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A DESCRIPTIVE STUDY OF RESPONSE TO INTERVENTION (RTI) IMPLEMENTATION AT THE ELEMENTARY LEVEL IN WEST VIRGINIA

A dissertation submitted to
the Graduate College of
Marshall University

in partial fulfillment of
the requirements for the degree of

Doctor of Education
in
Curriculum and Instruction

by
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Approved by
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Marshall University
August 2012

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DEDICATION

The completion of this dissertation is dedicated to my son, Clayton. I am so delighted I have you in my life to serve as a reminder of what is truly important. My thoughts, my actions...everything I do is for you.

ACKNOWLEDGMENTS

First, I would like to thank Dr. Ron Childress for chairing my committee. Without your patient, supportive guidance and constructive feedback, this goal may never have been realized.

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I would also like to thank my colleagues at the WVDE and RESA 4 for your mentoring and support during this endeavor. The guidance and support you have provided have truly allowed me to challenge myself and my thinking, try new things, and learn so much more about the profession of education.

Finally, I would like to thank my family. Thank you for making sacrifices, adjusting schedules, and seeing that Clayton was cared for so I could attend classes, conferences, and seminars.

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ABSTRACT

The purpose of this study was to describe levels of RTI implementation in West Virginia elementary schools. Little is known about the national efforts that states are collectively undertaking to scale up implementation of RTI (Hoover, Baca, Wexler-Love, & Saenz, 2008). West Virginia's elementary schools were required by state policy to implement RTI in reading by July 1, 2009. A wide-scale implementation status check has not been conducted since that date. A cross-sectional research design using members of the school's curriculum team to complete the *RTI Implementation Inventory* was used to provide a description of RTI implementation fidelity.

All eight RTI components demonstrated statistically significant results. Fifty-seven of 64 indicators were rated usually or always implemented. Principals most often generally perceived the highest implementation levels, whereas classroom teachers reported the lowest implementation levels. In five RTI components, higher mean scores were reported in schools in which the faculty demonstrated a belief that RTI benefits all students and in schools that have a school plan for evaluating RTI. Higher levels of implementation in one RTI component were reported by schools with smaller student enrollment and in schools which receive Title I funding. Higher levels of implementation in two RTI components were reported by schools that possess an electronic RTI data management system.

CHAPTER ONE: INTRODUCTION

Introduction and Rationale

The concept of Response to Intervention (RTI) builds upon recommendations from the President's Commission on Excellence in Special Education which recommended that students with disabilities should be considered general education students first, promoting a model of prevention rather than a model of failure (National Association of State Directors of Special Education and Council of Administrators of Special Education, 2006). Although language related to RTI was written into the reauthorization of the Individuals with Disabilities Act (IDEA 2004), the term RTI was never specifically used (International Reading Association, 2010). The language permits an alternative approach for determining students with learning disabilities. Six of the eight areas in which low achievement may be an indicator of a learning disability fall within the realm of language and literacy: oral expression, listening comprehension, written expression, basic reading skills, reading fluency skills, and reading comprehension. As a result, educators in many districts began focusing their efforts toward preventing language and literacy difficulties and improving instruction for all students.

Response to Intervention has developed as a framework for organizing instruction. This framework enables identification of students at risk for poor learning outcomes through a focus on teachers' opportunities to monitor student progress. This model provides a school-wide academic and behavioral support system with multi-tiered levels of intervention (National Association of State Directors of Special Education,

2005). The multi-tiered process provides support to struggling learners in the general education classroom or through supplemental instruction, while assessing outcomes (Hollenbeck, 2007). Teachers present evidence-based interventions and modify the intensity and type of interventions delivered depending on a student's responsiveness. RTI provides opportunities for teachers to intervene before a student's skill deficits become severe.

The "severe discrepancy" method for identifying learning disabilities used prior to 2004 represented a "wait-to-fail" model forcing students to perform poorly for years before achievement scores were sufficiently below IQ scores (Fuchs, Mock, Morgan, & Young, 2003). The reauthorization of the Individuals with Disability Act (IDEA 2004) facilitated the use of Response to Intervention (RTI) to provide a framework for educators to use scientifically-based research interventions with students. As a result, documentation recording student responses can be used for identification of specific learning disabilities (Torgeson, 2009). Within this framework, the overarching goal of RTI is not to prevent the need for special education but to prevent life-long difficulties related to chronic academic failure (Fuchs & Fuchs, 2009).

RTI is structured as a multi-tiered service delivery model. At the center of the first tier is a focus on high quality, research based instruction for all students in the general education environment (Mellard, Byrd, Johnson, Tollefson, & Boesche, 2004). The second tier provides skill focused, small group, high intensity intervention with continued monitoring of individual progress (McMaster, Fuchs, Fuchs, & Compton, 2005). Children who do not respond sufficiently enter a third tier of high intensity intervention, often leading to an eligibility decision for placement in special education.

As schools implement RTI, teacher mindset and focus must shift from special education eligibility concerns to providing effective instruction (Fletcher, Coulter, Reschly, & Vaughn, 2004). As explained by Torgeson (2009), using RTI for identification of disabilities is advantageous if students are promptly given powerful interventions to prevent the materialization of serious reading difficulties. This focus on prevention allows students, who may have been deemed learning disabled under the "wait-to-fail" model, to have their needs met in a general education setting.

All West Virginia elementary schools were required to have an RTI model in place for collecting student data in reading by July 1, 2009. Thirty-six schools began this implementation in 2003 under the Reading First initiative with six schools joining the initiative in 2006 (WV Department of Education, 2009). The West Virginia Department of Education (WVDE) also established the process in 11 RTI pilot schools statewide beginning in 2005.

In January 2009, the WVDE conducted an implementation status survey with elementary principals. Although never formally published, survey findings indicated nearly all elementary schools were implementing the basic components of a tiered system including screening and progress monitoring, and nearly 30% of schools requested technical assistance in developing a way to manage the data collected (Lochner, 2009).

In a report for the Annie E. Casey Foundation, Reisman and Gienapp (2004) suggested when schools prioritize actions of change, measurable change can be expected in one to three years. Being at least three years into implementation, schools should re-examine processes and procedures in place to determine where they stand in this

undertaking. If schools have adopted this new initiative in name only, without focusing on fidelity to essential program design features, outcomes will often be inadequate. (Kovaleski, Gicklin, Morrow, & Swank, 1999). Furthermore, implementing the RTI components with fidelity is critical now that IDEA 2004 permits schools to consider a student's responsiveness to intervention (RTI) as a component of specific learning disability (SLD) determination. Maintaining fidelity of implementation is fundamental in that decisions being made based upon the assumption of high quality instruction will affect children's lives presently and in the future.

For an RTI component to be successful in meeting student needs, the component must be implemented with high integrity (Johnson, Mellard, Fuchs, & McKnight, 2006). Mellard (2010) explains that implementing RTI with fidelity is using the curriculum and instructional practices consistently and accurately, in the manner intended. Protocols developed and validated with a specific level of training for the individuals delivering the instruction as well as a specified amount of time for the learners should yield an anticipated response from those learners. If fidelity is not consistent and accurate, how can educators explain the student's level of response? If the protocol was not delivered as intended we cannot attribute a good or poor response to instruction.

Research detailing the importance of fidelity to the components of RTI protocols often provides little information to guide schools in the practical application of "how," "why," and "when." The literature describing "how" schools are implementing is limited; consequently, schools and districts have been left scrambling to refine implementation of a tiered instructional model. It is imperative that present levels of RTI

implementation in reading be examined before schools and districts are charged to apply a tiered model to a variety of programmatic levels and content areas.

West Virginia schools are required to have a curriculum team at each school as a voice in the school's operation and an avenue for shared decision-making with focus on raising student achievement (West Virginia Code, 2011). The administrators, teachers and counselors comprising this team are charged to support the use of high-quality models of teaching, scheduling, and other aspects of educational delivery to meet a variety of student needs, provide educational opportunities that close achievement gaps between students, and to exercise school-level freedom and flexibility when the school has achieved exceptional levels of results-driven accountability. In order to make decisions that support these expectations, curriculum team members must stay informed about what is happening in their school.

Statement of the Problem

To more accurately identify students with Learning Disabilities (LD), in 2009 West Virginia began phasing in the use of RTI data as the method for LD identification. Concerns have arisen related to issues of equity, accuracy, timeliness, outcomes, feasibility, and consistency when using RTI instead of the discrepancy model as an identification method (Johnson, Mellard, & Byrd, 2005). Despite these multiple areas of concern, it is imperative that districts and schools scrutinize one area directly under their influence: the fidelity of their implementation of the RTI model. A quality implementation not only provides a foundation for high quality instruction for all children, but also greatly influences the mandated child-find process that is the gateway to special education for West Virginia's children.

Research has focused on the efficacy of RTI components individually but not on the efficacy of the RTI process as an integrated whole (VanDerHeyden, Witt, & Gilbertson, 2007). In theory, if each of the components is effective, then the overall process could be projected to yield results. Other than the WVDE implementation status report in 2009, there has not been a systematic assessment of the extent to which West Virginia schools are implementing all components of RTI. This study sought to answer this question from the perspective of members of the curriculum teams in West Virginia elementary schools. Second, the study also investigated differences in the level of RTI implementation based on selected attribute/demographic variables.

Research Questions

Specific research questions addressed in this study included:

1. What is the overall level of RTI implementation in West Virginia's elementary schools?
2. What is the level of RTI implementation for each of the major components of RTI in West Virginia's elementary schools?
3. What are the differences, if any, in the overall levels of implementation for each of the major components of RTI in West Virginia's elementary schools based upon selected school attributes including enrollment, staff role, socioeconomic status, Title I status, AYP status, and principal tenure?

Operational Definitions

Level of Implementation of RTI Attributes- an individual school curriculum team member's perception of the level of implementation as self-reported on the survey

instrument, *RTI Implementation Inventory*, using the five-point descriptive scale provided for each of the 64 attributes included in sections II-IX of the survey instrument.

Overall Level of RTI Implementation-an individual curriculum team member's perception of the overall levels of RTI implementation as self-reported on the survey instrument, *RTI Implementation Inventory*, for each of the 64 attributes included in sections II-IX of the survey instrument. The overall level of RTI implementation was calculated by summing the responses to teach of the 64 attributes included in sections II-IX of the survey instrument.

Major Component Implementation Levels- an individual curriculum team member's perception of the level of implementation as self-reported on the survey instrument, *RTI Implementation Inventory*, for each of the 64 attributes included in sections II-IX of the survey instrument. The level of RTI implementation for each component was calculated by summing the responses for each section of the RTI *Implementation Inventory* (multi-tier instruction (core, targeted, & intensive), assessment (screening & progress monitoring), infrastructure, leadership, and teaming/collaboration).

School Size-Section I requested respondents indicate which of the following categories represented their school's total number of students: <100, 101-200, 201-300, 301-400, 401+.

Types of Professional Development- Section I requested respondents indicate which of the following categories represented their school's participation in professional development providing guidance in implementation of tiered instruction: Reading First, RTI Demonstration, or WVDE K-3 Reading Model training.

Socioeconomic Status- Section I requested respondents indicate which of the following categories represented their school's percentage of students approved for free or reduced price meals: Low <35%; Medium 36%-50%, High 51%-75%, Very High 75%+.

Title I Status- Section I requested respondents indicate whether the school received Title I funding during the 2011-2012 school year.

Intervention Staffing- Section I requested respondents indicate which of the following represented the individuals providing intervention to students: classroom teacher, special education teacher, Title I teacher, speech-language pathologist, part time interventionist, full time interventionist.

Principal Tenure- Section I requested respondents indicate whether the principal began the position prior to or after the July 1, 2009 implementation deadline.

AYP Status- Section I requested respondents indicate whether the school attained AYP status during the 2010-2011 school year.

Faculty Belief- Section I requested respondents indicate their perception of whether the school faculty believes that RTI benefits all students.

Evaluation Plan- Section I requested respondents indicate whether the school has a detailed plan for evaluating the effectiveness of the RTI implementation.

Electronic Management System- Section I requested respondents indicate whether the school has available an electronic data management system for student RTI data.

Delimitations of the Study

This study was limited to elementary schools in West Virginia that contain grades K-3. In addition, the study population was limited to members of the school curriculum team in each of these elementary schools. Finally, the study was focused only on the content area of reading.

Significance

Little is known concerning state efforts in moving to large-scale implementation of RTI (Hoover, Baca, Wexler-Love, & Saenz, 2008). Few schools and districts have evaluated their RTI implementation. Even though West Virginia elementary schools were required to implement RTI in reading by July 1, 2009, there has been no statewide study of implementation status since that time. Therefore, this study will provide a baseline of implementation levels in West Virginia elementary schools.

This study establishes a set of benchmarks that provide an opportunity for teachers and administrators to reflect upon RTI implementation in their schools. By examining current implementation levels, this study provided state and district leaders information about RTI implementation from the perspective of the principal, teachers and counselors. Including the perspectives of individuals with different responsibilities may provide more reliable information than data collected only from individuals fulfilling one particular role.

Data from this study may provide guidance to districts regarding professional development or technical assistance need. Areas in which implementation scores are

lower may need further investigation by districts to identify necessary professional development needs at a district or school level.

Teacher preparation programs could use this information to align pre-service coursework and experiences to reflect current practice. Teacher candidates with this experience would be more marketable for employment. Along with many other states implementing RTI, West Virginia schools will be looking for teacher candidates that have developed an understanding of the processes and components of RTI.

The data could provide state policy makers information as to whether policy has been implemented and if it may need revision. If implementation has occurred, policy makers may need to allocate resources to provide for continued implementation and improvement. Unsuccessful implementation may indicate the need for revision to policy dates or the need for additional resources and professional development needs.

CHAPTER TWO: REVIEW OF THE LITERATURE

Introduction

Response to Intervention (RTI) is a multi-tiered method to provide early identification of learning disabilities and intervention. One reason RTI has been viewed as a welcome alternative to the discrepancy model is that teachers do not have to wait for students to demonstrate failure before they receive services (Bradley, Danielson, & Doolittle, 2007). A district may utilize some special education funds to provide early intervention services for students who require supplementary academic and behavioral supports to thrive in the general education environment (Center for Educational Networking, 2006). General education constitutes primary prevention as these students might likely become referrals for special education in the absence of these services (Fuchs & Fuchs, 2007; Center for Educational Networking, 2006).

