

PERCEIVED EDUCATOR KNOWLEDGE OF RESPONSE TO  
INTERVENTION (RTI)

by

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Abstract

PERCEIVED EDUCATOR KNOWLEDGE OF RESPONSE TO  
INTERVENTION (RTI)

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This study examined the perceived knowledge level of the Response to Intervention (RTI) practices among general education teachers, special education teachers, and principals in three school districts located in Northeast Texas. An on-line survey assessed the participants' perceived knowledge of the four major components needed to implement RTI. Additionally, this study allowed respondents to determine if there was a need for additional RTI staff development opportunities for effective RTI implementation. Furthermore, this study allowed respondents to determine if there was a need to incorporate at least one RTI course in higher education institutions. A total of 98 respondents participated in the survey. There was a significant difference in the perceived knowledge level between general education teachers, special education teachers, and principals with the use of the universal screener. Specifically, there was a significant difference in the perceived knowledge level between the general education

teachers and principals with the use of a universal screener. There was not a significant difference in the perceived knowledge level between the general education teachers and special education teachers with the use of the universal screener. The results of this study also indicated there was not a significant difference between the perceived knowledge levels of the three groups of educators with the use of progressing monitoring, evidence-based interventions, and data collection for RTI implementation. Results from this study indicated that the participants perceived themselves as not having adequate RTI knowledge and could benefit from additional professional development opportunities. Additionally, the three participant groups supported the idea to formally address RTI instruction in academic training programs to assist its implementation and success.

## Table of Contents

|                                  |     |
|----------------------------------|-----|
| Acknowledgements.....            | iii |
| Abstract.....                    | v   |
| List of Figures.....             | x   |
| List of Tables.....              | xi  |
| Chapter 1 INTRODUCTION.....      | 1   |
| Response to Intervention.....    | 2   |
| Statement of the Problem.....    | 9   |
| Purpose of the Study.....        | 11  |
| Research Questions.....          | 11  |
| Hypotheses.....                  | 12  |
| Theoretical Framework.....       | 12  |
| Significance of the Study.....   | 14  |
| Methodology.....                 | 17  |
| Treatment of the Data.....       | 18  |
| Limitations.....                 | 18  |
| Assumptions.....                 | 19  |
| Definitions of Terms.....        | 20  |
| Chapter 2 LITERATURE REVIEW..... | 23  |
| Reading Instruction.....         | 23  |

|   |    |
|---|----|
| Response to Intervention Implementation .....   | 30 |
| Special Education.....  | 32 |
| Role of Principals.....   | 35 |
| Role of General Education Teachers .....  | 36 |
| Role of Special Education Teachers .....  | 38 |
| Leadership.....   | 39 |
| Response to Intervention Supports: Professional Development, Leadership,<br>Resources ..... | 42 |
| Reading Interventions .....   | 47 |
| Chapter 3 METHODOLOGY .....   | 54 |
| Research Questions .....  | 54 |
| Hypothesis.....   | 55 |
| Research Design.....  | 56 |
| Participants.....   | 57 |
| Sampling Overview .....   | 57 |
| Description of Participants.....  | 60 |
| Survey Questionnaire.....   | 61 |
| Validation.....   | 64 |
| Data Collection .....   | 68 |
| Data Analyses .....   | 69 |
| Chapter 4 RESULTS.....  | 70 |



|  |     |
|--|-----|
| Test of Assumptions .....                            | 70  |
| Statistical Analysis.....                            | 72  |
| Chapter 5 SUMMARY OF FINDINGS, CONCLUSTION AND       |     |
| FURTHER STUDIES .....                                | 82  |
| Research Hypotheses Findings .....                   | 82  |
| Descriptive Statistics.....                          | 85  |
| Conclusions.....                                     | 88  |
| Implications.....                                    | 88  |
| Further Studies .....                                | 90  |
| Appendix A Formal Invitation to Superintentents..... | 92  |
| Appendix B Survey Consent.....                       | 94  |
| Appendix C Survey.....                               | 96  |
| Appendix D Survey Validation Letter .....            | 105 |
| Appendix E Instrument Validation .....               | 108 |
| Appendix F IRB Approval.....                         | 114 |
| References.....                                      | 117 |
| Biographical Information.....                        | 133 |

## List of Figures

|                           |   |
|---------------------------|---|
| 1. RTI Pyramid.....       | 4 |
| 2. RTI Leveled Tiers..... | 8 |

## List of Tables

|   |    |
|---|----|
| 1. Evidence-Based Interventions from What Works Clearinghouse:<br>Alphabetics .....   | 48 |
| 2. Evidence-Based Interventions from What Works Clearinghouse:<br>Early Reading .....   | 49 |
| 3. Evidence-Based Interventions from What Works Clearinghouse:<br>General Literacy Achievement .....                                      | 50 |
| 4. Evidence-Based Interventions from What Works Clearinghouse:<br>Reading Achievement .....   | 51 |
| 5. Evidence-Based Interventions from What Works Clearinghouse:<br>Reading Comprehension .....   | 52 |
| 6. Evidence-Based Interventions from What Works Clearinghouse:<br>Reading Fluency .....   | 53 |
| 7. Total Respondents per School District .....  | 61 |
| 8. Means for Validity of Clarity and Relevance from Survey Items .....  | 67 |
| 9. Kruskal-Wallis Test for Significant Differences .....  | 74 |
| 10. Mann-Whitney Test for Significant Differences using the Universal<br>Screener between General Education Teachers and Principals ..... | 74 |
| 11. Percentages of Respondents by Item, Status, and Knowledge Level Using<br>the Universal Screener .....                                 | 76 |

|  |    |
|--|----|
| 12. Percentages of Respondents by Item, Status, and Knowledge Level Using Evidence-Based Interventions ..... | 77 |
| 13. Percentages of Respondents by Item, Status, and Knowledge Level Using the Progress Monitoring.....       | 78 |
| 14. Percentages of Respondents by Item, Status, and Knowledge Level Using Data Collections.....              | 79 |
| 15. Number of Respondents Indicating Agreement with Item 11 .....  | 86 |
| 16. Number of Respondents Indicating Agreement with Item 12 .....  | 86 |
| 17. Number of Respondents Indicating Agreement with Item 13 .....  | 87 |
| 18. Number of Respondents Indicating Agreement with Item 14 .....  | 87 |

## CHAPTER 1

### INTRODUCTION

Response to Intervention (RTI) is an initiative enacted as a part of the No Child Left Behind Act (NCLB) of 2001 and the Individuals with Disabilities Act (IDEA) to identify at-risk or struggling students early and help them perform better academically using a multitier and multi-intensity approach (Fuchs & Fuchs, 2009). Stichter, Stormont, and Lewis (2009) reported that students who have the greatest academic needs are less likely to receive adequate reading interventions. In addition, Bursuck and Blanks (2010) found an overrepresentation of at-risk students in special education because of reading problems. According to Lyon et al. (2001), early interventions have the possibility of reducing the number of students with reading problems by up to 70%.

Mask and McGill (2010) investigated Texas' implementation of RTI. The outcome of their 2007-2008 study revealed that 65% of elementary campuses were in the beginning phases of implementation. From the respondent surveys, Mask and McGill found that educators are not satisfied with the level of training for RTI tier implementation. Spectrum K12 (2010) identified two major challenges with RTI implementation. The first challenge consisted of a lack of knowledge for RTI implementation of the RTI components by educators. The

second challenge is continuing education and sufficient professional development in efforts to implement RTI effectively.

A study found that many schools have achieved significant progress in the implementation of RTI in schools, but have yet to determine significant results or changes as a result of RTI (O'Connor & Freeman, 2012). While teachers are participating in the RTI process, they are not seeing significant student gains or progress toward student achievement. O'Connor and Freeman recommend district-level support, specifically, on-going staff developments, for RTI implementation.

### **Response to Intervention**

Response to Intervention is a framework to increase student achievement. The framework involves three phases (tiers). In Tier I, educators use a universal screener for students identified as potential at-risk learners. Based upon the universal screener data collected from Tier I, students who do not meet the screener measurement criteria enter Tier II. Tier II interventions directly address specific academic areas using a progress monitoring tool to assess the intervention's effectiveness (Fuchs, Fuchs, & Stecker, 2010). If progress on Tier II does not meet satisfactory progress, student are then enrolled in Tier III, which engages students in more intensive interventions and progress monitoring (Mellard, McKnight, & Woods, 2009). Therefore, schools use RTI to identify at-risk students along with providing adequate instructional interventions prior to

special education referrals (Fletcher & Vaughn, 2009). With RTI being implemented in most K-12 schools, the outlook would be to connect the K-16 spectrum with the RTI framework and have intentional collaboration among education experts from learning institutions (e.g., K-12, community colleges, and four-year colleges) to implement the components seamlessly and effectively. Ultimately, trained educators and university professionals could correctly model the RTI components to schools that would need support in providing services to at-risk students (Rinaldi, Averill, & Stuart, 2011).

Educator knowledge of four distinct RTI components was identified through a literature review. The components include: using a universal screener (Gerzel-Short & Wilkins, 2009; & Shapiro, Zigmond, Wallace, & Marston, 2011), using researched-based interventions (Carney & Stiefel, 2008; Hoover & Love, 2011; & Sharpiro, et al., 2011, progress monitoring (Carney & Stiefel, 2008; Gerzel-Short & Wilkins, 2009; Sharpiro, et al., 2011, Wixson & Valencia, 2011), and data collection for decision making (Hoover & Love, 2011, Wixson & Valencia, 2011).

Response to intervention is a three-tier intervention model for students receiving targeted academic skills which are assessed periodically within a six to nine-week timeframe (Shinn, 2007). Fletcher and Vaughn (2009) further described RTI as the “layered intervention that begin in general education and increase in intensity depending on the students’ instructional response.” (p. 31).

If the student is unable to successfully make progress with the intervention, Shinn recommends changing the intervention. Progress monitoring continues for this new intervention. Should the student continue to demonstrate insufficient progress with the new intervention, Shinn (2007) renamed the “RTI process” into the “RTI eligibility process” (p. 611). Murawski and Hughes (2009) suggested “5% of the school population” will be placed in the third tier of the RTI model (p. 269). Fletcher and Vaughn (2009) proposed that many students failing to make adequate progress in Tier III are referred to special education services. See Figure 1, Pyramid, for a RTI model that labeled the three RTI Tiers and their descriptors (Hands & Voices, 2012).

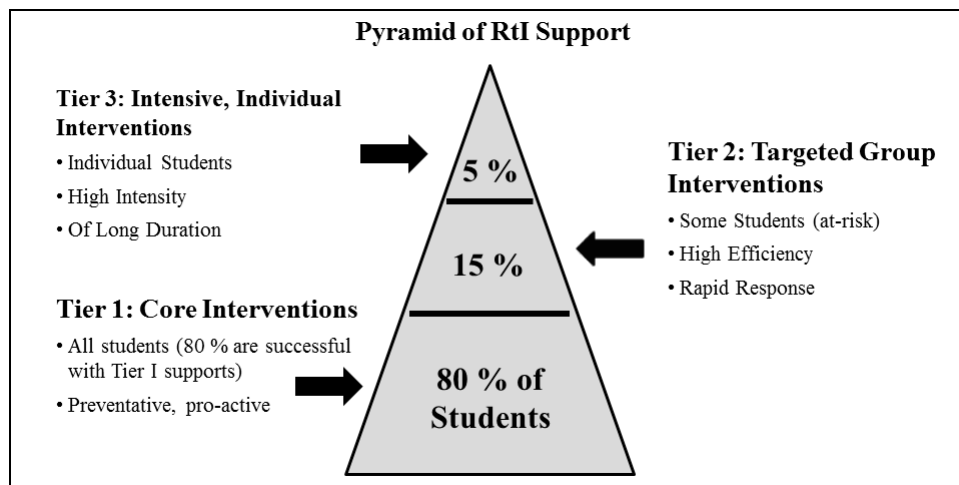


Figure 1 Pyramid used with permission from Hands & Voices

The RTI process has several steps and a team of trained educators to function as a successful system. A general educator’s first step in Tier 1 is to verify that all students are receiving a high quality education by teaching a



standard curriculum. Likewise, educators must also ensure students are receiving varied instruction, or differentiation, and should include instructional strategies for promoting student learning (Fuchs, Fuchs, & Compton, 2012). Step one project to benefit about 80% of students in a classroom (Bursuck & Blanks, 2010). Barnes and Harlacher (2008) suggested the teacher's second step is to administer a universal screener to detect students who may be struggling in reading at a minimum of three times per year (fall, winter, and spring). Students who do not meet the minimum benchmark screener score receive Tier II evidence-based interventions (Mesmer & Mesmer, 2008) as well as continue to receive Tier I instruction. The benchmarks are analyzed to determine the students' specific areas of need (Lenski, 2012). The third step requires a trained evaluator (teacher or an appointed trained staff member) to implement Tier II evidence-based interventions to students in a small-group setting.

Fuchs, Fuchs, and Compton (2012) recommend that Tier II interventions should range between 20 to 45 minutes per session, three to four times per week for 10 to 20 weeks. Tier II interventions are to be implemented as indicated by the program's design specifics (Friedman, 2010). Step four involves frequent progress monitoring to ensure the student is responding positively to the intervention (Mesmer & Mesmer, 2008). The assessments used to progress monitor should correlate with the skills being taught by the intervention program and done with fidelity. Weekly progress monitoring can be observed using a

computer generated or hand drawn graph to clearly see if the intervention is successful (Wright, 2007). A positive trend would indicate that the intervention is working. However, a negative trend would indicate that the intervention is not working. If a negative trend is visible, the teacher should quickly make changes to the intervention. The RTI team can use the graph to decide whether a student moves back to Tier I (positive trend) or moves to the more restrictive (negative trend) Tier III phase (Fuchs, Fuchs, & Compton, 2012). This visual representation reinforces the fourth RTI component of using data collection for decision making. Tier II interventions will reach about 15% of at-risk learners. Students are tracked for either a negative or positive trend. If a student does not make satisfactory progress, the student will be placed from Tier II to the more intensive Tier III intervention (Fuchs, Fuchs, & Compton, 2012).

The Tier III phase is the last stage utilized before the referral for special education testing and the fifth step of the RTI model. Tier III interventions enlists a specialist trained to work with academically challenged students, and requires the development and implementation of targeted interventions. The significant contrast between Tier II and Tier III interventions are the specific goals that may include below grade-level instruction (Fuchs, Fuchs, & Compton, 2012). The intervention may also target a specific skill to raise student achievement. For example, a student may have existing RTI data in the areas of reading fluency and reading comprehension from Tier II. Tier III instruction may target only one area

until the student shows progress. In addition, students in Tier III may receive targeted instruction in a smaller group or in a one-on-one setting. During step six, data collection in Tier III is comparable to Tier II. Frequent progress monitoring assessments are needed to determine if the intervention is effective (Fuchs, Fuchs, & Compton, 2012). After four to six weeks of interventions are provided to the at-risk student, step seven assembles the RTI team to analyze the progress monitoring data and determine if the student has adequately responded to Tier III interventions.

The RTI team decides if the student continues interventions in Tier III or recommends eligibility testing for special education services (Mesmer & Mesmer, 2008). The RTI team uses the data to determine if the student remains in their assigned Tier or is moved to either a more intensive Tier or less intensive Tier. See Figure 2 for a representation of the movement across RTI Tiers. This organizational approach is designed to provide intentional instruction for the students on each tier based on the progress monitoring data (Hoover & Love, 2011). Additionally, this systematic movement across Tiers allows the RTI team to collaborate and resolve existing issues or potentially prevent future problems to occur. These approaches assist the RTI team to remain focused on student achievement.

