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EVALUATING THE EFFECTIVENESS OF RESPONSE TO INTERVENTION:
COMPARING THE READING ACHIEVEMENT OF ELLS AND NATIVE ENGLISH
SPEAKERS

By

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B.A., Berea College, 1996
M.A., University of South Florida, 2001

A Dissertation
Submitted to the Faculty of the
College of Education and Human Development
in Partial Fulfillment of the Requirements
for the Degree of

Doctor of Philosophy

College of Education and Human Development
University of Louisville
Louisville, Kentucky

August 2012

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A Dissertation Approved on

July 27, 2012

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DEDICATION

This dissertation is dedicated to my entire family
whose time, patience, love, support, encouragement, and hugs helped me to persevere,
and to my friend
Dr. Susan Miletta
without whom I never could have begun nor completed this journey.

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ABSTRACT

EVALUATING THE EFFECTIVENESS OF RESPONSE TO INTERVENTION: COMPARING THE READING ACHIEVEMENT OF ELLS AND NATIVE ENGLISH SPEAKERS

Philip Kiersten Sapienza

July 27, 2012

Teaching reading in the mainstream classroom is a challenge. This challenge is compounded when trying to meet the needs of English language learners. Recently, Response to Intervention (RTI) has been suggested as a framework for classroom teachers to use in order to meet the wide range of needs of their students.

The purpose of this study was to evaluate the effectiveness of an RTI reading instructional model when used with English language learners (ELLs) in mainstream classrooms. A mixed-method, quasi-experimental, pre/post design was implemented. A purposive sample was drawn from third grade students in schools that integrated ELLs and native English speakers. Dynamic Indicators of Basic Early Literacy Skills (DIBELS) and the Developmental Reading Assessment (DRA) were used to assess Reading achievement. Student reading assessment scores from the end of second grade were used as a covariate. Data were analyzed using MANCOVA. Further analysis of the ELLs included in the study was conducted using MANCOVA with Assessing

Comprehension and Communication in English State-to-State (ACCESS) reading subsections as a covariate.

The results of this study showed that ELLs in schools implementing reading RTI were able to achieve predicted reading benchmark levels at the same rate as native English speakers in the same schools. Overall, the number of students reaching benchmark levels was nearly equal in RTI and comparison schools; however, RTI schools had a greater number of ELLs reaching the benchmark. ELLs in RTI schools made the greatest gains in reading scores between assessments as compared to all other groups in the study.

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CHAPTER I

Since 1994 there has been an increase of nearly 1,000,000 English language learners (ELLs) enrolled in grades K-12 (Kamps et al., 2007) in the United States. Data from the United States census of 2000 showed that 1 of every 5 public school students was a child of immigrants (Betts, Bolt, Decker, Muyskens, & Marston, 2009). Similarly, Klingner, Artiles, and Barletta (2006) cited 2002 data that showed 20% of people above age five spoke a language other than English in their homes and that 43% of general education classrooms had at least one student classified as an ELL. If the trend of ELL enrollment continues, these percentages could quite easily double in the next 20 years.

The growing numbers of ELLs only increase the importance of effective reading instruction and assessment because reading relies on language learning, visual input (graphemes), and comprehension. The most crucial point in reading education is found in third-grade. It is here where students are expected to transition from learning to read toward reading to learn. Additionally, high-stakes testing generally begins in third-grade. It is for these reasons that research in third-grade reading, especially with ELLs, is important.

Theoretical Perspective

My inspiration for conducting this research came from two main sources. First, I am an ESL teacher and ESL teacher educator. I understand the classroom teachers' needs on two levels, pre-service teacher preparation and daily attempts to meet the needs of ESL students. Historically, I believe that mainstream teachers have not been

adequately prepared to meet the needs of students who are English language learners. Secondly, I believe student advocacy is one of the most important tasks of educators. This is especially true for elementary students and their families, who may have neither the experience nor voice of older students.

Problem

The growing population of non-native English speakers in public schools adds to the pressure to create successful readers. Under the federal No Child Left Behind Act (NCLB, 2002), teachers are expected to help these ELLs reach the same reading goals as native English speakers within their first two years in a U.S. school. Many teachers are not prepared to take on this added challenge. Brown and Doolittle (2008) cite data from 2004 showing 56% of public school teachers had at least one ELL in his/her classroom. However, less than 20% of those same teachers had English as a second language (ESL) training (Brown & Doolittle, 2008). Whether due to a lack of ESL training, stress in responding to pressures for increasing student achievement, or teachers' cries for help, many teachers are quick to refer ELLs for special education programs. The referral process is complex for ELLs; however, Response to Intervention (RTI) provides a framework to address these issues in the regular classroom prior to referral to special education.

Reading Intervention

The purpose of implementing RTI in reading is three fold: 1) identify struggling readers, 2) provide those students with specific instruction, and 3) assess their ongoing needs (Fuchs & Fuchs, 2006). The ultimate goal of RTI is for the student to be successful in the regular classroom or to provide increasing support so the student can be

successful (Cummins, Atkins, Allison, & Cole, 2008; Linan-Thompson, Cirino, & Vaughn, 2007; Vaughn & Fuchs, 2003). Responsiveness, and ultimately success, is determined by the individual student's use of skills learned in interventions while performing academic tasks in the regular classroom (Fuchs & Fuchs, 2006).

RTI is implemented in three tiers. The first tier consists of regular classroom instruction provided to all students using best practices that are culturally appropriate (Linan-Thompson et al., 2007; Rance-Roney, 2009; Vaughn & Ortiz, 2010). Research identifies successful Tier 2 interventions in groups comprising five to seven students, meeting for approximately 30 minutes daily for 15 weeks (Brown & Doolittle, 2008; Kamps et al., 2007; Linan-Thompson & Ortiz, 2009; Rinaldi & Samson, 2008). Groups for Tier 2 interventions should be formed based on the reading skills not evidenced by the individual students. Tier 3 requires 20-30 minutes of intensive reading instruction on a specific skill or strategy in addition to Tier 1 and Tier 2 instruction (Brown & Doolittle, 2008; Kamps et al., 2007).

In this structured approach, a Tier 2 student would receive reading instruction twice and a Tier 3 student would receive reading instruction three times per day. Each additional tier has a smaller teacher to student ratio and is more focused on specific strategies.

RTI has a rich history as a framework for reading remediation with students in special education programs and more recently with students in general education settings. The combination of RTI and ELLs is a recent phenomenon. It is for this reason that research such as this is in limited supply. Hence, while RTI has a history of being effective with many populations of students, more needs to be known about the

effectiveness of RTI when used with ELLs. This study addressed this dearth in the research.

Research Needs

The major factor needing investigation was the amount of reading gains made by ELLs who participate in RTI. While RTI success is generally measured by performance in the classroom, or by achieving benchmarks of their peers, it was of interest to see the range of reading levels an ELL passed through while in RTI. It was important in this study evaluate ELL gains both in consideration of benchmarks and in terms of absolute gains from pre-test to post-test irrespective of benchmarks. These gains were of importance even without reaching the benchmark levels. Because ELLs typically begin the school year at a much lower reading level than native English speakers, the reading gains made by an ELL may be drastic when compared to any student who began the treatment nearer the benchmark. There is a need to examine general education, mainstream classrooms due to the fact that a majority of studies include only native Spanish speaking ELLs or bilingual programs (Betts, Bolt, Decker, Muyskens, & Marston, 2009).

Purpose

The purpose of this study was to evaluate the effectiveness of reading Response to Intervention with ELLs. This was accomplished by contrasting reading achievement data for ELLs and native English speakers from RTI schools and comparison schools (see Table 1).

Table 1.

Comparison Groups

English Language Learner	Reading Instruction	
	ELL RTI	Not ELL RTI
	ELL No RTI	Not ELL No RTI

Questions

This study presented questions related specifically to reading achievement gains of ELLs. I compared the gains in reading scores made by ELLs in schools utilizing RTI to all other non-RTI participants in the study. This allowed a valuable comparison to help form conclusions regarding the effectiveness of using RTI with ELLs.

This study focused on four questions:

- 1) Is there a significant difference in the reading achievement of third grade students enrolled in RTI schools and comparison schools?
- 2) Is there significant effect for ELLs on reading achievement through RTI controlling for English language proficiency?
- 3) Is the effect of RTI consistent across ELL groups and non-ELL groups?
- 4) How does the percentage of ELLs who reach benchmark reading levels compare to non-ELLs who reach benchmark levels?

I anticipated that ELLs in RTI programs would outperform native English speakers in comparison schools, but not those in RTI schools. While I did not expect ELLs would outperform native English speakers in RTI programs, I did believe they would make significantly larger gains in reading achievement.

Assumptions

Schools that were in their first year of RTI implementation were more closely related to a control group not implementing RTI than to a school that was in the 3rd or 4th year of implementation. Dariotis, Bumbarger, Duncan, and Greenberg (2008) stated that program implementation and fidelity were the most difficult in school settings possibly due to the conflicting demands placed on the classroom teachers. Mainstream teachers are expected to be teacher, policemen, nurse, nurturer, grader, record keeper, data collector, social-worker, and now academic interventionist. In the short-term of beginning a new program such as RTI, the concerns over implementation are increased. This assumption was the basis for using schools in their first year of implementing RTI as a comparison group in this study.

It was assumed teachers had the best interest of the child in their minds, socially, emotionally, and academically. This is presumably why educators persist in the field of public education. Equally, it was assumed that students from all cultural backgrounds wanted to be successful and can learn. This assumption acknowledged that while there may be extraneous circumstances regarding a teacher's implementation of RTI, the teacher's actions were based on the perceived needs of the students.

Second language development and progression through stages related to second language acquisition also have an affect on academic progress (Linan-Thompson & Ortiz, 2009). Collier (2011) also believes the progress of culturally and linguistically diverse students' progress ebbs and flows through stages. Collier (2011) not only believes that this pattern has an effect on academic progress, but also parallels the academic progression of students with specific learning disabilities. This latter phenomenon can

lead to an ELL mistakenly being placed in special education programs. RTI may help to alleviate these mistaken placements.

It was assumed that the reading interventions provided by the schools district and schools were research based and implemented faithfully. This study was concerned with RTI as a program and not specific interventions.

Delimitations

This study's generalizability was limited to elementary students from school districts in the United States. The sample related to 3rd grade students from schools that have ESL programs, which may offer different services or may have different teacher requirements than schools without ESL programs. ESL programs generally included at least one teacher certified in teaching students whose native language is not English, materials to support this teacher's instruction, and may have included a certified translator, or bilingual associate. The RTI interventions for each tier were limited specifically to those shown by the literature to be most effective with ELLs. Other interventions or programs with less research-based support were included. In this manner, I was attempting to faithfully implement interventions in accordance to RTI's insistence on research-based interventions and to provide the best instructional practice for students.

The time frame for this study was one academic semester. While this may have appeared to be an insufficient amount of time to determine academic progress, RTI is geared toward students who are two or more grade levels behind who need to 'catch-up' quickly (Foorman, Breier, & Fletcher, 2003). Six weeks is the standard time frame used to determine if an intervention was having an affect on student achievement (Fuchs,

2006). Including a full semester provided ample opportunity for gathering multiple data points across the three tiers of RTI.

It was difficult to accurately identify the level and fidelity of implementation of the RTI instructional models in comparison schools. While attempts were made to allay this threat through the use of an observation protocol, observations were taken intermittently throughout the semester, not continuously. Throughout the duration of the study, teachers in comparison schools received ongoing training and the faithfulness of their respective implementation of RTI and interventions may have increased.

Effective teachers may have had a great affect on student outcome regardless of the instructional model, RTI or otherwise. Conversely, poorly prepared teachers may have had a negative affect on student achievement regardless of instructional model. In a public school settings, it is possible the program's district level supervisors agreed to adopt an academic program without the knowledge of their teachers. It is possible teachers followed aspects of the program they believed to be effective, rather than the specific program.

Definition of Terms

Many of the terms in this study are common in educational settings. Some acronyms vary slightly from state to state. I attempted to define all terms as they arose throughout the study. Below are some of the terms that were essential to this research.

English language learners were defined by NCLB as any students whose parents' native language is not English. Additionally, each student whose parents fit this requirement also took a brief English language proficiency screening, a shortened form of ACCESS called WIDA ACCESS Placement Test or W-APT. If the results of the language

screening were below the level of initially fully English proficient (IFEP), they were considered ELLs. The student continued to be considered an ELL until they passed the standardized English language proficiency test, ACCESS, which was given yearly. A student was considered fully English proficient when they attained a composite score of 5 or greater and a literacy score of 4 or greater. Composite scores were the average of the students' scores from listening, speaking, reading, and writing subsections. Literacy scores were the average of the students' scores from reading and writing subsections scores.

Achievement Gain was defined as progress indicated by Developmental Reading Assessment (DRA) and Dynamic Indicators of Basic Early Literacy Skills (DIBELS). Both of these assessments are explored in further detail in chapter three.

Observation protocol used to measure fidelity of implementation was clearly defined and exemplified once specific schools were identified.

Summary

The increased number of ELLs in public education poses a challenge for elementary school teachers. Reading instruction for a student who is also learning English is more dynamic than for a native English speaker. Response to Intervention provides a research-based structure for teachers to improve reading achievement and ultimately language acquisition. This study aimed to explore the extent to which RTI was an effective way to accomplish the former aspect of teaching ELLs. With there being a limited amount of research into RTI with ELLs, this study was poised to further the field.

CHAPTER II

Review of Previous Research

A substantial amount of research has been conducted on Response to Intervention (RTI). This research includes quantitative and qualitative studies relating to the model as a whole, each of its subsections individually, the types of interventions, the role of various educational professionals, and more. Research on the use of RTI with English language learners (ELLs) is limited, mostly occurring in the last five years and originating from a small number of authors.

For this literature review, I searched professional organizations, national legislation, and peer-reviewed journals. I conducted key word searches on the following internet databases: EBSCO, ERIC, Linguistics and Language Behavior Abstracts, ProQuest, PsychInfo, Social Science Index, WorldCat, as well as global Google Scholar searches. Initial searches were conducted using the following keywords as full text and as acronyms: ELLs, RTI, reading, remediation, intervention, special education, referral, identification, language acquisition, fluency, NCLB, DIBELS, DRA, comprehension. Once relevant articles were located, I used the combination of keywords used to identify the respective articles within each database to seek more related articles. I used the reference lists of the relevant articles to find additional resources on key concepts related to reading remediation of ELLs using RTI. Additionally, I searched the web sites and journals of national organizations relating to English as a second language, RTI, and

assessment: Cross Cultural Developmental Education, *Educational Assessment*, National Association of Bilingual Education, RTI Action Network, RTI for Success, School Psychology, Second Language Acquisition, *Second Language Research*, *Special Education Quarterly*, Teachers of English to Speakers of Other Languages.

Due to the limited number of sources relating to both RTI and English language learners, I chose to include articles and information from all credible, juried or peer reviewed sources. I have organized the topics of this chapter in the following manner: Needs of classroom teachers, assessment of ELLs, RTI, and specific interventions for ELLs.

Needs of Classroom Teachers Regarding English Language Learners

A student's overall academic success is predicated on their reading achievement (Kern & Friedman, 2009). The number one focus of elementary school teachers is the reading achievement of their students. Concern over reading instruction has intensified since the passage of the federal No Child Left Behind (NCLB, 2001) Act, which requires that high stakes testing be used to measure reading achievement on a yearly basis in grades 3-8. Many states, including Florida's recently signed Senate Bill 0736 have linked both teacher salary increases and continuing yearly contracts to student achievement scores on these high stakes tests.