RTI is a tiered instruction model most frequently comprised of three tiers. At the center of the first tier is a focus on research based instruction (Mellard, Byrd, Johnson, Tollefson, & Boesche, 2004). Students who are targeted for further intervention, the second tier, have demonstrated a lack of response to the universal core program (Fuchs & Fuchs, 2007). Tier two intervention provides targeted instruction utilizing a variety of assistance in terms of differentiations, modifications, specialized equipment, and technology matched to targeted needs (Hoover & Patton, 2008). Data collected through this instruction serve as important pre-referral decision making data. Students who demonstrate insufficient progress throughout a second tier of intervention are considered for more intensive specialized interventions and/or special education services. Fuchs and Fuchs (2007) explained, "The premise behind RTI is that students are identified as LD

when their response to validated intervention is dramatically inferior to that of peers" (A model for implementing responsiveness to intervention, p. 14).

Response to Intervention (RTI)

Background of RTI

There are precedents for RTI that go back several decades, including the incorporation of a problem solving process (Stepanek & Peixotto, 2009). In the late 1980s, questions emerged regarding the effectiveness of special education programs, the decision making for eligibility, the emphasis on labels and categories, and the rigid need for eligibility determination before being eligible for services (Center for Educational Networking, 2006).

Through questioning and re-examination, the passage of the Individuals with Disabilities Education Act 1997 (IDEA 1997) initiated changes in special education. The law required educational agencies to develop services intended to address education needs before children were labeled as disabled. As a result, part of the funds could be used to provide school wide programs that benefit children with disabilities while providing incidental benefits to children without disabilities (Center for Educational Networking, 2006).

Accordingly, Congress' reauthorization of IDEA in 2004 included language to provide the option to use the RTI approach for determining eligibility for special education services (Center for Educational Networking, 2006). A transition from the traditional discrepancy based model was advocated as it was argued that the model had outlived its usefulness (Hollenbeck, 2007). The new guidelines required states to develop

regulations for determining a specific learning disability following these guide points: states must not require the use of a severe discrepancy between intellectual ability and achievement for deciding if a child has a specific learning disability, states must allow the use of a process based on the child's response to scientific, research-based intervention; and states may allow the use of other alternative research-based procedures for determining whether a child has a specific learning disability (U.S. Department of Education, Office of Special Education Programs, n.d.).

The multi-tiered process of providing support to struggling learners was the most commonly explored model. Hollenbeck (2007) further explained that IDEA 2004 suggests RTI applications are not specifically stated so that educators will have freedom to develop unique RTI implementations. Although RTI is not exclusively focused on the area of reading, the multi-tiered process used in reading instruction was heavily influenced by the Reading First legislation that came from the No Child Left Behind Act (NCLB) of 2001. This legislation changed the literacy climate of classrooms and schools across the United States. Reading First required qualifying schools to provide teacher professional development, materials, remedial programs, and ongoing progress monitoring. All activities had to be aligned with the research findings of the National Reading Panel (Stewart, 2004). This focused attention on the use of classroom procedures that were based on quantitative research.

Torgeson (2006) interviewed principals of ten percent of the Reading First schools in Florida. He found that 95% believed the attention brought to data-driven instruction was one of the most important advantages of Reading First. Eighty-five percent of the principals believed the 90-minute reading block was a significant

component, whereas 75% shared that professional development opportunities were one of the most crucial elements of their Reading First programs. Successful schools used data to determine the direction of upcoming instruction.

Conceptual Framework of RTI

At the center of any well implemented RTI framework should be informed problem solving based on student needs and the use of data to find and serve students at risk (Moats et al., 2010). Even though a variety of models describe the levels of intervention differently, most share familiar features across the three tiers (National Joint Committee on Learning Disabilities, 2005). Vaughn and Fuchs (2003) proposed that the ideal RTI model contains four mechanisms operating across the three tiers. Pervasively, there should be ongoing progress monitoring and methods for tracking the data, distribution of information concerning research-based practices, dedication to high quality general education, and the ability to put into practice specialized interventions for at risk learners. Although the construction of RTI models varies, most early intervention models are based upon the problem solving model, standard treatment protocol model, or a blend of the two.

Critical Components

RTI is a multi-tiered service-delivery model most frequently thought of as a three-tiered model; although, there is much discussion relating to how many tiers actually provide adequate intervention (Johnson, Mellard, Fuchs, & McKnight, 2006; Martson, 2003; O'Connor, Fulmer, & Harty, 2003; Tilly, 2003; Vaughn, 2003). Johnson et al.

(2006) hypothesized that the labeling of tiers allows districts to make plans for the multiple levels of intervention that are separate from special education.

According to Mellard (2004), there are components which are critical to an RTI model regardless of whether a school chooses to implement a standard treatment protocol or a problem solving approach. The components include the use of high quality core classroom instruction using research based methods, tiered interventions, universal screening, progress monitoring, and fidelity measures of intervention.

Multi-tiered Instruction

Tier one core instruction provides primary support and interventions that are intended to be proactive and preventative (National Association of State Directors of Special Education, 2005). Within an RTI framework, tier one occurs in the general education classroom (Johnson, Mellard, Fuchs, & McKnight, 2006). Typically, it is provided to the whole class throughout the entire school year by instructors who are highly qualified. Screening and progress monitoring occur within this tier to provide data for making decisions regarding grouping of students or continuing or changing instructional practices. At this level, instruction becomes the foundation upon which all supplementary interventions are based. This high quality instruction and monitoring identifies students who need additional support.

Typical classroom instruction must be high quality prior to identifying students for specific support in the subsequent tiers. The quality of the general education setting can be considered by comparing students' learning rates and achievement in a variety of classrooms across the same grade level. At the base of this high quality instruction is the

use of a scientifically based core curriculum which may rectify reading problems for students who are at risk (National Reading Panel, 2000).

In reading, high quality instruction should include a focus on phonemic awareness, phonics, fluency, vocabulary, and comprehension. Phonemic awareness skills can be taught and are vital to a child developing the ability to read (National Reading Panel, 2000). Direct instruction in phonics provides a large majority of students an opportunity to be successful (Foorman, Francis, & Fletcher, 1998). According to Morrow, Kuhn, and Schwanenflugel (2006), many educators assume that a student can become fluent if he or she can decode, but this is not necessarily true. Struggling readers may not become fluent readers incidentally or automatically. Struggling students need explicit instruction in fluency and many occasions for intense, fluency-focused practice (Hudson, Lane, & Pullen, 2005).

Fluency demonstrates a reciprocal relationship with comprehension; fluent readers do not have to methodically decode each word and can focus attention to the meaning of the text (Stecker, Roser, & Martinez, 1998). Vocabulary instruction should be thoughtfully and repetitively included in a variety of protocols utilizing both direct and indirect instruction (National Reading Panel, 2000). Instruction in comprehension requires the teaching of how the elements of the reader, the text, and the activity, all set within a context, affect understanding when reading (Consortium on Reading Excellence, Inc., 2008).

Tiers two and three are a school's line of defense in the battle of reducing the number of low performing students or students who may later be referred for disability

determination and special education programs (Johnson et al., 2006). According to Compton, Fuchs, and Fuchs (2006), timely, evidence-based interventions can be the determining factor for at risk students who return to the general education classroom or are referred for special education services. Immediate and powerful tiered interventions are systematically implemented when a student's screening results indicate a deficit (Buffum, Mattos, & Weber, 2009; Mellard, 2004).

Approximately 15% of the student population may not make sufficient reading gains based on core instruction alone (Griffiths, Parsons, Burns, VanDerHeyden, & Tilly, 2007). Using a multi-tiered system is an efficient way to utilize staff to provide students with the interventions in proportion to the needs demonstrated (Mellard, 2004). Although the number of tiers, frequency, duration, intensity of intervention, and the curriculum utilized may vary as much as the expertise of those implementing the RTI framework, the overall structure of a tiered system is similar. Intensive instruction for at risk students provides additional academic time focused on reading instruction and practice (Torgeson, 2002).

Group size is a critical characteristic of intervention. Intervention is provided in small groups with the group size becoming smaller as the intensity of the intervention increases. Typically, progress monitoring occurs one to three times per week for a course of nine to twelve weeks in which the intervention is provided by someone other than the classroom teacher (Johnson et al., 2006). Although who delivers the intervention at a particular school is contingent upon the staff composition, the interventionist's knowledge and quality of instruction influence student outcomes (Rowan, Correnti, & Miller, 2002). In one-on-one reading tutoring, Slavin et al. (2009) reported that certified

teachers were more successful than paraprofessionals or volunteers. However, all schools may not be able to provide one on one instruction utilizing certified teachers. Determinations regarding who provides intervention impact the intensity of instruction (Mellard, McKnight, & Jordan, 2010).

Vaughn (2003) explained that completion of intervention instruction can result in one of three outcomes: the student exits tier two and returns to only tier one instruction, the student remains in tier two and continues intervention, or the student's rate of progress and level of support needed warrants special education eligibility determination. Two approaches to providing intervention to students are described in the literature: standard treatment protocol and the problem solving approach. In some schools, a combination of the two has been implemented with the standard treatment protocol occurring first (Johnson et al., 2006).

To alleviate the high level of variability that is part of the collaborative based problem solving model, some researchers promote the Standard Treatment Protocol framework in which intervention for all struggling learners is consistent (Hollenbeck, 2007). At risk students are provided an intensive intervention in a small group setting outside of general education for a specified time period. These interventions are often scripted or structured and have demonstrated a likeliness of producing results for a great number of students (Center for Educational Networking, 2006).

Standard treatment protocol is typically used in reading research in which a student's responsiveness to the intervention is used as a measure of determining a reading disability (Vaughn, Linan-Thompson, & Hickman, 2003). In this model, the school-

based problem solving team is still an essential component as it is responsible for planning the intervention, supporting the implementation, monitoring progress, and making a summative evaluation of the student's response to the intervention (Center for Educational Networking, 2006).

The Problem Solving Model is a systematic, data-driven procedure that uses collaborative teaming to emphasize early classroom interventions, goal setting, data based decision making, and functional evaluation procedures (Marston, Muyskens, Lau, & Canter, 2003). In the problem solving model, struggling students receive support at tier two through school-based problem solving teams. These teams use a problem-solving process in which functional and behavioral assessments are used to identify why a student is not mastering the academic skills at the same pace as his or her peers (Center for Educational Networking, 2006). From these data, the team crafts an individualized intervention to address the specific need.

Universal Screening

A school nurse would use an eye chart to determine students who are having difficulty seeing. Students exhibiting difficulty with this task would be referred for a more in-depth vision assessment. Similarly, a teacher can use a screening measure to find students who may be at risk for having reading difficulties (Johnson et al., 2006). Universal screening is a procedure through which children may be identified as being at risk for reading difficulties and could benefit from additional instruction. Typically, this is a brief measure administered three times per year to all students in a school. Measures that are efficient, reliable, and reasonably valid should be utilized (What Works Clearninghouse, 2009).

According to Jenkins (2003), a screening measure should identify students who require additional assessment, must be practical, and must generate positive outcomes without consuming resources that could be better used elsewhere. Furthermore, Jenkins elaborated that screening must be accurate and that a screener is better to err on the side of providing false positives rather than false negatives. However, if the screener provides an elevated number of false positives, students may miss the opportunity to benefit from early intervention services because the personnel that could be providing intervention are occupied with assessment.

Accuracy in screening is also affected by the establishment of a cut score. Schools must determine guidelines for deciding when a student's performance around this dividing line warrants further investigation. The determination of this cut score is influenced by the use of a criterion referenced or normative comparison standard of performance. In criterion-referenced screening, a student must score at a specified level of aptitude whereas the normative comparison provides a comparison to an appropriate peer group. Criterion measures are often preferred due to the information provided relative to performance on specific skills.

Progress Monitoring

The assumption that students will benefit from high quality classroom instruction is fundamental to progress monitoring (Johnson et al., 2006). For students who are not responsive, alternate interventions can be provided and responsiveness to this instruction can be measured. Progress monitoring is a valid and efficient tool used to collect data that allow educators to determine an intervention's effectiveness and if any modifications are necessary (Johnson et al., 2006). These data provide a cumulative record

documenting a student's response to an intervention (Mellard, 2004). For instance, the progress of tier two students should be monitored weekly, bi-monthly, or monthly. Data collected should be used to decide whether students still require intervention support. Students making insufficient progress should receive a tier three intervention plan designed by a school-wide team (What Works Clearninghouse, 2009).

The National Association of State Directors of Special Education (NASDE) has summarized nine attributes for progress monitoring in the RTI process. To be effective, progress monitoring should:

1. Assess the specific skills embodied in state and local academic standards;
2. Assess marker variables that have been demonstrated to lead to the ultimate instructional target;
3. Be sensitive to small increments of growth over time;
4. Be administered efficiently over short periods;
5. Be administered repeatedly (using multiple forms);
6. Result in data that can be summarized in teacher-friendly data displays;
7. Be comparable across students;
8. Be applicable for monitoring an individual student's progress over time; and
9. Be relevant to development of instructional strategies and use of appropriate curriculum that addresses the area of need (National Association of State Directors of Special Education, 2005).

Johnson et al. (2006) point out that progress monitoring procedures have a role in all three tiers of instruction. In tier one, general screening procedures are used to decide

which students may be at risk by comparing their performance to a criterion measure. Progress monitoring in this tier can be used to determine if a student is making progress as anticipated in the general curriculum by displaying individual growth over time. Curriculum based measures (CBM) are often used in tier one to assess the skills covered within the curriculum in an alternating pattern. This patterning allows scores from different times of the school year to be compared to decide whether a student's performance is increasing, decreasing, or remaining steady (National Center on Student Progress Monitoring, 2006). Results from these data allow educators to determine instructional and curricular changes to support all students in reaching proficiency and to identify any student who may be in need of more extensive intervention in tier two and beyond.

The role of progress monitoring changes to some extent in tier two and three. In these tiers, progress monitoring determines whether the intervention is helping a student learn at a suitable rate (Johnson et al., 2006). Data collected allow educators to decide if a student no longer requires tier two support, if the intervention needs to be intensified, or if a student may need a special education referral. Timely decision making can occur if student progress using CBM is assessed twice per week, the results are charted, student progress is analyzed regularly, and decision making rules are followed to determine when a student is not making sufficient progress (Fuchs, Fuchs, Hintze, & Lembke, 2006; National Association of State Directors of Special Education, 2005).

Fidelity

Fidelity is conceptually defined as a measure of implementation of an intervention, program, or curriculum as it was researched or specified for use by the

developer (National Association of State Directors of Special Education, 2007; Gresham, MacMillan, Beebe-Frankenberger, & Bocian, 2000). Instructional fidelity measures are often assessed simply by a checklist of teaching behaviors that allows the observer to note what was used and for what duration (Mellard, 2004). School-level fidelity encompasses the integrity with which screening and progress monitoring processes are conducted and decision-making procedures are in place. Moreover, schools must examine fidelity at both the school level, such as the implementation of the RTI process, and at the teacher level with fidelity measures of implementation of instruction and progress monitoring (Johnson et al., 2006).