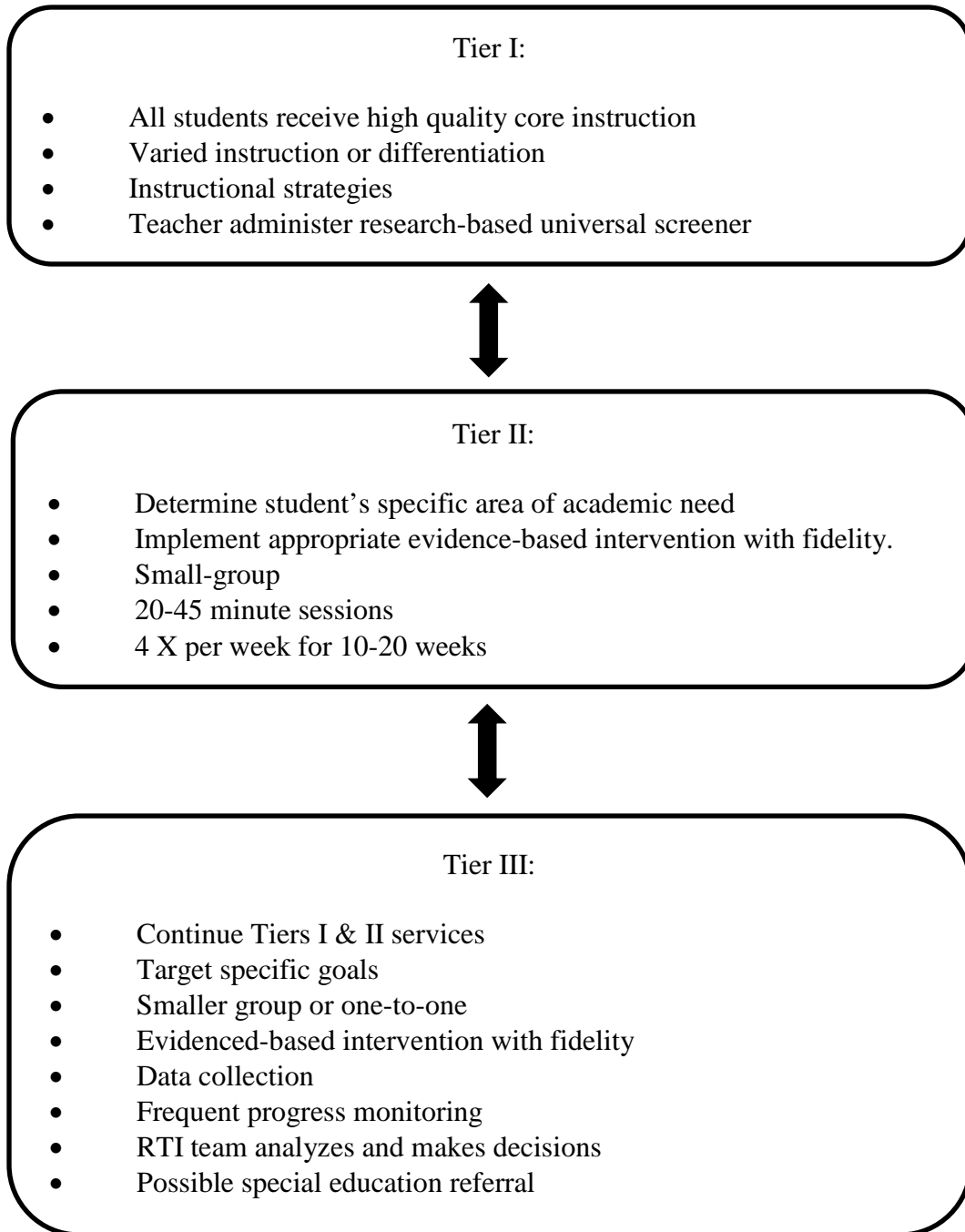


Figure 2 RTI Leveled Tiers

### **Statement of the Problem**

Educators have expressed concerns about having sufficient knowledge and training to effectively implement RTI to their struggling learners (Spectrum K12, 2010). Classroom teachers would be expected to identify academically challenged students early using the RTI components (Fletcher & Vaughn, 2009). Many researchers have identified up to seven major components for RTI. Other researchers have chunked four-to-five of the seven RTI components, keeping them similar to those researchers who elaborated and extended the number of RTI components. However, the inconsistent and duplicitous nature of the many lists of the RTI components from researchers may cause some confusion for educators (Barnes & Harlacher, 2008). An analysis of the literature for the current study was used to identify four similar RTI themes or components.

More than 50% of educators in the southern region of the United States admitted to an inadequate knowledge of RTI and endorsed a need for increased teacher trainings for more effective RTI implementation (Spectrum K12, 2010). About 60% of educators believe professional development will reasonably eliminate the barrier of effectively implementing RTI (Spectrum K12, 2010). Effective professional development would serve to model best practice strategies for “differentiation, flexible grouping,” and progress monitoring, (Fletcher & Vaughn, 2009, p. 31) for educators to use in the classroom to promote student success.

Pre-service teachers rely on colleges and universities to prepare and engage their minds with practical applications to teach diverse learners. Grigorenko (2008) concluded that higher education does not adequately prepare pre-service teachers to teach fundamental reading skills to students. In fact, Grigorenko researched several syllabi from higher education institutions from her state and found that only 36% focused on phonics and comprehension, while none prepared teachers to assess students using research-based assessments or mentioned RTI. In addition, 50% of the required textbooks used for these courses were rated “unacceptable” by the National Council on Teacher Quality, meaning they were “misleading, inaccurate, or incomplete” (Grigorenko, 2008, p. 285). Instructors, who are not prepared, either from a lack of experiential learning or resources, will essentially deprive a struggling reader the necessary opportunities to become a successful reader.

Due to gaps in training, stress on in-class practices, and mounting instructor responsibilities, there is a need to evaluate an educator’s level of expertise using the RTI components in Texas to determine possible solutions to overcome the barrier of implementing RTI successfully. In addition, higher education could address the RTI implementation to focus the specific needs in the preparation of pre-service teachers with the use of the RTI components. The aim of the current study is to highlight the potential connection across the K-16

spectrum by increasing collaboration to close the achievement gap for students in Texas.

### **Purposes of the Study**

The purpose of this study was to add to the research used by Mask and McGill's (2010) and Spectrum K12 (2010) studies of RTI practices among general education teachers, special education teachers, and principals.

Additionally, the purpose of this study was:

1. To determine if a significant difference exists in the perception of RTI knowledge between principals, special educators, and classroom teachers.
2. To determine if professional development in RTI are needed so school districts can plan and organize specific staff developments for educators.
3. To determine if at least one course in RTI is needed in higher education institutions to prepare pre-service teachers with the RTI fundamentals.

### **Research Questions**

The following research questions were answered:

1. How well do general education teachers, special education teachers, and principals understand the RTI universal screener attributes?
2. How well do general education teachers, special education teachers, and principals understand the concept of evidence-based interventions?
3. How well do general education teachers, special education teachers, and principals understand RTI progress monitoring?

4. How well do general education teachers, special education teachers, and principals understand data collection for RTI decision making?

### **Hypotheses**

The following hypotheses were tested:

1. No statistically significant difference exists in the perception of knowledge of universal screener attributes between general education teachers, special education teachers, and principals.
2. No statistically significant difference exists in the perception of knowledge of evidence-based interventions between general education teachers, special education teachers, and principals.
3. No statistically significant difference exists in the perception of knowledge of RTI progress monitoring between general education teachers, special education teachers, and principals.
4. No statistically significant difference exists in the perception of knowledge of data collection in RTI decision making between general education teachers, special education teachers, and principals.

### **Theoretical Framework**

Lev Vygotsky's zone of proximal development is used as the theoretical framework for the current study. The zone of proximal development measures the independent abilities among learners to their abilities with facilitated support from an expert (Warford, 2010). Warford used Vygotsky's notion of zone of



proximal development to describe how educators use their own zone of proximal development to teach students.

Warford (2010) cites that teacher development is an on-going process as students' learning abilities and styles differ over time. Therefore, the Vygotskian approach sees the teacher capacity developed and practiced within a collaborative learning environment. Educators today need the benefits of collaborative learning opportunities to expand their knowledge in reading instruction (National Reading Panel, 2006) along with effective RTI implementation (Prasse et al., 2012). Teachers learning by the Vygotskian theory are rarely seen in both higher education and in school systems (Warford, 2010). Warford used Vygotsky's notion of expanding the current knowledge and skills of both pre-service teachers and current educators through direct teaching and reflection, but with a wider range of time and space for skill acquisition. For example, when educators or pre-service teachers are in a collaborative learning environment, Warford suggested teaching educators and pre-service teachers using authentic classroom practices through reenactments, videos demonstrations, or field-based experiences. The teacher who is directly taught and has reflected promotes their understanding of new concepts from an expert trainer. The new learning is likely to be used in classrooms because the experience from the training was high quality and practical for teachers and pre-service teachers.

### **Significance of the Study**

Teachers who identify students experiencing reading deficits earlier can work to close that gap much sooner. Lose (2007) revealed that a student's learning deficit in literacy usually appears after experiencing one year of non-purposeful instruction. In this situation, students exhibiting severe academic deficits through curriculum-based measurements are introduced to the RTI process (Shinn, 2007). According to the 2010 RTI Adoption Survey, about 60% of respondents in the southern region of the United States are in full RTI implementation (Spectrum K12, 2010). Additionally, 90% of elementary students are in RTI for reading support. Data from this survey also revealed that insufficient professional development, or training, was the greatest barrier for implementing RTI effectively (Spectrum K12, 2010). On the state level, 65% of elementary campuses in Texas reported being in the beginning stages of the RTI implementation (Mask & McGill, 2010). When comparing Mask and McGill's analysis with Spectrum K12's 2010 RTI Adoption Survey, Texas has procrastinated with the attempts of improving their RTI implementation. Mask and McGill (2010) reported that 86% of campuses in Texas are using RTI for reading support, which was similar to Spectrum's K12 data. Mask and McGill's study highlighted a significant lag in Texas' RTI implementation plan. Educators need additional training in the "RTI tier implementation, evidence-based interventions and instruction, and progress monitoring" (Mask & McGill, 2010,

p. 6). Implementation of RTI in Texas is still in the beginning phase in a majority of schools. It would be beneficial to reassess the perception of RTI knowledge from general education teachers, special education teachers, and principals. Likewise, this study will use the Mask and McGill's staff development investigation and determine if training is needed to improve the RTI implementation.

Evaluating the perception of knowledge of general education teachers, special education teachers and principals regarding RTI is needed because these professionals constantly make critical decisions about student learning outcomes through the tier process. Educators will presumably make better decisions having a knowledgeable RTI background (Walker-Dalhouse et al., 2009). Many times, schools have introduced the RTI components through a PowerPoint presentation at faculty meetings (Wright, 2007). While this may be the most feasible way to train teachers about RTI, most schools fail to follow through with additional training (Shapiro, Zigmond, Wallace, & Marston, 2011). When schools do provide additional staff development, surveyed educators report positive outcomes (Sharp et al., 2011). Clearly, structured professional development is vital for successful RTI implementation (Walker-Dalhouse et al., 2009).

Educators should receive professional development to correctly implement specific practices to support the RTI process regardless of the intervention (Danielson, Doolittle, & Bradley, 2007). These specific practices include, but are

not limited to, screening, assessment, and progress monitoring. The Regional Educational Laboratory at Edvance Research (2008) reported that proper staff development will increase student achievement by 20 percentile points. In addition, effective RTI implementation has proven to reduce the number of students who qualify for special education services (Richards, et al., 2007). These data supports the need for specific and effective on-going professional development for educators (Barnes & Harlacher, 2008) and pre-service teachers because “teachers, not programs, teach children...” (Lose, 2007, p. 277).

More than 10 years ago, pre-service teachers who specialized in either general or special education were trained separately (Goe, 2006). Special education pre-service teachers were exposed to and were taught skills geared for students with disabilities more than general education pre-service teachers (Richards et al., 2007). General education teachers are now required to teach struggling students with and without disabilities. Teachers are challenged to seek alternative measures such as using differentiation and learning strategies to encourage academic growth for these students (Richards, Pavri, Golez, & Canges, 2007). Most special education teachers now have multiple roles such as teaching disabled and non-disabled students in the general education setting, implementing Tier III interventions, and collaborating and communicating with staff. Unquestionably, both general and special education departments in higher education need to collaborate and share similar values as school districts to

prepare pre-service teachers for a diverse set of students (Greenberg, Pomerance, & Walsh, 2011).

It is essential to have both general education and special education programs working together for a common goal. However, studies indicate that many higher education institutions are not educating pre-service teachers with RTI. In fact, Greenberg et al. (2011) indicate that higher education institutions have made few, if any, adjustments in their curriculum to acclimate RTI fundamentals. They suggest that teacher training programs do not provide adequate first-year teacher training.

### **Methodology**

This quantitative study provided a current snapshot of how knowledgeable elementary educators in three Northeast Texas school districts are of RTI. A survey was used to collect the data. The goal of this survey was to measure the perception of knowledge among general education teachers, special education teachers, and principals of the RTI components, specifically: the universal screener, using evidence-based interventions, progress monitoring, and data collection for decision making.

Before formal data collection occurred, the Internal Review Board reviewed and approved the research protocol. A panel of five RTI experts was selected to validate the survey instrument. The expert panel used a three-point Likert scale instrument to determine if the survey questions were clearly written

and was relevant to the study. The panel's responses were used to determine if further adjustments were needed on the questionnaire.

A random sampling method was used to identify three school districts. An email was sent to the superintendents seeking approval to conduct this study in each of their school districts. After approval, a second email was given to individual elementary campuses in each of the three school districts. The email encouraged principals, general education teachers, and special education teachers to participate in this study through an on-line survey using SurveyMonkey. A total of 98 respondents participated in this study.

### **Treatment of the Data**

SurveyMonkey was used to gather, sort, and analyze the surveys as the participants submitted them. The Kruskal-Wallis test was used to determine if the mean ranks of the four RTI components are alike in each group of educators. The Mann-Whitney was also used to determine the differences between two groups of educators for one of the four RTI components. Additionally, descriptive statistics was used in this study to describe the need for further RTI staff developments and the need to incorporate at least one RTI course in higher educational institutions.

### **Limitations**

This study investigated how knowledgeable elementary educators in Texas are of RTI practices. The following limitations and delimitations were found in this study.

1. The study focused on elementary educators in Texas. The researcher is aware there are students in secondary schools who are struggling readers; however, there is a greater number of research conducted in elementary schools.
2. The study randomly selected three school districts in Texas. The school districts not selected did not participate. This research was conducted on a smaller scale in comparison to the Mask and McGills' 2010 study.
3. Only general education teachers, special education teachers, and principals participated in this study. Other educators involved with RTI did not participate.
4. Additionally, this study used only a 3-point Likert scale questionnaire. The design of the survey could have persuaded educators of either having no knowledge of the RTI components or considered themselves as experts with each of the RTI components.

### **Assumptions**

This research study made the following assumptions:

1. The participants answered the survey accurately and independently.
2. The analysis of the data is represented with fidelity.

## Definition of Terms

To fully understand this study is dependent on the knowledge of the common Response to Intervention terminology. The following terms are used throughout the study:

- a) *Data collection* is a tool to gather data used to determine if an intervention is benefitting the student's academic needs. If the data reveal the student is not benefitting with the intervention, a different intervention or changes to the existing intervention may need to occur (Shapiro, Zigmond, Wallace, & Marston, Eds., 2011).
- b) *Differentiation* refers to the methods of how we teach students by using their preferred learning styles or multiple intelligences (Gardner, 1993). Suggestions for reliable differentiation include intensive instruction with "meaning and authenticity," treating and respecting students as "individuals," and using essential tools and practices around the classroom to connect with the learner (Sousa & Tomlinson, 2011, p. 15).
- c) *Evidence-based intervention* is a program or instructional strategies that have been proven successful based on its design (Bursuck & Blanks, 2010).