The growing population of non-native English speakers in public schools adds to the pressure to create successful readers. Since 1994 there has been an increase of nearly 1,000,000 English language learners (ELLs) enrolled in grades K-12 (Kamps et al., 2007). Data from the United States census of 2000 shows that 1 of every 5 public school students is a child of immigrants (Betts et al., 2009). Similarly, Klingner, Artiles, and

Barletta (2006) cite 2002 data showing that 20% of people above age five speak a language other than English in their homes and that 43% of general education classrooms have at least one ELL. If the trend of ELL enrolment continues, these percentages could double in the next 20 years. The growing numbers of ELLs adds to the pressure and importance of effective reading instruction and assessment.

Under NCLB, teachers are expected to help ELLs reach the same reading goals as native English speakers within the first two years of enrollment in a U.S. school.

Research indicates that many teachers are not prepared to take on this challenge. Brown and Doolittle (2008) cite data from 2004 showing 56% of public school teachers have at least one ELL; however, less than 20% of those same teachers have ESL training. Many teachers are quick to refer ELLs for special education programs due to (1) a lack of English as a second language (ESL) training; (2) stress in responding to pressures for increasing student achievement; (3) teachers' cry for help. The referral process is complex for ELLs.

With the 2001 reauthorization of NCLB, interest in preventing unwarranted referrals of ELLs for special education services, specifically learning disabled (LD), has increased (Klingner & Harry, 2006). Prior to resorting to special education referrals, teachers and child study teams (CST) are required to ask how can they strategically improve the reading achievement of ELLs. Further complications arise from the assessments used to measure ELLs' academic achievement, qualifications for special education, language acquisition rates, native language development, and more. A review of current literature concerning methods of assessment for ELLs who struggle with reading prior to referral for special education services follows.

Challenges When Assessing ELLs

Assessing student achievement is always a challenge because there are many factors to consider when creating or evaluating a particular instrument. These factors include: validity and reliability of measures; levels of accommodation to the specific student language needs; the formative and/or summative uses to which the instruments are designed; formal and informal assessment procedures; students' attitude toward English, teachers' attitude toward ELLs; and anxiety related to language and testing. Reading assessments require further considerations, such as: instructional reading level, independent reading level, context, genre, and background information. Each of the preceding considerations is multifaceted and varies widely among students. Teachers frequently struggle with the need to cover grade level material, but often have to search for materials to cover these reading considerations.

Language and Culture

'Where is the child from? Does he/she speak English?' Teachers are quick to ask these two questions when an ELL is on their roster. It is understandable to want to know this information, for they both affect learning English and ultimately reading. However, these are only superficial inquiries, especially if the teacher does not appreciate the depths to which a child's language and culture affect their education. Rinaldi and Samson (2008) suggest that schools have a "difficult time distinguishing between the difficulty of acquiring a second language and a language based learning disability" (p. 6).

Acculturation is the process of internalizing, or becoming a part of, a culture other than one's native culture (Mettler, 1998). Betts et al. (2009) described the most influential aspects of acculturation as the process and reasons for coming to America, the

distance between the native language (L1) and English (L2), and the amount of contact between the child and American culture. The influence of time exposed to L2 has been a long-standing aspect of ESL education (Cummins, 1980). Distance between languages refers to how much the two are similar or dissimilar, e.g., graphically, auditory, and semantically (Chiswick & Miller, 2004). More commonalities between languages, and cultures for that matter, generally increase the speed of second language acquisition (Betts et al., 2009). Spanish is one example of a language closely related to English, e.g. both utilize the Roman alphabet and both have many similar sounds and vocabulary; whereas Arabic is quite different on both accounts. It would be inappropriate to believe that ELLs from these two varying linguistic backgrounds achieved the same levels of English proficiency within the same period of time.

A more significant predictor of an ELL's ability for reading achievement in English is their prior formal schooling. A vast amount of research shows that if a child has been taught reading skills in their native language, they will have greater success in learning to read English (Betts et al., 2009; Klingner et al., 2006; Linan-Thompson & Ortiz, 2009; Vaughn & Ortiz, 2010). When compared to ELLs who are culturally isolated in a classroom, ELLs who share a classroom with someone having the same L1 show faster rates of acquiring English literacy skills (Vaughn & Ortiz, 2010). This is attributed to the ELLs' similar set of background educational experiences facilitating the comprehension of new ones in that they can jointly compare and contrast. The studies by Vaughn and Ortiz (2010) also provide evidence supporting the fact that literacy skills are similar across many languages. Therefore, if a child has acquired reading skills in one language, it is easier for them to apply them in other settings, namely reading English.

Thomas and Collier present data in their 1997 study indicating the less schooling the student receives in their native language, the longer it will take them to acquire proficiency in reading English. A challenge for teachers is they infrequently have access to the ELLs academic background let alone their achievement level. Without this information it is difficult for the teacher to determine where to begin reading instruction and what expectations to have for the individual ELL.

Assessments themselves are a challenge. Except for a few bilingual or immersion programs, the reading assessments are administered in English, measuring English reading achievement, and follow reading instruction provided in English (Linan-Thompson, Cirino, & Vaughn, 2007). NCLB mandates ELLs be provided access to the same academic content and ability to create output equal to native English speakers (§3113 and 3212). This could be in the form of an adult who reads the text aloud in English and/or provide native language paraphrasing when available. There are not enough qualified translators in the public schools (AdvocatesforChildren, 2009). This amounts to both a lack of appropriate instruction and cultural insensitivity (Linan-Thompson et al., 2007; Linan-Thompson & Ortiz, 2009). In such cases, assessment results would be invalid due to the ELLs being provided neither the proper instruction nor sufficient opportunity to learn English (Figueroa & Newsome, 2006; Klingner et al., 2006; Linan-Thompson et al., 2007).

Validity issues notwithstanding, many factors confound teachers' ability to interpret ELLs' reading assessments. The most obvious cause is from the gap between ELLs' social language ability and their academic language ability (Betts et al., 2009; Cummins, 1980; Klingner & Harry, 2006; Linan-Thompson & Ortiz, 2009). These are

also referred to as basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP) respectively (Cummins, 1980). ELLs generally begin to excel in context-rich, oral communications within their first two to three years in a U.S. school (Betts et al., 2009; Cummins, 1980). This can cause teachers to have higher expectations for their academic achievement due to the fact that the ELL ‘sounds’ like the native English-speaking children during informal, context-rich, communications (Cummins, 1980; Linan-Thompson & Ortiz, 2009). Teachers commonly mistake low academic language proficiency as a learning disability (Klingner & Harry, 2006). However, ESL research indicates that an ELL’s academic language development takes significantly longer to develop, approximately five to seven years (Betts et al., 2009; Cummins, 1980; Linan-Thompson & Ortiz, 2009). Being ‘developed’ in the cases of both BICS and CALP signifies language output considered to be average for their peer group.

Language Acquisition or Disability

Identifying students with specific learning disabilities has been a difficult and contentious area of special education (Hale et al., 2010; Ofiesh, 2006); this difficulty is further compounded for ELLs (Collier, 2010; Wagner, Francis, & Morris, 2005). The challenges teachers face when giving reading assessments to ELLs reach further than the regular classroom. When regular education teachers struggle to overcome the instructional and assessment challenges in working with ELLs, they frequently look for help from the Child Study Team (CST) and special education teachers. One result is a substantial amount of data showing ELLs are incorrectly placed in LD programs (Ortiz, Wilkinson, Robertson-Courtney, Kushner, 2006). Further, identifying ELLs who in fact

are at-risk for reading disabilities is especially difficult (Linan-Thompson, Vaughn, Prater, Cirino, 2006).

The most glaring concern is the ELLs' low achievement in reading as evidenced in assessment. Empirically, the most obvious cause is from the gap between an ELL's social language ability and academic language ability (Klingner & Harry, 2006; Linan-Thompson & Ortiz, 2009). Timed reading assessments, both with and without including accuracy rates, also yield results indicating concerns of a specific LD (Linan-Thompson & Ortiz, 2009). Timed reading assessments are especially difficult for ELLs. Data collected from public schools show that ELLs are prematurely stigmatized by comparisons with either students in LD programs or native speakers who are low-achievers (Figueroa & Newsome, 2006; Klingner et al., 2006; Linan-Thompson et al., 2007; Linan-Thompson & Ortiz, 2009). The latter label comes from the CST's initial IQ screening of low performing ELLs, which generally show the ELLs as average to above average (Figueroa & Newsome, 2006; Klingner et al., 2006; Linan-Thompson & Ortiz, 2009). This achievement gap is what alarms both the classroom teacher and the CST.

In the NCLB Act of 2002, a significant gap between an individual's IQ and achievement scores was sufficient for placement in an LD program (Figueroa & Newsome, 2006; Klingner et al., 2006; Linan-Thompson et al., 2007). This achievement gap was not specifically defined and included other equally vague parameters (Fuchs & Fuchs, 2006). Linan-Thompson and Ortiz (2009) explain that NCLB did not specify which IQ instrument to implement nor did it define what actually constitutes a gap between achievement and IQ. Many IQ tests are culturally and/or linguistically biased in and of themselves (Figueroa & Newsome, 2006; Klingner et al., 2006; Linan-Thompson

et al., 2007; Schultz & Fortune, 1981). CSTs were ill prepared, especially when language acquisition was added as a confounding variable. Research indicates CSTs lacked both knowledge of and experience with ESL to know how to modify assessments or to use another assessment altogether (Klingner et al., 2006; Linan-Thompson and Ortiz, 2009). Data from Figueroa and Newsome (2006), collected from a sample representing metropolitan school districts, suggest that CSTs do not investigate the confounding factor of language “on test, testing, and diagnosis” (p. 6). Their data showed that 68% of CSTs simply inserted a disclaimer noting their lack of knowledge in the area of ESL; furthermore, over 90% of CSTs did not even consider issues relating to language, culture, or prior schooling when recommending LD placement for ELLs (Figueroa & Newsome, 2006).

An unanticipated result has appeared in data showing how this has affected ELLs’ placement in public schools. In grades kindergarten through four, ELLs were significantly under represented in LD programs compared to the national average (Linan-Thompson and Ortiz, 2009). However, in grades five through 12, ELLs were dramatically over represented in LD populations (Linan-Thompson & Ortiz, 2009). Research shows specifically that waiting until fourth grade, or higher, to assess an ELL for LD in reading increases the difficulty of remediation (Rinaldi & Samson, 2008). Typically, instruction in reading begins to switch to reading as instruction during fourth grade. At this point the instructional environment plays a huge role in an ELL’s success or failure (Klingner et al., 2006). Some researchers documented teachers as believing they have done all that can be done or that the ELLs kids are too low (Klingner et al.,

2006). The demand on reading as being necessary for ELLs to increase academic achievement practically forced them into consideration for LD programs.

Several instances have been documented showing misdiagnosis of ELLs as having specific learning disorders in reading (Klingner et al., 2006; Linan-Thompson & Ortiz, 2009). The most compelling data providing evidence of both CSTs' inadequacies and the inaccuracy of relying solely on IQ/achievement gap measures were found by Linan-Thompson and Ortiz (2009). They found one school in which the CST placed 19 Kindergarten ELLs in LD programs. Upon further review by an expert panel, only one of those children was found to have a learning disability (Linan-Thompson & Ortiz, 2009). This same panel reviewed 21 cases of ELLs being placed in LD programs based on their IQ/achievement gap: 10 of the 21 ELLs' low achievement in reading was found to be related to cultural and linguistic factors rather than a learning disability (Linan-Thompson & Ortiz, 2009).

Klingner and Harry (2006) investigated the decisions of CSTs in 12 schools specifically chosen because of their representation of a broad spectrum. Their findings summed up the challenges noticed by many other researchers. Klingner and Harry (2006) found that CSTs have difficulty:

differentiating between English language acquisition and learning disabilities, including not knowing when a child is ready to be assessed in English, confusion about when to refer an ELL, misinterpreting a child's lack of full proficiency as low IQ or learning disabilities, and an over reliance on test scores, with little consideration given to other factors that might affect a student's performance (p 262).

The 2004 reauthorization of the Individuals with Disabilities Education Improvement Act (IDEA) included an additional method to document and to assess whether an ELL qualifies for LD placement. Moreover, the method utilized should be a

scientific and research-based program such as Response to Intervention (Cummins, Atkins, Allison, & Cole, 2008; Fuchs & Fuchs, 2006; Linan-Thompson et al., 2007).

Response to Intervention (RTI)

RTI has been a part of special education programs dating back to the 1970s (Bender & Shores, 2008). However the reauthorization of IDEA has given it new life in regular education settings. Cummins et al., (2008) concluded RTI is far more than a tool of special education eligibility. Cummins stated RTI is a means to systematically improve educational delivery school wide (Cummins et al., 2008). Vaughn and Ortiz (2010) believe that RTI's greatest benefit to classroom teachers is that it helps identify children who are 'at risk' rather than those already experiencing a deficit. Frequently ELLs fall into the former category (Orosco & Klingner, 2010). Solely relying on IQ/achievement gap measures to determine if a student needs further intervention appears arbitrary (Klingner et al., 2006; Stecker, Fuchs, & Fuchs, 2008). Fuchs & Fuchs (2006) challenge using the IQ/achievement gap discrepancy measures as:

atheoretical and that some of its basic assumptions have not been supported by research...[and] it represents a wait-to-fail model antithetical to early intervention; that is, children must fall dramatically behind their peers in academic achievement to qualify as LD. (p. 4)

What is RTI?

The National Center on Response to Intervention (2010) defines RTI as: [integrating] assessment and intervention within a multi-level prevention system to maximize student achievement and to reduce behavior problems (p.1). With RTI, schools identify students at risk for poor learning outcomes, monitor student progress, provide evidence-based interventions and adjust the intensity and nature of those

interventions depending on a student's responsiveness, and identify students with learning disabilities or other disabilities.

According to the National Center for Learning Disabilities' Response to Intervention Action Network (2010) division, RTI is a "multi-tiered approach to help struggling learners' in which a student's 'progress is monitored at each stage of intervention to determine the need for further research-based instruction and/or intervention in general education, in special education" (What is RTI section, para. 1).

The purpose of implementing RTI in reading is three fold: identify struggling readers, provide those students with specific instruction, and assess their ongoing needs (Fuchs & Fuchs, 2006). The ultimate goal of RTI is for the student to be successful in the regular classroom or to provide increasing support so the student can be successful (Cummins et al., 2008; Fuchs & Fuchs, 1986; Linan-Thompson et al., 2007; Vaughn & Fuchs, 2003). Responsiveness, and ultimately success, is determined by the individual student's use of skills learned in Tier interventions while performing academic tasks in the regular classroom (Fuchs & Fuchs, 2006; Tam, Heward, & Heng, 2006).

All research found concerning RTI for ELLs support a system comprising of three tiers. Each tier requires increasingly smaller numbers of students and an intense direct instruction of literacy skills (Brown & Doolittle, 2008; Cummins et al., 2008; Kamps et al., 2007; Linan-Thompson et al., 2007). Fuchs and Fuchs (1986) state that all interventions at each Tier require systematic formative evaluations to monitor student progress toward the benchmark (Linan-Thompson et al., 2007; Stecker et al., 2008; Griffiths, Van Der Heyden, Skokut, & Lilles, 2009). Rinaldi and Samson (2008) specifically define these evaluations as weekly progress, both formal and informal.

RTI Tier 1. The first tier consists of regular classroom instruction provided using best practices that are culturally appropriate (Linan-Thompson et al., 2007; Vaughn & Ortiz, 2010). Early in the academic year, Tier 1 requires administering a reading assessment to all students in the classroom to determine if the instruction provided is sufficient for student progress (Cummins et al., 2008; Brown & Doolittle, 2008; Fuchs & Fuchs, 1986; Orosco & Klingner, 2010, Rinaldi & Samson, 2008; Vaughn & Fuchs, 2003). Vaughn and Ortiz (2010) support the use of Tier 1 reading assessments for both ELLs and native English speakers measuring early reading indicators. These early reading indicators include alphabetic principle, letter-sound correspondence, blending sounds, phonology, sight word recognition, and oral reading fluency (Kamps et al., 2007; Vaughn & Ortiz, 2010). From this assessment it can be ascertained if the instruction was appropriate and which students are academically at risk. This Tier 1 assessment serves another important purpose: it allows teachers to establish a benchmark for the reading assessment (Fuchs & Fuchs, 2006; Linan-Thompson et al., 2007). The instructional goal of the subsequent Tiers is to support the ELL in attaining the benchmark set by their peers (Fuchs & Fuchs, 2006; Vaughn & Fuchs, 2003).