Several studies confirm the importance of fidelity including those completed by Foorman and Moats, Foorman and Schatschneider, Gresham et al., Kovaleski et al.; Telzrow, McNamara, and Hollinger, and Vaughn, Hughes, Schamm, and Kinger as cited in Johnson et al. (2006). These studies suggest that positive outcomes occur when there is fidelity of implementation at the school level, there is a high degree to which the selected interventions are empirically supported, and there is fidelity of intervention at the teacher level. Johnson et al. further detail the key components in general education that support a higher level of fidelity: following a systematic curriculum, providing effective and direct instruction, using specified instructional materials, using a checklist of key instructional components, video-taping or observing classroom instruction, graphing results against goals, and basing decisions regarding curriculum and instruction on data. Reschly and Gresham (2006) designated three key indicators of general education fidelity including that 80 to 85 percent of students pass tests, results improve over time, and a high percentage of students are on trajectory for proficiency.

In tier two and three, fidelity can be measured with a focus on method, frequency, and support systems (Johnson et al., 2006). According to Gresham (1989), the tools of observation, teacher questionnaires, and self report or video taping of lessons can be divided into two main categories of direct and indirect assessment. The frequency of these assessments can be influenced by the experience level of the teacher, the teacher's request for support, the overall performance of the class, and the amount of positive or negative change in special education referrals. An appropriate level of support must be provided to teachers through professional development or resource allocation to support them with intervention fidelity (Johnson et al., 2006).

Learning Disabilities

The National Joint Committee on Learning Disabilities (NJCLD) has defined learning disabilities (LD) as a:

> heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical skills. These disorders are intrinsic to the individual, presumed to be due to the central nervous system dysfunction, and may occur across the life span. Problems in self-regulatory behaviors, social perceptions, and social interaction may exist with learning disabilities but do not, by themselves, constitute a learning disability. Although learning disabilities may occur concomitantly, with other disabilities (e.g., sensory impairment, mental retardation, serious emotional disturbance), or with extrinsic influences (such as cultural differences, insufficient or

> inappropriate instruction), they are not the result of those conditions or influences (1998, p. 258a).

Learning disabilities are often diagnosed in children after they have entered school. Learning disabilities affect an estimated 4-6% of public school students (Cortiella, 2009). Students are only classified as learning disabled if the assumption can be made that it is not the result of an inadequate education, an absence of sensory deficits, such as hearing or visual impairments, an absence of serious neurological disorders which could impede learning, or the absence of major social and/or emotional difficulties which could impede learning (Siegel, 1999).

There are five common types of learning disabilities. Dyslexia, the most prevalent disability, is reflected by having trouble understanding written language. Students with dyscalculia have trouble with solving arithmetic problems and grasping math concepts. Students with dysgraphia struggle with letter formation and the ability to write within a defined space. Auditory and visual processing disorders afflict individuals with typical hearing and sight, resulting in difficulty comprehending and using verbal or written language. Non-verbal learning disabilities originate in the right hemisphere of the brain and result in problems with visual-spatial, intuitive, organizational, evaluative, and holistic processing functions (Cortiella, 2009).

In the 1980s and 1990s, the notion of early identification of students demonstrating reading difficulties appeared harsh to many educators who were versed in using a discrepancy model for the identification of learning disabilities. Schools and districts typically waited until the end of second or beginning of third grade before

making a determination that a student demonstrated substantial disabilities in reading (Gersten & Dimino, 2006). Although it may have appeared more humane to allow students a chance to mature, paradoxically, it was demonstrated in a longitudinal study that students struggling to learn to read prior to the end of first grade almost always remain poor readers (Juel, 1988). At present, the common sense approach of Response to Intervention (RTI) focuses on this early identification of students displaying difficulty.

RTI and LD Identification

The term Response to Intervention entered the public debate as a result of a presentation at the United States Department of Special Education's Learning Disabilities Summit; however, research relevant to the process has been collected for over 30 years (Griffiths et al., 2007). A transition from the traditional discrepancy model has been advocated based on the argument that the model in place for decades had outlived its usefulness (Hollenbeck, 2007; MacMillan, Gresham, & Bociam, 1998). MacMillan and Speece (1999) found that IQ testing for LD eligibility was not valid due to IQ's lack of predictability of classroom performance or specific educational need. MacMillan et. al. (1998) found that schools using the discrepancy model typically over-identify students as LD compared to researchers reviewing the scores collected by the school teams. Conversely, one reason RTI has been viewed as a long-awaited alternative to the discrepancy model is that teachers no longer have to wait for students to demonstrate failure before services can be provided (Bradley et al., 2007).

Additionally, the reauthorization of IDEA in 2004 brought many changes to special education regulations and included language to support states' option to consider using data collected in the RTI framework to determine eligibility for special education

(Center for Educational Networking, 2006). This alternative made available uses of a multi-tiered process of furnishing support to struggling learners while assessing the outcomes of this instruction. Data gathered through the multi-tiered system become part of a comprehensive evaluation used to determine the precise nature and existence of a learning disability.

Once identified, students with a learning disability are served through specially designed instruction to meet their unique needs. To achieve academic proficiency, students with a learning disability require intensive, explicit scientifically based instruction that is monitored on an ongoing basis. This specially designed instruction is delivered via general and special education across all grades and ages (Johnson et al., 2006).

School staff members' roles and responsibilities are dramatically changing as a result in this shift in school structures. Bender (2002) and Tomlinson (1999) suggested that all students can benefit through differentiating instruction. IDEA 2004 requires schools to provide a free and appropriate public education including special education and related services. Procedures for documenting instruction while monitoring student progress allow educators to make determinations for students who are not responding as desired (Johnson et al., 2006).

Discrepancy versus RTI

In 1977, guidance from the United States Office of Education stated that the criteria for determining a student with learning disabilities should be a discrepancy between the student's IQ and achievement (Fuchs et al, 2003). Since its inception, there

has been great debate surrounding the issue of using this model as a method of identifying students with LD (Lyon & Fletcher, 2001).

Over the last 25 years, the number of students identified as learning disabled has increased considerably. In the 1990s, the number of students identified as learning disabled increased thirty-eight percent with the largest increase (forty-four percent) being school-age children Many believe a major factor in this increase is the use of the discrepancy model in which educators often waited until the end of second or third grade for students to show a large gap between IQ scores and achievement (Lyon & Fletcher, 2001). Furthermore, although rates of learning disabilities have increased dramatically, many times students who are the most deserving of the label fail to be identified because a relatively low IQ score does not demonstrate a discrepancy from their low achievement scores (Fuchs et al., 2003).

Several meta-analyses and longitudinal studies of reading development have shown that students with IQ - achievement discrepancies are not unlike students who do not present IQ -achievement discrepancies in the nature or expression of their learning disability. Poor readers cannot be distinguished based on IQ (Fletcher, Lyon, Fuchs, & Barnes, 2007).

More recently districts and schools have been asked to abandon the discrepancy method of learning disability identification and adopt an alternative method: Response to Intervention (RTI) (Fuchs et al., 2003). Supporters claim RTI solves many problems associated with the IQ-discrepancy model. With RTI in place, it is possible to provide assistance to a greater number of struggling students. With a focus on providing

individualized and intensive instruction to struggling students, RTI separates students with disabilities from those who struggle academically because of insufficient prior instruction (Fuchs et al., 2003). This separation can lead to a reduction in special education enrollment and cost, as students are not falsely identified as LD at a high rate. Furthermore, some RTI approaches are non-categorical, avoiding the use of stigmatizing labels (Fuchs et al., 2003).

RTI capitalizes on the fact that manifestations of a reading disability, cognitive profile of strengths and weaknesses, patterns of growth in reading over time, and response to instruction do not vary by IQ. The presence or absence of a discrepancy should not be the determining factor as to whether a student is taught using appropriate methodology (Moats et al., 2010).

Criticisms of RTI for Identification

It has appeared that RTI is the best way to diagnose SLD, however, professional concern has been expressed whether this is truly the most effective way to approach specific learning disabilities identification (Berkeley, Bender, Peaster, & Saunders, 2009). Unexpected learning failure is excluded because the presence of average or above average cognitive ability may not be documented. If undocumented, the label of learning disabled may be given to those that are simply slow learners (Kavale, 2005). RTI is not able to differentiate specific learning disabilities from other disabilities, for example, mental retardation, emotional or behavioral disorders, and attention deficit disorder (Mastropieri & Scruggs, 2005).

Reynolds and Shaywitz (2009) suggested RTI models are being practiced without adequate research and support resulting in negative long-term effect on students with disabilities. They argue that as a diagnostic model, RTI lacks validity and provides little guidance about what to do instructionally after a child fails to respond to instruction and intervention. Furthermore, oversimplification of what constitutes an individual student's status as responding or not responding occurs (Mackenzie, 2009). False positives and false negatives arise when examining scores without the knowledge of a student's IQ.

RTI has also been characterized as another form of the discrepancy model. An individual student's response is compared to a peer in his class or other comparison group. This comparison and the fact that using RTI for identification produces different results for different children will cause RTI to face the same inconsistencies in measurement that plagued the discrepancy models of the past (Reynolds & Shaywitz, 2009).

Using RTI to identify a learning disability may help ensure that all children with special needs receive appropriate services. RTI appears to provide easier access to special education which may allow for a rush to judgment and the identification of false positives, or children who are incorrectly identified (Fuchs & Fuchs, 2006) .

Teacher Efficacy and RTI

Research has shown that the teacher is the most significant component in the effectiveness of classrooms (Darling-Hammond, 1997; Haycock, 1998; Marzano, 2003). As RTI has become increasingly implemented, research attention has turned to the process of implemenation and the impact it has upon the teachers and support personnel

(Nunn & Jantz, 2009). The self-belief that the teacher is effective in controlling the results of learning and behavior is teacher efficacy (Nunn & McMahon, 2000).

Teacher efficacy is influenced by the support, structure, and efficiency by which the teacher effectively controls sucessful experiences for students in the classroom (Erdem & Demirel, 2007). As teacher efficacy increases, the capacity to affect results also increases resulting in reinforced strength and direction of teacher-student interactions (Guskey & Passaro, 1994).

In a study of RTI involvement and RTI implementation variables associated with teacher efficacy, a substantive link was found between the teachers actions and what positive outcomes develop as a result of those actions (Nunn & Jantz, 2009). RTI professional development provided to teachers developed knowledge and confidence to support their capabilities to provide positive student learning outcomes in the classroom. Conversely, this study did not support a relationship between teacher efficacy of RTI implementation and the external control efficacy component which included variables influencing students lives outside of school such as home and family, community opportunities, presence of violence, drugs, or alcohol in the community, and whether the student comes to school ready and prepared to learn. The external variables for students over which teachers have little or no control caused considerable stress and frustration to teachers. They were viewed as obstacles to implementing interventions for students in need.

Leadership and RTI Success

The vision for successful RTI requires effective leadership. Building leadership must be dedicated to principles that ensure high levels of success for all students. This leadership must embody a collaborative style focused to ensure that all students will achieve. Successful building leadership is signified by frequent fidelity checks for curricula, interventions, and instruction to confirm that good intentions become successful actions. There is a dedication to the simple premise that decisions have been made based on the effect on student achievement. Successful RTI leadership is signified by strategic action (Kukic, 2008).

Another model for effective leadership with relevance to RTI is Covey's (1991) four roles of leadership: modeling, path finding, aligning, and empowering. The effective RTI leader models data-based decisions while building trust with all stakeholders to build a collaborative culture. The effective RTI leader combines trustworthiness, character, and competence into a style that empowers stakeholders to take the risks required to achieve success with all students. Path finding is matching the organization's passions with stakeholder needs. The aligning role of the effective RTI leader is to ensure that evidence-based practice is common practice. One person cannot empower another; however, the empowering leader must develop the conditions to allow followers to choose to be empowered. The empowering leader empowers staff to make instructional choices as long as those choices result in enhanced performance. The bottom line is that a successful RTI leader does whatever it takes to ensure student success (Kukic, 2008). Powerful principals are focused on the instructional core of personalized learning and getting results for every student (Fullan, 2010).

Evaluation of Tiered Instruction

There has been limited evaluation of the implementation of RTI as states shift to large-scale implementation (Hoover et al., 2008). In a report compiled one year after the final regulations for the IDEA were passed fifteen states had adopted an RTI model and nine of them were implementing the model on a large scale (Berkeley et al., 2009). Twenty-two states reported being in a development phase, ten states are providing guidance to schools and districts, and three states are not in the process of providing guidance or developing a model.

The National Center for Education Evaluation and Regional Assistance has reported that an Evaluation of RTI Practices for Elementary School Reading has been undertaken with the anticipated release of findings in 2013 (Institute of Education Sciences, 2011). This study plans to address effects on academic achievements of at risk students, outcomes of reading achievement and special education identification, and how RTI practices vary across schools. Although the schools participating are not identified at this time, the study will use a combination of regression discontinuity methods, time series comparisons, and descriptive data collection from school staff to investigate these areas.

Many schools and districts are attempting to evaluate RTI outcomes for students but not the fidelity of implementation. The fidelity of implementation of the RTI system is a critical component for RTI implementation (Kovaleski J. F., 2007). Additional research is needed to develop a feasible and targeted system for measuring implementation within an RTI system. Without such system, difficulty will arise when teachers are asked to interpret student response to intervention and make conclusions

about assessment and procedural decisions within the context of implementation (Keller-Margulis, 2012).

At the National Level

In a report published by the Institute of Education Sciences' National Center for Education Evaluation and Regional Assistance (2008), the impact of the national Reading First initiative was evaluated. Funds for Reading First implementation were provided to state education agencies according to the proportion of children aged five to 17 who live in the state and represent families with incomes below the poverty line, compared to the number of such children who reside in all states (US Department of Edcuation Office of Elementary and Secondary Education, 2002). The purpose of Reading First was to ensure that all children in America, including students of poverty, were able to learn to read by the end of third grade. Funding could be used to provide reading programs and professional development for educators to ensure that all teachers, including special education teachers, developed the necessary skills to use these programs effectively.

The Reading First Impact Study used a regression discontinuity design. This quasi-experimental method was selected because of the design's ability to produce unbiased estimates of program impact (Abt Associates & Rosenblum Brigham Associates, 2008). This design is also used when the evaluator cannot randomly assign targets to intervention and control groups, but could divide them on the basis of need or other condition (Rossi, Lipsey, & Freeman, 2004).

In designing the evaluation, schools eligible for the grant were rank ordered for funding based on a quantitative rating, such as an indicator of past student reading

performance or poverty within each district or site. A cut-point in the priority list was then determined to separate funded schools and non-funded schools. This process led to the conclusion that there should be no systematic differences between funded and non-funded schools except for the characteristic associated with the quantitative school ranking. In the study, 248 schools were studied, 125 of which were Reading First schools. Data were collected and analyzed through a variety of measures including assessments in reading comprehension and decoding, classroom observations of teachers' instructional practices in reading, teachers' organization and order, and students' engagement in print (Gamse, Jacob, Horst, Boulay, & Unlu, 2008).