- d) *Interventions* are ways teachers can adjust the intensity of their teaching practices for a positive and measurable student learning outcome (Sailor, 2009). Sailor cautions educators defining the term ‘intervention’ loosely as any new improvement toward teaching practices. RTI interventions must be evidence-based, meaning the intervention has been validated by researchers (Sailor, 2009). Tutorials, on an individual basis, are a great example of an intervention for at-risk students in grades 1-3 (Lose, 2007).
- e) *Pre-service teachers* are teacher candidates in training to become future teachers (Brownell, Sindelar, Kiely, & Danielson, 2010).
- f) *Professional development (PD)*, also known as training, teaches and engages educators with “skills and concepts” needed to perform their educational duties accurately (Barnes & Harlacher, 2008, p. 427).
- g) *Progress monitoring* are frequent assessments used to “determine the effectiveness of the intervention” (Gerzel-Short & Wilkins, 2009, p. 108).
- h) *Strategies* are ideas or thoughts to facilitate a student’s learning. A few common classroom strategies include: scaffolding, cooperative learning, and modeling (Howard, 2009).

- i) *Universal screeners* are Curriculum-Based Measurements typically given three times a year (Fall, Winter, Spring) to assess a student's academic knowledge. Universal screeners are beneficial because they inform educators of which students are not learning the curriculum and could use extra support (Gerzel-Short & Wilkins, 2009).

### **Chapter Review**

This chapter described the four RTI components and practices in schools. This study used Mask and McGill's (2010) RTI framework on a much smaller scale. This quantitative study examined the perception of knowledge among elementary general education teachers, special education teachers, and principals with the implementation of the four RTI components. The study allowed participants to provide feedback for possibly needing further RTI professional developments in school districts and feedback to possibly include at least one RTI course in higher education institutions. The Kruskal-Wallis test, the Mann-Whitney test, and descriptive statistics were used to analyze the data.

## CHAPTER 2

### LITERATURE REVIEW

Response to Intervention (RTI) originated from the 2004 reauthorization of the IDEA (Lenski, 2012). Response to Intervention provides at-risk students several opportunities to develop the missing reading skills needed before the special education referral process occurs. Response to intervention is designed to have a positive impact for student achievement and school improvement by implementing intentional tier support (O'Connor & Freeman, 2012). To achieve this transformation, the educational community is encouraged to alter their current teaching philosophy towards early interventions and preventative initiatives (Fuchs, Fuchs, & Compton, 2012).

#### **Reading Instruction**

Phonics and phonemic awareness are two important primary language development skills for beginning readers (Goldstein, 2011). "*Phonics*" refers to the connection between printed letters and sounds (Goldstein, 2011). Typically, early readers learn single letters sounds before blending letter combinations. Phonics helps early readers to decode the letter sounds of words using patterns. Rasinski, Rupley, and Nichols (2008) indicated there are several hundred one-syllable words created by easily adding a consonant or pattern blend. Many phonics activities consist of learning each letter and its corresponding sound (Goldstein, 2011). Once this skill is mastered, phonetic activities may involve

blending letter sounds to make simple to complex words. Phonics instruction is not simply an early reader approach; it is an on-going conceptual process practiced well into adulthood.

“*Phonemic awareness*” refers to the ability to hear and to correctly articulate the sounds of the words (Goldstein, 2011). Activities to increase phonemic awareness include using manipulatives while saying each word and phoneme, syllabication, and constructing words using onset and rime (Goldstein, 2011). Additionally, early readers can boost their word recognition and “spelling patterns” by using “word families or common phonograms” (Rasinski, Rupley, & Nichols, 2008, p. 257). For example, students learning –am words as in cam, dam, ham, Pam, and ram may recognize and read these spelling patterns easier in other texts. This simple awareness of spelling and sound patterns has proven to be an essential ingredient for the development of early readers (Goldstein, 2011; Rasinski, Rupley, & Nichols, 2008).

Reading fluency is an essential element to build successful readers (Rasinski, 2004). Fluency is the ability to read with automaticity, to make connections with the text, and the ability to read with systematic rhythm (Rasinski, 2012). According to Rasinski (2004), the less time students spend decoding words, the more effort is expended making meaning of the text (Rasinski, 2004). Fluency is sometimes confused with speed (Rasinski, 2004). Some teachers regularly time students reading a passage and focus more on

beating their previous fluency score. The purpose of fluency is not speed.

Rather, fluency is reading with rhythm to gain meaning.

How can educators teach fluency as defined? Teachers can utilize their existing reading curriculum and their integrated reading across content to build fluency in the classroom (Rasinski, 2012). Fluency is modeled by reading a text aloud by the teacher as if he or she is performing on stage to a live audience. When this practice is demonstrated and facilitated with authenticity, students become engaged, have a greater understanding of the text, and an increased motivation to continue reading. Students can be shaped to use true fluency with practice through songs, dialogues, monologues, scripts, poems, speeches, and stories (Rasinski, 2012). In elementary settings, teachers can teach word families in isolation and use those isolated words in rhyming poems or songs. When these activities become mastered, an extension activity using word families and non-word families are presented (Rasinski, 2008). Rasinski strongly suggested incorporating fluency into everyday reading instruction and avoiding the association of fluency with speed. Teaching fluency using authentic repetition can help all students make positive reading gains and increase motivation, specifically those students who are at-risk.

Pilonieta (2010) indicated that the use of research-based comprehension strategies in the classroom is effective to promote good readers. Reading comprehension is defined as “the capacity to perceive and understand the

meanings communicated by texts” (Wilhelm, n.d., para. 2). Reading comprehension offers a justification for reading and provides an opportunity to build student’s background from the text.

Researched-based strategies are a way to connect with the text (Pilonieta, 2010). Wilhelm (n.d. para. 5) identified effective reading comprehension strategies as follows: building prior knowledge; understanding why the reader wants to read; predicting what will occur in the future; using context clues to understand unfamiliar words or meaning; using visualization or mental snapshots; questioning before, during and after reading to engage with the text; monitoring comprehension throughout the text; and reflecting with the context. While educators can use all the comprehension strategies during a reading lesson, these strategies are most beneficial when the teacher explicitly and systematically models how to use them. To teach and model reading comprehension to students, Fisher and Frey (2007) suggested using the gradual release model. Levy (2007, para. 2) further labeled the concept of the gradual release model into the three stages “I do, We do, You do.” During the “I do” phase, Levy (2007) suggested that the teacher model, or directly teaches the use of the comprehension strategy. Next, the “We do” phase incorporates a guided practice instruction where both the teacher and the students use and apply the strategy appropriately (Levy, 2007). Finally, the “You do” phase allow students to practice the new learned skill independently while the teacher proactively monitors the students (Levy, 2007).

Teaching comprehension strategies effectively will not only be a benefit to student understanding, it will aid students in the automatic use of the strategies to analyze and comprehend texts in other subjects. Teaching these comprehension strategies can help improve student overall reading comprehension (Hagaman, Luschen, & Reid, 2010). The underlining purpose of teaching reading comprehension strategies is to improve student quality of reading by appropriately using strategies on an as needed basis during independent reading (Hagaman et al., 2010).

The last major component for effective reading instruction is vocabulary acquisition. Research suggests a child's vocabulary is primarily dependent on the language gained during their primary grades (Biemiller, 2011). A typical one-year-old child has approximately 20 words in their vocabulary bank and will increase to approximately 50,000 words by 12 years of age (Loraine, 2008). The National Reading Panel (2002) found that there is a strong correlation between vocabulary and reading comprehension.

As elementary students become older, they begin reading for informative purposes (Loraine, 2008). Students as early as third grade begin reading non-fiction texts, which contain rich vocabulary. Teachers must be able to effectively teach students the new vocabulary so students can properly understand the context.

Sometimes, teachers taught students vocabulary by defining new words using a traditional dictionary (Beck, McKeown, & Kucan, 2013). A new method of teaching vocabulary is known as “*explicit and implicit*” instruction (National Reading Panel, 2012). Teachers use explicit instruction to pre-teach new terms and to break apart words using prefixes and suffixes to help students fully understand new vocabulary. Students learn the definition of new vocabulary words and correctly use the words in context as early as Kindergarten (Beck, McKeown, & Kucan, 2013). For example, when teachers define the word “reluctant,” use “reluctant” in a sentence, and frequently substitute a word with “reluctant” in sentences, students are found to use “reluctant” instead of a lower-level vocabulary word in both verbal and written form (Beck, McKeown, & Kucan, 2013, p. 4).

Implicit instruction, on the other hand, increases student vocabulary while they are actively reading books. Students who experience the print, pictures, and visuals of literature have shown a stronger connection and comprehension (National Reading Panel, 2012). Beck, McKeown, and Kucan (2013) indicated implicit instruction may be favored because of the overwhelming number of vocabulary words to teach during direct instruction. However, students may not learn as many vocabulary terms through implicit instruction because students need skills such as context clues, or words that surround the unknown vocabulary word, and apply reasoning skills to the texts read. According to Beck, McKeown,



and Kucan (2013), there are no set number of vocabulary words to teach students. When given a set of 100 new vocabulary words, students, on average, learn between five to 15 vocabulary words. To incorporate implicit instruction in the classroom, teachers should expose students with an abundance of texts. Beck, McKeown, and Kucan (2013) suggest that teachers use strategies which point out captions, illustrations, and other information in stories. Students and teachers should then participate in oral discussions about the text while stating the vocabulary term frequently in correct context. Finally, teachers should chunk, or segment, the student's learning with repeated exposure to increase their vocabulary retention (Beck, McKeown, and Kucan, 2013).

Many educators would agree that reading instruction is extremely important in schools (Davis, 2010). Reading is the fundamental block that creates social and economic growth (Reardon, Valentino, & Shores, 2012). Reynolds, Wheldal, and Madelaine (2011) indicated that it is difficult to accept the compelling number of students who struggle to read and knowing the value reading possesses. By incorporating the essential reading components effectively at the elementary setting (phonemic awareness, phonics, fluency, comprehension, and vocabulary), educators can prepare students with the skills needed for language development and abstract cognitive skills for upper grades and post-secondary education (Wixson & Lipson, 2012).

## **RTI Implementation**

Learning to read is an extraordinary and complex skill based on several components that young learners need to be successful readers (Chapman, Greenfield, & Rinaldi, 2010). A practical and well-functioning RTI system is dependent on factors including motivation, a solid framework, a streamlined delivery model, teacher knowledge, and the notion that all students can succeed (Fuchs, Fuchs, & Compton, 2012). Many schools have increased student achievement as the result of implementing RTI (Fuchs, Fuchs, & Compton, 2012). These schools used the model Fuch, Fuchs, and Compton described and incorporated additional components that added integration within the culture of their school.

Jenkins, Schiller, Blackorby, Thayer, and Tilly (2013) conducted an important study focused on RTI implementation for reading in 62 elementary schools across 17 states. Selected schools were located in districts with predominantly white students; more than 30% of students had free or reduced lunch, and had less than 5,000 student enrollment. The schools surveyed were asked opened-ended questions and clarifying questions through phone calls. Results indicated that schools averaged 3.1 years of RTI implementation, used RTI primarily for grades K-3, and 84% focused RTI in the area of reading. Among participants, 80% of teachers used differentiated leveled reading groups during Tier I instruction. Screening methods were also used at least twice a year.

Tier 2 and Tier 3 groups were conducted for five days a week averaging 100-150 minutes in Tier II and 150-250 minutes in Tier III. Additionally, 23% of schools monitored the student's progress in Tier II. Progress monitoring in Tier III was not mentioned. This study resembles how many researchers describe the basic RTI framework.

Rinaldi, Averill, and Stuart (2011) examined the RTI implementation with a university partnership. During the 2007-2008 school year, teachers reported concerns about RTI implementation. Specific concerns included issues related to progress monitoring and tiered instruction. Together, educators and university partners created a RTI framework that encompassed: universal screening, progress monitoring, research-based strategies and tiered instruction, and tracking system for special education referrals. Similarly, the group developed a reading model using phonemic awareness, alphabetic knowledge, phonics, fluency, and comprehension. Over three years of RTI implementation, teachers reported the acceptance of the RTI framework, student improvement, an increased collaboration, and a decrease in special education referrals. In addition to improving student achievement, RTI implementation improved the school's climate.

Researchers recommend using student feedback to drive instruction and small-group RTI groups. Chapman, Greenfield, and Rinaldi (2010) examined elementary student perceptions of RTI reading instruction at their school based on

student drawings. Students' drawings, which served as the data to be analyzed, included their feelings towards reading, the importance of books during instruction, the teacher's location during instruction, and additional teacher assistance. The student-made pictures indicated 77% of students had a good feeling towards reading as described by a happy face on their character's faces. Additionally, researchers used student-made drawings to conclude the level of importance books have during instruction. Students included at least one book in their drawing 80% of the time, indicating books are an important resource to have during instruction and perceived themselves as readers. Furthermore, researchers wanted to assess the students' perception of where teachers instruct reading, in terms of the teacher's location in the classroom. Students drew teachers working with them during small group instruction 75% of the time. About eight percent of students drew teachers teaching to the whole class. To assess how students perceived tier support, researchers looked for additional personnel drawn in pictures. Approximately four percent of students drew more than one teacher on their portrait. Students' drawings may be a good indicator to assess their view of learning and of reading, in general. The student's perspectives can influence the school's action towards RTI implementation as a whole.

### **Special Education**

Special education has encountered many controversies regarding student eligibility, service delivery, and proper teaching methods (Goldstein, 2011).

Response to Intervention is a proactive model to potentially reduce the number of at-risk students identified as having a specific learning disability (Fien et al., 2011). Improved classroom instruction and interventions have helped students with disabilities have a greater opportunity to succeed in our society (Goldstein, 2011).

Response to Intervention is a framework designed to improve the quality of education for all students (Fuchs, Fuchs, & Compton, 2012). Stakeholders responsible for implementing RTI have a massive task for providing the quality education to prevent students from falling further behind. Fuchs, Fuchs, and Compton (2012) indicate that the academic focus for students with a disability should be relevant and purposeful for their academic needs. Currently, there are 13 categories used to identify a student with a disability. According to Goldstein (2011), approximately two-thirds of the students in special education are identified as having a specific learning disability (SLD). Twenty years ago, less than three percent of students were labeled as SLD (Donovan & Cross Eds, 2002). Klingner et al. (2005) claimed that students are referred primarily for special education services as a result of reading issues. According to IDEA (PL 108-446), students should not be identified with a disability due to inadequate education in reading, which includes the five key elements of reading instruction. However, many of the students in special education are referred as a result of poor teaching. A special education label may, in fact, lower teacher and student expectations

(Donovan & Cross, 2002). Some general education teachers may feel insecure teaching a classroom with learning disabled students considering a lack of professional developments and minimal experience teaching mixed abilities (MacFarlane & Woolfson, 2012). RTI is driven to provide all students adequate classroom instruction and, if necessary, researched-based interventions to increase students' level of academic performance.

There are a disproportionate number of students in special education from diverse backgrounds, which has been and continues to be an issue of great concern (Donovan & Cross, 2002). For example, Donovan and Cross (2002) indicate that Texas ranks above other states with the number of Hispanic students classified as having a learning disability. The United States Department of Special Education Programs closely oversees each state's cooperation with IDEA based on 20 performance indicators (Fiedler et al., 2008). IDEA added two performance indicators specifically to monitor the unbalanced special education population. With these additional indicators, school districts must now report student percentages by racial and ethnic groups in special education.

Efforts to address the overrepresentation of minority students in special education are ongoing and fluid (Fiedler et al., 2008). The goal of these efforts focuses on improving the universal classroom instruction and resources for both general education and special education students. The RTI team is a valuable resource to help understand the RTI process (Hoover & Love, 2011). With proper

RTI practices, students with a learning disability can be included as a part of the larger learning environment and not as a detached system (Murawski & Hughes, 2009).

Teachers and administrators play a critical role in student achievement. An effective leader should encourage collaboration, model effective practices, and share their leadership roles. Similarly, teachers must recognize their own educational attributes and limitations to produce an effective learning environment (Helterbran, 2010). Together, these educators can play a critical role with the development and transition between RTI tiers.

