remarked that with the past pre-referral process, sometimes students waited far too long to receive any support. With RTI students can be identified quickly and offered interventions to address reading deficits (Hoover, 2010). Another benefit of RTI when compared to the traditional pre-referral process has been better documentation of interventions. Instead of teachers filling out a checklist of attempted interventions after the fact with little accuracy as to timeframe or success of implementation, RTI progress monitoring is held on a regular schedule and interventions are recorded and evaluated in a structured fashion. An additional advantage of RTI as compared to the traditional pre-referral process is the increased flexibility to change interventions. Due to the monthly progress monitoring meetings, RTI interventions are considered for decrease or increase every four weeks. There was previously no vehicle

for this type of discussion, resulting in more rigidly formed intervention groups and less responsive intervention decisions for individual students.

Possible future benefits. Beyond the benefits already expressed by interviewees, there are potential benefits that the district has not yet realized. It is anticipated by stakeholders that the adoption of RTI will lead to a reduction in numbers of comprehensive evaluations. Data to support this is not available at this time, however, it is reasonable to assume that early identification and provision of interventions will increase achievement in some students who might otherwise have continued to lag behind and required lengthy and costly comprehensive evaluations. An additional benefit not yet realized in this district is the reduction of students classified as having a specific learning disability. Current statistics on classifications within the EARSD in the category of SLD are not significantly different from the numbers in previous years. However, many respondents remarked that they expect the number of students classified in this eligibility category to decrease over time, as the district builds capacity within the RTI framework of interventions and support becomes more comprehensive. Additionally, as the intervention offerings broaden at Tier II and Tier III, there will be multiple opportunities to support students as they are declassified. The availability of continued support is anticipated to encourage shorter periods of classification for some students with SLD who may have remediated deficits within special education programs, but require ongoing support in order to meet with success using the curriculum in the general education setting. A robust RTI structure will offer interventions for these students as they are declassified and are no longer eligible for special education programs.

RTI and SLD.

Purpose of RTI. A major focus of this study was to examine RTI as it relates to eligibility determinations of specific learning disabilities. Qualitative data indicates that there is a varied understanding of the process and purpose of RTI within the staff sample. Although there is a district vision for RTI, the process of implementation varies somewhat from one building to another. It is not unexpected that intervention delivery at the elementary level will vary from what occurs at the secondary level (Johnson & Smith, 2008). In the case of EARSD, interventions are delivered during the school day at the elementary level, whereas the middle school and high school are providing interventions after school or on weekends with some reported success. Minor differences in process between elementary buildings exist, although the process is likely to become more unified as the district evaluates success and adjusts recommendations accordingly. While understanding of process may be somewhat fluid as changes are made, understanding of the history and purpose of RTI should perhaps be more cohesive. Respondents identified the purpose of RTI in very linear and singular ways. They seem not to understand the basic paradigm shift behind RTI (Hoover, 2010). The past practice of moving from singular instruction for all, failure for those who can't keep up, and provision of support through special education is intended to be replaced through RTI, by high quality, differentiated instruction for all, provision of research-based interventions delivered with fidelity and regular data-driven progress monitoring; all of which are intended to meet the needs of the majority of the population with only a small percentage of students requiring special education. Respondents, for the most part, did not indicate an understanding of this paradigm shift.

IDEA 2004 federal mandate. Very few interviewees had any knowledge of the RTI language in the 2004 reauthorization of IDEA with respect to eligibility determinations for SLD. Although there was professional development provided for staff related to the Foundations intervention as well as the data management aspect of RTI, apparently the topic of RTI within IDEA was absent from in-service discussions. One respondent was clear that this omission was not an oversight. Since RTI is intended to be a general education initiative, the district administration wanted to focus on the framework and implementation for all EARSD students rather than associating RTI with special education law, risking the possibility that staff would view RTI as a chore they perform in the interest only of special education. I would argue that as the staff becomes more comfortable with RTI and continue to identify its benefits, that knowledge of the language of RTI and SLD eligibility in the law will be assistive to the staff in supporting buy-in and in understanding the need to remain vigilant with implementation fidelity.