The study demonstrated that Reading First produced a positive and significant impact on the amount of time spent on the five components of reading. Reading First also positively influenced professional development in scientifically based reading instruction, support of reading coaches, amount of reading instruction, and supports available for struggling readers. The program produced a positive and significant effect on decoding among first grade students, but was unable to produce a significant effect on comprehension test scores in grades one, two, or three.

At the State Level

Many states have begun evaluating their RTI models in a variety of ways at the state level. The Kansas Department of Education has contracted with WestEd to complete an external evaluation of the Kansas Multi-tier System of Supports (MTSS). Data collection for the evaluation will be conducted during 2011-2014 and will address

implementation, student outcomes, infrastructure, and sustainability of MTSS in participating schools, districts, and early childhood settings (Evaluation Summary, 2012).

Joseph Torgesen, representing the Florida Center for Reading Research and Florida State University, has published an article reporting the outcomes from Florida's Implementation of Reading First's tiered instruction model. To determine the outcomes, the percentages of students having serious reading difficulties and the rates of learning disabilities (LD) identification were tracked and compared. Students were defined as having significant reading difficulties if they performed below the 20th percentile on measures of pre-reading skills or measures of reading comprehension (Torgeson, 2009). Participating schools demonstrated a reduction in the percentage of their students identified as learning disabled in Grades K–3. The percentage of students identified as learning disabled at the end of kindergarten went from 2.1% to 0.4% from Year 1 to Year 3. Percentages for grades one, two, and three were 67%, 53%, and 42%, respectively.

At the basis of many RTI models is a focus on problem solving. Ohio uses a problem-solving model that includes collaborative consultation. The Ohio Intervention-Based Assessment (IBA) focuses on teaching students with evidence based curricula. Students that are not responding to the instruction are monitored by a multi-disciplinary team that follows a problem solving approach prior to referral to special education eligibility evaluation. A study was conducted to determine the relationship between the IBA and student outcomes and the level of fidelity with which the IBA was implemented. Data were collected on 227 schools by obtaining a problem solving worksheet where the teams recorded information related to the IBT components and the Evaluations Team Report (ETR) form that described the learning concerns interventions and progress

monitoring data. Teams submitted their documentation that reflected their most complete and accurate implementation of the problem solving process.

The authors used a Case Evaluation Instrument that utilized a five point Likert scale used to evaluate both fidelity and student change. With regard to fidelity of implementation, the average rating for all components was 3.28/5. The rating of 3 indicated that "some elements" of the problem solving components were documented. For student outcomes, results demonstrated a 4 which was defined as intermediate between no progress and significant progress. The authors indicated a significant relationship between student results and two of the problem-solving components. The relationship between student results and integrity of implementation was low (Telzrow, McNamara, & Holinger, 2000).

The Florida Problem Solving/RTI project provided evaluation data for the first two years of implementation in 34 pilot schools and seven demonstration districts (Castillo, Hines, Batsche, & Curtis, 2009). To evaluate if there was an increase in consensus, infrastructures, implementation, and district support of the pilot schools, researchers examined data collected through a beliefs survey, skills assessment, perception of skills survey, focus group interviews, a self-assessment, and checklists. Findings indicated that participants needed further support for applying skills acquired during the first two years of implementation and there was an increase in levels of implementation from year one, however the levels were still less than optimal.

W.A. Callender examined the Idaho results based model (RBM), which is a combination of a problem solving model and a standard protocol model (Callender,

2007). This study focused on special education placement and reading performance in approximately 150 elementary and secondary schools, of which approximately 60 were implementing the Idaho results based model. Special education placement data from 1999 to 2004 were examined. Nearly 1,400 K-3 students were separated into two groups: a RBM with an intervention plan group and a non RBM with similar reading performance but no intervention plan. These groups were evaluated on reading improvement. Findings indicated that students with an intervention plan improved considerably more in reading than did the non-RBM counterparts. Districts with at least one RBM school demonstrated a decrease of three percent in special education placements. During this time frame, statewide, overall enrollment increased by three percent and special education placements increased by one percent.

In Pennsylvania, RTI has been examined through the use of Instructional Support Teams (IST). A study conducted by Kovaleski, Gickling, Morrowm, and Swank (1999) was designed to examine whether students receiving instructional support display higher increases on time on tasks, task completion, and task comprehension measures than similar students that do not have access to the IST process. The school relationship between level of implementation (high or low) and student progress on the same measures was examined. Data were collected from 492 students attending 117 schools. Schools were categorized by program start date. One group included 232 students and the other included 260 students. Comparison groups of 237 at risk, non-IST students from 36 non-IST schools and 1,189 average students sampled from all 153 schools were formed.

Time on task scores were recorded on ten minute intervals. Task completion was calculated by dividing the work attempted by the amount of work expected. Task comprehension scores were rated zero to four based on questioning each student directly after completing an assigned task. Results demonstrated that high implementation IST groups showed greater gains than non-IST groups on the three measures. The low implementation IST groups demonstrated lesser gains and showed regression between the posttest and follow-up across the measures. The high implementation schools demonstrated better results from posttest to follow-up on the measures. A significant difference between low implementation and non-IST schools was not found on any measure (Kovaleski et al., 1999).

Peterson, Prasse, Shinn, and Swerdlik (2007) developed a study to examine the Illinois flexible service delivery system (FSDS). Between 1999 and 2003, data were collected from 556 K-8 students from 26 FSDS model schools across the state. To be included in the sample, the sites had to have been implementing the FSDS for at least two years, have staff that had received professional development in the skills essential to the implementation of FSDS, and the implementation of FSDS was proceeding in an acceptable manner based on the Flexible Service Delivery Rubric of Quality Indicators. To determine if FSDS was effectively meeting the needs of the students, curriculum based measures (CBM) were collected in reading. There was a slight rise in average correct words per minute. Referrals for special education remained comparatively stable with only a 1% change in placement data.

The Center for Evaluation and Education Policy (CEEP) at Indiana University, on behalf of the Indiana Department of Education (IDOE), conducted a study to measure the

level of awareness and comprehension of the RTI framework, degree of school corporations' implementation of RTI, corresponding professional development, and feedback from educators about the role of the Indiana Department of Education in providing technical assistance to support school corporations in the exploration, implementation, and sustained practice of the RTI framework (Spradlin, et al., 2009). Results related to knowledge and implementation indicated 65% of respondents reported themselves as having either a great deal or a fair amount of knowledge about RTI. Of those that answered, 93% of respondents indicated their school was in the process of adopting or implementing RTI: 25% of respondents said their school corporation/school was in the exploration and conceptualization stages of RTI (level 1), 60% of respondents indicated their school corporation/school was in the initial implementation stage (level 2), 13% of respondents answered their school corporation/school has fully implemented RTI (level 3), and 2% of respondents indicated that their school corporation/school has reached the level of sustained practice (level 4).

The Colorado Department of Education used RTI Implementation Rubrics to collect data on how 109 schools in 15 districts are doing across the six components comprising RTI implementation in Colorado: Leadership, Problem Solving, Curriculum and Instruction, Assessment, Climate and Culture, and Family and Community Partnering (Colorado Department of Education, 2010). The section on leadership referred to the RTI related tasks of leaders: creating a clear vision and commitment to the RTI process, inspiring, facilitating, and monitoring growth & improvement, along with holding high standards for everyone. Leaders were also rated on their abilities of promoting the essential components of RTI and the significant systemic changes needed

to implement RTI with fidelity, committing resources, time, and energy to building capacity and sustaining the momentum needed for change, and supporting collaborative problem-solving approaches with colleagues, families, learners, and community members to build partnerships. The Problem-Solving Process (PS) section had respondents rate how their school was doing in creating a collaborative culture in which the PS model is used to define the problem, analyze contributing factors to the problem, develop a plan, monitor its implementation, and adjust the plan as needed.

Curriculum was rated on the level to which it embodied 21st century skills, was comprehensive, was connected within and across content areas, was relevant and applicable, and was guaranteed, viable, and appropriate for the instructional level of each individual student. Respondents rated assessment based on whether schools screened students to identify those at risk, used diagnostic assessments to determine factors contributing to at-risk status, used formative assessments (progress monitoring) to monitor the effects of instruction, and used summative assessments to make outcome-based decisions about mastery of skills and standards. Respondents rated school climate based on how the school community welcomes, honors, supports, and builds relationships with diverse learners and families to increase academic and social emotional outcomes for all. Family and community partnering effectiveness was based on levels in which stakeholders share responsibility for learners' success by establishing and sustaining trusting relationships, understanding and integrating family and school culture, maintaining reciprocal communication, engaging in collaborative problem-solving, coordinating learning at home, school and in the community, and acknowledging and celebrating progress.

Respondents were asked to rate their schools as emerging (establishing consensus), developing (building infrastructure), operationalizing (gaining consistency), or optimizing (innovating and sustaining) for each of these areas. Results indicated a majority of respondents rated their school as in the developing phase for each component, with the exception of the Climate and Culture component. Respondents rated this component as operationalizing, one percentage point higher than developing.

At the School and District Level

The Minneapolis problem solving model (MPSM) was examined to evaluate RTI effectiveness. Data were examined on special education placements and achievement prior to and following the MPSM implementation. The number of students needing special education remained constant. Achievement data demonstrated similar levels of performance and growth with students traditionally identified for special education and students needing alternative programming through the use of the MPSM. The authors used an odds-ratio analysis for examining disproportion for students of color. The authors analyzed data for five years and discovered that in the Minneapolis Public Schools, the odd ratios for African American students identified as having LD or MMI was near 2.0 (Martson, Muyskens, Lau, & Canter, 2003).

Bollman, Silberglitt, and Gibbons (2007) conducted a study to examine the impact of the St. Croix River education district model (SCRED). This study was comprised of data collection across the five districts. Data included the percentages passing reading curriculum based measures (CBM), benchmark scores for students in grades K-8, reading CBM scores at or below the 10^{th} percentile for students in grades 1-6,

and prevalence rates of special education identification (Bollman, Silberglitt, & Gibbons, 2007). Examination of the data demonstrated a reduction of students achieving at the lowest level, while the overall percentage of students attaining the grade level standard improved. Overall student reading outcomes reflected improvement based on the percentages of passing CBM benchmark scores. The prevalence rates for special education also decreased.

Vaughn et al. (2003) evaluated the exit group model (EGM). The study examined 45 second grade students at risk for reading disabilities based on teacher recommendations and scores on a screening measure used within three schools. Students were assessed again following ten weeks of supplemental instruction. If they met exit criteria, students no longer were provided supplemental instruction. Students who did not meet exit criteria received additional instruction for up to 30 weeks through 10 week increments. The analysis of findings indicated: 11 students did not exit by the end of the 30 weeks; however, they did demonstrate improved reading scores.

The Standard-Protocol Mathematics Model (SPMM), which focused on mathematics outcomes and relied on the universal screening of level of achievement, has been evaluated by Ardoin, Witt, Connell, and Koenig (2005). To determine what degree a class-wide intervention and individual intervention improved mathematics outcomes, 14 fourth grade students were enrolled in one of two classrooms that housed a total of six mathematics classes. Participants in the study were assigned to the two lowest sections of mathematics instruction. After screening, a class-wide intervention was implemented in response to the screening data that indicated a class-wide skills deficit. Following the intervention, five students reflected the need for further intervention.

In an evaluation of the System to Enhance Educational Performance's (STEEP) implementation in five elementary schools, VanDerHeyden et. al. (2007) examined the number of initial evaluations and percentages of children who qualified for services through a baseline, across schools design. The evaluation concluded an increase in evaluation efficiency raising the number of evaluations resulting in special education placement from a little over one half to nearly 70% placement.

Two schools participated in an evaluation of Tiers of Reading Intervention (TRI) by O'Connor, Harty, and Fulmer (2005). In this study, 100 students in each of grades K-3 were tracked for reading achievement in word attack, passage comprehension, and fluency compared to a control group. Students receiving interventions from university researchers showed improvement on all reading measures.

The Behavior Support Model (BSM) is a standard protocol response to intervention model focusing on classroom behavior support. After staff was trained by the university researchers, ten students from one elementary school were selected for the study. These students participated in a check out system documenting goals and parent signatures. Time-series data were collected across five phases: baseline, and when attaining 70% of points, 75% of points, 80% of points, and 90% of points. Four students did not achieve desired results in the first study. These students received a function-based intervention plan. Time-series data were collected. There were decreases in both office referrals and teacher perception of problem behavior (Fairbanks, Sugai, Guardino, & Lathrop, 2007).

Summary

Response to intervention is a tiered instructional model focused on high quality core instruction followed by levels of targeted and intensive support as needed for at-risk students. Although the number of tiers comprising the framework may vary, typically RTI is implemented following either a standard treatment protocol model or a problem solving model. Both models are comprised of the components of tiered instruction, universal screening, progress monitoring, and fidelity. The focus on data-driven instruction as a part of this framework has allowed RTI to become welcomed by many as a long awaited alternative to the discrepancy model utilized for determining a learning disability. However, critics of the framework suggest students may continue being inaccurately identified as the student's achievement will still be compared with a peer group.

CHAPTER THREE: RESEARCH METHODS

Introduction

This chapter describes the research design, population, instrument, data collection methods, and statistical analyses used in the study. The chapter is organized into the following sections: Research Design, Population and Sample, Instrumentation, Data Collection and Analysis, and Limitations.

Research Design

A cross-sectional research design was utilized to provide a snapshot of implementation levels of elementary schools at one moment in time (Fink, 2003). This type of study provided an opportunity to gather information to describe implementation levels from a large number of individuals in a relatively short period of time. Cross-sectional studies are the best way to determine commonness of something and may reveal associations that could be more rigorously investigated in a follow up study. Furthermore, cross-sectional studies are likely to have a study population that is representative of the larger target population.

Population and Sample

West Virginia elementary schools are required by West Virginia state code §18-5A-6 to have established a curriculum team comprised of the principal, the counselor designated to serve that school, and no fewer than three teachers representative of the grades taught at the school (West Virginia Code, 2011). The population for this study consisted of the members of West Virginia's elementary school curriculum teams. The West Virginia Department of Education reported 435 elementary schools statewide

(School and District Data, 2011) . These schools varied slightly in grade level configuration (K-2, K-3, K-4, K-5, K-6, K-8, K-12) but all schools included grades which were required by West Virginia special education policy to have RTI implemented in the area of reading by July 1, 2009.

The population for this study consisted of the estimated 2,175 curriculum team members in West Virginia's 435 elementary schools that included grades K-3. The population estimate (N=2,175) was calculated by multiplying the required minimum number of curriculum team members by the 435 elementary schools. The entire population was included in the study.