RTI Tier 2. Much of the research supports Tier 2 interventions as comprising of five to seven students, meeting for approximately 30 minutes daily for 15 weeks (Brown & Doolittle, 2008; Kamps et al., 2007; Linan-Thompson & Ortiz, 2009; Rinaldi & Samson, 2008). In addition to their Tier 1 reading instruction, students in Tier 2 are given direct instruction targeting two to four specific literacy skills needing improvement (Brown & Doolittle, 2008; Kamps et al., 2007; Linan-Thompson & Ortiz, 2009). Tier 2 groups are formed based on skills needing reinforcement (Cummins et al., 2008; Rinaldi and

Samson, 2008). The classroom teacher, reading specialist, or ESL teacher provides this additional support. The ongoing assessments in both Tier 1 and Tier 2 determine if the student is making progress toward the benchmark or if additional support is needed (Brown & Doolittle, 2008; Fuchs & Fuchs, 2006; Kamps et al., 2007; Rinaldi & Samson, 2008). If progress is being made, the CST determines whether to continue Tier 2 or if the student can be successful in the classroom without additional interventions. If continued formative assessments show little or no gain, the student may progress to Tier 3 interventions (Brown & Doolittle, 2008; Fuchs & Fuchs, 2006; Kamps et al., 2007; Rinaldi & Samson, 2008).

RTI Tier 3. Tier 3 requires 20-30 minutes of intensive reading instruction on a specific skill in addition to Tier 1 and Tier 2 instruction (Brown & Doolittle, 2008; Kamps et al., 2007). Rinaldi & Samson (2008) suggest instruction be given one-on-one. However, Linan-Thompson & Ortiz (2009) support having groups of up to three students. Tier 3 interventions target one or two specific literacy skills and should be provided by a specialist, either from special education or from ESL in the case of a non-native English speaker (Fuchs & Fuchs, 2006; Klingner et al., 2006; Linan-Thompson & Ortiz, 2009; Rinaldi & Samson, 2008). The CST should closely monitor this level of intervention and progress should be expected in a shorter amount of time as compared to Tier 2 interventions. Ongoing assessments at all three tiers are used to determine if the student is making progress and the number of interventions can be reduced, or if the student should be referred for special education (Brown & Doolittle, 2008; Klingner et al., 2006). Linan-Thompson, Cirino, and Vaughn (2007) make it clear that RTI is not simply recursive remediation. If a student is making gains in the small group tier, and not

performing in the classroom, further analysis is needed by the CST to determine the cause.

RTI and ELLs

Research from special education and from ESL supports RTI's three tier structure. RTI provides a proactive procedure to reduce the disproportionate number of ELLs in LD programs and increase reading achievement (Linan-Thompson et al., 2007). Because it includes a balanced approach, scaffolded instruction, and frequent formative assessments, there is increasing support detailing Tier 1 and Tier 2 interventions as simply effective teaching practice for all students (Linan-Thompson & Ortiz, 2009; Vaughn & Ortiz, 2010). At the very least, RTI provides a measurable reply for teachers who say they have done all they can for a given child (Klingner et al., 2006).

Analysis of research on RTI and ELLs show numerous benefits, including collaborating with specialists, inclusion of language development objectives, increased cultural responsiveness, and effective interventions. Without utilizing RTI, there would be a continued disproportion of ELLs in LD programs (Klingner et al., 2006; Linan-Thompson & Ortiz, 2009).

One factor that research overwhelming supports is the inclusion of language goals along with the literacy skills at each tier (Brown & Doolittle, 2008; Klingner et al., 2006; Linan-Thompson & Ortiz, 2009; Vaughn & Ortiz, 2010). Linan-Thompson and Ortiz (2009) state that effective interventions must be comprehensive for ELLs, and not just based on a single skill. They further state that Tier 2 and 3 interventions include systematic direct instruction including oral language goals (Linan-Thompson et al., 2007; Linan-Thompson & Ortiz, 2009). Having smaller groups, along with targeting specific

goals allow for closer examination of the ELLs output and provides opportunities for culturally responsive teaching (Klingner et al., 2006).

With RTI, scores below the benchmark indicate the ELLs' needs, not LD (Fuchs & Fuchs, 2006; Klingner et al., 2006; Klingner & Harry, 2006; Vaughn & Ortiz, 2010). Prior to RTI, these students may have been prematurely labeled LD (Klingner & Harry, 2006; Vaughn & Ortiz, 2010). Vaughn and Ortiz (2010) warn that penalizing ELLs for mispronunciations during Tier 1 assessments would unnecessarily increase the number of students needing intervention. Furthermore, during subsequent Tier interventions, ELLs should not be penalized for mispronunciations unless that specific sound pattern was the targeted language goal (Vaughn & Ortiz, 2010).

For RTI to be successful there must be school-wide involvement (Linan-Thompson & Ortiz, 2009). With teachers' lack of ESL training being well documented (Klingner et al., 2006), studies show CSTs need to include the classroom teacher, school psychologist, special education teachers, ESL teachers, and have the support of school administration (Brown & Doolittle, 2008; Cummins et al., 2008; Klingner & Harry, 2006). Additionally, every attempt should be made to include input from the ELL's parents in order to include the student's educational history and cultural considerations, as previously noted in this paper (Brown & Doolittle, 2008; Linan-Thompson & Ortiz, 2009; Vaughn & Fuchs, 2003).

Reading Interventions for English Language Learners

Research is limited regarding which assessments and interventions are both valid and reliable when used in multi-cultural classrooms. Klingner et al., (2006) dissected prior research on this topic. They found several instances where reading achievement,

both in English and in the native language, of an ELL was positively correlated with phonological awareness, print awareness, alphabetic knowledge and rapid naming (Klingner et al., 2006). Assessments in these areas indicate RTI interventions would be beneficial and may preclude LD referral. Data from Kamps et al. (2007) supported findings from Linan-Thompson et al. (2007) indicating ELLs achieved significant gains in reading after Tier 2 interventions focused on phonological and phonemic awareness, letter-sound recognition, and alphabetic decoding. In their study, ELLs receiving these Tier 2 interventions outperformed all other experimental and control groups, regardless of their native language (Kamps et al., 2007).

There are several benefits of implementing RTI with ELLs. Fuchs & Fuchs (2006) believe the primary benefits are the shift from the wait to fail model and that RTI is based on more sound theory than IQ/achievement gap as qualification for LD. For administrators, RTI can help identify poor teaching (Linan-Thompson et al., 2007; Linan-Thompson & Ortiz, 2009) and is roughly two-thirds less expensive than traditional LD methods (Fuchs & Fuchs, 2006). RTI also minimizes an ELL's persistent academic drop in literacy (Vaughn & Fuchs, 2003). One of NCLB and IDEA's goals from reauthorization, reduced number of ELLs in LD, can be realized (Klingner et al., 2006; Linan-Thompson et al., 2007). Fuchs and Fuchs (2006) state RTI identifies student needs early before deficits become too great.

Conclusion

There is a vast amount of research concerning RTI. However, research on the use of RTI with ELLs is scarce. A downfall of the research that is available is that many projects include only native Spanish speaking ELLs, or exclude programs that are

bilingual. The research data found included neither English language proficiency scores of ELLs nor the number of years in school in the United States. It appears that both CST implementing RTI and researchers in the field need to describe the ELLs they survey in greater detail. Rarely did the data include country of origin, amount of prior formal schooling, literacy level in L1, family structure/history, or other information ESL research has found to be significant. Klingner et al., (2006) acknowledge that there is a need for research concerning the possible connection between learning to read in English and native language, race, background, or family information. This dissertation was an attempt to partially fill that gap.

RTI is not without its own pitfalls. Success in Tier 2 or Tier 3 intervention does not always equate to success in the regular classroom (Fuchs & Fuchs, 2006). Choosing appropriate assessments, provided in English or the student's native language, creates concern in all settings, including RTI (Fuchs & Fuchs, 2006; Klingner et al., 2006; Linan-Thompson & Ortiz, 2009). A concern found in nearly all reported research on reading is that special populations, such as ELLs, are at best frequently excluded from the discussion and at worst from all data (Klingner et al., 2006).

This leaves a number of questions and areas for further examination. While there have been some studies supporting specific intervention strategies (Kamps et al., 2007; Klingner et al., 2006), data indicating the degree of success with ELLs having various English language proficiency levels or having varying native languages, is lacking. An additional factor requiring further investigation is the amount of reading gains made by ELLs who participate in RTI. While RTI success is generally measured by performance in the classroom, or by achieving benchmarks of their peers, it may be of interest to see

the range of reading levels an ELL passes through while in RTI. These gains may be significant even without reaching the benchmark levels.

The purpose of the present study was to explore the effectiveness of reading RTI, utilizing research supported interventions, with ELLs. My study focused on four questions: 1) Do ELLs enrolled in schools implementing RTI obtain higher reading achievement levels than ELLs in comparison schools? 2) Do ELLs enrolled in schools implementing RTI make greater gains toward reading benchmarks than students who are not ELLs in the same schools? 3) Do ELLs enrolled in schools implementing RTI make greater gains toward reading benchmarks than students who are not ELLs in comparison schools? 4) How do reading scores of ELLs receiving interventions in RTI compare to all other conditions?

CHAPTER III

Methods

The purpose of the present study was to explore the effectiveness of RTI with ELLs. In this chapter I explain my method of investigating using the following categories: Questions, Participants, Design, Instruments, Data Collection/ Procedures, and Data Analysis.

Questions

My study focused on four questions:

- 1) Is there a significant difference in the reading achievement of third grade students enrolled in RTI schools and comparison schools?
- 2) Is there significant effect for ELLs on reading achievement through RTI controlling for English language proficiency?
- 3) Is the effect of RTI consistent across ELL groups and not ELL groups?
- 4) How does the percentage of ELLs who reach benchmark reading levels compare to students who are not ELLs who reach benchmark levels?

Variables

For question one the dependent variable was reading achievement scores of all sampled 3rd grade students. Achievement was measured by comparing student baseline scores on both Dynamic Indicators of Basic Early Literacy Skills (DIBELS) and Developmental Reading Assessment (DRA) scores on the same two instruments at three

intervals. The selected independent variable was the two groups of schools, RTI or comparison schools. The students' DRA scores from the end of second grade were used as a covariate. At each interval of assessment an ANCOVA was conducted to test for significant reading achievement. Once all data were collected, a MANCOVA was the method of statistical analysis (Keppel & Wickens, 2004).

The dependent variable for question two was reading achievement scores of 3rd grade ELLs measured by both DIBELS and DRA in the same manner as question one. The dependent variable was reading achievement. The independent variable was ELL and had two levels, ELL in RTI schools or ELL in comparison schools. Additionally, a covariate, ACCESS scores for ELLs, was considered to account for a greater portion of the variance in reading achievement scores for this sample. MANCOVA was the method of statistical analysis (Keppel & Wickens, 2004).

Question three explored the connection between language learning and reading instruction. The dependent variable was the reading achievement scores on both DIBELS and DRA. The two independent variables were ELL and not ELL, each with two levels, RTI schools or comparison schools. Second grade DRA scores were used as a covariate. The method of analysis was a MANCOVA (Keppel & Wickens, 2004).

The fourth research question compared percentages of ELLs and students who were not ELLs who reached 3rd grade benchmark reading goals. Reading benchmark attainment was measured by comparing individual DRA scores from the post-test with a specific cut-off score dictated by the school district. Percentages were calculated for each cell of the sample to be compared against each other (Shavelson, 1996).

Participants

The purposive sample for this study was comprised of third grade students from elementary schools in a major metropolitan school district of over 97,500 students. Because this study was based on a special population's participation in a school wide program, I began by using school district-level information to identify elementary schools that had an English as a Second Language (ESL) program. The school district had 90 elementary schools. Of those schools, 33 had an ESL program and five more elementary schools added ESL programs for the 2011-2012 academic year. Next, I contacted the district coordinator for RTI to determine which schools had both an ESL program and the length of time they had implemented RTI. I used this data to separate the elementary schools into two pools: schools that had three or more years experience with RTI and schools that had just begun implementing RTI during the 2010-2011 or the 2011-2012 academic year. The former was the pool of schools from which a treatment group was identified while the latter was the pool of schools from which a comparison group was identified.

In order to gain an adequate sample size to maintain statistical power, I had four schools in each group. Schools in this district typically had three classes per grade level and the class sizes were capped at 24 students. A modest estimation of an average class size of 20 provided 480 third grade students or approximately 240 students in each group, RTI schools and comparison schools. While it was difficult to determine with any certainty the enrollment of ELLs for upcoming year, I used enrollment data from the previous academic year to estimate the number of ELLs in the sample. ELLs accounted for between 18% and 25% of the student body in elementary schools that had an ESL

program (District ESL office, personal communication, May 1, 2011). These percentages were the basis for my estimated sample of ELLs, which provided between 88 and 120 ELLs in each condition. An *a priori* power analysis yielded a desired sample size of 102 students, $\alpha = .05$, Cohen's $d = .5$, $1-\beta = .80$ (Keppel & Wickens, 2004). Table 2 shows the expected sample broken down into cells for analysis. It was within reason to believe I could achieve the sample size necessary to yield a statistically powerful analysis.

The numbers of students given in Table 2 were estimates, and represented an ideal situation. In reality the numbers were unequal in each cell at the beginning of this study and would likely reflect some attrition by the end of the study. Having cell sizes that were unequal raised issues related to heterogeneity of variance across cells and inflated the standard error estimates (Keppel and Wickens, 2004). To allay these issues, I used a random number generator to select a number of students who were not English language learners equal to the number of ELLs from respective schools. In this manner I insured there were an equal number of ELLs and not ELLs selected from each school. Further adjustments for any inconsistency of the data were addressed during data analysis.

I contacted the school district research department to assist with the collection of data for the schools in the study. The research department removed any information identifying the individuals from which the data was collected. Every effort was made to insure the anonymity of the students. Demographic information for these schools provided by the school district research department were: total school enrollment, gender, race, primary language, percentage of free and reduced lunch, percentage of exceptional education students, percentage of ELLs and their respective number of years

in a U.S. school. I also used this data to compare and contrast the demographic breakdown for third grade against their respective school wide data.

Table 2.

Sample of 3rd Grade Students by Instruction Model and ELL Status

	English Language Learners	Not English Language Learner
RTI Schools	60	180
Comparison Schools	60	180

Also, I collected DRA and DIBELS scores from the previous academic year, 2010-2011's second grade students. I used the reading assessment and demographic information from the four schools that implemented RTI and had an ESL program to match four first-year RTI schools that had an ESL program. Students qualified for placement in the treatment group if they were identified as being actively enrolled in both the English as a Second Language program and a school implementing RTI. The control group consisted of ELLs who were actively enrolled in a school with an ESL program and in a school in the first year implementing RTI. Data were collected on all students in both schools in order to add to the analysis of RTI overall and in relation to ELLs.

The sample population from which this study pulled was elementary school ELLs in one major metropolitan school district and, more broadly, the targeted population was elementary schools across the United States. I hoped to generalize about the

effectiveness of RTI with elementary school students who were also learning English. Shadish et al. (2002) warned that confusing levels of assignment and analysis could lead to increased internal and statistical conclusion validity threats. This was a potential limitation; however, since implementing RTI with ESL was a new phenomenon, there were few opportunities to use lower order units. Implementing two fairly reliable measures that matched treatment and control groups, see O_1O_2 on Figure 1, helped reduce threats to statistical conclusion validity, threats to power, effect size, the internal validity threat of selection bias and increased generalizability (Shadish et al., 2002).