Fidelity. With regard to fidelity as required by IDEA, some issues should be noted. RTI, as a multi-faceted framework, must be well defined at the district level. The design of district data collection and management, implementation of tiered interventions, and evaluation of its successes and challenges must be monitored for fidelity in order to insure that RTI is in reality aligned with the district vision and design (Glover & DiPerna, 2007). This is a difficult task, when considering the commitment of personnel and time required in administration of this oversight in buildings where the process may be intended to vary. The concept of fidelity is generally associated with delivery of specific intervention programs offered by individual teachers and certainly this is appropriate. When interventions are not delivered as they were designed, they are less likely to

produce gains with at-risk students (Fuchs, Fuchs, & Stecker, 2010). As interventions are adapted by individual teachers, it is difficult to attribute a student's success or failure to a specific intervention and to plan for adjustments which may be needed during progress monitoring (O'Connor & Klingner, 2010). Overseeing individual teachers for intervention fidelity should be done regularly by the building administrator. Although several respondents mentioned that other staff members such as Child Study Team members and reading specialists observe delivery of interventions, these staff do not hold supervisory positions and therefore should not be required to evaluate the performance of peers. However, if only principals are charged with the responsibility of monitoring fidelity within their building, the time required for this task will be a significant drain on the time available to complete what is already a very long "to do" list.

Perhaps most important in considerations of fidelity, is the philosophical dichotomy of intervention fidelity and differentiated instruction (Fuchs & Fuchs, 2009b; Snell, 2009). Following a scripted delivery of intervention insures fidelity, however the most successful educators understand that good teaching is recursive in nature. Teachers introduce material, observe and assess students as they interact with the material, and then adjust their instruction in order to differentiate for the various needs of their students. This is difficult to do within the intervention blocks if they are delivered with utmost fidelity. One would argue that teachers can still observe, and certainly RTI requires data collection to assess student success, but going back to reteach a skill in a differentiated format after the lesson has passed squanders the "teachable moment" and requires finding yet more time in an already challenging schedule for differentiated

reinforcement (Friedman, 2010). Somehow this must be accomplished if the needs of various types of learners are to be successfully met within the RTI structure.

RTI data use in SLD eligibility determinations. Finally, I examined the use of RTI data in eligibility determinations for SLD. At this time, the EARSD is consistently using the RTI data to track individual student progress. There is minimal use of data for identifying specific learning issues. Respondents indicated that the data only offers a general skill deficit based on lack of progress with an intervention that is intended to address fluency. Child Study Team members reported that they do not currently use RTI data as part of their comprehensive evaluation, or to assist them in choosing specific assessments within the evaluation process. However, the RTI data has been reported to positively impact the timeframe that is required between identification of a reading deficit and referral for a comprehensive evaluation. RTI's consistent progress monitoring and documentation of interventions with their intensity and duration allows the Child Study Team to determine with confidence that the student's deficits are not the result of poor-quality instruction or insufficient general education interventions.

Although the law allows for it, RTI data alone has not, at this time, been used in EARSD to make classifications for SLD. Respondents who are most involved with these eligibility decisions indicated that there has not been a directive offered by the district to allow for that. They did state, however, that they believe while assistive, RTI data currently in use, is not adequate to assess a student's learning style, perceptual strengths and weaknesses or any processing disorders that may be interfering with academic success. Comprehensive evaluations conducted by appropriately trained and certified professionals would still be required to collect this information and make appropriate

recommendations about eligibility for special education and related services (McGrew & Wendling, 2010). This is aligned with current federal regulations stating that a comprehensive evaluation is required to identify a disability (Flanagan, Fiorello, & Ortiz, 2010).

Discussion of Quantitative Results

The final research question posed in this study queries whether students who participate in RTI interventions make measureable gains in reading achievement. This is addressed by considering the quantitative results. Discussion of quantitative results focuses on interpretation of grade level results, tier level results, length of intervention results and whole sample results.

Grade level interpretations.