### **Role of the Principals**

Principal leadership is important to promote both teacher and student learning in schools (Johnson, 2008). School principals have a continuous list of responsibilities; however, they must balance their responsibilities while supporting the faculty, parents, and students in the building. Schools that implement RTI need principals who are very knowledgeable and capable to manage the RTI process in a systematic manner (Hilton, 2008). An effective principal will constantly support educators by providing the necessary resources and training for implementing RTI (Samuels, 2008). For example, principals should be willing to work with educators, redefine job responsibilities as needed, oversee meetings, and proactively seek professional development opportunities to promote effective RTI implementation (Wright, 2007). If principals support their

educators, then it increases the probability of educators embracing the RTI framework as NCLB envisioned.

### **Role of the General Education Teacher**

The general education teacher is critical to the success of RTI initiatives. Bender (2009) described a typical 3rd grade general education teacher's role in a classroom of 22 students implementing RTI through a multitier system. The first step is for a teacher to assess the class using a universal screener, which is a typical curriculum-based measurement (Gerzel-Short & Wilkins, 2009). After the assessments have been administered, scored and analyzed, four to five students are usually found to have evidence of having reading difficulties (Bender, 2009). During whole group instruction, each teacher is expected to target those students needing extra support using Tier I interventions, (Bender, 2009). Interventions may include changing teaching styles, providing individual assistance, and/or reviewing the student's homework (Wright, 2007). Frequent progress monitoring is necessary to determine if the interventions are successful. These interventions may be sufficient to meeting some of these four to five students' needs. However, if the data from Tier 1 interventions are unsuccessful, a reading diagnostic assessment may be necessary to reveal specific academic deficits (Mellard, McKnight, & Woods, 2009). In this case, the teacher may refer the unresponsive Tier 1 students (usually two to three students) to the campus RTI multi-



disciplinary team for collaboration and possible access to Tier II support (Wright, 2007).

The RTI multi-disciplinary team meets on a regular basis and may include the principal, general education teacher, special education teacher, a school psychologist, and other pertinent stakeholders involved with the RTI intervention (Lipson & Wixson, 2010). The goal of the RTI team is to make data-driven decisions, support the general education teacher, and follow the RTI district guidelines. Lipson and Wixson (2010) strongly urged all RTI team members to receive the appropriate trainings to make accurate decisions for RTI implementations.

Following the decisions made from the RTI team meeting, the general education teacher plans Tier II interventions for students in selected for Tier II. The teacher then uses existing data shared at the RTI team meeting to plan appropriate small-group sessions targeting specific deficit skills for Tier II interventions. Bender (2009) reported that teachers may experience having students with varied skill deficits in reading. This means teachers need to plan multiple 30 minute, small-group sessions to meet the individual student needs, as well as, plan activities for the other students not needing interventions. For example, one student may need interventions for decoding skills and the other two students may need interventions for comprehension and/or fluency. This teacher will need to plan two 30 - minute intervention sessions and plan one hour of

activities for the rest of the class. Tier II interventions are usually implemented in six to nine week intervals with frequent progress monitoring and data to determine if the interventions are working. After this initial interval has been completed, the general education teacher may schedule a meeting with the RTI team to present the data from the progress monitoring assessments for the Tier II students, specifically for those not making adequate progress. The team can then determine whether students return to Tier I interventions, remain in Tier II, or move to a further intensive Tier III level (Hughes & Rollins, 2009).

### **The Role of the Special Education Teacher**

A special education teacher's role has shifted from teaching a self-contained, or special education only classroom, to teaching in an inclusive, general and special education setting (Richards, Pavri, Golez, & Canges, 2007). Tier III would be the appropriate inclusion of the special education teacher due to the specific skill set employed by special education teachers (Fuchs, Fuchs, & Stecker, 2010). Prior to implementing Tier III interventions, special education teachers, or other appointed staff, should have reviewed the data from Tiers I and II, consulted with the general education teacher, created appropriate goals, and planned targeted interventions (Hunley & McNamara, 2010). Hunley and McNamara described Tier III interventions as the most intensive level for intervention because it involves constant problem-solving and a possible special education referral for those not making adequate progress. Bender (2009)

suggested that special education teachers should pull the Tier III students out of the general education setting for interventions to relieve general education teachers from implementing yet another intervention. General education teachers have classes of diverse learners, therefore, it is almost impossible to effectively implement all three levels of tiered interventions, teach the required subjects, and fulfill the duties and responsibilities set by the school (Bender, 2009).

General and special education teachers should collaborate to meet the needs of struggling learners using RTI (Wright, 2007). Both types of educators have shared responsibilities when using RTI, which means, both need support and to be in constant communication while working closely with students (Richards et al., 2007). The collaboration amongst these stakeholders would prove critical to the success of the RTI implementation.

### **Leadership**

Principals are constantly faced with the stressors of improving student achievement. In fact, about one-fourth of student achievement is affected by the administrator's actions (Rieckhoff & Larsen, 2012). A teacher's perception of the campus RTI approach is also a function of the principal's action (Murakami-Ramalho & Wilcox, 2011). Making a significant difference on a primarily at-risk campus takes a determined and unique leadership style. It takes both the educators and the administrators to structure the implementation of RTI successfully.

Murakami-Ramvalho and Wilcox (2011) conducted a case study on an RTI elementary campus with positive student achievement as the result of a highly impressive leadership style. The school had 313 students with a ratio of one teacher to 15 students. Approximately 45% of the students were on a free or reduced lunch program and 51% of the students attended this elementary as their school of choice. The school of choice offer students who do not live in the district zone to attend their preferred school that offer a school of choice as an option. The principal accounted for the success of the school as the result of the collaborative approach from the teachers and her ability to listen to the teachers' suggestions. The principal further stated teacher buy-in and motivation are important contributors to the success of implementing interventions.

The principal, with the help of a reading coordinator, planned purposeful RTI training and planning sessions one summer and offered a monetary stipend for teachers as an incentive to attend the scheduled sessions (Murakami-Ramvalho & Wilcox, 2011). Almost all the teachers attended, which contributed to the buy-in of RTI implementation. During these summer planning and training sessions, teachers gathered their collective ideas and incorporated a plan of action to incorporate a small-group differentiated intervention block for all learners. This idea was suggested by a teacher to avoid the stigma associated with struggling students only needing small group support.

The principal's leadership was accepted by the school primarily because she actively listened to her teachers' ideas and benefited from their knowledge to improve the performance of their school (Murakami-Ramalho & Wilcox, 2011). The concept of shared leadership is growing among school districts. Shared leadership values teachers' ideas, knowledge, and capacity to build the notion of quality instruction and interventions. The teachers commented positively with the manner in which RTI was planned, initiated, and executed. With the principal's caring and focused leadership and the collaborative approach by her teachers, their RTI method was a success. A comprehensive school-wide initiative to correctly implement RTI for struggling readers will promote value towards educational practices.

Bean and Lillenstein (2011) indicated the need for pre-service teachers to be adequately educated before entering the professional teaching community. School principals are seeking teacher candidates with learned skills from their teacher preparatory school because teachers are required to have a broad spectrum of knowledge working with intervention systems, specifically RTI (Prasse et al., 2012). According to the National Reading Panel report (2002), teachers must be familiar with teaching reading. Specifically, pre-service teachers need to know the five essential elements of reading, basic reading instruction and assessment, (Wixson & Lipson, 2012) and collaboration skills (Murawski & Hughes, 2009).

Despite the fact that schools are increasingly implementing RTI, teacher preparation programs have not matched the needs necessary to develop pre-service teachers with the elements and understanding of RTI tier support (Prasse et al. 2012). Consequently, pre-service teachers are lacking the knowledge necessary to deliver RTI in the classroom. Prasse et al. (2012) described a need for a post-secondary education reform to include RTI components and structure.

Schumaker (2009) offered several recommendations to post-secondary institutions to incorporate RTI concepts in their curriculum. Pre-service teachers can expand their knowledge about general learning strategies through discussion, shared reading, and written reflection. Additionally, pre-service teachers can learn about using practical strategies for a particular group of learners, specifically special education students. Furthermore, pre-service teachers should understand how to integrate strategies connected with the specified content. Lastly, in a learning institution, it is vital to teach strategies for struggling students in real-life practicum setting. Research demonstrates a larger knowledge gain when pre-service teacher learn one strategy at a time, synthesize the learning, and apply their new learning.

### **Response to Intervention Supports: Professional Development and Resources**

Many researchers have indicated effective RTI implementation results in greater student achievement (Barnes & Harlacher, 2008; Fuchs, Fuchs, & Stecker, 2010; Mellard, McKnight, & Woods, 2009). Fuchs, Fuchs and Compton (2012)

indicate that precise RTI implementation greatly benefits participating schools. In order to adequately implement RTI, effective professional development is vital (Mask & McGill, 2010). A study conducted by Dunst and Raab (2010) demonstrated that professional development activities provided at the school setting were more beneficial than attending conferences or off-campus workshops. Teachers reported that they were more involved with the activities presented.

Cooter and Perkins (2011) indicated school districts spend unnecessary funds purchasing the latest and greatest reading intervention program instead of investing those funds in appropriate professional development to increase teacher knowledge capacity. The quality of a teacher is dependent on their opportunities for continued enriched learning (Bruder, Mogro-Wilson, Stayton, & Dietrich, 2009). Proper interventions for each tier, using research-based strategies, and using progress monitoring with fidelity are examples of topics of professional development for educators (Mask & McGill, 2010). Teachers could also benefit from post-professional development sessions to ensure practices are suitably executed and questions are answered thus expanding teacher efficacy.

Proper interventions within each tier require commitment, organization, and an integration of staff members (Fuchs, Fuchs, & Compton, 2012). Effective implementation of RTI is also dependent on the policy and procedures from individual districts. Incorporating the trained RTI team in each school is a key

factor to promoting effective RTI practices at the district level (Hoover & Love, 2011). Both district and campus representatives should have clear expectation for successfully implementing RTI and the commitment to providing educators with adequate training to service at-risk students.

Structuring RTI with the philosophy of all children can learn and the understanding of the basic framework is necessary (Hughes & Rollins, 2009). The RTI team consists of educators who are invested in the student achievement. The underlining question the team needs to ask for each at-risk student is - How can we assist this student to make the necessary gains when the curriculum was not fitting? The team approach allows for intentional discussions about the need for each student. This collaborative approach could also become streamlined by adding a checklist to ensure the basic RTI framework is addressed for each unique learner (Hoover & Love, 2011). Ultimately, the goal of the RTI team is to ensure students are responding positively to the strategies and interventions at each tier using data gathered by the student's teacher. If students are not making adequate progress, the RTI team considers alternative methods for interventions. Strong collaboration between the RTI team is vital for the success of implementing RTI in schools (Hoover & Love, 2011).

Armbruster, Lehr, and Osborn (2001) indicated that research-based reading strategies are valuable for all learners. Sailors and Price (2010) suggested that professional development trainers increase teacher knowledge by utilizing



“declarative, procedural, and conditional” practices (p. 302). Declarative practices are defined as “knowing which strategies to use” (Sailors & Price, 2010, p. 302). Procedural practices are “knowing how to use these strategies” (Sailors & Price, 2010, p. 302). Conditional practices are “knowing when and why to use the strategies” (Sailors & Price, 2010, p. 302). Sailors and Price claimed professional development trainers should teach a small number of reading strategies to teachers during a session, but delve deeply into the mechanics of the strategies.

Teachers should be given multiple opportunities to stretch their teaching capacity. Professional developments instruct teachers to use research-based strategies in the classroom effectively (U.S. Department of Education, Institute of Education Science, 2010). Additionally, purposeful professional developments model great strategies for teachers to reflect and to see how they can transfer their new learning into their own classroom. In conjunction with the modeling, teachers can see and touch any manipulatives, or supplemental resources, trainers used to address the strategies. Furthermore, trainers are available to answer questions and become a resource for teachers. Not only do teachers need professional development to increase their knowledge, Bruder, Mogro-Wilson, Stayton, and Dietrich (2009) stressed the importance of continued coaching with the learned strategies.

Professional development focused on progress monitoring is critical for RTI implementation in all the three tier levels. Progress monitoring audits the effectiveness of the intervention for struggling students (Stuart & Rinaldi, 2009). Teachers who learn and fully understand how to progress monitor (Ballock, 2010) are more than likely to implement the intervention with fidelity (Stuart & Rinaldi, 2009). Professional development in progress monitoring allows educators to assess instruction for maximum effectiveness. To do this, trainers must allow educators to see how to progress monitor various interventions. This process will contribute to the success of progress monitoring in the classroom as it allows teachers to see the process and ask questions for clarity. Additionally, this process helps teachers gain ideas of the resources and materials used to progress monitor. Most importantly, trainers need to allow educators an opportunity to apply their new learning in a mock scenario and analyze their results (Sprague, Pennefather, Marquez, Yeaton, & Marquez, 2011). Further coaching from the trainers will enhance the concept of monitoring the student's progress to problem solve using real data.

Effective professional development extends the knowledge of educators and offers coaching assistance to support the acquisition of new skills (Bruder, Mogro-Wilson, Stayton, & Dietrich, 2009). Professional development aim to model RTI practices within the three-tiered pyramid (Prasse, Breunlin, Giroux, Hunt, Morrison, & Their, 2012). Teachers need professional development to

expand their knowledge because there is not a teacher preparation program that prepares a pre-service teacher with RTI implementation inclusively.

### **Reading Interventions**

What Works Clearinghouse (WWC; U.S. Department of Education, n.d.) reviews research-based interventions and publishes the outcome on their website <http://ies.ed.gov/ncee/wwc/findwhatworks.aspx>. Their aim is to help schools make data driven-decisions based on research-based interventions. What Works Clearinghouse uses studies that identify the effectiveness of intervention programs using credible evidence. Since WWC studies a wide variety of literacy elements, the interventions identified will be closely aligned with the five elements of reading. WWC uses specific descriptions to rate the effectiveness of the interventions. A positive effect (++) rating indicates researchers studied the intervention and concluded that it had a positive outcome effect based on solid evidence. A potential positive effect (+) rating indicates researchers studied the interventions and concluded to have a positive effect until evidence proves otherwise. A mixed effects (+-) rating indicates that the researchers findings on the intervention's outcome was not conclusive. No discernable effect (0) rating indicates the researchers did not have evidence to determine an outcome for the intervention. Tables one through six label the evidence-based interventions with their effectiveness.