Design

This study employed a mixed-methods, quasi-experimental control group design with pretests (Shadish, Cook, & Campbell, 2002; Teddlie & Tashakkori, 2009). A diagram of the planned design can be seen in Figure 1. Mixed methods research designs include both qualitative and quantitative data collection methods (Teddlie & Tashakkori, 2009) and lessen construct validity threats related to mono-method bias (Shadish et al., 2002). Quasi-experimental indicates that the participants were randomly assigned to treatment or control groups (Shadish et al., 2002). The lack of random assignment can lead to the internal validity threat of selection bias, but the inclusion of pretest measures and a control group permitted the exploration of any bias (Shadish et al., 2002). Furthermore, having pretest measures increased the power of this study improving statistical conclusion validity and aided in controlling for internal validity threats related to regression and maturation (Shadish et al., 2002).

The treatment group consisted of ELLs who were enrolled in schools that had been implementing RTI for over three years. The control group was comprised of ELLs from

schools that were in their first year of implementing RTI. The unit of analysis was schools.

Figure 1.

Research Diagram

		<u>5/15/2011</u>	<u>8/30/2011</u>		<u>10/1/2011</u>		<u>11/10/2011</u>		<u>12/15/2011</u>
NR	RTI ELL	O _{1a} O _{2a} O ₃	O ₁ O ₂	X	O ₁ O ₂	X	O ₁ O ₂	X	O ₁ O ₂
	RTI not ELL	O _{1a} O _{2a} O ₃	O ₁ O ₂	X	O ₁ O ₂	X	O ₁ O ₂	X	O ₁ O ₂
NR	1 st YR RTI ELL	O _{1a} O _{2a} O ₃	O ₁ O ₂	X	O ₁ O ₂	X	O ₁ O ₂	X	O ₁ O ₂
	1 st YR RTI not ELL	O _{1a} O _{2a} O ₃	O ₁ O ₂	X	O ₁ O ₂	X	O ₁ O ₂	X	O ₁ O ₂
O _{1a} = DIBLES score from the end of 2 nd grade (may not be available on all students) O _{2a} = DRA score from the end of 2 nd grade O ₁ = DIBELS O ₂ = DRA O ₃ = ACCESS X indicates 4-6 weeks of reading instruction or intervention(s)									

Figure 1. Diagram of the proposed mixed-methods, quasi-experimental control group design with pretests.

The first research question, exploring the effectiveness of RTI, was investigated by measuring the RTI schools against non-RTI schools. The second research question, regarding the effectiveness of RTI with ELLs, was addressed by comparing reading measures of ELLs in the treatment group against reading measures of ELLs from the comparison group with the added covariate controlling for level of English acquisition. To address the third research question, the interaction between RTI and ELLs was explored. The fourth research question compared the percentage of students who reached grade level reading proficiency.

Instruments

There were both quantitative measurement instruments and a qualitative instrument employed for this study. The quantitative measures were the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) and the Developmental Reading Assessment

(DRA). For the ELLs, a covariate measure was gathered for each individual student. That measure was the English language proficiency test Assessing Comprehension and Communication in English State-to-State or ACCESS. The qualitative portion was a school observation checklist used to gauge fidelity of RTI implementation.

Quantitative Instruments

All of the quantitative instruments had a history of implementation with elementary school populations, including ELLs. I employed two reading assessments, DIBELS and DRA. The DRA and the DIBELS served two functions: (1) as a pretest measure to match treatment and control schools and (2) as a device monitoring reading progress during the study.

The DIBELS have been implemented nationally for primary grades, K-2, since the 1980's. The school district had utilized DIBELS for over 5 years. All primary teachers were given district level training on administering DIBELS that was followed by yearly school level training. This test measured early literacy skills as students began learning to read. Specifically, DIBELS measured phonemic awareness, alphabetic principles, accuracy and fluency, vocabulary, and comprehension (University of Oregon, 2010). The DIBELS sub-tests employed for this study were related specifically to phonological awareness, fluency, reading nonsense words, and sound recognition. Students were shown letters and identified the letter name and/or sound. Actual words and nonsense words were shown and students were expected to either identify the words appropriately and/or read the words. Short reading passages were provided for students to read while they were being timed.

The DRA was given to all students in this study. All classroom teachers received district level training for DRA administration. The Instructional Coach or the Building Assessment Coordinator reinforced this training yearly, at the school level. Pearson Education Company developed the DRA over 20 years ago (Pearson, 2010). Pearson stated that the DRA helped “identify students' reading achievement through systematic observation, recording, and evaluation of performance” (Pearson, 2010, p. 1). DRA consisted of three parts: pre-reading, fluency check, and comprehension. The pre-reading and fluency check were completed with the teacher, but led by the student. Students identified themes in the book by conducting a picture-walk before reading. The teacher asked the students to read a specific section aloud while the teacher recorded reading behaviors (running record). After the student read the entire text, the student performed a brief comprehension check that included an oral retelling and statement of the main idea or a similar written response.

Assessing Comprehension and Communication in English State-to-State (ACCESS) is another nation wide assessment. The ACCESS was developed by World-Class Instructional Design and Assessment (WIDA). WIDA is a consortium of states dedicated to the design and implementation of high standards and equitable educational opportunities for English language learners. The Center for Applied Linguistics in Washington, DC in collaboration with WIDA developed the ACCESS. The ACCESS measured English language proficiency in 4 domains: Listening, speaking, reading, and writing (Wisconsin Center for Educational Research, 2007). The reading portion of the ACCESS test was used as a covariate to control for language proficiency levels which were shown to be an indicator of the rate of reading achievement (Linan-Thompson et al.,

2007; Vaughn & Fuchs, 2003). The reading portion of the ACCESS was comprised of content-based passages and multiple-choice questions. Because only ELLs took the ACCESS, I used an ANCOVA only on analysis between groups of ELLs and not when comparing data of native English speakers.

Reliability and validity. There have been numerous studies relating to the validity and reliability of DIBELS by professionals in the fields of both measurement and teaching and learning (University of Oregon, 2010). Literature on the internal consistency reliability coefficients for early elementary were between .84 and .95 (Hintze, Ryan, & Stoner, 2003). Test-retest reliability ranged from .74 - .97 for the sub-tests and between .79, and .92 for the composites (Hintze, et al., 2003). Roehrig, Petscher, Nettles, Hudson, and Torgesen found that DIBELS was a strong predictor of third grade reading achievement scores, $r=.71$ (Roehrig, Petscher, Nettles, Hudson, & Torgesen, 2008). Both the Hintze et al. (2003) data and Roehrig et al. (2007) data support the use of DIBELS as a predictor of reading achievement with third grade students. Klingner et al., (2006) noted that reading achievement, both in English and in the native language of an ELL, was positively correlated with phonological awareness, print awareness, alphabetic knowledge, and rapid naming. In this manner, the Klingner et al. (2006) data support the use of DIBELS with ELLs.

In a report to the Pearson Education Company on the validity of DRA, Williams (2006) found that individual scores on the DRA for a second grade population ($N=2470$) at the end of the academic year were correlated with the students' scores from fall of third grade on the Iowa Test of Basic Skills Vocabulary and Reading Comprehension sections. Composite scores on the ITBS and DRA held the highest correlation, $r = 0.71$, $p < .01$

(Williams, 2006). This latter portion of Williams' findings specifically supports the use of DRA with the students sampled for the current study.

For the ACCESS, WIDA cites a 2004 validity study completed with the assistance of the Center of Applied Linguistics. This study consisted of 6500 students from eight states that support the use of ACCESS as a means of evaluating English proficiency (Kenyon, 2007; WIDA, 2007). Reliability measures for ACCESS yield a Pearson correlation (r) between .941 and .949 for elementary grades, and .941 specifically for 3rd grade (Kenyon, 2007). The ACCESS was administered and results were tabulated prior to the beginning of this study, making ACCESS reading scores viable as a covariate.

Perceived threats to validity. While both DIBELS and DRA have been in use for many years and have been tested for reliability and validity in relation to reading assessment, there were some internal validity issues for this study. Both of the measures are scripted and were proctored by the classroom teachers. There was a possibility of a threat to statistical conclusion validity, specifically reliability of measures and fidelity of implementation (Shadish et al., 2002). There may have been some construct validity threats relating to reactivity of the experimental situation in that the teachers may desire to see an affect. I attempted to allay these threats by randomly retesting 2 students from each classroom during each assessment period, using DRA and DIBELS. I compared the retest results with the classroom teachers' results and discussed any discrepancies should they exist. An inter-rater reliability correlation greater than .80 was considered satisfactory (Shavelson, 1996).

Training for ESL teacher-proctors was provided by the publishers of ACCESS via online simulations and exit quizzes (Wisconsin Center for Educational Research, 2007).

WIDA increased the fidelity of the test implementation and the reliability of their test results by requiring test administrators to complete yearly simulations. There was a possibility of unaccounted variance in these scores because I had no manner in which to control or test the fidelity of the implementation of this assessment. I had to rely on the instrument itself and the efficacy of the annual training. This may have increased validity issues related to the statistical conclusion validity issue of unreliability of implementation. There were two factors that lessened this issue (Shaddish et al., 2002). The first factor that reduced some of the validity issues was all teachers providing the ACCESS instrument has received the same training and administer the assessment during the same time frame. The second factor was that there was an equal chance for each student to receive any variance in ACCESS implementation.

Qualitative Instruments

As part of the qualitative component of this study, I conducted observations of all schools in the study. This qualitative aspect focused on the reading instructional practices observed, specifically the level and fidelity of RTI implementation. I developed a checklist based on the aspects of RTI implementation provided to classroom teachers during both district and school level training, and based on an instrument created by Academic and Behavior Response to Intervention (ABRI). The observation tool is found in Appendix A. The district level RTI coordinator and school level instructional coaches provided the RTI training data (----Online, 2011).

Observations in each classroom lasted between five and ten minutes. Approximately 30 additional minutes were spent making observations throughout the school. As noted on the observation tool, the goal was to find evidence related to the use

of reading interventions, whole-group reading instruction, progress monitoring in classrooms, progress monitoring school-wide, indication of students in Tiers, classroom arrangement and materials, etc.

The purpose of having a qualitative aspect to this study was to evaluate fidelity of implementation of RTI as directly related to the implementation expectations established by the school district and their respective buildings. Additionally, the observations provided a clearer description of the setting from which the reading data came including the importance placed on recording reading data, communication of students' interventions, and the classroom environment.

Prior to conducting observations I had to gain permission from the principal of each school. I met with building principals to discuss the goals of my research, the observation tool, how I planned to conduct the observations, and a timeline. I requested to conduct a school-wide walk through observation once a grading period, approximately once every six weeks. Walk through observations are customary in this school district and are conducted by walking throughout the building, briefly looking in and listening to classrooms, and taking note on information pertaining to the observation checklist. Additionally, I collected anecdotal notes relating to behaviors and remediation strategies observed, such as, small groups, re-teaching reading strategies, documentation of formative assessments, etc. These notes helped to empirically support identifying that reading interventions were being used. At the end of the observation, I met with the principal to discuss the data collected and ask any questions that arose during my visit.

RTI was a relatively new initiative in the school district. All teachers within RTI schools received ongoing training. Schools with ESL programs received additional

training and support from the district ESL department. The newness of the program and the scrutiny of the various departments aided in fidelity of RTI implementation. The committee comprised of the respective teacher, counselor, ESL teacher, and district trainers made frequent assessments and decisions regarding placement into RTI tiers for all students. It was possible that the quality and fidelity of implementation increased as teachers became more familiar with RTI. However, this qualitative observation tool allowed me to account for any treatment-sensitive variance in RTI implementation in and among schools, related to construct validity (Shaddish et al., 2002).

Data Collection Procedures

Within the first month of school, all classroom teachers administered the DIBELS and DRA for all students. These served the two purposes of pretest data for this study and formative assessment for RTI. The results of the DIBELS and DRA assessments were used to determine RTI Tier placement in the treatment group. This procedure was repeated again in October, November, and in December.

During each treatment period, the time between establishing Tiers and reassessment, I visited each school to conduct the observation checklist. Upon arriving at each school I reintroduced myself to the principal and discussed the observation procedures. With the principal's direction, I conducted observations in the third grade classrooms and areas where RTI data were held. Observation data were collected at least three times for each building. Each observation occurred within six weeks of each ongoing assessment conducted in August, October, and November. It was the ongoing assessments which informed RTI intervention placement and each intervention was conducted for a minimum of six weeks (Stecker, Fuchs, & Fuchs, 2008).

A review of qualitative data provided insight into the level of implementation of RTI in treatment schools and implementation of the comparison schools' respective intervention plan. This fidelity of implementation data helped to triangulate the data from the quantitative scores (Shadish, et al., 2002). In this manner the data were more robust in that there was further information regarding possible explanations as to why scores changed or remained unchanged.

Data Analysis

All quantitative analysis was conducted using the analytic computer program called Statistical Package for the Social Sciences or SPSS. To be consistent with the power analysis conducted to determine sample size, I set the statistical inference levels as follows: $\alpha = .05$, Cohen's $d = .5$, $1-\beta = .80$ (Keppel & Wickens, 2004). Using the .05 alpha level, as customary in social science research, I was able to accurately determine statistical significance 95% of the time (Shavelson, 1996).

After each assessment, I completed a one-way ANOVA. The four groups were the independent variables and the dependent variable was the reading scores. In this manner I was able to see if there was a significant difference between groups. If significance was found, I used these data as a covariate.

At each subsequent assessment point, I completed another two-way MANOVA to test the effect of RTI prior to implementation and at this instance of implementation. For this MANOVA the independent variables were ELL and RTI and the dependent variables were the two DRA assessment points.

At the end of the data collection period, a MANOVA was used to analyze the data across the entire sample to determine if there were any statistical differences between the

RTI schools and comparison schools as a whole. In this manner I was able to evaluate the effectiveness of RTI in general. The dependent variable was reading achievement and the independent variable was reading remediation, RTI or comparison. The assumptions for MANOVA were evaluated using SPSS software before conducting the analysis. The assumptions that must be met in order to perform a MANOVA were normality, linearity of dependent variables, independent random sampling, level and measurement of variables, and multivariate homogeneity of variance (Keppel & Wickens, 2004).

Linan-Thompson et al. (2006) described that language proficiency scores such as ACCESS are substantially related to reading acquisition rate. Following the suggestion of Linan-Thompson et al. (2006) for enhancing data analysis on this topic, ACCESS reading data were also included as a covariate with ELLs for conducting a MANCOVA. This analysis was between all ELLs in the study. Prior to conducting the MANCOVA, I tested the 2 added assumptions: 1) linear regression, the covariate had a linear relationship with the dependent variable. 2) homogeneity of regression of coefficients, the correlation between y and z was equal for all levels of x (Pedhazur, 1997; Shavelson, 1996).

In the event the evaluation of the results from either the MANOVA or MANCOVA yield significance, I included post hoc analysis. For the repeated measures ANCOVA post-hoc tests on covariate adjusted factors was conducted by completing pairwise comparisons of estimated marginal means (Pedhazur, 1997; Shavelson, 1996). This type of post hoc analysis may lead to inflated alpha levels. Therefore, a Bonferroni adjustment was necessary (Stevens, 2002). Post hoc analysis allowed me to describe more succinctly where the significance lies (Stevens, 2002; Shavelson, 1996).