2nd and 3rd grade. When examining the results of all students who received RTI interventions in 2nd and 3rd grade, findings indicate no statistically significant difference between the mean beginning scores, the mean gain or the mean ending scores when compared to the benchmarks set for the population of all 2nd and 3rd graders at Jefferson Elementary School. The 2nd and 3rd grade students targeted for RTI interventions began only slightly below their same grade peers and made comparable gains, resulting in ending scores that were not statistically different from the ending benchmarks for their grade. Interviewees agreed that scores on universal screenings are not used in isolation when making decisions regarding the need for intervention. This is evidenced by the fact that 2nd and 3rd grade students were offered Tier II RTI interventions even though there was no statistically significant difference between their beginning scores and the set benchmark scores for their grade. Such decisions would likely have been made based on

functional information and teacher observations of reading behavior, which indicated that although these students' scores were not markedly below the benchmark, there was reliable information to suggest that they would be at risk for reading failure if they received no intervention support. Gains for this group of students kept adequate pace in order to allow the RTI students to achieve ending scores that were again not significantly different from their target ending benchmark.

1st and 2nd grade. In contrast, there was a statistically significant difference between 1st and 2nd grade students' beginning scores and the beginning benchmark. Although functional information and classroom teacher reports likely corroborated reading deficits for this population, their scores alone would have signaled need for intervention. With RTI interventions, 1st and 2nd grade students made significantly greater gains when compared to the overall 1st and 2nd grade expected gains. Their gains were large enough to result in ending scores which were higher than, but not significantly different from the ending benchmark for the 1st and 2nd grade population from a statistical standpoint. This 1st and 2nd grade group of students receiving RTI interventions essentially "caught up", and slightly surpassed the target benchmark for all students in their grade.

1st grade. The final grade level group analyzed were 1st grade students receiving RTI interventions. This sample of students began with mean test scores that were significantly below the benchmark for the population signaling the need for support. The mean gain made by this group, although not statistically significant, was slightly greater than the gain expected by the 1st grade population and sufficient to produce ending scores for the 1st grade RTI sample that were not significantly different from the ending

benchmark expectation for the 1st grade population. As with the 1st and 2nd grade RTI sample, this 1st grade RTI sample ended with scores slightly higher than the ending benchmark for 1st grade but the difference was not statistically significant. For students who began well below their peers, gains that allow them to end at least at grade expectations are certainly meaningful.

Grade level results of this study reveal that students receiving RTI interventions in 1st grade or in 1st and 2nd grade made greater gains than those who received RTI interventions in 2nd and 3rd grade. These findings lead one to question whether RTI benefits are greatest in the early grades and whether there is a diminishing return on these interventions as students mature. Such assumptions have been researched in the last several years with findings supporting earlier interventions as most beneficial (Simmons et al., 2008; Cooke, Kretlow, & Helf, 2010). The results of this study would corroborate such earlier findings. Simmons et al. (2008) also found that reading gains produced by early interventions with kindergarten students were sustainable over time making the investment of early intervention well worth the time and cost.

Tier level comparisons.

1st grade tier comparisons. When considering tier level results, findings for 1st grade students who received Tier II or Tier III interventions began with scores significantly below benchmark with targeted Tier III students having the lowest scores. There was no statistically significant difference in their mean gains and no statistically significant difference in their ending scores when compared to the ending benchmark for 1st grade. Although not statistically significant, the gains made by the Tier III RTI intervention group were greater than those of the Tier II intervention group, with

resulting ending scores for both these groups that were slightly higher than the ending benchmark and with Tier III students scoring slightly better than Tier II students after intervention. Since the Tier III students began with lower scores, catching up to and slightly surpassing the ending 1st grade benchmark and the 1st grade Tier II sample, this group showed the largest gain at 1st grade.

1st and 2nd grade tier comparisons. Tiered results for the 1st and 2nd grade sample show non-significant statistical differences. There was no statistically significant difference between mean beginning scores, mean gain, or mean ending scores for the Tier II and Tier III 1st and 2nd grade sample groups. Students receiving Tier II interventions had similar scores and gain to those of the population and the targeted Tier III sample group. The students receiving Tier III intervention, however, began significantly below the population. Statistically, they had non-significant differences in gains and ending scores when compared to the benchmark and the Tier II intervention group. Although statistically not significant, this sample of students receiving Tier III RTI interventions made enough gain to catch up and slightly surpass the population although they began considerably behind their same grade peers.