Table 1  
Evidence-Based Interventions from What Works Clearinghouse: Alphabetics

| <b>Alphabetics</b>                         | (++)<br>Positive<br>Effect | (+)<br>Potentially<br>Positive<br>Effect | (+/-)<br>Mixed<br>effects | (0)<br>No<br>discernable<br>effect |
|--|----------------------------|--|---------------------------|------------------------------------|
| Early Intervention<br>in<br>Reading (EIR)® |                            | X  |                           |                                    |
| Stepping Stones to<br>Literacy             | X                          |  |                           |                                    |
| Ladders to<br>Literacy                     |                            | X  |                           |                                    |
| Earobics ®                                 | X                          |  |                           |                                    |
| DaisyQuest                                 | X                          |  |                           |                                    |
| Reading<br>Recovery®                       |                            | X  |                           |                                    |
| FastForWord®                               | X                          |  |                           |                                    |
| Repeated Reading                           |                            |  |                           | X                                  |

Table 2  
Evidenced-Based Interventions from What Works Clearinghouse:  
Early Reading

| <b>Early Reading</b>  | (++)<br>Positive<br>Effect | (+)<br>Potentially<br>Positive<br>Effect | (+/-)<br>Mixed<br>effects | (0)<br>No<br>discernable<br>effect |
|---|----------------------------|--|---------------------------|------------------------------------|
| Interactive<br>Shared Book<br>Reading   |                            | X  |                           |                                    |
| Sound<br>Foundations  |                            | X  |                           |                                    |
| Phonological<br>Awareness<br>Training plus<br>Letter<br>Knowledge<br>Training |                            | X  |                           |                                    |
| Ready, Set,<br>Leap®  |                            |  |                           | X                                  |

Table 3  
 Evidence-Based Interventions from What Works Clearinghouse:  
 General Literacy Achievement

| <b>General Literacy Achievement</b>    | (++)<br>Positive<br>Effect | (+)<br>Potentially<br>Positive<br>Effect | (+/-)<br>Mixed<br>effects | (0)<br>No<br>discernable<br>effect |
|--|----------------------------|--|---------------------------|------------------------------------|
| Read Naturally®                        |                            | X  |                           |                                    |
| Student Team<br>Reading and<br>Writing |                            |  |                           | X                                  |

Table 4  
Evidence-Based Interventions from What Works Clearinghouse:  
Reading Achievement

| <b>Reading Achievement</b>                      | (++)<br>Positive Effect | (+)<br>Potentially Positive Effect | (+/-)<br>Mixed effects | (0)<br>No discernable effect |
|---|-------------------------|------------------------------------|------------------------|------------------------------|
| Instructional Conversations and Literature Logs |                         | X                                  |                        |                              |
| Reading Mastery                                 |                         | X                                  |                        |                              |
| Reading Recovery®                               | X                       |                                    |                        |                              |
| Enhanced Proactive Reading                      |                         | X                                  |                        |                              |
| Accelerated Reader™                             |                         | X                                  |                        |                              |
| Peer-Assisted Learning Strategies               |                         | X                                  |                        |                              |
| Fast ForWord®                                   |                         |                                    |                        | X                            |
| Read Naturally®                                 |                         |                                    |                        | X                            |
| Read Well®                                      |                         |                                    |                        | X                            |

Table 5  
Evidence-Based Interventions from What Works Clearinghouse: Reading  
Comprehension

| <b>Reading<br/>Comprehension</b>     | (++)<br>Positive<br>Effect | (+)<br>Potentially<br>Positive<br>Effect | (+/-)<br>Mixed<br>effects | (0)<br>No<br>discernable<br>effect |
|--------------------------------------|----------------------------|--|---------------------------|------------------------------------|
| Peer-Assisted Learning Strategies    |                            |  | X                         |                                    |
| Sound Partners                       | X                          |  |                           |                                    |
| Reading Recovery                     |                            | X  |                           |                                    |
| SpellRead™                           |                            | X  |                           |                                    |
| Early Intervention in Reading (EIR)® |                            | X  |                           |                                    |
| Ladders to Literacy                  |                            |  | X                         |                                    |
| Fast ForWord                         |                            |  | X                         |                                    |
| Repeated Reading                     |                            | X  |                           |                                    |
| Accelerated Reader™                  |                            |  | X                         |                                    |
| Read Naturally®                      |                            |  |                           | X                                  |



Table 6  
Evidence-Based Interventions from What Works Clearinghouse:  
Reading Fluency

| <b>Reading Fluency</b>            | (++)<br>Positive<br>Effect | (+)<br>Potentially<br>Positive<br>Effect | (+/-)<br>Mixed<br>effects | (0)<br>No<br>discernable<br>effect |
|-----------------------------------|----------------------------|--|---------------------------|------------------------------------|
| Reading Recovery®                 |                            | X  |                           |                                    |
| Ladders to Literacy               |                            | X  |                           |                                    |
| Sound Partners                    | X                          |  |                           |                                    |
| Reading Mastery                   |                            | X  |                           |                                    |
| Fast ForWord®                     |                            |  |                           | X                                  |
| Earobics®                         |                            | X  |                           |                                    |
| SpellRead™                        |                            | X  |                           |                                    |
| Accelerated Reader™               |                            |  |                           | X                                  |
| Read Naturally®                   |                            |  | X                         |                                    |
| Peer-Assisted Learning Strategies |                            |  |                           | X                                  |

## CHAPTER 3

### METHODOLOGY

This study used the Mask and McGills (2010) and Spectrum K12 (2010) frameworks to evaluate the perception of knowledge of educators in Texas. Quantitative research was used as the study method as this was also used in Mask and McGill's research. Most importantly, quantitative research was used to explain "the relationships of specific variables" with this RTI study (Edmonds & Kennedy, 2012, p. 20). This study used a survey research design to assess educators and provided a current snapshot of the perceived knowledge level of Northeast Texas educators are of RTI. Additionally, this research used the educators' feedback to determine if there is a need for additional staff developments and determine whether higher education institutions should incorporate RTI in their curriculum.

#### **Research Questions**

The purpose of this study was to investigate elementary educators' level of perceived knowledge using the four RTI components for reading in Texas school districts. The following research questions and hypothesis were tested:

1. How well do general education teachers, special education teachers, and principals understand the RTI universal screener attributes?

2. How well do general education teachers, special education teachers, and principals understand the concept of research-based interventions?
3. How well do general education teachers, special education teachers, and principals understand RTI progress monitoring?
4. How well do general education teachers, special education teachers, and principals understand data collection in RTI decision making?

### **Hypotheses**

The following hypotheses were made:

1. No statistically significant difference exists in the perceived knowledge of universal screener attributes between general education teachers, special education teachers, and principals.
2. No statistically significant difference exists in the perceived knowledge of evidence-based interventions between general education teachers, special education teachers, and principals.
3. No statistically significant difference exists in the perceived knowledge of RTI progress monitoring between general education teachers, special education teachers, and principals.
4. No statistically significant difference exists in the perceived knowledge of data collection in RTI decision making between

general education teachers, special education teachers, and principals.

### **Research Design**

This study used a causal-comparative research design. Johnson and Christensen (2012) acknowledged that causal-comparative research involves the attempt to discover a relationship between independent and dependent variables. Johnson and Christensen further noted that causal-comparative research is non-experimental.

Educator role (general education, special education, and principal) served as the independent variables for all four hypotheses. The four dependent variables examined included the perceived knowledge level with the use of a universal screener, evidence-based interventions, progress monitoring, and data collection for RTI decision making. A non-parametric, Kruskal-Wallis test was used to compare the mean ranks among the three educator groups. Chan and Walmsley (1997) indicate that the Kruskal-Wallis test is used to determine whether three or more independent groups are the same or different on some variable of interest” (p. 1755). The Mann-Whitney test was also used to determine which dependent variable was statistically significant among the groups of educators.

## **Participants**

This study focused on three Northeast Texas school districts. Pseudonyms were given to each of the participating school districts to maintain confidentiality. District one had 57 total participants, in comparison to four participants in District two and 32 participants in District three. This study sampled general education teachers, special education teachers, and principals in each of the three school districts.

## **Sampling Overview**

James, Milenkiewicz, and Bucknam (2008) advised researchers to choose the respondents appropriately to represent the populations of the study. Based on the 2011-2012 Texas Public School Districts Categorized by Type, from the Texas Education Agency (2013), school districts from Northeast Texas were identified as suburban, rural, or urban settings. After the school districts were distinctly categorized by settings, districts were randomly selected using a random number generator. Superintendents from selected districts were emailed a formal invitation to participate in this study in ascending numerical order within each setting. See Appendix A for a copy of the formal invitation. Superintendents were given two follow-up emails before moving on to the next ascending school district for that particular setting. This pattern continued for each setting until a school district agreed to participate in the study.

After each of the three randomly selected school districts from each setting was selected, the chosen school districts were researched to determine the total number of elementary schools represented each designated district. Furthermore, within each elementary school, the researcher identified the administrators and emailed a letter that communicated the purpose of the study, attached the IRB approval letter, and added a web link for the survey from SurveyMonkey. The email asked principals to forward the message to general education teachers and special education teachers.

The school district from the rural setting has one elementary that service PK – 8<sup>th</sup> grade elementary students. The total student population for this rural district was 71 not noting the exact elementary population. Students are considered predominately White (84.3%) followed by Hispanic (12.9%). The students' at-risk factor is 19% above the state level. For the rural school district, the superintendent forwarded the email to the seven elementary educators to participate in the survey. After two follow-up emails were sent to the seven educators to participate in the study, a total of three out of six general educators agreed and completed the survey. The one special education teacher also completed the survey. A total of four out of the seven educators participated in the study from the rural setting.

The school district from the suburban setting has 10 elementary campuses with a total population of 5,940 elementary students. Students are predominantly

African American (41%) followed by Hispanic (30%) and White (21%). Additionally, students from the suburban setting are considered economically disadvantaged (61%). After consent from the suburban school district executive was obtained, the researcher emailed elementary administrators from the selected suburban setting school district with a similar format as the rural school district. Principals forwarded the email to their educators with the survey link. After two reminder emails were given, a total of 32 out of 531 participants completed the survey. A total of 27 out of 498 general education teachers and one out of 22 special education teachers completed the survey. Furthermore, a total of four out of 11 principals from the suburban setting completed the survey.

Lastly, the school district from the urban setting has 51 PK – 6 grade elementary schools with a total population of 36,783 students. Students are predominately Hispanic (39.6%) followed by White (28.7%) and African American (24%). Additionally, students from the urban setting are considered economically disadvantaged (59.9%) and at-risk (51%). After receiving permission to conduct a study in the suburban setting, an email with the purpose of the study, an attached IRB approval letter, and the survey link to SurveyMonkey, was sent to all elementary principals. After a week, a minimal number of respondents participated in the study. A reminder email was sent to principals asking for their support by providing their input on SurveyMonkey and encouraging their educators to also partake in the study. After one week, a total

of 18 out of 52 suburban principals and 26 out of 1,664 general educators took the survey; however, a few special education teachers contributed their responses. The researcher studied each elementary campus and collected only the special education teacher's email addresses. A separate email was sent only to special education teachers asking for their cooperation in this study. After one week from the email distribution, four special education teachers completed the survey. A second and final email was sent to the special education teachers asking for their support. With all efforts given, a total of 13 out of 104 special education teachers responded to the survey.

### **Description of Participants**

A descriptive approach was used to describe the participants' attributes. Blaikie (2003) defines descriptive statistics as an informational summary used to make connections about the sample. Although descriptive statistics may allow researchers to make "predictions" about the data; however, it cannot answer "why" a phenomenon occurred (Blaikie, 2003, p. 7).

A total of 98 educators contributed in this study. However, five participants did not disclose their school district. The total number of 98 participants was used because the variable, school district, was not needed for the current study. Specifically, 61.2% of general education teachers ( $n = 60$ ), 15.3% of special education teachers ( $n = 15$ ), and 23.4% of principals ( $n = 23$ ) in an elementary setting participated in the survey (see Table 7). Female educators



represented 90.8.4% of the total participants ( $n = 89$ ) in comparison to 9.1% of male respondents ( $n = 9$ ).

Table 7  
Total Respondents by School District

|                            | General Educator Respondents | Special Educator Respondents | Principal Respondents | Total Respondents |
|----------------------------|------------------------------|------------------------------|-----------------------|-------------------|
| District 1                 | 26/1,664                     | 13/104                       | 18/52                 | 57/1,820          |
| District 2                 | 3/6                          | 1/1                          | 0                     | 4/7               |
| District 3                 | 27/498                       | 1/22                         | 4/11                  | 32/531            |
| Unknown                    | 4                            | 0                            | 1                     | 5                 |
| Total                      | 60/2,168                     | 15/127                       | 23/63                 | 98/2,358          |
| Percentage (response rate) | 61.2 %<br>(2.77 %)           | 15.3 %<br>(11.8 %)           | 23.4 %<br>(36.5 %)    | ---<br>(41.6 %)   |

*Note:* Data represents: District respondents/Total district educators

### Survey Questionnaire

Bell (2010) described a survey questionnaire as a tool to gather data from a specific population that will represent the findings as a collected unit. Thus, a survey questionnaire directed specifically for general education teachers, special education teachers, and principals aimed to provide information about their perceived knowledge level with the use of the RTI components, feedback about their own RTI knowledge level, the need for additional staff developments, and

feedback if RTI should be in at least one education course in a higher education institution.

The *Survey on an Educator's Knowledge of Response to Intervention* was modified using existing RTI questions written by MacKinnon (n.d.) from Alaska Department of Education & Early Development's Response to Instruction/Intervention Implementation Survey ([http://www.eed.state.ak.us/nclb/pdf/RTI\\_Survey.pdf](http://www.eed.state.ak.us/nclb/pdf/RTI_Survey.pdf)) and Duran (2004) from Woodridge School District 68's RTI In-Service Survey (<http://www2.woodridge68.org/survey/survey.php?sid=59>). Written consent to use these existing surveys was obtained from the original authors (see Appendix B).

Response to Intervention: Educator's Knowledge and Needs Survey was the questionnaire designed for this study (see Appendix C). This questionnaire was organized into two sections. The first section gathers each elementary educator's demographic information. The second section requested educators to rate their perceived RTI knowledge in reading using a 3-point Likert Scale where 1 = no knowledge, 2 = unsure, or 3 = expert. Croasmun and Ostrom (2011) state Likert scales offer respondents a range of choices to a specific statement or statements. Specific questions from the survey assessed each of the research questions concerning the RTI components.

Research question 1) How well do general education teachers, special education teachers, and principals understand RTI universal screener attributes? A single Likert item #20 addressed this research question. Schultz (2010) indicates the “universal screenings are used to identify students whose performance may indicate further examination” (p.21). Since a universal screener is the first step to measure and collect data to identify potential at-risk students (Fuchs, Fuchs, & Compton, 2012), it was important to determine if educators have knowledge with the use of a universal screener to identify students at-risk for academic difficulties.

Research question 2) How well do general education teachers, special education teachers, and principals understand the concept of “evidence-based interventions?” Survey items 23 – 25 asked educators if they are able to select the appropriate evidence-based intervention to match the students’ needs, if they can use the interventions on their campus with fidelity, and how frequent and intensive the intervention should be at each RTI tier.

Research question 3) How well do general education teachers, special education teachers, and principals understand the RTI progress monitoring? Luckner and Bowen (2010) described progress monitoring as an assessment tool to measure student’s academic progress on a frequent basis. Survey items 27 and 28 asked educators how often educators should progress monitor students and whether educators can use appropriate assessments for progress monitoring.

Research question 4) How well do general education teachers, special education teachers, and principals understand data collection in RTI decision making? Survey items 21, 22, 29 – 32, and 34 assessed educators related to data collection and decision practices that aimed to increase student reading outcomes.

The researcher also used survey items 11 – 13 to allow educators to assess their own RTI knowledge and determine if additional staff development are needed to increase their personal knowledge level in RTI using a four-point Likert Scale. Additionally, the researcher allowed the educators to provide feedback on a one-item Likert Scale question to determine if colleges/universities should address RTI in at least one course. Educators answered survey items 11 -13 using these four-point Likert Scale questions where 1 = Strongly Agree, 2 = Agree, 3 = Disagree, and 4 = Strongly Disagree.

The survey was sent to three public school districts in Northeast Texas to assess their perceived knowledge level of using the RTI components, to determine if extra staff developments are needed, and if higher education institutions should include at least one course in their curriculum. These school districts were randomly selected and the educators from these three school districts volunteered to participate in the survey.

### **Validation**

According to Gall, Gall, and Borg (2007), a questionnaire must meet validity requirements just like any source of data collection in research. A panel

of RTI experts was selected to validate the survey instrument. The goal of this survey was to measure the perceived knowledge level among general education teachers, special education teachers, and principals of the RTI components, specifically: the universal screener, using evidence-based interventions, progress monitoring, and data collection for decision making.

To assess the validity of the content on this survey, a panel of RTI experts consisting of five school counselors with extensive RTI training analyzed the survey for relevance and clarity. (Refer to Appendix D for the letter given to each of the RTI panel experts). A survey validation form was created to confirm validity for this research (see Appendix E). Each school counselor was asked to closely evaluate each survey question to determine if the wording was clear. Furthermore, each school counselor was asked to determine if each of the questions were relevant to the study. The panel of RTI experts used a form containing a 3 – point Likert-type rating scale with Y = yes, the question is clear/the question has relevance to the study. Y/M = Yes, the question is somewhat clear, but could be worded better/the question has little relevance. N = no, the question is not clear/the question has no relevance to the study.