Instrumentation

The survey instrument used in this study was a researcher adapted version of *New York State's Self-Assessment Tool for RTI Readiness and Implementation* (New York State Response to Intervention Technical Assistance Center, 2009). This instrument included best practice indicators of RTI implementation and key principles of the RTI policy framework. A copy of the version of the instrument used in this study is included in Appendix A.

The original instrument was developed by consortium members of the New York State Response to Intervention Technical Assistance Center (NYS RTI TAC) in collaboration with personnel from the New York State Education Department (NYSED) Office of Vocational & Educational Services for Individuals with Disabilities (New York State Response to Intervention Technical Assistance Center, 2009). The instrument was designed to assist individual schools and/or districts in evaluating current levels of RTI

readiness and implementation and to facilitate development of an RTI implementation plan. The researcher formally requested permission from New York State's Response to Intervention Technical Assistance Center to adapt the instrument to incorporate selected demographics and language specific to West Virginia's K-3 reading model. No response was received by the researcher to either the written or electronic requests for permission.

The adapted instrument concentrates on five components of RTI: Multi-tiered Instruction, Assessment, Infrastructure, Leadership, and Teaming/Collaboration. The original instrument also contained sections on Parent Involvement and Professional Development, which were not included in the adapted instrument due to the length of the instrument. Questions were reworded for use with an appropriate Likert scale and to use vocabulary consistent with the West Virginia K-3 reading model, such as core, targeted, and intensive instruction describing tiers one, two, and three.

Section one of the revised instrument requested demographic information including school size and location, as well as information regarding the school's participation in selected statewide reading initiatives. Sections two, three, and four requested information about the multi-tier system including core, targeted, and intensive instruction. Questions were organized into sub-categories for each tier. Sections five and six focused on screening and progress monitoring administration and use of data attained. Section seven contained five questions related to the infrastructure of the school. Section eight focused on leadership capacity and principal's actions relating to RTI. Section nine included seven items regarding teaming, collaboration and the problem-solving team at the school.

The modified version of the instrument was reviewed by a panel of experts (Appendix B) to determine content validity. Content validity is the degree to which a test measures the intended content area and is present when a test adequately samples the appropriate content area (Gay, 1996). Panel members were asked to verify that all sub-areas of RTI have been included and that the components represented were appropriate in proportion to the other components. They were also asked to review the instrument for clarity and fidelity to the West Virginia K-3 reading model.

Panel members included a former state level RTI coordinator, a district level elementary curriculum specialist, a regional special education director, an elementary principal, and an RTI specialist. These individuals have demonstrated knowledge and expertise in the RTI process through participating in planning, developing, and implementing RTI in their schools and/or districts. Panel members provided feedback via email with follow up telephone conversations as necessary. Minor editorial changes were made as a result of this feedback.

A small pilot administration of the instrument was conducted following completion of the validation study. The survey was administered to three individuals representative of the study population. Respondents were asked to provide feedback regarding the instrument. No additional revisions were necessary.

Data Collection

An email was sent to West Virginia elementary principals detailing the purpose of the study (Appendix C). This communication requested the principals share the upcoming email containing a link to an electronic version of the survey instrument with

members of the school's curriculum team that participate in the decision making related to RTI implementation. Respondents had from October 31, 2011 to December 13, 2011 to access the survey.

Data Analysis

Data collected for research questions one and two were analyzed using a one-sample *t*-test. Mean scores for each attribute, component, and the total were compared to mean scores from a hypothetical normal distribution to determine if the observed means were significantly different for the hypothetical means. Data collected for research question three were analyzed using mean scores and an ANOVA or an independent samples *t*-test to determine if there were statistically significant differences in the levels of implementation based on the selected attributes.

Limitations of the Study

The methods used in this study were subject to the following limitations:

1. Given that the data were self-reported, accuracy of the data is limited to the ability of respondents to carefully read and adequately respond to the survey questions.
2. The generalizability of the findings may be limited because of the sample size. As respondents completed the inventory, the number of respondents completing each section diminished, especially in the latter sections, which is an indicator that perhaps the inventory was too long for completion in one sitting.
3. There could have been confusion on the part of some respondents as the West Virginia Department of Education released the announcement of the shift to a focus on Support for Personalized Learning (SPL) just prior to the time the *RTI Implementation Inventory* link was open for data collection.

Summary

The purpose of this chapter was to describe the methods used to conduct this study. A cross-sectional survey design was used to examine RTI implementation levels and the differences between RTI implementation levels and school characteristics. A total of 435 elementary schools was invited to participate in a survey. One-sample *t*-test, independent sample *t*-test, and ANOVA were used to determine the existence of any statistically significant differences among the study variables.

CHAPTER FOUR: PRESENTATION AND ANALYSIS OF FINDINGS

Introduction

The purpose of this study was to describe the levels of RTI implementation as perceived by members of school curriculum teams in West Virginia elementary schools. Implementation levels were investigated for total RTI implementation and for each of the major components of the RTI model; core instruction, targeted instruction, intensive instruction, screening, progress monitoring, infrastructure, leadership, and teaming/collaboration. Secondly, the study sought to determine if there were any differences in perceptions of RTI implementation levels by school curriculum team members based on selected demographic and attribute variables. This chapter is organized into the following sections: (a) data collection, (b) respondent characteristics; (c) major findings for each research question investigated in this study; (d) ancillary findings, and (e) a summary of the findings.

Data Collection

Following approval of the Marshall University Institutional Review Board (IRB) (Appendix D), principals of 435 West Virginia elementary schools containing grades K-3 were pre-notified via an email on October 26, 2011(Appendix C) and invited to participate in the study and to forward to the curriculum team members. Five emails were returned as undeliverable. In a follow-up email on October 31, 2011, principals received an email containing the link to share with curriculum team members (Appendix A). Additional follow-up emails were sent on November 10, 2011, November 15, 2011, November 28, 2011, and December 7, 2011 as reminders to principals to request that they forward the survey if they had not done so and to inform them when data collection

would close. Data collection was closed on December 13, 2011 and 285 curriculum team members participated in the study.

Respondent Characteristics

Section one of the survey requested respondents respond to demographic and attribute questions. The data requested included school enrollment, participation in professional development initiatives, participant role in the school, socioeconomic status, AYP, and Title I status of the school, role of the individual providing interventions, and principal tenure. Respondents also provided information regarding the presence of faculty belief in RTI, existence of an evaluation plan for RTI, and the availability of an electronic data management system. Data related to school characteristics are presented in Table 1 and RTI related school characteristics are presented in Table 2.

As curriculum team members, survey participants were asked to identify their role in the school. Due to the limited number of respondents selecting special education teacher, Title I teacher, or other, these responses were collapsed into one group of other professional educators. The percentage of respondents identifying themselves as administrators was 38% (n-104), while 40.1% (n=110) were classroom teachers, and 21.9% (n=60) were other professional educators (e.g. counselors, specialists, etc.).

Respondents were asked to provide data about the number of students in the school in which they were assigned in 2011-2012. For purposes of analysis and because of a small number of responses in the group for school enrollment of less than 100, enrollment was collapsed into four groups: schools with less than 200 students, and schools with 201-300, 301-400, and 401 or more students. Twenty-seven percent (n=76)

of the respondents indicated their school's enrollment to be 200 or less students. Twenty-nine percent (n=80) reported an enrollment of 201-300 students, 17% (n=48) reported an enrollment of 301-400 students, and 26% (n=72) reported an enrollment of 401 or more students.

Survey respondents were also asked to describe the socioeconomic status of their school using the percentage of students qualifying for free or reduced meals as the measure. The percent of respondents reporting less than 35% of students approved for free or reduced price meals was eight percent (n=23), while 23% (n=63) reported between 36% and 50% of students in their schools as being approved for free or reduced price meals, 46% (n=125) reported free and reduced price lunch levels of between 51% and 75%, and 23% (n=62) reported that 76% or more of the students in their schools were approved for free or reduced price meals.

Respondents were asked to identify all of the role groups in their schools that were responsible for providing targeted and intensive interventions. The percent of respondents reporting interventions in their schools were delivered by classroom teachers was 77% (n=213). Sixty-seven percent (n=185) indicated that interventions were delivered by special education teachers, and 60.4% (n=166) indicated interventions were delivered by Title I teachers. The percent of respondents reporting that a speech-language pathologist delivered interventions was 12% (n=35). Almost four in 10 (38.9%) of the respondents reported intervention instruction was delivered by part-time interventionists whereas 24% (n=66) reported intervention instruction was delivered by full-time interventionists.

Respondents were also asked to indicate if their school received Title I funding. The percent of respondents reporting assignment to a school that does receive Title I funding was 64% (n=177), while 35.4% (n=97) reported their school did not receive Title I funding. For the 2010-2011 school year, 62.4% (n=171) of respondents reported their school made AYP while 37.6% (n=103) reported their school did not.

Table 1

Characteristics of Respondents' Schools

School Characteristic	n	%
Enrollment		
<200 students	76	27.5
201-300 students	80	29.0
301-400 students	48	17.4
401+	72	26.1
Socioeconomic Status		
Low Poverty	23	8.4
Medium poverty	63	23.1
High Poverty	125	45.8
Very High Poverty	62	22.7
Intervention Providers*		
Classroom Teachers	213	77.5
Special Education Teachers	185	67.3
Title I	166	60.4
Part-Time Interventionists	107	38.9
Full-Time Interventionists	66	24.0
Speech-Lang. Pathologist	35	12.7
Title I Funding		
Yes	177	64.6
No	97	35.4
2010-2011 AYP		
Yes	171	62.4
No	103	37.6
Prof. Dev. Opportunities*		
RTI Demonstration	60	21.1
WVDE K-3 Reading Model	56	19.6
Reading First	42	14.7
Principal Tenure		
Prior to July 1, 2009	176	64.2
After July 1, 2009	98	35.8

*Duplicated Count N=285

Respondents were asked to indicate if their school had participated in any of three major RTI professional development initiatives. Sixty respondents (21.1%) reported their schools had participated in the RTI demonstration school initiative, 19.6% (n=56) participated in the WVDE K-3 reading model training, and 14.7% (n=42) participated in the Reading First initiative. Respondents were also asked to provide information regarding the service history of the current principal. Responses indicated 64.2% (n=176) assumed the principalship prior to July 1, 2009, and 35.8% (n=98) became principal after July 1, 2009.

Almost three-fourths (74.2%) of the respondents indicated they believed that the majority of faculty and staff in their school believed RTI is beneficial to all students. Respondents were also asked whether there was a plan for evaluating the effectiveness of RTI implementation in their schools. One hundred and ninety-seven respondents indicated that their schools did have such a plan. Respondents also reported that 48.9% (n=133) of their schools use an electronic data management system for maintaining student RTI data.

Table 2

RTI Related School Characteristics

School Characteristic	n	%
Believe RTI benefits all students		
Yes	201	74.2
No	70	25.8
Evaluation plan for RTI		
Yes	197	72.4
No	75	27.6
Electronic data management		
Yes	133	48.9
No	139	51.1

N=285

Major Findings

Major findings are organized around each research question investigated in this study. The major findings are followed by a section on ancillary findings, including data on instrument reliability. A summary of the findings concludes the chapter.

Research Question One: What is the overall level of RTI implementation in West Virginia's elementary schools?

Respondents were asked to indicate the perceived level of implementation in their school on each of 64 attributes related to the implementation of RTI in reading. These 64 items reflected eight components of RTI including core instruction, targeted instruction, intensive instruction, screening, progress monitoring, infrastructure, leadership, and teaming/collaboration.

Means and standard deviations are presented for each of the 64 attributes. A one-sample *t*-test was used to compare the sample mean for each attribute to the mean (M=3.0) from a hypothetical normal distribution. An overall implementation level score was also calculated by summing the responses to each of the 64 individual survey items. A one-sample *t*-test was then used to compare the total sample mean to the mean (M=128.0) from a hypothetical normal distribution. These data, organized around the eight components of RTI and a section on total implementation level, are discussed in the following sections.

Multi-tiered System: Core Reading Instruction

Respondents were asked to identify the levels of implementation for six attributes of core reading instruction in their schools. Data for each core reading instruction attribute are presented in Table 3.

Mean scores for the six attributes ranged from a low of 4.12 to a high of 4.59. The highest mean scores were related to the extent to which the five components of reading were addressed (M=4.59, SD=.55), t=45.48, $p < .001$, the provision of a 90-minute reading block (M=4.43, SD=.90), t=25.42, $p < .001$, and the extent to which the core instruction reflects systematic, explicit instruction (M=4.36, SD=.67), t=32.25, $p < .001$. The remaining three attributes related to the implementation of core instruction included the extent to which core instruction was differentiated based on the needs of all students (M=4.27, SD=.77), t=26.22, $p < .001$, the extent to which core instruction was routinely checked for fidelity (M=4.26, SD= .88) t= 22.97, $p < .001$, and whether core instruction met the needs of at least 80% of the students (M=4.11, SD= .79) t= 22.22, $p < .001$.

Table 3

Means, Standard Deviations, and One-sample t-test Results for Core Reading Instruction Attributes

Core Reading Attribute	M	SD	*t*
1. Core instruction addresses the 5 components of reading.	4.59	0.55	45.48***
2. Core instruction meets the needs of at least 80% of ALL students as demonstrated by benchmark assessments.	4.11	0.79	22.22***
3. Core instruction reflects systematic, explicit instruction.	4.36	0.67	32.35***
4. Core instruction is provided during a 90-minute block per day.	4.43	0.90	25.42***
5. Core instruction is differentiated based on the needs of ALL students in the core program.	4.27	0.77	26.22***
6. Core instruction is routinely checked for fidelity (checklists, walk-throughs, etc.).	4.26	0.88	22.97***

Scale: 1-Never, 2-Infrequently, 3- Sometimes, 4-Usually, 5-Always N=285

***p < .001 on one sample *t*-test compared to normal distribution

Multi-tiered System: Targeted Intervention

Respondents were asked to identify the levels of implementation for eleven attributes of targeted intervention in their schools. Data for each of these attributes are presented in Table 4.

Mean scores for the eleven attributes ranged from a low of 4.33 to a high of 4.72. The highest mean scores were related to the extent to which progress is evaluated by progress monitoring assessment data (M=4.72, SD=.54), t=49.30, $p < .001$, interventions are implemented by staff knowledgeable about the student needs (M=4.63, SD=.62), t=40.58, $p < .001$, interventions are matched to student needs (M=4.52, SD=.52), t=36.02, $p < .001$, and interventions are implemented by staff trained in the needed area of instruction (M=4.5, SD=.64), t=35.87, $p < .001$.