This result for the 1st and 2nd grade sample, paired with the finding for the 1st grade sample, indicates that interventions offered at Tier III have had the most meaningful impact on students identified as having the largest deficits. It is important to remember that in EARSD Tier III interventions are less unified than Tier II interventions. No consistent intervention programs have yet been formally adopted. Intervention specialists who provide Tier III service rely, in large part, on individual skill sets that they have acquired throughout their teaching careers. As a group, the Tier III 1st grade

sample and 1st and 2nd grade sample are clearly benefitting from this additional support. What is difficult to ascertain, is the particular variable that may be producing these positive results. Gains may be a result of particular intervention programs, informal supports offered by Tier III interventionists, strong affective connections between interventionist and students, or simply more time on task. Complexity of intervention frequency, intervention intensity, and individual skill sets of service providers make attribution of gains difficult to assign to a particular variable of the Tier III support. This dilemma was noted in a previous recent study (Duhon, Mesmer, Atkins, Greguson & Olinger, 2009).

2nd and 3rd grade tier comparisons. Findings comparing tiered interventions for 2nd and 3rd grade students differed from the findings of the younger groups. For this sample, there were no statistically significant differences in the mean beginning scores for 2nd and 3rd graders who received Tier II RTI interventions and 2nd and 3rd graders who received Tier III RTI interventions. However, there was a statistically significant difference in the mean gain of these two groups. The 2nd and 3rd grade students who received Tier II RTI interventions had a mean gain that was significantly greater than the same grade students receiving Tier III RTI interventions. This larger mean gain made by students receiving Tier II RTI interventions led to a statistically significant higher mean ending score than was achieved by the students receiving Tier III RTI interventions. The 2nd and 3rd grade students receiving Tier III interventions, in contrast to the 1st grade sample and the 1st and 2nd grade sample, made slow enough gains that their mean ending score was significantly below the ending benchmark. In contrast, the 2nd and 3rd grade students receiving Tier II interventions made statistically significant gains allowing them

to achieve a mean ending score significantly above both the Tier III intervention group and the population benchmark. For this older sample, Tier III interventions produced no significant further gains.

Some might attribute this finding to the aforementioned benefits of early intervention (Cooke, Kretlow, & Helf, 2010; Greenwood et al., 2011). Others argue that there may be a diminishing return with additional amounts of support as some previous studies have indicated (Wanzek & Vaughn, 2008; Wanzek & Vaughn, 2009). I would argue that beyond these two issues, it is likely that as students get older and have been provided even early and appropriate interventions, there will always be a group of students for whom the RTI interventions may be insufficient. These students may have true learning disabilities and will require comprehensive evaluations to determine their eligibility for special education and related services. Tier III students who make insufficient gains even when high-quality, research-based interventions are delivered with fidelity are likely to be identified as these most at-risk students.

Length of intervention considerations.

A final consideration of quantitative results for subset groups of RTI students is the comparison of benefits for participation in RTI interventions for one year as opposed to two years. When comparing gains of 1st grade students who received RTI interventions for one year, their mean gain of 48.90 exceeds the expected gain of 36.00 for the population. Likewise, the mean gain of 90.11 for 1st and 2nd grade students who received RTI interventions for two years exceeds the expected gain of 75.00 for this population. In contrast, the mean gain for 2nd and 3rd grade students receiving RTI interventions at 69.40 is very close to the expected gain of 64.00 for the population of all 2nd and 3rd grade

students. Conflicting results of two year samples render decisions about the need or lack of need for extended service times inappropriate. However, it is clear that for the sample groups identified in this study, students receiving only one year of RTI intervention support at 1st grade made comparable gains to 1st and 2nd grade students receiving two years of RTI interventions.

Whole sample considerations.