The qualitative data were compiled for each school. The data were analyzed using closed coding method defined by Glaser and Strauss (Glaser & Strauss, 1967). Data were chunked into categories based on the observation tool and by that which is empirically similar. This was completed on three levels: for individual schools, across both groups in the study, and collectively across all schools in the study. This process was recursive and conducted routinely after each new observation. Data were clustered into related, overarching categories and used to identify of themes that cut across categories (Glaser & Strauss, 1967; Miles & Huberman, 1994). These categories helped to identify common factors across schools. These common factors and the underlying categories were compared to the expected implementation of RTI as outlined by district level training. The percentage of agreement between the qualitative data and the district training guidelines indicated the fidelity of implementation of RTI.

It seems obvious that students in RTI, especially ELLs, would show significant gains in reading achievement. This could be due to the fact that those below level received more time and greater intensity of instruction. Student gains in other content areas may have suffered. The time given to reading intervention had to be taken from somewhere else. I hoped to find that ELLs in RTI programs made greater gains toward the reading benchmark than all students in the control group. This would show the importance of RTI and support RTI as being highly effective with ELLs.

CHAPTER IV

Results

The purpose of the current study was to explore the effectiveness of reading Response to Intervention for ESL students. To achieve this purpose, the study evaluated reading achievement of third-grade students from eight schools in one school district throughout one semester. Four schools had at least two years of experience implementing RTI and were matched with four schools that were in their first year of RTI, who are considered not fully implemented as yet. All schools included in the study were public schools that also had an ESL program.

This chapter is organized in sections: the schools sampled, the students sampled, and the analysis for each of the four research questions separately.

Sample Characteristics

For the Fall semester of the 2011-2012 academic year, third-grade data were requested from the school district. Data from 10 elementary schools, named School One, School Two, etc. in an effort to protect anonymity, that have ESL programs and RTI programs were provided. Preliminary evaluation of the data indicated which schools had employed RTI greater than 2 years and were therefore considered RTI schools, the treatment group. There were four schools in this category, Schools One, Three, Eight, and Nine. There were six schools that had less than 2 years experience with RTI, Schools Two, Four, Five, Six, Seven, and Ten. These schools were considered comparison

schools. Of the comparison schools, School Two and School Six were not included in this study due to their low enrollment of third-grade ELLs, eleven and five students respectively, and due to the principals' denial of requests for site visits using the qualitative observation checklist. Comparison and RTI groups, therefore, were comprised of four schools each.

School Characteristics

Six of the schools (Schools Four, Five, Seven, Eight, Nine, and Ten) were located in the urban center in or near downtown. School One and School Three were also located in urban areas of town, but not within the boundaries of downtown.

The Federal Title I status is based on the school having $\geq 35\%$ of the student population to qualify for free or reduced (U.S. Department of Education, 2004). The range of students who qualified for free or reduced lunch for the schools in this study was 57.55% - 96.27%. All of these schools were Title I schools based on the percentage of students who qualified for Federal free or reduced lunch assistance.

Table 3.

Total Students by Race

School	American Indian	Pacific Islander	Asian American	Hispanic	Multi- Racial	Black	White	Total Students	Total ELLs
1			21	141	15	272	103	552	130
3			17	144	31	263	254	709	135
4	1		14	55	10	221	92	393	75
5			25	104	14	187	464	794	93
7		1	13	62	14	281	52	423	81
8			18	64	20	233	78	413	72
9			14	52	9	393	146	614	64
10	3		13	70	15	374	35	510	96
Total	4	1	135	692	128	2224	1224	4408	746

Data provided by the district Data Management, Planning & Program Evaluation Department from their school-wide data books for elementary schools.

Total school enrollment ranged from 393 – 794 students with a mean of 551. The enrollment of black students was nearly twice that of white students, 2224 and 1224 respectively. As noted in Table 3, students of Hispanic origin were the third largest group at 692 students. At the date these data were collected students could only be designated into one category. Since that time, designation as black or white could be marked in addition to other national origins.

There was a wide range of ELLs enrolled at each school, between 64 and 135 students with a mean of 93.25 students. For third grade, the range of ELLs was between 14 and 34 with a mean of 18.75. Because third-grade ELLs are a special population and were the focus of this study, a Chi-Square test was conducted to insure the number of third-grade ELLs at each school were fit to test. The results of the Chi-Square were significant, $\chi^2(7) = 34.5, p = .000$, indicating there was a significant difference among the schools in this sample confirming the data were appropriate for analysis.

Table 4.

ESL Instructional Support and Languages Spoken by School

School	# of ESL Teachers	Language of ESL Teachers	# of BAI's	Language of BAI
One	2	(1) Spanish	2	(2)Spanish
Three	2	(1) French	2	Spanish
Four	2		1	(1)Spanish
Five	1	Spanish	1	Spanish
Seven	2	(2) Spanish	2	(1)Bosnian (1)Spanish
Eight	2		1	Spanish
Nine	2		1	Spanish
Ten	2	(1) Spanish	3	(1)Russian (2)Spanish

Note: All teachers and BAI's were fluent in English. No language designation indicates English was the only language spoken.

Each school had ESL support in the manner of at least one certified ESL teacher and at least one Bilingual Associate Instructor (BAI). According to the school district's

job descriptions, a BAI is a non-certified position held by an individual who is a native speaker of a language other than English, who has passed an English proficiency exam, and receives ongoing training on instructional practices. Table 4, above, shows Schools Four, Eight, and Nine relied on a BAI for native language support and communication with parents who did not speak English. School Three has a certified ESL teacher who spoke French, but had no French-speaking students. While neither the State Department of Education nor the school district mandate a student-teacher ratio for ESL programs, School Ten had the lowest ratio at 19:2 and School Five had the highest ratio at 46:1. The average student-teacher ratio for ESL programs for the eight schools included in this study was 26:1, with a median of 24:1.

NCLB requires each school to report their respective Annual Yearly Progress (AYP) in regards to meeting their respective goals related to academics and other targets. These other targets could include, but are not limited to, decreasing absenteeism for teachers and students, decreasing student discipline referrals, or increasing academic scores for specific groups of students. Table 5, below, depicts the AYP for each school, as well as reported reading goals and percentages, for the past two academic years. School Eight was the only school to meet AYP goals for 2011. Noticeably, School Eight also had the second lowest reading proficiency percentage in 2010 and Schools Three and Five held the highest percentages for both years. No school met the State reading goals for either year. Data from Table 5 helped to guide decisions related to school pairings for analysis.

Data from the 2010 and 2011 state accountability test, State Core Content Test, and from the third grade diagnostic test, IOWA test of Basic Skills, are found on Table 6.

For each school the percentage of students in grades three through five who scored novice was noted. Percentages for students who scored proficient or higher were also noted. Schools Three and Five had both the lowest percentage of novice scores and the highest percentages of proficient scores for grades three through five. However, School Four held the best percentile score for third-grade on the IOWA test. School Ten was reconfigured in 2010. The school district stated the 2010 data for School Ten was not appropriate for analysis and did not provided the data from that year. Data from Table 6 was used to aid in decisions related to school pairings for analysis.

Table 5.

Annual Yearly Progress and Reading Proficiency Goals (NCLB Goals)

School	Title I School	AYP Reading 2011	AYP Overall 2011	Reading Goal for 2010	% Proficient Reading 2010	Reading Goal for 2011	% Proficient Reading 2011
One	Y	N	N	73.64	60.96	80.23	54.50
Three	Y	N	N	73.64	65.33	80.23	67.26
Four	Y	N	N	73.64	44.09	80.23	39.16
Five	Y	N	N	73.64	77.35	80.23	72.75
Seven	Y	N	N	73.64	53.16	80.23	56.02
Eight	Y	Y	Y	73.64	52.30	80.23	62.43
Nine	Y	N	N	73.64	57.09	80.23	53.85
Ten*	Y	N	N	73.64	*	80.23	66.47
District	Y	N	N	68.69	63.25	76.52	63.79
State	Y	N	N	n/a	71.85	n/a	70.98

Note: % Proficient includes all scores proficient and higher. * Student application and assignment guidelines for School Ten were reconfigured for the 2010 academic year. Data provided by the school district's Data Management, Planning & Program Evaluation Department from their school-wide data books for elementary schools.

Qualitative School Characteristics

The qualitative aspect of this study was completed using the observation protocol found in Appendix A. The observations were empirical, including notes from observations during site visits, and did not include interviews or discussions. The

purpose was to see the extent the third-grade classes were alike among schools and to look for evidence of RTI implementation.

Table 6.

2010 and 2011 State Core Content Test and IOWA Test of Basic

Skills Results

School		<u>Grade 3-5 State Reading</u>		<u>Grade 3 IOWA Reading</u>
		% Novice	% Proficient	Percentile
One	2010	9.63	60.96	36
	2011	14.29	54.50	34
Three	2010	6.33	65.33	46
	2011	7.47	67.27	47
Four	2010	20.47	44.09	27
	2011	23.68	39.16	29
Five	2010	6.06	77.13	62
	2011	5.99	72.75	57
Seven	2010	11.39	53.16	49
	2011	17.47	56.02	38
Eight	2010	14.64	52.30	42
	2011	10.50	62.43	48
Nine	2010	14.96	57.09	38
	2011	15.38	53.85	47
Ten*	2010	*	*	28
	2011	10.40	66.47	32
District	2010	9.33	66.40	52
	2011	10.42	65.45	51
State	2010	na	na	62
	2011	na	na	61

* Student application and assignment guidelines for School Ten were reconfigured for the 2010 academic year. Data provided by the school district's Data Management, Planning & Program Evaluation Department from their school-wide data books for elementary schools

School One. The total enrollment at School One was 552 students including 130 ELLs. There were 67 third-grade students divided into three classrooms of 23, 22, and 22 students. Of the 67 third-grade students, 16 were ELLs. There was evidence that School One used Creating A Respectful Environment (CARE) for Kids as part of their social-behavioral instruction.

Each classroom was similar. All three rooms had SMART Boards®, four computers for student use, and a district provided classroom library with roughly 200 titles. These texts were grouped by theme in baskets in a central location. The classrooms were not overcrowded and had work samples displayed around the room. There were many teacher made posters that appeared to be from previous lessons. All of the classrooms had student desks arranged in cooperative groups.

Two of the classrooms had three reading groups listed and one class had four reading groups listed. This is an indication of specific skills reading instruction. There was further evidence of reading interventions. The interventions appeared to be the same for each classroom, giving the impression that the third-grade team of teachers planned the interventions. Students were at the computers using SuccessMaker®, an interactive and adaptive reading software program that includes a wide range of material from letter recognition and phonics to whole word recognition developed by Pearson Learning, Inc. The classrooms had reading “I CAN” statements displayed at the head of the classroom near the Smart Board® and other “I CAN” statements posted near the guided reading tables. At the head of the classroom the statement was, “I CAN find specific info in text and highlight to answer questions.” At the reading table it stated, “I CAN ask myself questions while reading to better understand.”

School One is in its third year of RTI implementation. The school did not have a place where school-wide RTI progress monitoring was posted. Instead, teachers had a trifold poster display for their respective class' tiers. These boards were displayed near the place in the classroom where guided reading groups were held. In one of the three third-grade classrooms the display was open, while two classrooms had the display closed beside the guided reading table. On the display, students were represented by a sticky-note placed in the corresponding tier, with their assessment date and assessment score. The only open display indicated there were six Tier 1 students, five Tier 2 students, and 14 Tier 3 students. Each student also kept a RTI journal in which they recorded their reading goals and personal anecdotes on how they have worked to achieve their goals. This appeared to be used as a means of self-monitoring.

School Three. The total enrollment at School Three was 709 students including 135 ELLs. There were 118 third-grade students divided into four classrooms of 24, 23, 23, and 22 students. Of the 118 third-grade students 34 were ELLs.

All four classrooms had three computers and similar classroom libraries. The classroom libraries held approximately 200 texts organized by genre in baskets and appeared to be the district provided books. The classrooms appeared to be small and felt crowded. All of the classrooms had student desks arranged in modified rows, possibly due to the amount of space. None of the classrooms had an abundance of posted materials. It was noticeable that one of the teachers used mainly purchased materials for display and one teacher had only a few work samples displayed. The other two rooms had few materials displayed, but they were both student and teacher made from previous lessons.

Three of the classrooms had reading “I CAN” statements posted and one did not. Two rooms had “I CAN make inferences” and one class had “I CAN use schema to help me understand.” The latter classroom had a student created poster with examples of inferences. The former had teacher made posters with components of the Café and Daily 5 structured reading program. These are indications of specific skills instruction.

School Three had been using RTI for two years. Progress monitoring charts were displayed prominently in each classroom. The displays had the four column headings of novice, apprentice, proficient, and distinguished, with each student’s name and reading assessment score placed in the corresponding column. The school also had a room designated for RTI discussion and progress monitoring. This room had each grade level displayed by RTI Tiers. Each student was represented by a sticky-note that indicated their name, DOB, ECE or ELL status, race, Title I status, and targeted goals by date. Throughout the school were posters that referred to the NCLB index of proficient and distinguished scores titled “Strive for 85”. Each grade level had their own poster that was updated when district-wide assessments were given. The third-grade reading poster listed indexes of 29.1, 37.5, 20.8, and 41.6. The specific assessment from which the indexes came was not named.

School Four. The total enrollment at School Four was 393 students including 75 ELLs. There were 71 third-grade students divided into three classrooms of 23, 24, and 24 students. There were 14 ELLs spread across the classes. There was evidence this school also utilized CARE for Kids. School Four was in its second year of RTI implementation.

School Five. The total enrollment at School Five was 794 students including 93 ELLs. There were 120 third-grade students divided into five classrooms of 24 students.

There were 19 ELLs spread across the classes. School Five was in its first year of RTI implementation. The principal at School Five declined requests for walk-throughs.

School Seven. The total enrollment at School Seven was 423 students including 81 ELLs. There were 55 third-grade students divided into four classrooms of 18, 18, and 17 students. There were 14 ELLs spread across the classes. School Seven is one of three elementary schools in the district to be selected as redesign schools. These three schools were provided three additional teachers in an effort to reduce class sizes school wide. The district also provided a registered nurse to promote health education and attend to health issues during school. Redesign schools utilized CARE for Kids.

All three rooms had SMART Boards®, three computers for student use, and a district provided classroom library with roughly 200 titles. These texts were grouped by theme in baskets in a central location. One classroom had an additional classroom library with roughly 50 books and magazines grouped by content area. This same classroom had far more teacher materials organized throughout the room, indicating this teacher had been in the same room for a many years. The other two classrooms had far fewer materials shelved around the room. With fewer students, these classrooms had more space for additional items compared to non-redesign schools. Each room had an open carpeted area for class meetings or for working on the floor and had two tables for group work or guided reading. Two of the classrooms had desks arranged in cooperative groups while one classroom was arranged in a u-shape with a large round table in the center. There were not many displays on the walls of these three classrooms. All three had their own area in the hallway with displays of student work. Two displays were of

classroom quilts, which are an aspect of CARE for Kids. One display was of social studies group projects.

School Seven was in its first year of RTI implementation. In two of the rooms there were students using SuccessMaker®. SuccessMaker® and guided reading tables were the only signs of interventions in the classrooms. Two students were pulled out of the classroom for Leveled Literacy Instruction (LLI), an intervention program designed to boost reading achievement through direct instruction developed by Fountas and Pinnell/Heinemann. School Seven employed two certified teachers specifically to conduct reading interventions with Tier 3 students throughout the school. The school did have a room dedicated to school-wide RTI progress monitoring. The data was organized in Tiers by grade level with pocket charts. Students were represented by a card containing their name, DOB, ECE and/or ELL status, assessment dates, and assessment scores. Each card was colored to indicate the Tier into which the student was after the universal assessment in August. Even as a student progressed through Tiers, their colored card remained as an indication of where they began.

School Eight. The total enrollment at School Eight was 413 students including 72 ELLs. There were 50 third-grade students divided into three classrooms of 15, 17, and 18 students. There were 14 ELLs among the three classes. Like School Seven, School Eight is one of three elementary schools in district to be selected as redesign schools and also has smaller class sizes and a school nurse. Redesign schools utilized CARE for Kids.