Following closely in mean scores were the following: targeted interventions are delivered in small homogenous group formats (M=4.47, SD=.71), t=31.85, $p < .001$, targeted interventions available in my school are research-based (M=4.46, SD=.71), t=31.61, $p < .001$, targeted interventions are offered in addition to the 90 minutes provided in core reading instruction (M=4.42, SD=.9), t=24.29, $p < .001$, targeted instruction is consistent with core instruction in terms of instructional strategies (M=4.42, SD=.68), t=32.32, $p < .001$, and targeted interventions are implemented consistently as specified by research or program (M=4.42, SD=.68) , t=31.95, $p < .001$. The lowest mean scores were related to the extent to which instruction is consistent with core instruction in terms of vocabulary (M=4.36, SD=.74), t=28.00, $p < .001$, and whether targeted interventions are provided as soon as student at-risk status is determined (M=4.33, SD=.76), t=27.10, $p < .001$.

Table 4

Means, Standard Deviations, and One-sample t-test Scores for Targeted Intervention Attributes

Targeted Intervention Attribute	M	SD	*t*
1. Targeted interventions available in my school are research-based.	4.46	0.71	31.61***
2. Targeted interventions are matched to targeted students' needs.	4.52	0.65	36.02***
3. Targeted interventions are offered in addition to the 90 minutes provided in core reading instruction.	4.42	0.90	24.29***
4. Targeted instruction is consistent with core instruction in terms of vocabulary.	4.36	0.74	28.00***
5. Targeted instruction is consistent with core instruction in terms of instructional strategies.	4.42	0.68	32.32***
6. Targeted interventions are implemented by staff knowledgeable about the student needs.	4.63	0.62	40.58***
7. Targeted interventions are implemented by staff trained in the needed area of instruction.	4.50	0.64	35.87***
8. Targeted interventions are implemented consistently as specified by research or program.	4.42	0.68	31.95***
9. Targeted interventions are delivered in small homogenous group formats (up to 6 students per group).	4.47	0.71	31.85***
10. Targeted interventions are provided as soon as student at-risk status is determined.	4.33	0.76	27.10***
11. Targeted interventions progress is evaluated by progress monitoring assessment data.	4.72	0.54	49.30***
Scale: 1-Never, 2-Infrequently, 3- Sometimes, 4-Usually, 5-Always	N=285		

***p < .001 on one sample *t*-test compared to normal distribution

Multi-tiered System: Intensive Intervention

Respondents were asked to identify the levels of implementation for six attributes of intensive intervention in their schools. These data are presented in Table 5.

Mean scores for the six attributes ranged from a low of 3.85 to a high of 4.67. The highest mean scores were related to the extent intensive intervention progress is evaluated by progress monitoring assessment data (M=4.67, SD=.59), t=43.37, $p < .001$, intensive interventions are research-based (M=4.54, SD=.69), t=34.08, $p < .001$, and the extent to which intensive intervention is implemented by staff knowledgeable about student needs and trained in the needed area of instruction (M=4.54, SD=.68), t=34.70, $p < .001$. The remaining three attributes related to the implementation of intensive instruction included the extent to which intensive interventions are implemented on a consistent basis at the fidelity level that is specified by research or program (M=4.36, SD=.77), t=27.10, $p < .001$, intensive interventions are delivered in groups smaller than Tier 2 (M=4.33, SD= .85), t= 24.09, $p < .001$, and whether intensive intervention is offered in addition to the 90 minutes provided in core reading instruction (M=3.85, SD= 1.15), t= 11.34, $p < .001$.

Table 5

Means, Standard Deviations, and One-sample t-test Scores for Attributes related to Intensive Intervention

Intensive Intervention Attribute	M	SD	*t*
1. Intensive intervention is offered in addition to the 90 minutes provided in core reading instruction (at least 45 minutes per day, 5 times per week).	3.85	1.15	11.34***
2. Intensive interventions are delivered in groups smaller than Tier 2.	4.33	0.85	24.09***
3. Intensive interventions are implemented on a consistent basis at the fidelity level that is specified by research or program.	4.36	0.77	27.10***
4. Intensive interventions are research-based.	4.54	0.69	34.08***
5. Intensive intervention is implemented by staff knowledgeable about the student's needs and trained in the needed area of instruction.	4.54	0.68	34.70***
6. Intensive intervention progress is evaluated by progress monitoring assessment data.	4.67	0.59	43.37***

Scale: 1-Never, 2-Infrequently, 3- Sometimes, 4-Usually, 5-Always N=285

***p < .001 on one sample *t*-test compared to normal distribution

Assessment: Screening

Respondents were asked to identify the levels of implementation for eight attributes of screening in their schools. Data for each attribute are presented in Table 6.

Mean scores for the eight attributes ranged from a low of 3.61to a high of 4.75. The highest mean scores were related to the extent the regular schedule established for screening all students was followed (M=4.75, SD=.57), t=46.38, p < .001, whether established screening arrangements were followed (M=4.65, SD=.58), t=42.47, p < .001,

whether screening/benchmarking data are routinely shared at staff meetings and/or grade level team meetings (M=4.47, SD=.83), t=26.72, $p < .001$, and the extent to which training relative to administration of screening measures has been provided to staff prior to screening (M=4.46, SD=.78), t=28.09, $p < .001$. The remaining attributes related to screening included screening data from each administration are graphed according to grade level and classroom per skill area assessed (M=4.35, SD=.81), t=24.92, $p < .001$, screening data accurately to determine at-risk status (M=4.21, SD= .68), t= 26.91, $p < .001$, decision rules based on local or national norms are used to identify students needing differentiated instruction or additional intervention (M=4.01, SD=1.41), t=10.79, $p < .001$, fidelity checks of screening procedure and administration are conducted on a regular basis (M=3.88, SD= 1.14), t= 11.47, $p < .001$, and whether refresher practice sessions are provided prior to each screening administration (M=3.61, SD= 1.24) , t= 7.40, $p < .001$.

Table 6

Means, Standard Deviations, and One-sample t-test Scores for the Screening Component of Assessment Attributes

Assessment Attribute	M	SD	*t*
1. The regular schedule established for screening ALL students (minimum of 3 times per year) has been followed.	4.75	0.57	46.38***
2. Established screening arrangements (who, what, where, and when) are followed.	4.65	0.58	42.47***
3. Training relative to administration of screening measures has been provided to staff (teachers, interventionists, administrators) prior to screening.	4.46	0.78	28.09***
4. "Refresher" practice sessions are provided prior to each screening administration.	3.61	1.24	7.40***
5. Fidelity checks of screening procedure and administration are conducted on a regular basis.	3.88	1.14	11.47***
6. Screening data accurately determine at-risk status.	4.21	0.68	26.91***
7. Screening data from each administration are graphed according to grade level and classroom per skill area assessed.	4.35	0.81	24.92***
8. Screening/benchmarking data are routinely shared at staff meetings and/or grade level team meetings.	4.47	0.83	26.72***
Scale: 1-Never, 2-Infrequently, 3- Sometimes, 4-Usually, 5-Always	N=285		

***p < .001 on one sample *t*-test compared to normal distribution

Assessment: Progress Monitoring

Respondents were asked to identify the levels of implementation for thirteen attributes of screening in their schools. Data for each attribute are presented in Table 7.

Mean scores for the thirteen attributes ranged from a low of 3.75 to a high of 4.50. The highest mean scores were related to having followed established progress monitoring arrangements (M=4.50, SD= .70*), t*= 31.60, p < .001, staff received training in the administration of progress monitoring measures (M=4.46, SD=0.81*), t*=24.40, p < .001, staff having received training in the interpretation of progress monitoring measures (M=4.36, SD=0.82*), t*=26.48, p < .001, and progress monitoring tools including curriculum based (CBM) and informal measures (M=4.34, SD=0.91*), t*=21.71, p < .001.

Next in the ranking were the following attributes: progress monitoring data are used to determine the effectiveness of interventions (M=4.32, SD=0.81*), t*=23.95, p < .001, established decision rules determine student movement through the tiers (M=4.31, SD=0.84*), t*=23.09, p < .001 , progress monitoring data are graphed in terms of performance level (M=4.31, SD=0.90*), t*=21.34, p < .001, progress monitoring data are routinely shared at each grade level with teachers, administrators, and parents (M=4.25, SD=0.88*), t*=20.88, p < .001, and regular checks of fidelity of progress monitoring administration are conducted (M=4.24, SD=0.97*), t*=18.74, p < .001.

The lowest-rated attributes were students performing below grade level expectations are progress monitored weekly or biweekly (M=4.19, SD=0.87*), t*=20.23, p < .001, progress monitoring data are graphed in terms of progress per skill area assessed (M=4.19, SD=0.94*), t*=18.58, p < .001, graphed progress monitoring data are used to inform individual student movement through the tiers (M=4.19, SD=0.91*), t*=19.15, p <

.001, and refresher practice sessions are provided as needed and indicated by fidelity checks (M=3.75, SD=1.14*)*, *t*=9.65, $p < .001$.

Table 7

Means, Standard Deviations and One-sample t-test Scores for the Progress Monitoring Component of Assessment Attributes

RTI Attribute	M	SD	*t*
1. Staff has received training in the administration of progress monitoring measures.	4.46	0.81	26.48***
2. Staff has received training in the interpretation of progress monitoring measures.	4.36	0.82	24.40***
3. Established progress monitoring arrangements are followed.	4.50	0.70	31.60***
4. Regular checks of fidelity of progress monitoring administration are conducted.	4.24	0.97	18.74***
5. "Refresher" practice sessions are provided as needed and indicated by fidelity checks.	3.75	1.14	9.65***
6. Established decision rules determine student movement through the tiers.	4.31	0.84	23.09***
7. Progress monitoring tools include curriculum based measures (CBM) and informal measures to gauge progress and inform instruction.	4.34	0.91	21.71***
8. Students performing below grade level expectations are progress monitored weekly/biweekly.	4.19	0.87	20.23***
9. Progress monitoring data are graphed in terms of performance level.	4.31	0.90	21.34***
10. Progress monitoring data are graphed in terms of progress per skill area assessed.	4.19	0.94	18.58***
11. Progress monitoring data are routinely shared at each grade level with teachers, administrators, and parents.	4.25	0.88	20.88***
12. Progress monitoring data are used to determine the effectiveness of interventions.	4.32	0.81	23.95***
13. Graphed progress monitoring data are used to inform student movement through tiers.	4.19	0.91	19.15***

Scale: 1-Never, 2-Infrequently, 3- Sometimes, 4-Usually, 5-Always N=285

***p < .001 on one sample *t*-test compared to normal distribution

Infrastructure

Respondents were asked to identify the levels of implementation for five attributes of infrastructure for RTI in their schools. Data for each attribute are presented in Table 8.

Mean scores for the five attributes ranged from a low of 4.05 to a high of 4.24. The highest mean scores were related to the extent to which data are used to determine effectiveness of RTI by examining the number of students meeting benchmarks by grade level per year (M=4.24, SD=0.91*)*, t=19.92, $p < .001$, whether data are used to determine effectiveness of RTI by examining the number of students receiving Tier 2 and 3 interventions by grade per year (M=4.13, SD=0.97*)*, t=16.95, $p < .001$, and the extent to which data are used to determine effectiveness of RTI by examining the movement of students across tiers over time (M=4.10, SD=.96*)*, t=62.06, $p < .001$. The lowest mean scores were on the following attributes: data are used to determine improvements to the school's overall RTI process (M=4.06, SD=1.06*)*, t=14.55, $p < .001$, and data are used to determine the effectiveness of RTI by examining the number of students referred to special education by grade per year (M=4.05, SD=1*)*, t=15.30, $p < .001$.

Table 8

Means, Standard Deviations, and One-sample t-test Scores for Attributes related to Infrastructure for RTI in the School

Infrastructure Attribute	M	SD	*t*
1. Data are used to determine effectiveness of RTI by examining the number of students meeting benchmark by grade level per year.	4.24	0.91	19.92***
2. Data are used to determine effectiveness of RTI by examining the number of students receiving Tier 2 & 3 interventions by grade per year.	4.13	0.97	16.95***
3. Data are used to determine effectiveness of RTI by examining the number of students referred to special education by grade per year.	4.05	1.00	15.30***
4. Data are used to determine effectiveness of RTI by examining the movement of students across tiers over time.	4.10	0.96	16.64***
5. Data are used to determine improvements to the school's overall RTI process.	4.06	1.06	14.55***

Scale: 1-Never, 2-Infrequently, 3- Sometimes, 4-Usually, 5-Always N=285

***p < .001 on one sample *t*-test compared to normal distribution

Leadership

Respondents were asked to identify the levels of implementation for seven attributes of RTI leadership in their schools. Data for each attribute are presented in Table 9.

Mean scores for the seven attributes ranged from a low of 3.82 to a high of 4.61. The highest mean scores were related to the extent to which the principal schedules core reading instruction that ensures 90 minutes of reading instruction (M=4.61, SD=0.81),

t=28.19, p < .001, the principal communicates with the district office regarding the RTI process, student data, and professional development needs in his/her building (M=4.43, SD=0.9*)*, *t*=23.05, p < .001, and the principal allocates the necessary resources essential for effective RTI implementation (M=4.27, SD=0.96*)*, *t*=19.28, p < .001.

Following the highest-rated attributes are the following attributes: the principal participates in professional development opportunities that support the RTI implementation process (M=4.15, SD=0.97*)*, *t*=17.12, p < .001, and the principal participates with the RTI Team to analyze student data (M=4.13, SD=1.04*)*, *t*=15.92, p < .001. The attributes with the lowest perceived level of implementation included the principal participates in grade-level team meetings to analyze student reading performance data (M=4.0, SD=1.06*)*, *t*=13.62, p < .001, and the principal provides input to help teachers plan instruction based on student reading performance data (M=3.82, SD=1.18*)*, *t*=10.07, p < .001.

Table 9

Means, Standard Deviations, and One-sample t-test Scores for Attributes related to Leadership for RTI in the School

Leadership Attribute	M	SD	*t*
1. The principal participates with the building-based RTI Team to analyze student data.	4.13	1.04	15.92***
2. The principal participates in grade-level team meetings to analyze student reading performance data.	4.00	1.06	13.62***
3. The principal provides input to help teachers plan instruction based on student reading performance data.	3.82	1.18	10.07***
4. The principal participates in professional development opportunities that support the RTI implementation process.	4.15	0.97	17.12***
5. The principal allocates the necessary resources essential for effective RTI implementation.	4.27	0.96	19.28***
6. The principal schedules core reading instruction that ensures 90 minutes of reading instruction.	4.61	0.81	28.91***
7. The principal communicates with district office regarding the RTI process, student data, and professional development needs in his/her building.	4.43	0.90	23.05***

Scale: 1-Never, 2-Infrequently, 3- Sometimes, 4-Usually, 5-Always N=285

***p < .001 on one sample *t*-test compared to normal distribution

Teaming/Collaboration

Respondents were asked to identify the levels of implementation for seven attributes of teaming/collaboration in their schools. Data for each attribute are presented in Table 10.