The majority of the panel experts indicated the items were clearly written and were relevant to the study. A few items received a Y/M score and were reviewed. Items 21 and 27 received Y/M for both clarity and relevance. After further and careful review of these two items, the researcher did not make any

revisions. Item 28 focused on progress monitoring, which is relevant to this study. No revisions were made to Item 28.

If a panel expert placed a Y/M on any item, the researcher reviewed the items for possible revisions. If the majority of the panel experts placed an N on any item, then the researcher completely removed the question. Table 8 displays the mean rating for the clarity and relevance of the items on the survey regarding the RTI components.

Table 8  
Means for Validity of Clarity and Relevance From Survey Items

| Question has Clarity |     |    | Item # | Question has Relevance |     |    |
|----------------------|-----|----|--------|------------------------|-----|----|
| Y                    | Y/M | N  |        | Y                      | Y/M | N  |
| 100%                 | 0%  | 0% | 20     | 100%                   | 0%  | 0% |
| 80%                  | 20% | 0% | 21     | 80%                    | 20% | 0% |
| 100%                 | 0%  | 0% | 22     | 100%                   | 0%  | 0% |
| 100%                 | 0%  | 0% | 23     | 100%                   | 0%  | 0% |
| 100%                 | 0%  | 0% | 24     | 100%                   | 0%  | 0% |
| 100%                 | 0%  | 0% | 25     | 100%                   | 0%  | 0% |
| 80%                  | 20% | 0% | 27     | 80%                    | 20% | 0% |
| 100%                 | 0%  | 0% | 28     | 80%                    | 20% | 0% |
| 100%                 | 0%  | 0% | 29     | 100%                   | 0%  | 0% |
| 100%                 | 0%  | 0% | 30     | 100%                   | 0%  | 0% |
| 100%                 | 0%  | 0% | 31     | 100%                   | 0%  | 0% |
| 100%                 | 0%  | 0% | 32     | 100%                   | 0%  | 0% |
| 100%                 | 0%  | 0% | 34     | 100%                   | 0%  | 0% |

*Note:* Yes = Yes, the question is clear/relevant, Y/M = Yes, it is somewhat clear, but could be worded better/little relevance, N = No, it is not clear/no relevance

## **Data Collection**

The Institutional Review Board for the Protection of Human Subjects from The University of Texas at Arlington approved this research. Please see Appendix F for a copy of the approval letter.

The educators from the selected school districts participated in an on-line survey using the SurveyMonkey website during the Spring and Summer 2014 semesters. Overall, three school districts were randomly selected. Each superintendent from these selected school districts gave their initial consent to have the study conducted in their own school districts. Next, principals were asked to not only participate in the survey, but to also forward the email to their teachers.

Before educators began the questionnaire survey, they read and accepted the consent form that indicated the purpose of the study, their rights as a research participant, and that they may discontinue their participation willingly without penalty. Additionally, educators were assured their identity and their school district's name would be kept confidential. Educators were told it would take approximately 15-20 minutes to complete the survey. SurveyMonkey was used to collect and analyze the results as the educators completed the survey.



## **Data Analyses**

Quantitative methods were used to analyze the results of this study. The Kruskal-Wallis test was used to test hypotheses one through four. The Statistical Package for the Social Sciences, Version 22 was used for the statistical analysis.

This study used the Kruskal-Wallis as the statistical test to compare the perceived knowledge level of using the RTI components between the general education teachers, special education teachers, and principals. The data from this study determined if differences existed among the three educator groups in the use of a universal screener, the use of evidence-based interventions, progress monitoring, and the process of data collection for decision-making. Specifically, hypotheses one measured survey question 20. Hypotheses two measured questions 23, 24, and 25. Hypotheses three measured survey questions 27 and 28. Hypothesis four measured survey questions 21, 22, 29-32, and 34.

Descriptive statistics was used to gather simple conclusions with this study. A measure of central tendency provided a simple outcome of how knowledgeable general education teachers, special education teachers and principals are of each of the RTI components. In addition, a measure of central tendency provided the data to determine if staff development was needed to expand the educators' RTI knowledge level. Furthermore, a measure of central tendency provided a voice for current educators to determine if RTI should be taught in at least one course in higher education institutions.

## CHAPTER 4

### RESULTS

The purpose of this study was to determine if there was a significant difference between the perceived knowledge levels of general education teachers, special education teachers, and principals in the four RTI components. The four different types of RTI components this researcher studied were 1) universal screener, 2) evidence-based interventions, 3) progress monitoring, and 4) data collection. An analysis of this study and a summary of the results are discussed in this chapter. The Kruskal-Wallis test was used to analyze the data for each dependent variable.

#### **Tests of Assumptions**

An attempt was made to determine if the parametric assumptions were met. According to Drew, Hardman, and Hosp (2008, p. 319) there are three major assumptions that must be measured 1) the scores are independent of one another, 2) the variances of the scores are equal, which is referred as “assumption of homogeneous variances.” and 3) the populations from the sample have a normal distribution. The Kruskal-Wallis non-parametric test was used because of the issues related to the non-normality and variance in this current study.

*Independence.* The scores among the samples are independent from each other because each educator completed a single questionnaire. Since scores came

from each educator, the “scores are independent” (Clifford, Hardman, & Hosp, 2008, p. 319).

*Homogeneity of Variance.* The non-parametric Levene’s test was used to determine if the samples had equal variances (homogeneity of variance) ( $p > .05$ ). Nordstokke and Zumbo indicated that the non-parametric Levene’s test is more robust when there is evidence of skewness in the samples collected. A non-significant result was found between the data collection and universal screener components for the assumption of homogeneity of variance. The two sig. values were greater than the alpha score of .05 and therefore, assume homogeneity of variance. There was a significant value of less than the alpha score of .05 for progress monitoring and the universal screener for the assumption of homogeneity of variance. The null hypothesis was rejected.

*Normal distribution.* The Kruskal-Wallis test does not measure normality (McDonald, 2014). Therefore, Tabachnick and Fidell (2001) indicated that a normality test should be used in statistics to determine skewness and kurtosis in each variable.

Tabachnick and Fidel (2001, p. 73) described skewness as the “symmetry of the distribution; a skewed variable is a variable whose mean is not in the center of the distribution.” Howe (2014) indicated that the distribution is skewed if the data are less than -1 or greater than 1. The data analysis revealed that there was a negatively skewed distribution in the use of the data collection. A negatively

skewed distribution means that the asymmetric tail was leaning more on the left side. The educators rated themselves more as experts with the use of the data collection. Kurtosis affects the flatness or peakedness of the distribution (Tabachnick and Fidell (2001). Positive kurtoses were present in progress monitoring and data collection.

The Kruskal-Wallis non-parametric procedure was used because there were unequal variances in two out of the four variables (evidence-based interventions and progress monitoring). The universal screener and data collection, however, did have equal variances. Furthermore, the Kruskal-Wallis was also used because the universal screener was measured by a single Likert item

### **Statistical Analyses**

The Kruskal-Wallis was used to test each of the research hypotheses:

1. No statistically significant difference exists in the perceived knowledge of universal screener attributes between general education teachers, special education teachers, and principals.
2. No statistically significant difference exists in the perceived knowledge of evidence-based interventions between general education teachers, special education teachers, and principals.

3. No statistically significant difference exists in the perceived knowledge of RTI progress monitoring between general education teachers, special education teachers, and principals.

4. No statistically significant difference exists in the perceived knowledge of data collection in RTI decision making between general education teachers, special education teachers, and principals.

General education teachers, special education teachers, and principals were grouped separately to compare their perception of knowledge level using the universal screener, using evidence-based interventions, progress monitoring, and data collection.

Hypothesis One: The results of the Kruskal-Wallis test demonstrated a statistically significant difference in the perception of knowledge of using a universal screener between general education teachers, special education teachers, and principals ( $H(2) = 8.626, p = .013, p > .05$  with a mean rank of 43.79 for general education teachers, 53.27 for special education teachers, and 61.93 for principals (see Table 9). The Mann-Whitney post-hoc test was used to determine which of the three groups of educators resulted with a significant difference at the .05 significance level. There was not a significant difference in the perception of knowledge using a universal screener between general education teachers and special education teachers,  $U = 363.0, p = .212$ . This statistical finding indicated that both general education teachers and special education teachers had the same

knowledge level with the use of a universal screener. There was, however, a significant difference in the perceived knowledge level between general education teachers and principals,  $U = 434.5, p = .004$  (see Table 10). This outcome revealed that these two educators have different knowledge levels with the use of a universal screener.

Table 9  
Kruskal-Wallis Test for Significant Differences

|             | Universal<br>Screener | Evidence | Progress<br>Monitoring | Data<br>Collection |
|-------------|-----------------------|----------|------------------------|--------------------|
| Chi-Square  | 8.626                 | 4.257    | 3.063                  | 3.559              |
| df          | 2                     | 2        | 2                      | 2                  |
| Asymp. Sig. | .013                  | .119     | .216                   | .169               |

Table 10  
Mann-Whitney Test for Significant Differences using the Universal Screener  
between General Education Teachers and Principals

| Job Description   | N  | Mean Rank |
|-------------------|----|-----------|
| General Education | 60 | 37.74     |
| Principal         | 23 | 53.11     |
| Total             | 83 |           |

| Test Statistics        | Universal Screener |
|------------------------|--------------------|
| Mann-Whitney U         | 434.500            |
| Z                      | -2.856             |
| Asymp. Sig. (2-tailed) | .004               |

Hypotheses Two: The Kruskal-Wallis Test was used to assess hypothesis two. The results demonstrated that there was not a significant difference in the perceived knowledge level of general education teachers, special education teachers, and principals with the use of evidence-based interventions for RTI implementation ( $H(2) = 4.257, p = .119, p < .05$  with a mean rank of 45.53 for general education teachers, 51.17 for special education teachers, and 58.78 for principals. This outcome indicated that the three educators are perceived to have the same knowledge level with the use of evidence-based interventions.

Hypothesis Three: The analysis of the Kruskal-Wallis test indicated that there was not a significant difference in perceived knowledge between the general education teachers, special education teachers, and principals with progress monitoring for RTI implementation ( $H(2) = 3.063, p = .216, p < .05$  with a mean rank of 46.10 for general education teachers, 57.63 for special education teachers, and 53.07 for principals. This outcome suggested that all three educators have the same knowledge level with progress monitoring.

Hypothesis Four: The analysis of the Kruskal-Wallis test indicated that there was not a significant difference with the perceived knowledge level between general education teachers, special education teachers, and principals with data-collection for RTI implantation ( $H(2) = 3.559, p = .169, p < .05$  with a mean rank of 45.41 for general education teachers, 54.53 special education teachers,

and 56.89 for principals. These data insinuated that all three educators have the same knowledge level with data-collection.

Descriptive statistics was used to describe the perceived knowledge level for each of the RTI components among the three groups of educators. The survey items used to assess the knowledge level for each of the RTI components used a 3-point Likert-Scale where 1 = no knowledge, 2 = unsure, and 3 = expert. The knowledge level for each participant group on each RTI component was broken down by the corresponding survey item number.

*Universal screener:* The results on Table 11 indicated that principals and special education teachers are perceived as experts with the use of the universal screener. The general education teachers are unsure about the use of the universal screener.

Table 11  
Percentage of Respondents by Item, Status, and Knowledge Level using the Universal Screener

| Item 20: I understand how to use a universal screener to identify students at-risk for academic difficulties. |              |            |            |
|---|--------------|------------|------------|
|   | No Knowledge | Unsure     | Expert     |
|   | N (%)        | N (%)      | N (%)      |
| Principals  | 2 (8.7%)     | 3 (13.0%)  | 18 (78.3%) |
| General Education   | 11 (18.3%)   | 25 (41.7%) | 24 (40.0%) |
| Special Education   | 2 (13.3%)    | 4 (26.7%)  | 9 (60.0%)  |



*Evidence-based interventions:* The results on Table 12 indicated that the three groups of educators are perceived as experts with the use of the evidence-based interventions. There were three items assessed.

Table 12  
Percentage of Respondents by Item, Status, and Knowledge Level using Evidence-Based Interventions

| Item 23: I can select the appropriate evidence-based interventions to match the students' needs. |              |            |            |
|--|--------------|------------|------------|
|  | No Knowledge | Unsure     | Expert     |
|  | N (%)        | N (%)      | N (%)      |
| Principals   | 0 (0.0%)     | 7 (30.4%)  | 16 (69.6%) |
| General Education  | 3 (5.0%)     | 20 (33.3%) | 37 (61.7%) |
| Special Education  | 0 (0.0%)     | 5 (33.3%)  | 10 (66.7%) |
| Item 24: I know how to use the interventions on my campus with fidelity.                         |              |            |            |
|  | No Knowledge | Unsure     | Expert     |
|  | N (%)        | N (%)      | N (%)      |
| Principals   | 0 (0.0%)     | 4 (17.4%)  | 19 (82.6%) |
| General Education  | 2 (3.3%)     | 21 (35.0%) | 37 (61.7%) |
| Special Education  | 0 (0.0%)     | 4 (26.7%)  | 11 (73.3%) |
| Item 25: I know how frequent and intensive the intervention should be at each Tier.              |              |            |            |
|  | No Knowledge | Unsure     | Expert     |
|  | N (%)        | N (%)      | N (%)      |
| Principals   | 0 (0.0%)     | 3 (13.0%)  | 20 (87.0%) |
| General Education  | 3 (5.0%)     | 22 (36.7%) | 35 (58.3%) |
| Special Education  | 0 (0.0%)     | 6 (40.0%)  | 9 (60.0%)  |

*Progress Monitoring:* The results on Table 13 indicated that the three groups of educators are perceived as experts with the progress monitoring. Furthermore, results indicated that item 28 had 0% of the respondents identified as having no knowledge. This detail indicated that the respondents were either unsure or experts for item 28. There were two items assessed.

Table 13  
Percentage of Respondents by Item, Status, and Knowledge Level using Progress Monitoring

| Item 27: I know how often I should progress monitor my students.        |              |            |             |
|---|--------------|------------|-------------|
|   | No Knowledge | Unsure     | Expert      |
|   | N (%)        | N (%)      | N (%)       |
| Principals  | 0 (0.0%)     | 6 (26.1%)  | 17 (73.9%)  |
| General Education   | 1 (1.7%)     | 21 (35.0%) | 38 (63.3%)  |
| Special Education   | 0 (0.0%)     | 0 (0.0%)   | 15 (100.0%) |
| Item 28: I can use the appropriate assessments for progress monitoring. |              |            |             |
|   | No Knowledge | Unsure     | Expert      |
|   | N (%)        | N (%)      | N (%)       |
| Principals  | 0 (0.0%)     | 7 (30.4%)  | 16 (69.6%)  |
| General Education   | 0 (0.0%)     | 21 (35.0%) | 39 (65.0%)  |
| Special Education   | 0 (0.0%)     | 4 (26.7%)  | 11 (73.3%)  |

*Data Collection:* The results on Table 14 indicated that the three groups of educators are perceived as experts with the collection of data. Furthermore, results indicated that items 22 and 29 had 0% of respondents identified as having no knowledge. This detail indicated that the respondents were either unsure or experts for items 22 and 29. There were seven items assessed.