In order to answer the final research question of this study; “Does interaction with the RTI process produce measureable gains in reading achievement for at-risk students” data results for all students receiving RTI interventions are considered. As a total group, these 30 students had a mean beginning score significantly below the expected benchmark (-6.70). After RTI interventions there was no statistically significant difference between their ending scores and expected ending benchmarks. The mean ending score of RTI students at (4.37) was slightly above the benchmark set for the population. In essence the students receiving RTI interventions caught up to the general population based on expectations set by the EARSD. The statistically significant mean gain of (11.07) made by students receiving RTI interventions is functionally meaningful. It enabled these at-risk students as a group to gain reading skills in the area of fluency at a pace that measures their skill as commensurate with same grade peers. This outcome supports RTI proponents’ assertion that early interventions provided through RTI may offer a vehicle for timely attainment of grade level skills for at-risk students (Glover & DiPerna, 2007). Certainly, the whole sample findings are aligned with the district RTI goal to provide intervention that maximizes the success of all students.

Representation of ethnic minorities.

A final note regarding whole sample implications of this study considers overrepresentation of ethnic minorities in the targeted RTI sample. As mentioned earlier, ethnic minorities, particularly Black and Hispanic students, have historically been singled out as low achievers and ultimately overrepresented in special education (Beratan, 2008; Glover & DiPerna, 2007; Kozleski & Huber, 2010; Skiba et al., 2008). Of the 30 sample students identified for this study, 28 of them are White, one student is Asian and one student is Black. While Asian students comprise 30.36% of the Jefferson Elementary School population, the one Asian student included in RTI interventions represents only 3.33% of the total sample. 4.02% of all students at Jefferson Elementary School are Black, but again, only 3.33% of the total sample is represented by the one Black student. In contrast, where 62.72% of all Jefferson Elementary School students are White, the 28 White students provided RTI interventions represent 93.33% of the total sample. Clearly, in the school studied, overrepresentation of minority populations is not an issue. The data-driven decision making that is fundamental to the RTI process, provides a vehicle for objective inclusion and exclusion of students within the RTI framework, leaving little room for subjectively biased outcomes.

Limitations

Limitations of this research are (1) small sample size of student records for quantitative findings, (2) lack of longitudinal results, and (3) unavailability of exact dates for movement between tiers for sample students. The sample size of student records in this study was dependent on the actual number of students who have received RTI interventions. Since EARSD only began implementing RTI in 2009 in Jefferson

Elementary School as a pilot, this was the school in the district that had the largest number of students to study. Even so, EARSD is a high achieving district with few students identified as at-risk for reading failure. While most available student records were included in the sample and the number in the total sample was adequate, subgroups by grade and tier were small. Moreover, data for the quantitative sample was only available for a two year period. These short-term results may not be replicated in a long-term study where students have access to interventions over longer periods of time and move fluidly between tiers for RTI support. Finally, the lack of exact dates for movement between tiers makes tier support implications difficult to interpret. These issues limit the generalizability of findings to other schools within the EARSD as well as schools elsewhere in the state or country.

Implications for Future Research

By answering the research questions outlined for the study this inquiry provides evidence of the process of RTI implementation and its structure within the district of study. It serves to fill a gap in the literature regarding stakeholder perceptions of the benefits and challenges of RTI. Quantitative data indicate that students receiving RTI interventions make measureable and meaningful gains in reading achievement. The findings of this study add to knowledge in the field and may be assistive to other districts as they draft frameworks for RTI / multi-tiered intervention systems in the future.

Implications for future research include (a) study of a larger student record sample in order to determine more pervasive and definitive results of growth in student reading achievement; (b) longitudinal studies to examine comparative benefits of RTI for younger vs. older students; (c) longitudinal studies to examine percentages of students

receiving Tier II or Tier III interventions who return to Tier I service vs. students requiring comprehensive evaluation for special education; (d) inquiry focused on comparison of benefit received in Tier II vs. Tier III interventions; (e) qualitative studies including parents and students in stakeholder sample group; and (f) studies examining RTI process, perceptions and student growth across several school districts with varied demographics in order to examine generalizability of both qualitative and quantitative findings of this study.