The three classrooms were similar. The student desks were arranged in communities of 3 and 4. Each classroom had the district provided classroom library of

roughly 200 titles in a central location, organized by topics. There were four computers for student use in each room. There were three guided reading groups posted in each classroom. All three teachers used I CAN statements. Each room was focused on a different strategy: recognize and explain point of view, focus while reading, understand what I read. The rooms were not crowded, but there appeared to be many kinds of instructional materials stored around each room. There were posters and student reminders of how to use components of the Café and Daily 5 structured reading program.

School Eight was in its third year of RTI implementation. There were students using SuccessMaker® on the computers and guided reading groups were posted, both of which are evidence of interventions. Like School Seven, School Eight employed certified teacher(s) specifically to conduct reading interventions with Tier 3 students throughout the school. It was not clear how many teachers held this position. The school did have a room dedicated to progress monitoring. A chart divided by Tiers represented each classroom. On each chart were sticky-notes with student names and their DRA scores, placed in the corresponding Tier. Near each teacher's poster were the I CAN statements from past lessons, lines of learning, and grade level percentages of proficient and distinguished from recent assessments. There were no dates noted on the individual scores or for future assessments.

School Nine. The total enrollment at School Nine was 614 students including 64 ELLs. There were 49 third-grade students divided into three classrooms of 22, 23, and 24 students. Twenty ELLs were divided across the three classes. The principal of School Nine declined my request to conduct a walk-through.

School Ten. The total enrollment at School Ten was 510 students including 96 ELLs. There were 35 third-grade students divided into three classrooms and 15 ELLs among the three classes. All three classrooms were comprised of third- and fourth-grade combined with 23, 24, and 22 total students, and 12, 12, and 11 third-graders respectively. There was evidence that this school also utilized CARE for Kids.

There were some similarities among all three classrooms, while one classroom had some major differences. Beginning with the similarities, all three rooms had four computers for student use, SMART Boards®, posted I CAN statements similar to those mentioned from other schools, and showed evidence of components from the Café and Daily 5 structured reading program. The desks in each room were arranged in cooperative groups of four and five. There was a table for guided reading in each classroom. None of the classrooms appeared to be too crowded.

Two of the classrooms had the classroom libraries supplied by the school district. One teacher organized all the books by genre, with book baskets at each community of tables. One teacher placed approximately 100 books in groups by genre and approximately 100 books grouped by DRA level. These two rooms also had few displays posted around the room. It appeared that the displays were related to the topics currently being taught. The third classroom had far more displays and material stored around the room. The classroom library spanned 6 bookshelves with approximately 1,000 titles. The books were organized in baskets both by DRA level and by subject. The bookshelves formed a corner with a carpet, beanbag chairs, and lamps. Each community of tables also had a book basket in the center. This was the only room that also had a carpeted area for class meetings and working on the floor. Each wall of this class had

teacher and student-made displays from the major content areas, including past I CAN statements with a student sample attached.

School Ten was in its second year of RTI implementation. The use of guided reading and students working with SuccessMaker® were evidence of reading interventions. School Ten employed three adults specifically to conduct reading interventions with Tier 2 and Tier 3 students throughout the school. It was not clear if these individuals were full-time or if they were certified teachers. There was a room dedicated to progress monitoring. Each grade level had its own pocket chart on the wall to display the students by Tier. Each child was represented by a card showing their demographic information, ECE and/or ESL status, assessment accommodations allowed, and scores from every assessment taken in reading and math this academic year. Below each chart were binders for each class containing copies of every reading assessment each student had taken while enrolled at School Ten and progress monitoring charts. In the hallways were displays showing each teacher's name with their respective class percentages of proficient and distinguished scores. This display also indicated the goal percentages for each class. As of the last assessment, the name and date of which was not indicated, the percentages for each class were 80%, 60%, and 60%.

Matched Schools

The eight schools included in this study were from two groups, four had implemented RTI for two or more year, RTI group, and four had implemented RTI for less than two years, comparison group. A school from the RTI group was matched to a school from the comparison group. This was done to reduce issues related to sampling error and increase the power of analysis (Shaddish, Cook, & Campbell, 2002).

The pairings were based on total school enrollment, programs offered, total ELL enrollment, the number of third-grade ELLs, and class size, all of which are detailed on Table 7, Table 8 (both are below), and in the qualitative descriptions. Schools Eight and Seven were paired because of their similar enrollments and due to their both participating in the school redesign program. Schools Three and Five had the two largest student populations and a large number of third-grade students. There is a slight disparity in the number of third-grade ELLs between the schools; however, each school had the greatest number of third-grade ELLs for their respective group. Schools One and Ten were paired due to their similar total enrollments and number of ELLs. School Ten posed an additional challenge due to their having third- and fourth-grade split classes. While School Nine's total enrollment was much larger than School Four, they were paired based on their similar number of ELLs school wide and similar third-grade enrollment.

Sample

The number of third-grade students sampled from these eight schools was 847. The instances of native English speakers far outnumbered the ELLs, as expected. I separated the native English speakers from the ELLs and used a random number generator to select an individual case of native English speakers equal to the number of ELLs for each school. The combined number of ELLs ($n=160$) and the students who were not ELLs ($n=160$) was 320 third-grade students. Of the 340 students, 26 cases (10 ELLs and 16 who were not ELLs) held missing or unusable data and were not included for analysis. This yielded a sample of 294 ($N=294$) students for statistical analysis in this study, $n = 150$ and $n = 144$ for ELLs and not ELLs respectively. This is well above the sample size of 102 students (Cohen's $d = .5$, $1-\beta=.80$, $\alpha > .05$) suggested in the power

analysis discussed in Chapter III (Keppel & Wickens, 2004). Table 7 shows the four major categories for analysis and the respective samples (n). A Chi-Square testing the difference between the number of students, ELLs and not ELLs, in each condition indicated the data were fit for further analysis, $\chi^2(1) = .146, p = .702$ for RTI schools and $\chi^2(1) = .033, p = .856$ for comparison schools.

Table 7.

Sample of 3rd grade students by Instructional Model and ELL status

	English Language Learners	Not English Language Learner	Totals
RTI Schools	88	83	171
Comparison Schools	62	61	123
Totals	150	144	294

Table 8 shows the final number participants from each school by gender and ELL status. For each school, the number of students who were ELLs and who were not ELLs was fairly consistent given the random sampling of students who were not ELLs. This was confirmed by a Chi-Square tests which showed no significance between between ELLs and not ELLs for each school, $\chi^2(1) = .03, p = .856$, indicating the data were fit for further analysis. The Chi-Square test indicated the data for gender was also appropriate for analysis, $\chi^2(1) = 1.1, p = .29$.

Table 8.

Number of 3rd Grade Students Included for Analysis by ELL Status and Gender

School	English Language Learners			Not English Language Learners		
	Boys	Girls	Total	Boys	Girls	Total
1	12	4	16	8	8	16
3	19	15	34	20	14	34
4	10	4	14	9	6	15
5	11	8	19	11	9	20
7	6	8	14	10	6	16
8	9	9	18	6	12	18
9	6	14	20	6	9	15
10	8	7	15	5	5	10
Totals	81	69	150	75	69	144

The number of students included in this sample for each category of race is shown on Table 9. The totals for each category reflected a similar breakdown as found for the entire third-grade (see Table 3). This supported the sample being representative of the greater third-grade population.

Assessments

The assessments for this study were the Developmental Reading Assessment (DRA), Dynamic Indicators of Basic Early Learning Skills (DIBELS), and Assessing Comprehension and Communication in English State-to-State (ACCESS) reading subtest. The DIBELS and DRA from the end of second grade were to be used as pretest scores. Additionally, the incremental DRA scores throughout the semester were to be used as the tests of reading achievement. The school district's research department was not able to provide the third-grade DRA scores for the current academic year without breaking the protocol established by both school district's and the university's Institutional Review Boards, therefore, only the DRA score from the end of second grade were provided. These were used as a pretest score.

Table 9.

Total Students by Race and by School for the Selected Sample

School	American Indian	Pacific Islander	Asian American	Hispanic	Multi- Racial	Black	White	Total Students	Total ELLs
1	-	-	2	14	1	9	6	32	16
3	-	-	2	23	5	16	22	68	34
4	-	-	2	8	1	13	5	29	14
5	-	-	1	12	-	9	17	39	19
7	-	-	4	7	1	15	3	30	14
8	-	-	5	12	-	14	5	36	18
9	-	-	1	8	-	20	6	35	20
10	-	-	2	11	-	10	2	25	15
Total	0	0	19	95	8	106	66	294	150

The school district supplied their in-house created assessment, Reading Proficiency Assessment (RPA), in lieu of the DRA scores from third grade. The RPA was administered twice, once in October 2011 and once in January 2012, henceforth referred to as RPA1 and RPA2. DIBELS was no longer approved for use in the school district and was not included in this study. The district's testing department could not provide parametric data regarding the reliability and validity for the RPA. The timing of RPA1 fits with the time frame of the end of the first round of RTI intervention cycle and the timing of RPA2 fits with both the end of the semester and the end of the second cycle of RTI interventions. Figure 2 depicts a revised research diagram.

Analysis

There are two treatment reading assessments. RPA1 was given midway through the study and RPA2 was given at the end of the study. A one-way ANOVA was conducted for each assessment to confirm that there was no significant difference between groups. For each ANOVA the independent variable was the four groups, see Table 7, and the dependent variables were the respective RPA scores.

Figure 2.

Revised Research Diagram

		<u>5/15/2011</u>		<u>10/30/2011</u>		<u>12/15/2011</u>
NR	RTI ELL	O _{1a} O _{2a}	X	O ₁	X	O ₂
R	RTI not ELL	O _{1a} O _{2a}	X	O ₁	X	O ₂
NR	<1 YR RTI ELL	O _{1a} O _{2a}	X	O ₁	X	O ₂
R	<1 YR RTI not ELL	O _{1a} O _{2a}	X	O ₁	X	O ₂

O_{1a} = DRA score from the end of 2nd grade

O_{2a} = ACCESS for ELLs taken in January of 2nd grade

O₁= RPA1

O₂= RPA2

X indicates 4-6 weeks of reading instruction or intervention(s)

Figure 2. Diagram of the mixed-methods, quasi-experimental control group design with pretests.

Analysis by ANOVA required the data met certain assumptions. The assumptions for conducting an ANOVA were independence of scores, normal distribution, and homogeneity of variances (Shavelson, 1996).

For RPA1, the assumption of independence was met. Students produced their score independently. The distribution of the RPA1 scores for the entire sample was not normal, with a skew coefficient of .77, kurtosis of -1.3, SD = 23.68. Further analysis of the frequency distributions showed that the RPA1 scores for RTI schools did fit a normal pattern while the distribution for comparison schools did not. Keppel and Wickens (2004) state that ANOVA is robust to violations of normality and that such violations are expected when dealing with special populations, such as ELLs. Leven's statistic indicated the assumption of homogeneity of variance was not violated for RPA1, ($p = .68, \alpha > .05$).

Scores from RPA2 met all three assumptions for ANOVA. Students produced their score independently. The distribution of RPA2 scores fit the normal curve, with a skew coefficient of $-.55$, kurtosis of $-.58$, $SD = 20.45$. Leven's statistic indicated homogeneity of variance was not violated for RPA2, ($p = .72$, $\alpha > .05$).

Results from the ANOVA indicated there was no significant difference in RPA1 scores among the four main groups noted on Table 7, $F(3, 290) = 1.4$, $p = .241$, $\alpha > .05$. This indicates that RPA1 scores are appropriate to use for further analysis with this sample. ANOVA results showed RPA2 was appropriate for use with this sample, $F(3, 290) = 1.13$, $p = .33$, $\alpha > .05$. Both RPA1 and RPA2 were used to evaluate the effectiveness of RTI with ELLs through the research questions posed in this study.

Research Question One

The first research question “is there a difference in the reading achievement of third-grade students between RTI and comparison schools?” was answered by conducting an ANCOVA at each instance of assessment. The covariate was DRA scores from the end of second grade. This question was explored two ways. First by using reading instruction, with the two levels of RTI and not RTI, as the independent variable. Second, the paired schools were compared against each other. This was conducted for each RPA assessment separately to check for significant differences between schools incrementally, which was important as the goal of RTI is for students to have marked improvement in short spans of time. A MANCOVA was conducted using both RPA1 and RPA2 scores as the dependent variable and RTI implementation, with two levels, as the independent variable. This MANCOVA was utilized to explore the effectiveness of RTI through a complete semester of implementation.

The covariates for this study were DRA and ACCESS scores. ANCOVA has the same three assumptions for ANOVA, as noted above, plus four more: linearity, homogeneity of regression, independence of covariates, and covariate measured without error.

In regard to the DRA, each student generated all scores provided for this study separately, as is the normal protocol for school assessments. The frequency polygon of scores for all students in this study were normally distributed among the range of DRA reading scores expected of third-grade students, although with a slight negative skew, with a skew coefficient of $-.33$, kurtosis of $-.71$, SD 9.45 . Levene's statistic was not significant ($p = .27$, $\alpha > .05$) indicating the assumption of homogeneity of variances was not violated. Linearity was checked using SPSS' general linear model to test the lack of fit for DRA as a covariate for RPA1 and RPA2. The respective significance levels of $p = .86$ and $p = .20$ indicated the assumption of linearity was satisfied for both assessments. A test of the interaction between RPA scores and DRA covariate scores showed no significance ($p = .14$ for RPA1, $p = .11$ for RPA2, $\alpha > .05$) supporting that the assumption of homogeneity of regression coefficients was not violated. In accordance with the assumption of independence of covariates, DRA assessments were taken by the students the previous academic year, 2010-2011, and were independent from this study conducted during the 2011-2012 academic year. The assumption of covariate measurement without error was assumed as the DRA is scripted and commonly used in this school district.

RPA1. An ANCOVA was conducted using second grade DRA scores as a covariate. The dependent variable was RPA1 scores. RTI implementation was the independent variable, which had the two levels of RTI or No RTI. The results of this

ANCOVA, depicting the mid-semester effects of reading instruction with RTI for third grade, was significant, $F(1, 268) = 8.08, p = .005$. The assumptions for this ANCOVA were verified. The Eta Square ($\eta^2 = .026$) indicated roughly 3% of the variance in RPA1 scores was accounted for by use of RTI.

A separate ANCOVA was conducted for each pair of schools as a post hoc analysis. The results of the comparisons of paired schools found two pairs of schools did not have a statistically significant difference in RPA1 scores and two of pairs of schools did have scores that were statistically significant, see Table 10.

RPA1 scores between paired Schools One and Ten and for paired Schools Four and Nine were not significantly different. The comparison of RPA1 scores between School Three and School Five was significant, with an Eta Square (η^2) of .11. For Schools Three and Five, roughly 11% of the variance in RPA1 scores was predicted by the use of RTI. RPA1 scores between School Seven and School Eight were also statistically significant, with an Eta Square (η^2) value of .089. For Schools Seven and Eight, roughly 9% of the variance in RPA1 scores was predicted by the use of RTI.

RPA2. The ANCOVA for RPA2 with second grade DRA as a covariate, depicting the end of semester effects of reading instruction with RTI for third grade showed no significance, $F(1, 268) = .042, p = .83$. The assumptions for this ANCOVA were verified. At the end of the first semester of third grade, there was no difference in the RPA2 scores for RTI schools, $M=53.44, SD=19.75$, and comparison schools, $M=50.77, SD=21.62$. Without significant results, there is no support for conducting post hoc analysis.

Table 10.