Table 14  
Percentage of Respondents by Item, Status, and Knowledge Level using Data Collection

| Item 21: I can develop my own reasons of why my students are not achieving desired levels in reading. |              |            |            |
|---|--------------|------------|------------|
|   | No Knowledge | Unsure     | Expert     |
|   | N (%)        | N (%)      | N (%)      |
| Principals  | 1 (4.3%)     | 6 (26.1%)  | 16 (69.6%) |
| General Education   | 3 (5.0%)     | 22 (36.7%) | 35 (58.3%) |
| Special Education   | 1 (6.7%)     | 6 (40.0%)  | 8 (53.3%)  |
| Item 22: I am able to group students by their needs.  |              |            |            |
|   | No Knowledge | Unsure     | Expert     |
|   | N (%)        | N (%)      | N (%)      |
| Principals  | 0 (0.0%)     | 4 (17.4%)  | 19 (82.6%) |
| General Education   | 0 (0.0%)     | 12 (20.0%) | 48 (80.0%) |
| Special Education   | 0 (0.0%)     | 2 (13.3%)  | 13 (86.7%) |

Table 14 - Continued

| Item 29: I am able to collect data to document and monitor student progress.   |              |            |            |
|--|--------------|------------|------------|
|  | No Knowledge | Unsure     | Expert     |
|  | N (%)        | N (%)      | N (%)      |
| Principals   | 0 (0.0%)     | 5 (21.7%)  | 18 (78.3%) |
| General Education  | 0 (0.0%)     | 6 (10.0%)  | 54 (90.0%) |
| Special Education  | 0 (0.0%)     | 0 (0.0%)   | 15 (100%)  |
| Item 30: I could analyze data from progress monitoring assessments to determine if students are responding to the intervention or need further academic support. |              |            |            |
|  | No Knowledge | Unsure     | Expert     |
|  | N (%)        | N (%)      | N (%)      |
| Principals   | 0 (0.0%)     | 2 (8.7%)   | 21 (91.3%) |
| General Education  | 0 (0.0%)     | 11 (18.3%) | 49 (81.7%) |
| Special Education  | 1 (6.7%)     | 0 (0.0%)   | 14 (93.3%) |
| Item 31: I could make modifications to the intervention plans based on students' response to the intervention data.  |              |            |            |
|  | No Knowledge | Unsure     | Expert     |
|  | N (%)        | N (%)      | N (%)      |
| Principals   | 0 (0.0%)     | 3 (13.0%)  | 20 (87.0%) |
| General Education  | 1 (1.7%)     | 14 (23.3%) | 45 (75.0%) |
| Special Education  | 2 (13.3%)    | 1 (6.7%)   | 12 (80.0%) |

Table 14 - Continued

| Item 32: I know how to use my RTI data to make recommendations for a special education evaluation. |              |            |            |
|--|--------------|------------|------------|
|  | No Knowledge | Unsure     | Expert     |
|  | N (%)        | N (%)      | N (%)      |
| Principals   | 0 (0.0%)     | 2 (8.7%)   | 21 (91.3%) |
| General Education  | 3 (5.0%)     | 19 (31.7%) | 38 (63.3%) |
| Special Education  | 1 (6.7%)     | 1 (6.7%)   | 13 (86.7%) |
| Item 34: I can apply differentiated instructions/strategies for struggling readers.                |              |            |            |
|  | No Knowledge | Unsure     | Expert     |
|  | N (%)        | N (%)      | N (%)      |
| Principals   | 0 (0.0%)     | 3 (13.0%)  | 20 (87.0%) |
| General Education  | 0 (0.0%)     | 10 (16.7%) | 50 (83.3%) |
| Special Education  | 1 (6.7%)     | 0 (0.0%)   | 14 (93.3%) |

## CHAPTER 5

### SUMMARY OF FINDINGS, CONCLUSIONS, LIMITATIONS, IMPLICATIONS, AND FURTHER STUDIES

Response to Intervention is a systematic framework to address the concerns of students struggling academically, specifically in reading (Fuchs, Fuchs, & Compton, 2012). This study was aimed to discover how the RTI practices differed among Texas educators in comparison to the original study from Mask and McGill (2010). Specifically, this study investigated the concerns for the need of additional RTI training as mentioned in Mask and McGill's 2010 study and the Spectrum K12 report (2010). Additionally, this study analyzed the perceived level of knowledge among general education teachers, special education teachers, and principals with the use of a universal screener, the use of evidence-based interventions, progress monitoring, and data collection for decision making for RTI implementation.

#### **Research Hypothesis Findings**

This study was intended to answer the following hypothesis:

1. No statistically significant difference exists in the perception of knowledge of universal screener attributes between general education teachers, special education teachers, and principals.

2. No statistically significant difference exists in the perception of knowledge of evidence-based interventions between general education teachers, special education teachers, and principals.

3. No statistically significant difference exists in the perception of knowledge of RTI progress monitoring between general education teachers, special education teachers, and principals.

4. No statistically significant difference exists in the perception of knowledge of data collection in RTI decision making between general education teachers, special education teachers, and principals.

The subsequent sections address each of the hypotheses and present the results of the findings.

A total of 98 educators from three districts in Northeast Texas participated in this study using an online survey created through SurveyMonkey. This causal-comparative study organized the 13 items that could assess the general education teachers', special education teachers', and principals' perceived RTI knowledge level for using a universal screener, using evidence-based interventions, progress monitoring, and using data collection for problem solving. The educators were asked to participate in this study using a 3-point Likert Scale where 1 = I do not have any knowledge in this area, 2 = unsure, 3 = I consider myself an expert in this area. The participants were able to identify their knowledge level for each RTI component that contributed towards the analysis of this study.

Results from using the non-parametric Kruskal-Wallis indicated that there was a significant difference in the perception of knowledge among the three educator groups with the use of the universal screener for RTI. The Mann-Whitney test was conducted to determine group differences on the perception of knowledge among the three groups of educators. The results indicated there was not a significant difference in the perception of knowledge on using a universal screener between general education teachers and special education teachers. There was not a significant difference in the perception of knowledge on using a universal screener between special education teachers and principals. There was a significant difference in the perception of knowledge between the general education teachers and principals. The null hypotheses was rejected for hypotheses one.

There was no significant difference in the perception of knowledge among the three educator groups using evidence-based interventions for RTI implementation. There was no significant difference in the perception of knowledge among the three groups using progress monitoring for RTI implementation. There was no significant difference in the perception of knowledge among the three groups of educators on collecting data for RTI implementation. The null hypothesis was not rejected for hypotheses two through four.



## **Descriptive Statistics**

Some of the survey items were aimed to provide insightful data about the issues involving the need of training as described in Mask and McGill's 2010 study. Furthermore, descriptive statistics was used to assess the perception of general RTI knowledge among the educators, staff development opportunities, and their thoughts of having RTI in higher education institutions. The survey items were rated using a 4-point Likert-Scale where 1= strongly agree, 2 = agree, 3 = disagree, and 4 = strongly disagree.

The respondents were asked to provide feedback on four items that pertained to their overall RTI knowledge level, professional development, and higher education courses. See Tables 15 - 18 for the descriptive statistic results. The respondents disagreed to having adequate RTI knowledge. Additionally, the educators agreed they would attend a staff development on RTI if there was an opportunity. Furthermore, educators both strongly agreed and agreed that there should be multiple staff development opportunities to present various educators' RTI needs. Lastly, educators strongly agreed that higher education institutions should address RTI in at least one course.

Table 15  
Number of Respondents Indicating Agreement with Item 11

|                            | Strongly Agree | Agree | Disagree | Strongly Disagree |
|----------------------------|----------------|-------|----------|-------------------|
| General Education Teachers | 6              | 14    | 34       | 6                 |
| Special Education Teachers | 2              | 3     | 8        | 2                 |
| Principals                 | 2              | 7     | 10       | 4                 |

Note: Item: 11: I have adequate RTI knowledge.

Table 16  
Number of Respondents Indicating Agreement with Item 12

|                            | Strongly Agree | Agree | Disagree | Strongly Disagree |
|----------------------------|----------------|-------|----------|-------------------|
| General Education Teachers | 20             | 28    | 9        | 3                 |
| Special Education Teachers | 4              | 10    | 1        | 0                 |
| Principals                 | 6              | 14    | 3        | 0                 |

Note: Item 12: If I had an opportunity to attend a staff development on RTI, I would attend.

Table 17  
Number of Respondents Indicating Agreement with Item 13

|                            | Strongly Agree | Agree | Disagree | Strongly Disagree |
|----------------------------|----------------|-------|----------|-------------------|
| General Education Teachers | 31             | 25    | 4        | 0                 |
| Special Education Teachers | 8              | 7     | 0        | 0                 |
| Principals                 | 7              | 14    | 0        | 1                 |

Note: Item 13: I believe there should be multiple staff development opportunities to present various educators' RTI needs.

Table 18  
Number of Respondents Indicating Agreement with Item 14

|                            | Strongly Agree | Agree | Disagree | Strongly Disagree |
|----------------------------|----------------|-------|----------|-------------------|
| General Education Teachers | 39             | 19    | 1        | 1                 |
| Special Education Teachers | 13             | 1     | 1        | 0                 |
| Principals                 | 12             | 11    | 0        | 0                 |

Note: Item 14: I believe colleges/universities should address RTI in at least one course.

## **Conclusions**

Bean and Lillenstein (2012) indicated general education teachers, special education teachers, and principals play a very important role with implementing RTI in schools. Furthermore, both Mask and McGill (2010) and Spectrum K12 (2010) claimed that the lack of training interfered with effective RTI implementation. It was important to discover if there was a difference in the perceived knowledge levels between the educators groups since they play a major role for effective RTI implementation.

The results of the current study indicate a significant difference in the perceived knowledge level between the three groups of educators for one of the four RTI components. Conclusions from this study support the conclusions from both Mask and McGill (2010) and Spectrum K12 (2010). This study exposed the need for continued RTI training for elementary educators. Additionally, educators from this study indicated the need for higher education institutions to incorporate the RTI components in at least one education course.

## **Implications**

Educators work tirelessly, day after day, to ensure the students are receiving the best education they could possibly receive. Inherently, it is assumed that RTI was designed to incorporate a systematic approach aimed to provide evidence-based interventions for struggling students in the general education setting.

Results of the current study suggest that school districts invest wisely its time and money to train educators. Professional developments with the use of the universal screener, the use of each evidence-based interventions, how to progress monitor with fidelity, how to collect data, and analyze the data to problem-solve are needed to expand the knowledge level of educators.

Mack and McGill's study and the Spectrum K12 report were published in 2010 with the recommendation for additional RTI training. Four years have passed since those two publications and current educators are still asking for RTI training and are willing to attend if their school district would offer the training. Additionally, current educators indicated they would attend multiple trainings if the opportunity existed. Therefore, if school districts would effectively train educators with purposeful RTI trainings, teachers could possibly implement RTI with fidelity and see an increase in student achievement. Additionally, with purposeful RTI trainings, Tier III students could receive intentional interventions from appropriate and trained personnel. These interventions may prevent at-risk students from potentially receiving a referral for an evaluation for special education services.

Additional recommendations would be that higher education intuitions incorporate RTI practices, knowledge, skills, and assessments into their curriculum. Doing so will enable pre-service teachers to have the knowledge needed to implement RTI in schools. Imagine how marketable pre-service

teachers would be if they have the RTI background. Even though pre-service teachers would be more marketable, pre-service teachers would have the skills needed to differentiate their instruction despite the diversity of their classroom demographics. Having higher education professionals, as partners with school districts, could serve to motivate and increase the support for pre-service teachers and current educators to implement RTI as intended and really focus the attention where it is most needed, the students.

### **Further Studies**

This study measured the perceived RTI knowledge level among general education teachers, special education teachers, and principals. Furthermore, educators voiced a desire to have higher education institutions to incorporate the RTI fundamentals in at least one education course.

Further research should be conducted to see if there is a difference in knowledge level among first-year teachers using RTI with and without at least one education course in higher education institutions. The results of this study may influence the value of having higher education institutions incorporate at least one RTI course in their curriculum.

Quality professional development in RTI is a consistent recommendation for educators (Bruder, Mogro-Wilson, Stayton, & Dietrich, 2009; Sailors & Price, 2010). A study can be conducted to determine the effectiveness of RTI implementation on elementary campuses with the outcome of quality professional

development. The results of this study may show the positive effectives on RTI implementation as the result of purposeful professional development.

Additionally, educators involved may discuss how the relationship between effective RTI professional development has on student achievement within each RTI Tier.

APPENDIX A  
FORMAL INVITATION TO SUPERINTENDENTS



[Date]  
Region #11  
[Name of Independent School District]  
[Address]  
[City, ST zip code]

Dear [Superintendent],

My name is Lilly Moreno, doctoral student from the Department of Educational Leadership and Policy Studies from the University of Texas at Arlington. My dissertation will investigate how knowledgeable elementary general education teachers, special education teachers, and principals are with Response to Intervention (RTI). I am seeking your consent to ask educators in your district to complete an on-line survey specifying their level of RTI knowledge. This assessment may benefit your school district to potentially incorporate specific staff developments, or training, to increase their RTI knowledge and needs. Furthermore, educators will be asked if RTI should be taught in at least one course in higher education institutions. This feedback may be valuable to post-secondary institutions to teach RTI concepts to pre-service teachers before they enter the professional community. This survey will be administered electronically during the spring semester of 2014 and take approximately 20 minutes or less to complete. To ensure confidentiality, [Name of Independent School District] will be given a pseudo name. Participating districts will not be identified in published research.

Your participation in this research is greatly appreciated. At your request, you will be provided with the outcome of your district's general knowledge of RTI and your district's area of RTI needs for future staff development(s). Additionally, your participation may encourage higher education institutions to adopt your needs into their curriculum.

Please respond to: [lilliana.moreno@mavs.uta.edu](mailto:lilliana.moreno@mavs.uta.edu) to participate in this study.  
Thank you very much! I look forward to hearing from you soon.

Regards,  
Lilly Moreno  
University of Texas at Arlington  
Educational Leadership and Policy Studies  
Doctoral Student  
[lilliana.moreno@mavs.uta.edu](mailto:lilliana.moreno@mavs.uta.edu)

APPENDIX B  
SURVEY CONSENT

Moreno, Lilly [lilliana.moreno@mavs.uta.edu]  
To: DURAN, SANDY [durans@woodridge68.org]  
Sent: Monday, July 11, 2011 11:17 AM  
Subject: Woodridge SD 68 - Contact Us

To Whom It May Concern:

My name is Lilly Moreno and I am a doctoral student from the University of Texas at Arlington. I am currently researching how knowledgeable general education teachers, special education teachers, and principals are with using Response to Intervention. I have researched existing surveys and came across your survey from <http://www2.woodridge68.org/survey/survey.php?sid=59>

Question #7 of your survey applies to my research. Would it be possible to use question #7 from this survey if I obtain written permission from the original author(s)?

Thank you for your time!

Lilly Moreno  
Doctoral Student  
University of Texas at Arlington

DURAN, SANDY [durans@woodridge68.org]  
To: Moreno, Lilliana  
Tuesday, July 12, 2011 11:04 AM

Feel free

MacKinnon, Margaret H (EED) [margaret.mackinnon@alaska.gov]  
To: Moreno, Lilliana  
Wednesday, July 13, 2011 1:06 PM

Hi, Lilly,

I authored the RTI survey questions, and it is fine with me if you choose to use some of the questions from this survey.

APPENDIX C

SURVEY

## **Response to Intervention: Educator's Knowledge and Needs**

### **ONLINE SURVEY CONSENT FORM**

#### **Response to Intervention: Educator's Knowledge and Needs**

Dear Texas Educator,

You are being asked to participate in a research study involving your current knowledge with implementing Response to Intervention (RTI). This study will be conducted by Lilly Moreno, Department of Educational Leadership and Policy Studies from the University of Texas at Arlington.

Your participation in this study is completely voluntary and you may discontinue your participation at any time without penalty. Your decision to partake in this study will have no effect on your current employment status.

Every attempt will be made to see that your results are kept confidential. Your information will be treated professionally and will be kept from any unauthorized persons. When the results of this study are published, your school district will be issued at fictitious name. Although this study does not have a direct benefit to you, it may help school districts to understand their staff's current knowledge of RTI, to understand the area of needs to effectively implement RTI for struggling students, to explore appropriate professional developments to fit their school's needs, and determine if there is value to include RTI courses in post- secondary institutions for pre-service teachers.

This research does not pose any more risk than those you experience in normal daily living.