Mean scores for the seven attributes ranged from a low of 3.56 to a high of 4.42. The highest mean scores were related to the extent to which shared responsibility for all children is evident among all faculty (M= 4.42 , SD= 0.75 *),* t=27.03, $p < .001$, the RTI/problem-solving team discussions are data driven (M= 4.31 , SD= 0.94 *),* t= 20.07, $p < .001$, the RTI/problem-solving team reviews student data to make decisions about tiered interventions for at-risk students (M= 4.17 , SD= 1.03 *),* t= 16.32, $p < .001$, and data from fidelity checks are used to inform instruction (M= 4.16 , SD= 0.93 *),* t= 17.84, $p < .001$. The remaining attributes were as follows: data from fidelity checks are used to inform professional development (topics, methods, and intensity) (M= 4.00,SD= 0.99 *),* t= 14.43, $p < .001$, the RTI/problem-solving team is given adequate time to meet regularly to discuss student data (M= 3.82 , SD= 1.18 *),* t= 10.00, $p < .001$, and the literacy coach or specialist meets regularly with teachers to assist them with core reading instruction and other aspects related to RTI implementation (M= 3.56 , SD= 1.38 *),* t= 5.84, $p < .001$.

Table 10

Means, Standard Deviations, and One-sample t-test Scores for Teaming/Collaboration in the School Attributes

Teaming/Collaboration Attribute	M	SD	*t*
1. Shared responsibility for all children is evident among all faculty.	4.42	0.75	27.03***
2. Data from fidelity checks are used to inform instruction.	4.16	0.93	17.84***
3. Data from fidelity checks are used to inform professional development (topics, methods, and intensity).	4.00	0.99	14.43***
4. An RTI/problem-solving team reviews student data to make decisions about tiered interventions for at-risk students.	4.17	1.03	16.32***
5. The RTI/problem-solving team is given adequate time to meet regularly to discuss student data.	3.82	1.18	10.00***
6. The RTI/problem-solving team discussions are data driven.	4.31	0.94	20.07***
7. The literacy coach or specialist meets regularly with teachers to assist them with core reading instruction and other aspects related to RTI implementation.	3.56	1.38	5.84***

Scale: 1-Never, 2-Infrequently, 3- Sometimes, 4-Usually, 5-Always N=285

***p < .001 on one sample *t*-test compared to normal distribution

Total Implementation Level

The total level of implementation mean score, calculated by summing the responses to each of the 64 attributes, was compared to the mean (M=192, R=64-320) from a hypothetical normal distribution. One-sample *t*-test results (N=253, M=242.80, SD 79.83, t= 22.87) revealed that the difference in the two means was statistically significant at $p < .001$.

Research Question Two: What is the level of RTI implementation for each of the major components of RTI in West Virginia's elementary schools?

The 64 attributes were grouped into eight RTI components. Total scores for each component were calculated by summing the responses to the level of implementation for each of the attributes included within each component. A one-sample *t*-test was used to compare the sample mean for each component to the mean from a hypothetical normal distribution for each component.

The RTI components mean scores for implementation, in no particular order, were progress monitoring (M= 55.41, SD= 8.62*)*, *t*=27.99, $p < .001$, targeted instruction (M=49.26, SD=5.33*)*, *t*=46.86, $p < .001$, screening (M=38.41, SD=5.68*)*, *t*=30.08, $p < .001$, and leadership (M=38.41, SD=5.68*)*, *t*=30.08, $p < .001$. The remaining components reflected scores as follows: teaming/collaboration (M=28.43, SD=5.56*)*, *t*=19.19, $p < .001$, intensive instruction (M=26.29, SD=3.68*)*, *t*=34.58, $p < .001$, core instruction (M=26.02, SD=3.25*)*, *t*=39.23, $p < .001$ and infrastructure (M=20.57, SD=4.48*)*, *t*=18.17, $p < .001$. One-sample *t*-test results indicated that the sample mean scores for each of the eight components were significantly different from the mean scores of their respective distributions at $p < .001$. Data for each component are presented in Table 11.

Table 11

Means, Standard Deviations, and One-sample t-test Results for RTI Implementation Level by Component

	n	Range	Comparison M	M	SD	t
Core Instruction	253	6-30	18	26.02	3.25	39.23***
Targeted Instruction	236	11-55	33	49.26	5.33	46.86***
Intensive Instruction	235	6-30	18	26.29	3.68	34.58***
Screening	224	9-45	27	38.41	5.68	30.08***
Progress Monitoring	216	13-65	39	55.41	8.62	27.99***
Infrastructure	213	5-25	15	20.57	4.48	18.17***
Leadership	212	7-35	21	29.40	5.52	22.13***
Teaming/ Collaboration	206	7-35	21	28.43	5.56	19.19***
Grand Total	253	64-320	192	242.80	79.83	10.12***

***p < .001 N=285

Research Question Three: What are the differences, if any, in the overall levels of implementation for each of the major components of RTI in West Virginia's elementary schools based upon selected school attributes including enrollment, staff role, socioeconomic status, Title I status, AYP status, and principal tenure?

Participant responses were analyzed to determine if there were differences in implementation levels for each of the eight components based on selected school demographic or attribute variables. Means and standard deviations were determined, and an ANOVA or an independent samples *t*-test was used to determine if there were statistically significant differences in implementation levels based on each of the demographic or attribute variables.

School Size

A one-way between groups analysis of variance was conducted to explore the difference in implementation level based on school size for each of the eight RTI

components. Mean implementation levels for each component based on school size are presented in Table 12. There was a statistically significant difference in levels of RTI implementation based on school size for the Targeted Instruction component: $F(3, 232)=2.92$, $p < .05$ as smaller schools consistently reported higher levels of implementation than larger schools. No additional statistically significant differences in implementation levels based on school size were found. Table 13 contains the ANOVA results.

Table 12

Means and Standard Deviations for RTI Implementation Levels by Components and by School Size

RTI Component	Number of students enrolled							
	<200		201-300		301-400		401+	
	M	SD	M	SD	M	SD	M	SD
Core Instruction	26.71	2.47	25.65	3.43	26.17	3.57	25.57	3.52
Targeted Instruction	50.75	3.68	49.13	4.89	48.50	7.25	48.18	5.81
Intensive Instruction	27.25	2.37	25.76	3.77	26.00	4.96	26.02	3.78
Screening	39.30	4.92	37.54	6.17	38.89	5.84	38.13	5.72
Progress Monitoring	55.94	8.32	55.34	7.82	56.22	10.11	54.33	8.91
Infrastructure	20.68	4.66	20.63	3.91	20.94	4.52	20.13	4.94
Leadership	30.62	4.10	29.05	5.53	28.83	6.66	28.81	6.02
Teaming/ Collaboration	29.67	4.71	28.46	5.74	27.68	5.89	27.54	5.86
Grand Total	249.71	76.67	248.07	68.79	235.93	95.70	233.58	84.28

n=72 (<200), n=74 (201-300), n=42 (301-400), n=65 (401+) N=285

Table 13

Analysis of Variance Results for RTI Implementation Levels by Component and School Size

RTI Component	df	SS	MS	F
Core Instruction				
Between Groups	3	58.43	19.48	1.86
Within Groups	249	2603.51	10.46	
Targeted Instruction				
Between Groups	3	242.63	80.88	2.92*
Within Groups	232	6432.61	27.73	
Intensive Instruction				
Between Groups	3	90.02	30.01	2.26
Within Groups	231	3072.72	13.30	
Screening				
Between Groups	3	114.12	38.04	1.18
Within Groups	220	7067.91	32.13	
Progress Monitoring				
Between Groups	3	103.75	34.58	.46
Within Groups	212	15854.40	74.79	
Infrastructure				
Between Groups	3	16.17	5.39	.27
Within Groups	209	4229.95	20.24	
Leadership				
Between Groups	3	126.59	42.20	1.39
Within Groups	208	6310.13	30.34	
Teaming/ Collaboration				
Between Groups	3	147.87	49.29	1.61
Within Groups	202	6184.68	30.62	
Grand Total				
Between Groups	3	12992.61	4330.87	.677
Within Groups	249	1592846.11	6396.97	

*$p < .05$

Role of the Respondent

A one-way between groups analysis of variance was conducted to explore the differences in the overall level of RTI implementation for each of the eight RTI components based on the role of the respondent. There was a statistically significant difference in implementation levels based on the role of the respondent for all eight RTI components. Results were as follows: Core instruction $F(2, 250)=7.17$, $p < .05$, Targeted Instruction $F(2, 233)=11.74$, $p < .05$, Intensive Instruction $F(2, 232)=8.24$, $p < .05$, Screening $F(2, 221)=6.76$, $p < .05$, Progress Monitoring $F(2, 213)=13.16$, $p < .05$, Infrastructure $F(2, 210)=3.73$, $p < .05$, Leadership $F\ 2,209)=11.32$, $p < .05$, Teaming/Collaboration $F(2,203)=7.08$, $p < .05$, and Grand Total $F(2,250)=3.70$, $p < .05$. The highest mean score for each component was reported by principals and the lowest mean score was reported by classroom teachers. Data for the role of the respondent are presented in Tables 14 and 15.

Table 14

Means and Standard Deviations for RTI Implementation Levels by Components and Role of the Respondent

RTI Component	Principals		Classroom Teachers		Other Professional Staff	
	M	SD	M	SD	M	SD
Core Instruction	26.95	2.71	25.40	3.57	25.41	3.19
Targeted Instruction	51.12	3.76	47.52	6.34	49.02	4.66
Intensive Instruction	27.43	2.63	25.35	4.31	25.94	3.53
Screening	39.97	4.80	36.92	6.23	38.26	5.41
Progress Monitoring	58.68	6.49	52.33	9.37	54.69	8.72
Infrastructure	21.53	3.39	19.70	5.12	20.33	4.77
Leadership	31.46	3.41	27.90	6.27	28.07	6.21
Teaming/ Collaboration	30.12	3.97	27.16	6.26	27.41	6.12
Grand Total	259.42	77.04	233.23	75.94	229.56	87.63

n=102 (Principals), n=107 (Classroom Teachers), n=65 (Other Professional Staff) N=285

Table 15

Analysis of Variance Results for RTI Implementation Levels by Role of Respondent

RTI Component	df	SS	MS	F
Core Instruction				
Between Groups	2	144.31	72.16	7.17*
Within Groups	250	2517.63	10.07	
Targeted Instruction				
Between Groups	2	611.08	305.54	11.74*
Within Groups	233	6064.15	26.03	
Intensive Instruction				
Between Groups	2	209.72	104.86	8.24*
Within Groups	232	2953.02	12.73	
Screening				
Between Groups	2	413.81	206.91	6.76*
Within Groups	221	6768.22	30.63	
Progress Monitoring				
Between Groups	2	1755.20	877.60	13.16*
Within Groups	213	14202.95	66.68	
Infrastructure				
Between Groups	2	145.53	72.77	3.73*
Within Groups	210	4100.59	19.53	
Leadership				
Between Groups	2	629.10	314.55	11.32*
Within Groups	209	5807.62	27.79	
Teaming/ Collaboration				
Between Groups	2	412.89	206.44	7.08*
Within Groups	203	5919.66	29.16	
Grand Total				
Between Groups	2	46157.37	23078.69	3.70*
Within Groups	250	1559681.35	6238.73	

*p < .05 N=285

Socioeconomic Status

A one-way between groups analysis of variance was conducted to explore the impact of socioeconomic status on the levels of RTI implementation for each of the eight RTI components. There were no statistically significant differences based on the percentage of students eligible for free and reduced meals in any component. Component means and standard deviations are presented in Table 16 and ANOVA results are provided in Table 17.

Table 16

Means and Standard Deviations for RTI Components by Socioeconomic Status

RTI Component	Below 35%		36%-50%		51%-75%		75%+	
	M	SD	M	SD	M	SD	M	SD
Core Instruction	25.86	3.07	26.56	3.06	26.04	3.33	25.53	3.32
Targeted Instruction	48.43	5.33	49.66	5.09	49.50	5.09	48.72	6.06
Intensive Instruction	26.33	3.34	26.45	3.49	26.30	3.66	26.13	4.07
Screening	37.39	5.09	38.00	6.34	38.90	5.31	38.08	6.06
Progress Monitoring	55.41	7.38	55.40	9.43	55.91	7.93	54.31	9.77
Infrastructure	21.24	4.13	20.86	4.83	20.25	4.37	20.81	4.58
Leadership	28.12	5.40	29.33	5.79	29.94	5.11	28.68	6.20
Teaming/ Collaboration	26.76	5.51	28.72	5.95	28.44	5.56	28.78	5.29
Grand Total	239.14	73.54	231.11	92.33	253.43	71.21	233.36	85.21

n=23 (Below 35%), n=63 (36%-50%), n=125 (51%-75%), n=62 (75%+)

Table 17

Analysis of Variance Results for RTI Implementation Levels by Socioeconomic Status

RTI Component	df	SS	MS	F
Core Instruction				
Between Groups	3.00	30.53	10.18	0.96
Within Groups	249.00	2631.41	10.57	
Targeted Instruction				
Between Groups	3.00	44.20	14.74	0.52
Within Groups	232.00	6631.03	28.58	
Intensive Instruction				
Between Groups	3.00	2.59	0.87	0.06
Within Groups	231.00	3160.15	13.68	
Screening				
Between Groups	3.00	58.18	19.39	0.60
Within Groups	220.00	7123.85	32.38	
Progress Monitoring				
Between Groups	3.00	83.86	27.95	0.37
Within Groups	212.00	15874.29	74.88	
Infrastructure				
Between Groups	3.00	24.99	8.33	0.41
Within Groups	209.00	4221.14	20.20	
Leadership				
Between Groups	3.00	83.75	27.92	0.91
Within Groups	208.00	6352.97	30.54	
Teaming/ Collaboration				
Between Groups	3.00	56.11	18.70	0.60
Within Groups	202.00	6276.44	31.07	
Grand Total				
Between Groups	3.00	26364.15	8788.05	1.39
Within Groups	249	1579474.57	6343.27	

N=285

Title I Status

An independent samples test was conducted to explore the differences in implementation levels based on Title I status of the school. There was a statistically significant difference between Title I status groups for the screening ($p < .05$) and teaming/collaboration ($p < .05$) components. Examination of the means for these components revealed Title I schools consistently reported a higher level of implementation for the two components. Component means, standard deviations, and *t*-test results are presented in Table 18.