ANCOVA Results of Paired Schools RPA1 scores controlling for 2nd Grade

DRA

School Pair	<i>F</i>	Mean	Std. Deviation
One & Ten	(1,50) 2.64	35.58 23.91	22.80 18.93
Four & Nine	(1,55) .01	25.64 19.45	20.43 21.74
Three & Five	(1,100) 13.60*	27.21 40.54	23.20 22.66
Seven & Eight	(1,54) 8.2*	45.96 39.38	23.26 22.38

Note: * $p < .05$

RPA1 and RPA2. A two-way MANCOVA was conducted using both the mid-semester reading assessment scores, RPA1, and the end of semester reading assessment scores, RPA2, as dependent variables. RTI implementation was the independent variable which had two levels: RTI and no RTI. DRA scores from the end of second grade was the covariate. The purpose was to test the effects of RTI after a full semester of implementation.

MANCOVA and MANOVA share some basic requirements that must be met prior to analysis. The requirements for MANOVA were normality, linearity of dependent variables, independent random sampling, level and measurement of variables, and multivariate homogeneity of variance. RPA1 and RPA2 are the scores being used for analysis by MANOVA. These two reading assessment are conceptually correlated.

The assumption of independent random sampling was met as both RPA1 and RPA2 were taken independently of one another. ELLs are a special population; however there is no reason to believe this selected sample is statistically different from the

population of ELLs. The student who were not ELLs were randomly selected. The assumption of level and measurement of variables dictates that the dependent variables, RPA1 and RPA2, are continuous and that the independent variables, schools, are categorical. This holds true for the data in this study.

MANCOVAs require additional assumptions to be met (Stevens, 2005). The assumptions are equality of variance-covariance matrices, a linear relationship between dependent variables (RPA1 and RPA2) and the covariate (DRA), and homogeneity of regression slopes. Each assumption was verified during analysis. Box's Test of Equality of Covariance Matrices is not significant (Box'M = 9.32, $F = .43$, $p = .98$), showing equality of variance-covariance matrices. Bartlett's Test of Sphericity is statistically significant (approximate Chi square = 21.37, $p < .000$), indicating sufficient correlation between the dependent variables to proceed with the analysis.

The results of the MANCOVA found that there was a significant difference in the reading scores between RTI schools and comparison schools, Wilks' $\Lambda = .96$, $F(2, 267) = 4.34$, $p < .05$. The partial Eta squared (.03) indicated that roughly 3% of the variance in combined RPA scores was accounted for by the use of RTI.

As noted in the above ANCOVAs conducted for each assessment separately, RPA1 scores were significant, while RPA2 scores were not. Furthermore, the significance was identified to be between two of the four matched schools. Additional pairwise comparisons made between RTI and comparison schools, with a Bonferroni adjustment to protect against errors related to multiple comparisons (Keppel & Wickens, 2004), found no significance.

Research Question Two

The second research question “is there a significant effect for ELLs on reading achievement through RTI controlling for English language proficiency?” was answered by conducting a MANCOVA using both assessments. Post hoc analyses were conducted when significance was found.

For this MANCOVA, the sample was limited to ELLs only. The dependent variables were RPA1 and RPA2 reading scores and the independent variable was RTI, with two levels: RTI school or comparison school. ACCESS reading sub-test scores were used as a covariate.

The assumptions for MANCOVA were verified as noted with research question one. ACCESS is an assessment given only to ELLs who have not attained proficiency in English. Therefore this assessment was only used as a covariate for comparisons between ELL groups. ACCESS reading scores met the assumption of independence as all students completed the reading subtest individually under strict supervision mandated by NCLB assessment protocol. The frequency polygon of scores for all students in this study were normally distributed with a slight kurtosis, with a skew coefficient of $-.67$, kurtosis of 1.99 , SD 27.2 . Levene’s statistic was not significant ($p = .35$, $\alpha > .05$) indicating the assumption of homogeneity of variances was not violated. Linearity was checked using SPSS’ general linear model to test the lack of fit for DRA as a covariate for RPA1 and RPA2. The respective significance levels of $p = .31$ and $p = .38$ ($\alpha > .05$) indicated the assumption of linearity was satisfied. A test between RPA scores and ACCESS covariate scores showed no significance ($p = .26$ for RPA1, $p = .19$ for RPA2, $\alpha > .05$) supporting the assumption of homogeneity of regression coefficients. In

accordance with the assumption of independence of covariates, ACCESS assessments were taken by students during previous academic year, 2010-2011, and were independent from this study conducted during the 2011-2012 academic year. The assumption of covariate measurement without error was assumed, as the ACCESS is a scripted assessment for which only ESL certified teachers received training for administration.

The results of the MANCOVA indicated there was multivariate significant difference in the RPA reading scores between ELLs enrolled in RTI schools and comparison schools, Wilks' $\lambda = .945$, $F(2, 143) = 4.14$, $p = .01$, partial $\eta^2 = .055$. The Levene test indicated the homogeneity of variance for each dependent variable was not violated. Roughly 6% of the variance in the combined RPA scores of ELLs was accounted for by the use of RTI. Further univariate analysis, shown on Table 11, showed a significant effect only with RPA2. There was not a significant univariate effect for RPA1 and RTI for ELLs.

In order to further explain where the significance lies for ELLs' RPA2 scores and RTI participation, an ANCOVA was conducted for each matched pair of schools. For each ANCOVA the dependent variable was the RPA2 of ELLs and the independent variable was RTI, with the two levels of RTI and no RTI. ACCESS scores were the covariate. Significance was found only between one pair of schools, School Seven and School Eight, $F(1, 29) = 5.04$, $p = .03$, $\eta^2 = .134$. For ELLs enrolled in Schools Seven and Eight, roughly 13% of the variance in RPA2 scores was accounted for by the use of RTI. Additional pairwise analyses were made between all RTI schools and all comparison schools based on RPA2 scores. A Bonferroni adjustment was made to

correct for errors related to multiple comparisons (Keppel & Wickens, 2004) and no other pairs of schools showed significance.

Table 11.

Univariate Post Hoc Comparing ELLs and RTI Controlling for Language Acquisition

Assessment	Group	F	Mean	Std. Deviation
RPA 1	RTI	(1,144) 3.2	29.03	22.78
	No RTI		35.90	21.75
RPA 2	RTI	(1,144) 4.42*	55.01	18.34
	No RTI		49.49	18.29

Note: $p < .05$

Research Question Three

Research question three “is the effect of RTI consistent across ELL groups and not-ELL groups?” explored the interaction between language learning and RTI. A MANCOVA was used to explore this relationship. The dependent variables were RPA1 and RPA2 scores. The two independent variables were ELL and not ELL, each with two levels, RTI or comparison schools. DRA scores were used as a covariate. The assumptions for MANCOVA were checked and the homogeneity of variance-covariance assumption was violated (Box’s $M = .18.31, p = .035, \alpha > .05$). MANCOVA is robust to violations related to Box’s M (Keppel and Wickens, 2004), which has been found to be overly sensitive. The Levene’s test of the homogeneity of variance for each dependent variable indicated the assumption was met. Bartlett’s Test of Sphericity is statistically significant (approximate Chi square = 21.37, $p < .000$), indicating sufficient correlation between the dependent variables to proceed with the analysis.

The MANCOVA results were found to be significant, Wilks’ $\Lambda = .92, F(8, 528) = 2.46, p = .01$, partial $\eta^2 = .036$. Follow-up univariate analyses for each reading

assessment indicated RPA1 was significant across ELL populations, $F(4, 265) = 2.65, p = .03, \eta^2 = .034$. Roughly 3% of the variance between ELLs and student who were not ELLs for RPA1 scores was accounted for by the use of RTI. However, further Bonferroni adjusted pairwise comparisons indicated no significance for any pairing of schools.

Research Question Four

Research question four “how does the percentage of ELLs who reach reading benchmark levels compare to students who were not ELLs who reach benchmark levels?” explored the overall goal of reading instruction and the effectiveness of RTI with special populations.

The school district used DRA scores to determine benchmark levels. Since the district was not able to provide DRA scores for the current academic year and remain in compliance with IRB exempted status this study required, analysis for this question had to be modified. Schools used results of RPA as an indicator of both reading progress and as a predictor for the state accountability test given at the end of the year. To explore research question four, RPA scores were used as a predictor for students who would reach grade-level reading benchmarks on the DRA.

An attempt was made to contact the schools in this study to determine what score, by percentage, a student would have to earn on the RPA to be considered proficient or on grade level. Four schools responded, two only after confirming that anonymity was protected as part of the study. Two schools responded with, “We use 80%.” One school stated, “We used to use 80% but we now use 93%.” One school responded with, “There is no specific score on the RPA used to indicate reading benchmarks.” Without a census

from the limited number of responding schools, the benchmark score on the RPA was operationally defined as 80%. Three of the schools used 80% as the indicator of reading success and this is a common standard for ten-point grading scales.

For each school, and for each of the four groups, the number of students reaching the established 80% benchmark score was counted. The number of students reaching the benchmark level was compared to the total number of students in their respective groups to attain percentages. The mean scores and standard deviations were also calculated for each school.

For RPA1, given in October of the 2011-2012 academic year, there were no students who scored 80% or higher. The range of scores across schools was from 0% to 66%. The mean score was 32.18%, SD=23.68, see Table 12. It should be noted that roughly 70% of the students who entered third-grade were considered at benchmark levels when they completed second-grade.

The scores for RPA2, given in January of the 2011-2012 academic year, indicated some progress compared to RPA1. Forty students scored 80% or higher, with 8 students scoring over 93%. The range of scores was from 0% to 100%. The mean score was 52.39%, SD=20.45, see Table 13. Of the 40 students who scored 80% or higher, 15 were ELLs. Four of those ELLs scored above 93%.

Table 12.

RPA1 Percentage Scores as an Indicator for Reading Benchmark Attainment

School	Mean	Std. Deviation	n
One	35.09	22.41	32
Three	26.41	23.31	68
Four	27.27	21.03	29
Five	40.15	22.46	39
Seven	46.20	22.87	30
Eight	43.58	21.75	36
Nine	18.80	21.35	35
Ten	22.96	19.14	25
Total	32.18	23.68	294

Table 13.

RPA2 Percentage Scores as an Indicator for Reading Benchmark Attainment

School	Mean	Std. Deviation	n
One	54.78	19.84	32
Three	57.02	17.70	68
Four	45.44	19.63	29
Five	60.25	21.89	39
Seven	49.90	21.35	30
Eight	52.55	19.76	36
Nine	45.20	20.61	35
Ten	45.32	20.74	25
Total	52.39	20.45	294

The number of students reaching RPA2 benchmark scores was similar between RTI schools and comparison schools, noted on Table 14 below. Twenty-one students from RTI schools scored 80% or higher on RPA2, five of those scored 93% or higher. Nineteen students from comparison schools scored 80% or higher on RPA2: three of

those scored 93% or higher. In regards to ELLs, RTI schools had 11 who scored 80% or higher and comparison schools had four. A total of four ELLs scored 93% or higher, three from RTI schools and one from comparison schools.

Table 14.

Comparison of ELLs and Not ELLs Attaining Reading Benchmarks on RPA2

	<u>RTI Schools</u>			<u>Comparison Schools</u>		
	80-93%	93-100%	Total	80-93%	93-100%	Total
ELL	8	3	11 (n=88)	3	1	4 (n=62)
Not ELL	8	2	10 (n=83)	13	2	15 (n=61)
Total	16	5	21 (n=171)	16	3	19 (n=123)

Addressing research question four, a total of 12.5% of ELLs in RTI schools reached established benchmark levels on RPA2 compared to 6% of ELLs in comparison schools. Additionally, a total of 12% of students who were not ELLs in RTI schools reached established benchmark levels on RPA2 compared to 24.5% of student who were not ELLs in comparison schools. In RTI schools, the reading achievement was similar for both ELLs and students who were not ELLs. In comparison schools, a greater number of students who were not ELL attained benchmark levels than ELLs in the same group.

CHAPTER V

Discussion

This chapter presents a review of the major findings of this study. The chapter is organized as follows: a discussion of the results for each research question and their connection to existing literature, limitations and implications of the results, and recommendations for future research.

Review of the Results

Research Question One

Research question one asked if there was a difference in the reading achievement of third-grade students between RTI schools and comparison schools. This question was addressed by analyzing district reading assessments, both RPA1 and RPA2, via MANCOVA using reading scores from the end of second-grade (DRA) as a covariate. Each assessment was also analyzed individually via ANCOVA using the same covariate.

The MANCOVA found a significant difference between the reading scores of RTI schools and comparison schools, Wilks' $\Lambda = .96$, $F(2, 267) = 4.34$, $p = .01$, $\eta^2 = .03$. However, the effect size is small with only 3% of the variance attributed to instruction, RTI or comparison. Further univariate analysis indicated that RPA2 held no significant difference when comparing all schools in the study. The 3% effect stemmed from variances in scores between groups on RPA1 only. Comparison of RPA1 scores for paired schools indicated only two pairs of schools held a significant difference, Schools Three and Five [$F(1,100)=13.60$, $p<.001$], Schools Seven and Eight [$F(1,54)=8.20$,

$p < .01$]. For Schools Three and Five, 11% of the variance in RPA1 scores was attributed to instruction through RTI, while 9% of the variance in RPA1 scores was attributed to instruction through RTI for Schools Seven and Eight. As a whole, 3% of the variance, while statistically significant, appeared to be low. However, when looking at specific pairs of schools, accounting for 11% and 9% of the variance in reading scores is sizable. In education accounting for the difference in academic achievement of any percentage of students is substantial.

The mean scores for the pairs of schools, see table 10, were interesting. The RTI schools had mean scores of 27.21 and 45.96, for Schools Three and Seven respectively. The comparison schools had mean scores of 40.54 and 39.38, for Schools Five and Eight respectively. In one instance the RTI school outperformed the comparison school on RPA1; School Seven outperformed School Eight. In one instance the comparison school outperformed the RTI school on RPA1; School Five outperformed School Three.

With the significance only lying on scores for RPA1 and not for RPA2, other questions arise. Logically, if this form of instruction was the primary reason for increased reading scores, RPA2 scores should also have significantly improved as well. Was the difference in RPA1 scores due to RTI instruction or other factors? RPA1 scores could have been partially influenced by what is commonly known as the *summer slide*. The summer slide refers to the dip in achievement of students due to being out of school, out of practice, during the summer break.

Yes, there was a difference in the reading scores of RTI schools and comparison schools. However, the results of this study were mixed with comparison schools outperforming RTI schools in some instances. There was relatively low effect size,

making it difficult to indicate the amount of influence reading instruction from either group had on the reading achievement of third-grade students.

Research Question Two

Research question two asked if there was a significant effect for ELLs on reading achievement through RTI controlling for English language proficiency. This question was addressed by analyzing RPA1 and RPA2 scores of ELLs in both RTI schools and comparison schools via MANCOVA. The covariate was the ACCESS reading sub-test.

The MANCOVA indicated there was a significant difference in the RPA reading scores between ELLs enrolled in RTI schools and comparison schools, Wilks' $\Lambda = .945$, $F(2, 143) = 4.14$, $p = .01$. Roughly 6%, partial $\eta^2 = .055$, of the variance in the combined RPA scores of ELLs was accounted for by the use of RTI. Similarly to research question one, there is a significant multivariate effect, but with a relatively small effect size. Univariate analysis indicated only RPA2 held significance for ELLs in the two groups, $F(1,144)=4.42$, $p<.05$. ELLs in RTI schools outperformed ELLs in comparison schools with respective mean scores of 55.01 and 49.49.

Pairwise comparisons of the ELLs from each school indicated there was only one pair of schools that held a significant difference, Schools Seven and Eight $F(1,144)=4.42$, $p<.05$. Roughly 13%, $\eta^2 = .134$, of the variance in RPA2 scores of ELLs was attributed to instruction model between Schools Seven and Eight. However, the comparison school outperformed the RTI school. School Seven and Eight had respective mean scores of 43.01 and 58.37.

Unlike with the sample taken as a whole in research question one, which showed significance with RPA1, ELLs showed a significant increase in achievement on RPA2.