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Appendix A

Standardized Interview Guide

Response to Intervention (RTI) and Specific Learning Disabilities (SLD)

Research Questions

1. How is RTI used in one public school district?
2. What are stakeholder perceptions of RTI benefits, challenges and usefulness in the SLD classification process?
3. Does interaction with the RTI process produce measureable gains in reading achievement for at-risk students?

I'd like to learn a little about your experience in education and your current work situation.

- 1- How many years have you been working in the field of education?
- 2- What is your current position?
- 3- What ages of students do you serve?

Thank you. Now some questions related to RTI.

- 4- How is RTI used in this district?

Probes:

- a. How does the team determine which students are at risk?
- b. What are the interventions offered to at risk students?
- c. In what subject areas are interventions provided?
- d. Can you explain the tier structure to me?

- e. How are decisions made about the number and types of interventions offered?
- f. How are decisions made about movement between tiers?
- g. In what ways were/are staff supported in the RTI process?
- h. Who is responsible for the implementation of the RTI process?
- i. How do you insure fidelity of treatment in classrooms?

5- Once it is collected, in what ways is the RTI data used?

6- How do you participate with the RTI process?

Let's talk a little about RTI in relationship to SLD classification.

7- What is your understanding of the IDEA 2004 federal mandate regarding RTI and SLD?

8- In what ways is RTI used in the eligibility process for SLD in this district?

9- Has RTI changed the eligibility process for SLD in your district? If so, in what ways?

10- What is your perception of the value of RTI in the eligibility process?

Probes:

- a. How does it inform decisions regarding the need for a comprehensive evaluation?
- b. In what ways are the RTI data used in the evaluation process?
- c. The definition of SLD specifies that a deficit in achievement is a result of a disorder of a basic psychological process. How has RTI

data contributed to an understanding of a student's disorder of a basic psychological process?

11- In what ways would you like to see RTI used that may be different from the current practice?

12- Is there anything else you think is important to consider regarding RTI and SLD eligibility?

Appendix B

Focus Group Interview Guide

Response to Intervention (RTI) and Specific Learning Disabilities (SLD)

Good afternoon and welcome. Thanks for taking the time to join us. My name is Linda Davidoff. I'm a doctoral student at Rutgers University and the purpose of the focus group is to get some information about your perceptions of RTI and the eligibility process as it currently functions in your district. I would also like to share with you some themes that are emerging from the interviews already conducted in order to verify that your perceptions have been authentically represented. As we discuss the general questions and themes, please feel free to share your point of view even if it differs from what others have said. My purpose is not necessarily to gain consensus, but to understand your perception of the issues. (Krueger, 2002)

You've probably noticed the audio recorder. I'm recording the session because I don't want to miss any of your comments. I'm sure your comments will be helpful and I can't write fast enough to get them all down. Although we'll be on a first name basis today I won't use any names in my study. Your comments will be completely confidential. (Krueger, 2002)

Focus Guide Interview Questions

- 1- What attributes of RTI do you feel are working well?
- 2- What are some of the difficulties that you have encountered with the RTI process and in what ways can it be improved?

- 3- How is fidelity of the interventions monitored?
- 4- Please share an experience with RTI that is memorable for you.
- 5- How has RTI been assistive in determining SLD?
- 6- How has RTI impacted the number of referrals for special education?
- 7- How has RTI impacted the timeframe from identification to classification of at-risk students?
- 8- How have parents responded to the RTI process?

Thank you. Let's talk a little bit about the themes that seem to be emerging from the individual interview data.

Emergent themes:

- 1- Benefits of improved instruction for all students.
- 2- Improved sense of collaboration between general and special education staff.
- 3- More appropriate referrals for special education evaluations.
- 4- Earlier identification of at-risk students.
- 5- Benefits of available RTI data.
- 6- Challenges of staffing and scheduling in RTI implementation.
- 7- Need for both RTI and comprehensive evaluations for determination of eligibility.