If you have any questions about this research, please feel free to contact me at [lilliana.moreno@mavs.uta.edu](mailto:lilliana.moreno@mavs.uta.edu) or my faculty advisor, Jim Hardy at [jimhardy@uta.edu](mailto:jimhardy@uta.edu). If you have any question regarding your rights as a research participant, please contact the University of Texas at Arlington Office of Research Administration at 817-272-2105 or at [regulatoryservices@uta.edu](mailto:regulatoryservices@uta.edu).

Please print a copy of this consent form for your records, if you desire.

You have read and understand the above consent form, you certify that you are 18 years old or older, and by selecting the "Accept and Next" button to enter the survey, you indicate your willingness to partake in this study voluntarily.

Thank your for participating.

**1. Job Description:**

- General Education Teacher
- Special Education Teacher
- Principal

**2. Gender:**

- Female
- Male

**3. Years of Experience:**

- Less than 1 year
- 1-2 years
- 3-5 years
- 6-8 years
- 9-10 years
- 11-15 years
- 16 or more years

**4. Number of years in Current Position:**

- Less than 1 year
- 1-2 years
- 3-5 years
- 6-8 years
- 9-10 years
- 11-15 years
- 16 or more years

**5. Highest Degree Earned:**

- Bachelor's Degree
- Master's Degree
- Doctorate Degree

**6. Teaching Certificate:**

- University
- Alternative

**7. I currently service a student in RTI:**

- Yes
- No
- I have prior to the 2012-2013 school year.

**8. How did you learn about RTI? Check all that apply:**

- On my own
- University
- Professional Development
- Service Center

**9. How many total hours of staff development or training have you received in RTI throughout your experience?**

- Less than 3 hours
- 4-6 hours
- 7-9 hours
- 10-12 hours
- 13-15 hours
- 16-19 hours
- 20 + hours

**10. These previous staff development (SD) have prepared me to implement RTI effectively.**

- None
- Few SDs
- Some SDs
- Many SDs
- Most SDs

**11. I have adequate RTI knowledge and do not need additional staff developments.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**12. If I had an opportunity to attend a staff development on RTI, I would attend.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**13. I believe there should be multiple staff development opportunities to present various educators' RTI needs.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**14. I believe colleges/universities should address RTI in at least one course.**

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

**15. Name your school district:**

**16. I understand the rationale behind RTI.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area



**17. I understand that RTI uses a multi-tiered system of instruction and intervention.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**18. I understand the process of teaching struggling students in each Tier of instruction.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**19. I understand that RTI is an integrated approach between general and special education.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**20. I understand how to use a universal screener to identify students at-risk for academic difficulties.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**21. I can develop my own reasons of why my students are not achieving desired levels in reading.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**22. I am able to group students by their needs.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**23. I can select the appropriate evidence-based interventions to match the students' needs.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**24. I know how to use the interventions on my campus with fidelity.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**25. I know how frequent and intensive the intervention should be at each Tier.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**26. I can name and explain the five essential components of effective reading instruction.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**27. I know how often I should progress monitor my students.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**28. I can use the appropriate assessments for progress monitoring.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**29. I am able to collect data to document and monitor student progress.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**30. I could analyze data from progress monitoring assessments to determine if students are responding to the intervention or need further academic support.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**31. I could make modifications to the intervention plans based on students' response to the intervention data.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**32. I know how to use my RTI data to make recommendations for a special education evaluation.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**33. I have heard of the term differentiation.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**34. I can apply differentiated instructions/strategies for struggling learners.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**35. I know how to manage my time effectively for all students in my classroom, including those in RTI.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**36. I understand the purpose of having a campus-based problem-solving team.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**37. I know which educators should be involved in my campus' problem-solving team.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

**38. I understand the various roles of each member of the problem-solving team.**

- I do not have any knowledge in this area
- Unsure
- I consider myself an expert in this area

APPENDIX D  
SURVEY VALIDATION LETTER

Date:

Dear Educator,

I am a doctoral student from the Department of Educational Leadership and Policy Studies at the University of Texas at Arlington. You have been selected to participate in validating a survey instrument because of your experience in education and in Response to Intervention (RTI). Your expertise will help my survey become a valid source for gathering critical data for this research.

My research will assess how knowledgeable educators are of Response to Intervention (RTI). Additionally, educators will provide their views of which RTI components they could use additional training through staff developments. Lastly, educators will provide their opinion of which RTI components higher education institutions could incorporate into their curriculum to prepare future educators prior to entering the professional community.

Please view the attached survey validation instrument. Please read and assess each survey question using a Yes/No scale for clarity and value towards this study. For clarity, simply assess each question and use the terms Y= Yes, the question is clear, Y/M=Yes, the question is somewhat clear, but could be worded better, or N=No, the question is not clear. Additionally, educators will evaluate if each question has value towards this research study and topic. Educators will use the terms Y=Yes, this question has relevance to the study, Y/M=Yes, this question has little relevance to the study or N=No, this question has no relevance towards this study. Lastly, I ask that you be so kind and edit the questions for better clarity and/or suggest additional questions that are valuable to this study. After I receive the rated surveys, I will revise the wording from questions receiving Y/M and modify or delete any questions which educators rated an N.

Thank you very much for enhancing my survey instrument. Your contribution is valuable to me. Please mail this survey instrument in the enclosed, pre-stamped envelope by [date]. Thank you!

Sincerely,

Lilly Moreno  
University of Texas at Arlington  
Doctoral Student

APPENDIX E  
INSTRUMENT VALIDATION



### Instrument Validation

#### RESPONSE TO INTERVENTION: AN EVALUATION OF AN EDUCATOR'S KNOWLEDGE AND NEEDS ASSESSMENT

**Directions:** Please evaluate each survey question using the Yes/No scale for clarity and value towards this research as indicated below. For clarity, circle Y= Yes, the question is clear, Y/M=Yes, the question is somewhat clear, but could be worded better, or N=No, the question is not clear. To determine relevance to this study, use the terms Y=Yes, the question has relevance to the study, Y/M=Yes, the question has little relevance to the study or N=No, the question does not have any relevance to the study. Please edit the questions for better clarity and/or suggest additional questions. The researcher will gather all the survey instruments to assess the rating scores.

Y = Yes, the question is clear/the question has relevance to the study.  
 Y/M = Yes, the question is somewhat clear, but could be worded better/the question has little relevance  
 No = No, the question is not clear/the question has no relevance to the study.

Thank you very much for participating in this survey. Your feedback will help me with my research study. Please return this completed survey in the self-addressed, stamped envelope provided.

Thank you, Lilly Moreno

| Question has clarity | Survey Question   | Question has relevance |
|----------------------|---|------------------------|
|                      | <i>Section 1: Demographic Data</i>  |                        |
| Y    Y/M    N        | 1. Job Description:<br><b>a. General Education Teacher</b><br><b>b. Special Education Teacher</b><br><b>c. Principal</b>  | Y    Y/M    N          |
| Y    Y/M    N        | 2. Gender<br><b>a. Male</b> <b>b. Female</b>  | Y    Y/M    N          |
| Y    Y/M    N        | 3. Years of Experience in Education:<br><b>a. Less than 1 year</b><br><b>b. 1-2 years</b><br><b>c. 3-5 years</b><br><b>d. 6-8 years</b><br><b>e. 9-10 years</b> | Y    Y/M    N          |

|                             |     |   |  |                               |     |   |
|-----------------------------|-----|---|--|-------------------------------|-----|---|
|                             |     | <b>f. 11-15 years</b><br><b>g. 15 or more years</b> |  |                               |     |   |
| Y                           | Y/M | N   | 4. Number of Years in Current Position:<br><b>a. Less than 1 year</b><br><b>b. 1-2 years</b><br><b>c. 3-5 years</b><br><b>d. 6-8 years</b><br><b>e. 9-10 years</b><br><b>f. 11-15 years</b><br><b>g. 15 or more years</b>  | Y                             | Y/M | N |
| <b>Question has clarity</b> |     | <b>Survey Question</b>                              |  | <b>Question has relevance</b> |     |   |
| Y                           | Y/M | N   | 5. Highest Degree Earned:<br><b>a. Bachelors Degree</b><br><b>b. Masters Degree</b><br><b>c. Doctorate Degree</b>  | Y                             | Y/M | N |
| Y                           | Y/M | N   | 6. Teaching Certificate through:<br><b>a. University</b><br><b>b. Alternative</b>  | Y                             | Y/M | N |
| Y                           | Y/M | N   | 7. I currently service a student in RTI: <b>a. Yes</b><br><b>b. No</b><br><b>c. I have prior to the 2011-2012 school year.</b>   | Y                             | Y/M | N |
| Y                           | Y/M | N   | 8. How many total hours of staff development or training have you received in RTI throughout your experience?<br><b>a. Less than 3 hours</b><br><b>b. 4-6 hours</b><br><b>c. 7-9 hours</b><br><b>d. 10-12 hours</b><br><b>e. 13-15 hours</b><br><b>f. 16-19 hours</b><br><b>g. 20+ hours</b> | Y                             | Y/M | N |

|                             |   |                               |
|-----------------------------|---|-------------------------------|
| Y    Y/M    N               | 9. These previous staff development (SD) have prepared me to implement RTI effectively.<br><b>a. None</b><br><b>b. Few SDs</b><br><b>c. Some SDs</b><br><b>d. Many SDs</b><br><b>e. Most SDs</b>                    | Y    Y/M    N                 |
| Y    Y/M    N               | 10. I have adequate RTI knowledge and do not need additional staff developments.<br><b>a. Strongly Agree</b><br><b>b. Agree</b><br><b>c. Disagree</b><br><b>d. Strongly Disagree</b>                                | Y    Y/M    N                 |
| Y    Y/M    N               | 11. If I had an opportunity to attend a staff development on RTI, I would attend.<br><b>a. Strongly Agree</b><br><b>b. Agree</b><br><b>c. Disagree</b><br><b>d. Strongly Disagree</b>                               | Y    Y/M    N                 |
| Y    Y/M    N               | 12. I believe there should be multiple staff development opportunities to present various educators' RTI needs.<br><b>a. Strongly Agree</b><br><b>b. Agree</b><br><b>c. Disagree</b><br><b>d. Strongly Disagree</b> | Y    Y/M    N                 |
|                             |   |                               |
| <b>Question has clarity</b> | <b>Survey Question</b>  | <b>Question has relevance</b> |
| Y    Y/M    N               | 13. I believe colleges/universities should address RTI in at least one course.<br><b>a. Strongly Agree</b><br><b>b. Agree</b><br><b>c. Disagree</b><br><b>d. Strongly Disagree</b>                                  | Y    Y/M    N                 |

|  |     |   |  |   |     |   |
|--|-----|---|--|---|-----|---|
| Y                                      | Y/M | N | 14. Name of your school district: _____  | Y | Y/M | N |
| <b><i>Section 2: RTI Knowledge</i></b> |     |   |  |   |     |   |
| Y                                      | Y/M | N | 15. I understand the rationale behind RTI.   | Y | Y/M | N |
| Y                                      | Y/M | N | 17. I understand that RTI uses a multi-tiered system of instruction and intervention.                    | Y | Y/M | N |
| Y                                      | Y/M | N | 18. I understand the process of teaching struggling students in each Tier of instruction.                | Y | Y/M | N |
| Y                                      | Y/M | N | 19. I understand that RTI is an integrated approach between general and special education.               | Y | Y/M | N |
| Y                                      | Y/M | N | 20. I understand how to use a universal screener to identify students at-risk for academic difficulties. | Y | Y/M | N |
| Y                                      | Y/M | N | 21. I can develop my own reasons of why my students are not achieving desired levels in reading.         | Y | Y/M | N |
| Y                                      | Y/M | N | 22. I am able to group students by their needs.  | Y | Y/M | N |
| Y                                      | Y/M | N | 23. I can select the appropriate evidence-based interventions to match the students' needs.              | Y | Y/M | N |
| Y                                      | Y/M | N | 24. I know how to use the interventions on my campus with fidelity.                                      | Y | Y/M | N |
| Y                                      | Y/M | N | 25. I know how frequent and intensive the intervention should be at each Tier.                           | Y | Y/M | N |
| Y                                      | Y/M | N | 26. I can name and explain the five essential components of effective reading instruction.               | Y | Y/M | N |
| Y                                      | Y/M | N | 27. I know how often I should progress monitor my students.  | Y | Y/M | N |
| Y                                      | Y/M | N | 28. I can use the appropriate assessments for progress monitoring.                                       | Y | Y/M | N |

|                             |     |   |   |                               |     |   |
|-----------------------------|-----|---|---|-------------------------------|-----|---|
| Y                           | Y/M | N | 29. I am able to collect data to document and monitor student progress.   | Y                             | Y/M | N |
| Y                           | Y/M | N |   | Y                             | Y/M | N |
| Y                           | Y/M | N | 30. I could analyze data from progress monitoring assessments to determine if students are responding to the intervention or need further academic support. | Y                             | Y/M | N |
| <b>Question has clarity</b> |     |   | <b>Survey Question</b>  | <b>Question has relevance</b> |     |   |
| Y                           | Y/M | N | 31. I could make modifications to the intervention plans based on students' response to the intervention data.  | Y                             | Y/M | N |
| Y                           | Y/M | N | 32. I know how to use my RTI data to make recommendations for a special education evaluation.   | Y                             | Y/M | N |
| Y                           | Y/M | N | 33. I have heard of the term differentiation.   | Y                             | Y/M | N |
| Y                           | Y/M | N | 34. I can apply differentiated instructions/strategies for struggling learners.   | Y                             | Y/M | N |
| Y                           | Y/M | N | 35. I know how to manage my time effectively for all students in my classroom, including those in RTI.  | Y                             | Y/M | N |
| Y                           | Y/M | N | 36. I understand the purpose of having a campus-based problem-solving team.   | Y                             | Y/M | N |
| Y                           | Y/M | N | 37. I know which educators should be involved in my campus' problem-solving team.   | Y                             | Y/M | N |
| Y                           | Y/M | N | 38. I understand the various roles of each member of the problem-solving team.  | Y                             | Y/M | N |

**Thank you very much for completing this survey!**

APPENDIX F  
IRB APPROVAL



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January 16, 2014

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**IRB No.:** 2013-0776

**Title:** *Response to Intervention: Educator's Knowledge and Needs*

### **EXEMPT MINOR MODIFICATION APPROVAL MEMO**

The UT Arlington Institutional Review Board (UTA IRB) Chair (or designee) reviewed and approved the modification(s) to this exempt protocol on **January 16, 2014** in accordance with Title 45 CFR 46.101(b). Therefore, you are authorized to conduct your research. The modification(s), indicated below, was/were deemed minor and appropriate for exempt determination/acknowledgment review.

- Recruitment/consenting information have been updated to reflect 2014

Pursuant to Title 45 CFR 46.103(b) (4) (iii), investigators are required to, “promptly report to the IRB any proposed changes in the research activity, and ensure that such changes in approved research, during the period for which IRB approval has already been given, **are not initiated without IRB review and approval** except when necessary to eliminate apparent immediate hazards to the subject.”

The modification approval will additionally be presented to the convened board on February 11, 2014 for full IRB acknowledgment [45 CFR 46.110(c)]. All investigators and key personnel identified in the protocol must have documented Human Subjects Protection (HSP) training on file with the UT Arlington Office of Research Administration; Regulatory Services.

The UT Arlington Office of Research Administration appreciates your continuing commitment to the protection of human research subjects. Should you have questions or require further assistance, please contact Robin Dickey at [robind@uta.edu](mailto:robind@uta.edu) or you may contact the Office of Regulatory Services at 817-272-3723.



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## BIOGRAPHICAL INFORMATION

Lilly Moreno has been serving both general education and special education students as a special education teacher for 10 years. She enjoyed educating students who others perceived as difficult to teach academically. She is very passionate about providing services to students with a learning disability and coaching other teachers. She received her Bachelor's in Interdisciplinary Studies from the University of Texas at San Antonio in 2003 and Master's in Administration from Sam Houston State University in 2007. She received her Ph.D. from the University of Texas at Arlington in Educational Leadership and Policy Studies in 2014. She desires to become a professor in education to teach pre-service teachers at their capacity before entering into their own classroom.