This suggests that ELLs require more time involved in specifically targeted instruction before showing improvement, as noted in the literature (Betts et al., 2009; Cummins, 1980; Linan-Thompson & Ortiz, 2009). As with research question one, RPA scores for schools Seven and Eight held the significance although in the opposite direction.

Yes, there was a significant difference between the reading achievement of third grade ELLs enrolled in RTI schools and comparison schools. The overall effect size, 6%, was relatively low and the majority of significance was between only one pair of schools in which the comparison school outperformed the RTI school. The difference was not found to be significant for all assessments and none of the schools yielded mean scores above grade-level benchmarks. These factors made it difficult to support generalizations about the effectiveness of RTI.

Research Question Three

Research question three asked if the effect of RTI is consistent across ELL groups and not ELL groups. This question was addressed by analyzing RPA1 and RPA2 scores via MANCOVA using second-grade DRA scores as a covariate.

While the results of the MANCOVA were statistically significant [Wilks' $\lambda = .92$, $F(8, 528) = 2.46$, $p = .01$, partial $\eta^2 = .036$], the effect size was small with only 3% of the variance between ELLs and not ELLs being attributed to instructional model. Post Hoc univariate analysis found only RPA1 held significant results. No specific pairs of schools indicated significant differences between ELLs and not ELLs.

ELLs in comparison schools (No RTI) outperformed ELLs in RTI schools on RPA1, as noted on table 15. This was not the case for RPA2, which showed no

significant difference between groups. Students who were not ELLs in comparison schools also outperformed their counterparts in RTI schools on RPA1 and RPA2.

Table 15.

Comparison of RPA Results Across ELL and Not ELL Groups

Assessment	ELL Status	Group	Mean	Std. Deviation	n
Reading Proficiency Assessment 1	ELL	RTI	27.46*	22.30	78
	ELL	No RTI	35.62*	21.90	61
	Not ELL	No RTI	34.50*	24.88	53
	Not ELL	RTI	31.83*	24.61	78
Reading Proficiency Assessment 2	ELL	RTI	56.00	18.13	78
	ELL	No RTI	49.60	18.21	61
	Not ELL	No RTI	52.113	25.09	53
	Not ELL	RTI	50.98	21.16	78

Note: * $p < .05$

No, the overall effect of RTI was not consistent across ELL groups and not ELL groups. When looking only at RPA1, the effect was consistent, students in the comparison group outperformed students in respective groups in RTI schools. RPA2 results, while not statistically significant, had ELLs in RTI schools out performing ELLs in comparison schools while students who were not ELLs in comparison schools outperformed their counterparts in RTI schools. It should be noted that none of the differences between mean scores for each group were greater than seven points and all mean scores were well below passing let alone the established proficiency level of 80%.

Research Question Four

Research question four asked how do the percentage of ELLs who reach benchmark levels compare to students who were not ELLs who reached benchmark levels. Without having the DRA scores from each school, the benchmark reading benchmark level for the provided RPA was operationally defined as 80%. The numbers of students reaching the benchmark score for each school and for each group were counted and percentages calculated. While no students reached benchmark levels on RPA1, there were students from each group who reached benchmark reading levels for RPA2.

A greater number and a greater percentage of ELLs in RTI schools reached benchmark levels on RPA2 as compared to ELLs in comparison schools, 11 and 4 students or 12.5% to 6% respectively. In RTI schools, roughly the same number and percentage of ELLs and students who were not ELLs reached benchmark levels, 10 and 11 students, 12.5% and 12% respectively. A greater number of students who were not ELLs in the comparison group reached the reading benchmark score than all other groups, 15 students or 24.5% of students who are not ELLs in comparison schools. Taken as a whole, 12% of students in RTI schools reached benchmark levels on RPA2 (21 of 171) and 15% students who are not ELLs reached benchmark levels on RPA2 (19 of 123).

These results suggest that reading instruction through RTI assisted ELLs in performing on par with native English speaking classmates. However, native English speakers in comparison schools outperformed all other groups. This may suggest that RTI plays to the middle ground, increasing achievement of ELLs but stifling the

achievement of some native English speakers. The results from comparison schools also confirm that native English speakers generally outperform ELLs in regular classroom settings without RTI intervention.

RTI with ELLs

From the literature, it was assumed that RTI would help special populations of students such as ELLs make greater progress toward grade-level reading benchmarks than student from comparison schools. Reading intervention would include smaller groups (Klingner et al., 2006), language modeling and objectives (Brown & Doolittle, 2008; Linan-Thompson et al., 2007; Linan-Thompson & Ortiz, 2009), and research-based teaching strategies (Fuchs & Fuchs, 2006; Vaughn & Ortiz, 2010).

RTI schools did employ these strategies. Results from research question four showed that, by the end of one semester, ELLs who received reading instruction through RTI performed equal to native English speakers who also received instruction through RTI. However, native English speakers from non-RTI schools outperformed both groups from RTI schools. The group of ELLs from comparison schools had the fewest to reach benchmark goals. These results suggest that RTI does help to accommodate the needs of ELLs so that they can achieve at a rate similar to native English speakers. When looking at the number of students who reached benchmark scores from comparison schools, these same results could be seen as RTI taking some of the attention away from native English speakers who would have had higher achievement. However, when you compare 21 students from RTI schools reaching benchmark goals to 19 students from comparison schools, it is difficult to support such a claim.

Overall, the scores on both reading assessments were low with mean scores well below a passing, let alone benchmark proficiency standards. Even looking at the gains between RPA1 and RPA2, the results were mixed. Each group outperformed the other in at least one instance. Interestingly, ELLs in RTI schools did show the greatest gains between assessments, increasing from a mean of 27.46 to 56.00. This was further evidence that ELLs need more time with specifically targeted instruction through a program such as RTI in order to be successful, supporting literature from Betts et al., 2009; Cummins, 1980; and Linan-Thompson & Ortiz, 2009.

The goal of RTI is to help special populations within mainstream classrooms reach grade level performance or provide increasing support for those student who need it (Cummins, Atkins, Allison, & Cole, 2008; Linan-Thompson, Cirino, & Vaughn, 2007; Vaughn & Fuchs, 2003); the results of ELLs in this study support this goal. With continued use of RTI, ELLs can perform on grade-level at the same rate as native English speakers supporting the findings of Fuchs and Fuchs (2006). Data indicating that ELLs held the greatest gains between the two assessments support the use of RTI with ELLs. With similar results between ELLs and non ELLs in RTI schools, and with ELLs in RTI schools outperforming their peers in comparison schools, the results of this study support the use of RTI in the regular classroom.

Limitations

This study had limitations, or challenges, that had to be addressed, as is the case with most research. The two greatest challenges were timing and assessment data. The initial goal was to be able to enter schools at the very beginning of the academic year. Scheduling challenges and progress through both the university and the school district's

IRB did not allow for data to be collected as early as planned. Because of this, the observation walk-throughs were limited to one visit instead of two or three. Furthermore, two principals rejected requests to conduct walk-throughs. Not being able to discuss research plans with principals prior to the beginning of the school year limited the usefulness of the observation tools.

The fact that the school district was not able to provide incremental DRA scores was a huge challenge. DRA is a commonly used and vetted instrument of assessment that schools use to determine grade-level achievement. Schools collected this data and only provided it to the district Data Management office at the end of the academic year. The school district did provide RPA data. While the school district was using this assessment as a predictor for the year-end assessment, there was no information on the reliability or validity for this instrument. The use of RPA brought issues related to internal validity (instrumentation) and related to measurement error (Shadish et al., 2002). If any error was associated with the RPA, it was consistent across all groups of students. The abundance of low scores on both RPA assessments was an indication that the RPAs were either more difficult than the DRA or that the standardized test format of RPA was difficult for third-grade students.

Sampling is an issue with most any study. This was especially true for the current study as it focused on a special population of students. With research in educational settings, it is difficult to use random sampling. Shaddis et al. (2002), note that purposive sampling in such cases is preferred as the goal is to be able to generalize to similar groups, i.e. schools. Since this study focused on a finite number of ELLs, the sample of students who were not ELLs was randomly selected from each school. The method of

sampling for this study was conducted using commonly accepted practices for social science research.

Making generalizations from a study should always be done with caution. For this study, the sample was relatively small even though it met the requirements established through preliminary power analysis. This school district was a large-sized school district in a metropolitan city of approximately one million residents. The district included over 97,500 students. All eight of the schools selected were in urban, Title 1 schools. The schools and students in this study were safely representative of urban schools in similarly sized cities where the majority of ELLs are native Spanish speakers.

As noted in Chapter three, the school district mandated that all schools implement RTI as part of their reading instruction program for the 2011-2012 academic year. This made creating a comparison group difficult, and there is the possibility of construct validity errors related to treatment diffusion. The RTI schools had begun using RTI at least two years prior to this study. Comparison schools were in their first year of implementing RTI. While it is commonly believed that initial efforts to begin a program such as RTI are more closely related to business as usual in the first year, it is possible that some of the comparison schools were successfully implementing many aspects of RTI. Data collected from observational walk-throughs indicated that schools were putting forth effort to implement RTI. However, results of this study did not show that the comparison schools were able to successfully address the needs of ELLs to the extent of treatment schools.

Implications

By and large, the result from this study support the use of RTI with ELLs as expected from previous literature. The number of ELLs and native English speakers in RTI schools who reached benchmark levels by the end of the first semester of third-grade were nearly the same, 11 and 10 students respectively. ELLs in RTI schools also showed the greatest amount of improvement from the first assessment to the second. ELLs showed a 26-point gain in the mean scores from the RPA1 in October to RPA2 in January. More ELLs from RTI schools reached benchmark reading levels than ELLs in comparison schools, 11 and 4 respectively. Taken together, the data make a case for schools implementing reading instruction through RTI in mainstream classrooms that include ELLs.

The results of this study should encourage schools to consider using RTI in classrooms that include special populations of students, especially ELLs. Educators are frequently looking for ways to help low performing students to achieve at higher levels. Additionally, NCLB tracks the performance of the low performing students year to year (AYP). Data from this study indicated that historically low performing students will show great improvement, including having many who reach grade-level expectations. The goal of teachers in multi-cultural classrooms is to be able to help ELLs to perform at levels similar to native English speaking students and the results of this study suggest RTI is a method to that end.

This study has implications for teacher educators and for ESL certification. In some fashion both of these programs are charged with preparing teachers to work with the population of students in today's classrooms. As the data showed, classrooms are

increasingly more culturally diverse and will continue to be so. RTI, including the research based interventions that go along with it, should be a part of the course of study for teacher preparation and ESL certification programs in order to maximize the educational success of ELLs. Further, these programs direct students to the research supporting successful interventions, such as RTI documented in this study.

Moreover, professional development for current teachers should consider covering the methods included in RTI. This study and previous literature support the use of continual progress monitoring and specifically targeted skills instruction through tiers in addition to the core instructional program. Teachers need to have time to explore methods to organize their instructional day to include time for interventions in small groups and for finding/developing meaningful assessments to monitor progress. This study shows that RTI is one way to help both teachers and students to be successful, successful in teaching and successful in reading achievement.

The results of this study also have implications for ESL certified teachers. Results from this study support much of other current trends in ESL instruction. Instructional models such as Sheltered Instruction Observation Protocol (SIOP), Specially Designed Academic Instruction in English (SDAIE), etc., have encouraged the use of language objectives and language modeling as part of core academic instruction across content areas (Echevarria, Short, & Powers, 2006). In this manner, language, the language demands of the content, and practical application of language are all interwoven. RTI specifically includes these as part of the intervention protocol. The results from this study showed the academic gains of ELLs realized when using this approach.

Future Research

Research focused on the use of RTI with English Language Learners is limited. The literature noted that there are many factors affecting the achievement of ELLs that need to be factored out, such as language acquisition rates. This research was one of the first to meet this need and additional research similar to this is necessary.

Two key elements that future studies should consider are samples from more than one school district of similar sizes and assessments that accurately reflect benchmark progress. Having a larger sample from a wider range of schools will help with both the statistical power of the data and with greater generalizability. Of course, accurate and consistent measurement instruments are a necessity of any research. Continuing the data collection through the end of the academic year is another important facet. ELLs generally need more time practicing literacy skills before fully comprehending them and benchmark reading goals are generally taken at the end of the academic year.

Additionally, future research into the specific differences between schools that show significance would be beneficial. Finding a way to include the amount of time ELLs have experienced formal education settings, both in and out of the U.S., is suggested.

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APPENDIX A

Observation Tool Response to Intervention in Reading

School _____ Date of observation: _____

Length of time implementing RTI school wide?

Universal screening measures and date(s):

RTI reading data displayed by tiers? YES NO

Data updated/up to date? YES NO

Progress monitoring assessment tool(s) evident? YES NO

Comments (Progress monitoring tools, personnel, display, special needs noted, target dates):

Number of third grade students:

	Room 1	Room 2	Room 3	Room 4	Totals
Tier 1					
Tier 2					
Tier 3					

School: _____ **Third Grade #** _____ **Date:** _____

Number of students present in room: _____

Number of adults in room: _____

Description of activities observed, include number of students participating:

Role of adult(s):

Description of evidence of interventions implemented (materials, work displays, groupings, etc):

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Instructor for Master's program and English as a Second Language Endorsement. Design curriculum, material, and course outlines aligned with university program standards. Provide classroom instruction, lectures, and training. Engage current classroom teachers in discussions concerning current research in ESL instruction, practical applications of ESL pedagogy, and classroom dynamics. Evaluate and critique papers and class presentations. Serve as teacher-mentor for certified teachers completing the practicum for ESL certification. Courses taught:

Workshop in Elementary Language Arts: ENL and Bilingual Methods

Workshop in Secondary Education: ESL/ELL Teaching Strategies

Advisor, ESOL National Committee

Educational Testing Service, Ewing NJ

2007-2008

Selected to 12 member national panel. Interpreted national standards and practices related to ESL instruction. Collaborated to revise teachers' certification exam to match national standards and created questions and scenarios to exemplify teaching practices relating to ESL.

Teacher

Lewis Elementary School, Tampa FL

2000- 2003

Taught mainstream 2nd and 3rd grade as both the classroom teacher and ESOL teacher. Led the 4th grade reading and writing Extended Day Learning Program. Duties for the Extended day program included: evaluating students who entered the program, schedule classes before and after school, recruit teachers, led after school lessons, etc. Elected to the School Advisory Committee member and assisted principal to involve families with academic policy.

Proctor/ Tutor

Sylvan Learning Center, Tampa FL

2000-2001

Served as a certified proctor for exams of professional certification and educational advancement. Tutored elementary and high school students in all content areas. Prepared high school students for college entrance exams, ACT and SAT.

PROFESSIONAL DEVELOPMENT DELIVERED

ELL's: Strategies, Assessment & Treatment

SIOP for Regular Classroom Teachers

Integrating Language and Content Objectives

Oral Production Patterns and Errors

ESL Writing Collaboration Strategies

PROFESSIONAL DEVELOPMENT COMPLETED (abbreviated)

TESOL National Convention: RTI, Authentic Assessment

TESOL K-12 Dream Day

Sheltered Instruction Observation Protocol for Trainers (SIOP)

Rigby OWE Guided Reading Instruction

SMART technology, SMART boards & cameras

Hands-On Equations

Intel Teach to the Future

Developmental Reading Assessment (DRA)

Word Walls That Work

Mathematics and Manipulatives

ADDITIONAL EXPERIENCES

Professional Member, TESOL, KYTESOL, NEA, KEA

Volunteer translator for Seven Counties/First Steps of Jefferson County 2008-present

Volunteer Governor's Cup & Odyssey of the Mind coach/judge 2000-2001, 2005–present

Hillsborough County Mathematics Council, 2000- 2003

Hillsborough County Science Council, 2000-2003

High School Junior and Senior Varsity cheerleading Coach 1996, 2000