Appendix C Informed Consent

Response to Intervention (RTI) and Specific Learning Disabilities (SLD)

You are invited to participate in a research study that is being conducted by Linda J. Davidoff, M.A., who is a doctoral student in the Educational Psychology Department at Rutgers University. The purpose of this research is to investigate the RTI process, perceptions of RTI held by stakeholders, and RTI impact on at-risk learners in your district.

Approximately 30 subjects from varied disciplines will participate in the study, and each individual's participation will last approximately two hours. The study procedures include participation in one individual interview and in one focus group.

- Subjects will be asked to participate in an individual interview with the principle investigator which will be audio recorded. The interview will take approximately 90 minutes.
- The final phase will be a focus group, to be audio recorded by the principle investigator. Approximately 10 subjects will be invited to participate. Its purpose is to gather further information and to member check emergent themes derived from analysis of the interviews. The focus group will take approximately 2 hours.

If you agree to take part in the study, you will be assigned a random code number. Your name will appear only on a list of subjects, and the master list that links the code to your identity will be maintained in a secure location. Data will be stored in a locked cabinet and/or restricted-access computer and will be made available only to persons conducting the study unless you specifically give permission in writing to do otherwise. No reference will be made in oral or written reports which could link you to the study. Therefore, data collection and information in the study records is strictly confidential.

There are no foreseeable risks to participation in this study. Participation in this study will offer an opportunity to share stakeholder observations and may produce valuable data regarding the process and development of RTI practice. Group research results will be shared with the school district. You will receive \$10.00 for completing the interview. If you participate in the focus group, you will receive an additional \$10.00.

Participation in this study is voluntary. You may choose not to participate, and you may withdraw at any time during the study procedures without any penalty to you. In addition, you may choose not to answer any questions with which you are not comfortable.

Subject's Initials _____

Print Date: 1/27/2011

Response to Intervention (RTI) and Specific Learning Disabilities (SLD)

This research is confidential. The research records will include some information about you and this information will be stored in such a manner that some linkage between your identity and the response in the research exists. Some of the information collected about you includes your years of experience, the job that you currently perform, and the ages of the students you service. I will keep this information confidential by limiting access to the research data and keeping it in a secure location. The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated, unless you have agreed otherwise. All study data will be kept for three years.

If you have any questions about the study or the study procedures, you may contact myself at 168 Knickerbocker Road, Cresskill, NJ 07626, ldavidof@eden.rutgers.edu or (734) 945-8550 or you can contact my faculty advisor, Dr. Stanley Vitello at Department of Educational Psychology, Graduate School of Education, Rutgers, The State University of New Jersey, 10 Seminary Place, New Brunswick, New Jersey, 08901, vitello@rci.rutgers.edu or (732) 932-7496 ext. 8326. If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:

Rutgers University Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs
3 Rutgers Plaza
New Brunswick, NJ 08901-8559
Tel: 732-932-0150 ext. 2104
Email: humansubjects@orsp.rutgers.edu

You will be given a copy of this consent form for your records.
Sign below if you agree to participate in this research study:

Subject (Print) _____ Date _____

Subject Signature _____ Date _____

Principal Investigator Signature _____ Date _____

Subject's Initials _____

Print Date: 1/27/2011

Appendix D

Audio Addendum to Consent Form

Response to Intervention (RTI) and Specific Learning Disabilities (SLD)

You have already agreed to participate in a research study entitled: Process, Perception and Potential: Response to Intervention (RTI) in One School District and Its Impact on Classification of Specific Learning Disabilities (SLD), conducted by Linda J. Davidoff. We are asking for your permission to allow us to audiotape as part of that research study. You do not have to agree to be recorded in order to participate in the main part of the study.

The recordings will be used for analysis by the research team.
 The recordings will include a code linked to the subjects' identity.
 The recordings will be stored in a locked file cabinet and linked with a code to the subjects' identity, and will be destroyed upon publication of study results.

Your signature on this form grants the investigator named above permission to record you as described above during participation in the above-referenced study. The investigator will not use the recordings for any other reason than that stated in the consent form without your written permission.

Subject (Print) _____ Date _____

Subject Signature _____ Date _____

Principal Investigator _____ Date _____

Subject's Initials _____

Print Date: 1/27/2011