Table 18

Means and Standard Deviations for RTI Component by Title I Status

RTI Component	Title I		Non-Title I		
	M	SD	M	SD	t
Core Instruction	26.04	3.16	25.97	3.43	.18
Targeted Instruction	49.39	5.18	48.99	5.64	.55
Intensive Instruction	26.36	3.76	26.17	3.53	.37
Screening	38.81	5.43	37.56	6.11	1.49*
Progress Monitoring	55.84	8.35	54.52	9.13	1.05
Infrastructure	20.59	4.37	20.53	4.71	.10
Leadership	29.58	5.31	29.03	5.95	.68
Teaming/Collaboration	28.80	5.17	27.70	6.24	1.27*
Grand Total	247.25	76.44	234.15	85.83	1.26

n=177 (Title I) n=97 (Non-Title I) N=285 *p <.05

Principal Tenure

An independent samples test was conducted to explore the differences in implementation levels based on principal tenure. There were no statistically significant differences in RTI implementation levels based on principal length of tenure for any of the eight RTI components; however, there was a significant difference in the grand total as principals employed prior to July 1, 2009 reported a higher grand total level of implementation. Component means, standard deviations, and *t*-test results are presented in Table 19.

Table 19

Means and Standard Deviations for RTI Implementation Levels by Component and Principal Tenure

RTI Component	Principal Prior to Date		Principal After Date		
	M	SD	M	SD	t
Core Instruction	26.39	3.00	25.34	3.58	2.47
Targeted Instruction	49.79	4.80	48.34	6.06	2.03
Intensive Instruction	26.75	3.37	25.50	4.05	2.54
Screening	38.85	5.62	37.63	5.72	1.55
Progress Monitoring	56.15	8.64	54.14	8.48	1.67
Infrastructure	20.92	4.31	20.00	4.71	1.45
Leadership	29.92	5.51	28.53	5.46	1.80
Teaming/ Collaboration	29.09	4.97	27.32	6.30	2.23
Grand Total	241.38	85.62	245.37	68.49	-0.40*

n=176 (Principal Prior to Date), n=98 (Principal After Date) **p <.01

AYP Status

An independent samples *t*-test was conducted to explore the impact of AYP status on the overall level of RTI implementation for each of the eight RTI components. There were no statistically significant differences in RTI implementation levels based on AYP status for the grand total or any of the eight RTI components. Component means, standard deviations, and *t*-test results are presented in Table 20.

Table 20

Means and Standard Deviations for RTI Implementation Levels by Component and AYP Status

RTI Component	AYP		Non-AYP		
	M	SD	M	SD	*t*
Core Instruction	26.28	2.99	25.58	3.61	1.66
Targeted Instruction	49.78	5.11	48.40	5.60	1.93
Intensive Instruction	26.44	3.66	26.05	3.71	0.80
Screening	38.40	6.03	38.42	5.09	-0.03
Progress Monitoring	55.61	8.83	55.07	8.30	0.45
Infrastructure	20.67	4.63	20.41	4.24	0.42
Leadership	29.69	5.45	28.91	5.64	1.00
Teaming/ Collaboration	28.54	5.85	28.27	5.09	0.34
Grand Total	244.10	80.03	240.67	79.87	0.33

n=171 (AYP) n=103 (Non-AYP)

Ancillary Findings

In addition to the independent variables listed in research question three, an additional three independent variables were examined. This section presents these findings as well as the data for the reliability of the survey instrument, the *RTI Implementation Inventory*.

Faculty Belief in RTI

An independent samples *t*-test was conducted to explore the impact of faculty belief on the overall level of RTI implementation for each of the eight RTI components and the grand total. Statistically significant differences in levels of implementation between groups were found in the following components: Core instruction ($p < .01$), targeted instruction ($p < .01$), intensive instruction ($p < .05$), infrastructure ($p < .01$), and teaming/collaboration ($p < .001$). Schools reporting a faculty belief that RTI benefits all students reported higher mean levels of implementation than those not reporting such a belief for each of these components. Component means, standard deviations, and *t*-test results are presented in Table 21.

Table 21

Means and Standard Deviations for RTI Components by Component and Faculty Belief in RTI

RTI Component	Belief Present		Belief Not Present		
	M	SD	M	SD	*t*
Core Instruction	26.46	2.80	24.68	4.08	3.21***
Targeted Instruction	50.13	4.55	46.53	6.60	3.84**
Intensive Instruction	26.80	3.23	24.72	4.48	3.24*
Screening	38.98	5.45	36.55	6.04	2.77
Progress Monitoring	56.45	8.13	51.96	9.33	3.30
Infrastructure	21.15	3.97	18.63	5.48	3.00*
Leadership	29.93	5.18	27.61	6.27	2.61
Teaming/ Collaboration	29.37	4.57	25.26	7.24	.000***
Grand Total	251.7	75.99	215.94	85.58	3.14

n=201(Belief Present), n=70 (Belief Not Present) N=285 * p <.05 **p <.01 ***p <.001

School Plan for Evaluating RTI Effectiveness

An independent samples *t*-test was conducted to explore the differences in implementation levels based on the presence or absence of a school plan for evaluating RTI effectiveness for each of the eight RTI components and the grand total. Statistically significant differences between groups were found in the following components: targeted instruction ($p < .05$), intensive instruction ($p < .01$), progress monitoring ($p < .05$), leadership ($p < .05$), and teaming/collaboration ($p < .01$). Schools with a plan present reported higher mean scores for each of these components. Component means, standard deviations, and *t*-test results are presented in Table 22.

Table 22

Means and Standard Deviations for RTI Component by Presence of a School Plan for RTI Evaluation

RTI Component	Has Plan		No Plan		
	M	SD	M	SD	*t*
Core Instruction	26.46	3.01	24.87	3.57	3.57
Targeted Instruction	50.12	4.71	46.95	6.20	3.70*
Intensive Instruction	26.71	3.21	25.17	4.55	2.49**
Screening	39.29	5.48	36.16	5.59	3.82
Progress Monitoring	57.07	7.51	51.08	9.79	4.28*
Infrastructure	21.52	4.03	18.15	4.68	5.25
Leadership	30.45	4.85	26.72	6.22	4.18*
Teaming/ Collaboration	29.57	4.71	25.52	6.46	4.35**
Grand Total	250.1	78.13	223.90	81.56	2.37

n=197 (Has Plan), n=75 (No Plan) N=285 * p <.05 **p <.01

Electronic Data Management System for Student RTI Data

An independent samples *t*-test was conducted to explore the differences in implementation levels based on the presence or absence of an electronic data management system for student data on the overall level of RTI implementation for each of the eight RTI components and the grand total. Statistically significant scores resulted for targeted instruction ($p < .05$), and the grand total ($p < .05$). Component means, standard deviations, and *t*-test results are presented in Table 23.

Table 23

Means and Standard Deviations for RTI Components by Presence of an Electronic Data Management System

RTI Component	Has System		No System		
	M	SD	M	SD	*t*
Core Instruction	26.64	3.06	25.42	3.32	3.03
Targeted Instruction	50.76	4.43	47.75	5.73	4.51*
Intensive Instruction	26.86	3.33	25.73	3.93	2.38
Screening	39.47	5.28	37.32	5.88	2.87
Progress Monitoring	57.16	7.81	53.58	9.06	3.11
Infrastructure	21.50	3.90	19.58	4.84	3.19
Leadership	29.76	5.48	29.01	5.57	0.99
Teaming/ Collaboration	29.22	5.47	27.60	5.55	2.10
Grand Total	257.38	72.30	228.78	84.37	2.90*

n=133 (Has System), n=139 (No System) N=285 * p <.05

Reliability of the Instrument

The internal consistency of the *RTI Implementation Inventory* was tested using Cronbach's alpha coefficient. Pallant (2011) explains that ideally, the Cronbach alpha coefficient should be above .7 while the best range for the inter-item correlation should be between .2 and .4.

Each component demonstrated internal consistency with Cronbach alpha coefficient scores at or above .797 (Pallant, 2011). Inter-item correlation data suggest which items are closely related. Only one component demonstrated an inter-item correlation range of less than .2. Across the eight components, a majority of the correlations are at .4 or higher. Data for Cronbach's Alpha Coefficient can be viewed in Table 30 and data for the inter-item correlations can be viewed in Appendix E.

Table 24

Cronbach's Alpha Coefficient for Internal Consistency

RTI Component	n	M	Range	Alpha Coefficient
Core Instruction	6	.418	.450	.797
Targeted Instruction	11	.445	.595	.892
Intensive Instruction	6	.544	.350	.852
Screening	9	.414	.536	.850
Progress Monitoring	13	.530	.556	.933
Infrastructure	5	.791	.139	.949
Leadership	7	.562	.526	.901
Teaming/Collaboration	7	.527	.530	.878
Total	64	.359	.845	.971

N=285

Summary of Findings

The purpose of this chapter was to present data collected concerning West Virginia's RTI implementation in elementary reading. Two hundred eighty-five curriculum team members responded to the survey. A majority of respondents worked in schools that received Title I funding, met AYP for the 2010-11 school year, had a principal who was in the administrator position prior to the mandated deadline for RTI implementation, had in place a belief that RTI benefits all students and an evaluation plan for RTI, but lacked an electronic data management system for student RTI data. Intervention is provided in the schools by a wide variety of individuals including classroom teachers, special education teachers, Title I teachers, speech-language pathologists, full time and part time interventionists.

When the mean scores for level of implementation for each of the 64 RTI attributes were compared to the mean scores from a hypothetical normal distribution, the mean scores for all 64 attributes were determined to be significantly different from the comparison mean. Only seven of the 64 items produced mean scores below 4.0, indicating that a majority of attributes were perceived by respondents to be either usually or always implemented. Overall, component mean scores and total mean scores also reflected a usual to always level of implementation.

When examining implementation levels by school attributes, significant differences were discovered in all eight components when analyzing the results based on the role of the respondent. Significant differences were also discovered in targeted instruction based on school size and for Screening and Teaming/Collaboration for Title I status.

Ancillary results showed five of the eight components demonstrated significant differences when analyzed based on the presence of a faculty belief in RTI and the presence of a school plan for RTI evaluation. One of the eight components demonstrated significant differences when analyzed based on the presence of an electronic data management system. The *RTI Implementation Inventory* used in this study demonstrated internal consistency with Cronbach alpha coefficients at .797 or above for each component and the total instrument.

CHAPTER FIVE:

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Introduction

This chapter reviews the purpose of the study, summary of the findings and conclusions related to the level of implementation of Response to Intervention (RTI) in West Virginia elementary schools. A discussion of the study implications and recommendations for further research conclude the chapter.

Purpose of the Study

The purpose of this study was to describe the levels of RTI implementation in West Virginia elementary schools. Implementation was examined in the components of multi-tiered reading instruction, screening, progress monitoring, infrastructure, leadership, and teaming/collaboration. The following research questions guided the study:

1. What is the overall level of RTI implementation in West Virginia's elementary schools?

2. What is the level of RTI implementation for each of the major components of RTI in West Virginia's elementary schools?

3. What are the differences, if any, in the overall levels of implementation for each of the major components of RTI in West Virginia's elementary schools based upon selected school attributes including enrollment, staff role, socioeconomic status, Title I status, AYP status, and principal tenure?

Methods

This study used a cross-sectional research design to measure the implementation of RTI key principles. A researcher modified version of New York State's Self-Assessment Tool for RTI Readiness and Implementation was used as the survey instrument. The population for this study included 2,175 educators serving on curriculum teams in West Virginia's 435 elementary schools containing grades K-3.

The instrument was sent electronically to the 435 schools. Principals were asked to forward the email containing the link to the electronic instrument to members of the school curriculum team. Two hundred eighty-five curriculum team members responded to the survey. Data were analyzed using a one-sample *t*-test, ANOVA, and an independent samples *t*-test to determine statistical significance at $p < .05$. The internal consistency of the *RTI Implementation Inventory* was calculated using the Cronbach's alpha coefficient.

Summary of Findings

When the mean scores for level of implementation for each of the RTI attributes were compared to the mean score from a hypothetical normal distribution, all 64 attributes were determined to be significantly different from the comparison mean. Fifty-seven of the 64 items produced mean scores above 4.0, indicating that a majority of stems were rated as usually or always implemented. Of the remaining attributes, the assessment component and the teaming/collaboration component each contained two of the seven lowest rated indicators with the lowest rated indicator , the literacy coach or specialist meets regularly with teachers to assist them with core reading instruction and other aspects related to RTI implementation, found in the teaming/collaboration component.

When the mean scores for level of implementation for each of the major components of RTI were compared to the mean scores from a hypothetical normal distribution for each component, the mean scores for all components were determined to be significantly different from their comparison means. The total mean score calculations indicated significant difference from the hypothetical mean. Examination of total mean score results revealed the sum total mode was 256 and 320 (maximum 320).

Further examination of the components' mean score when divided by the maximum value in the range reveal the components rank from highest to lowest level of implementation as follows: targeted instruction, intensive instruction, core instruction, screening, progress monitoring, leadership, infrastructure, and teaming/collaboration.

When examining the data based upon demographic and attribute variables, significant differences were demonstrated in implementation levels based upon the role of the respondent with principals reporting the highest mean scores for implementation. Significant differences were demonstrated in two components when the data were examined based upon Title I status and one component when examined based on school enrollment. Schools which received Title I funding reported higher mean scores for implementation. Schools with moderate enrollment also reported higher mean scores for implementation. No statistical differences were found for any component when examining results by the number of students eligible for free and reduced meals or the school's AYP status.

Ancillary findings revealed significant differences based on whether the school had a plan for evaluating RTI effectiveness and whether there was a faculty belief that

RTI benefits all students. Significant differences were demonstrated in a limited number of components when the data were examined based upon whether the school had an electronic data management system.

Conclusions from Major Findings

The data collected as a part of this study were sufficient to support the following conclusions:

1. What is the overall level of RTI implementation in West Virginia's elementary schools?

Overall, school curriculum team members perceived RTI attributes as usually or always implemented in grades K-3 in West Virginia elementary schools. This level of implementation is consistent across individual attributes and the total level of RTI implementation.

2. What is the level of RTI implementation for each of the major components of RTI in West Virginia's elementary schools?

Curriculum team members perceived all eight RTI components as usually or always implemented in grades K-3 in West Virginia elementary schools.

3. What are the differences, if any, in the overall levels and each of the major components of RTI implementation in West Virginia's elementary schools based upon selected school attributes including size, staff role, socioeconomic status, Title I status, AYP status, and principal tenure?

Principals reported higher levels of implementation than did teachers and other professional staff for each RTI component and the total RTI implementation level. School size, socioeconomic status, Title I status, AYP status, and principal tenure did not make a difference in levels of implementation.

Conclusions from Ancillary Findings

In five of eight components, the presence of a belief among the faculty that RTI benefits all students did make a difference in RTI implementation levels. For these five components, schools in which this belief is present reported higher implementation levels. In five of eight components, the presence of an evaluation plan for RTI did make a difference in RTI implementation levels. For these five components, schools in which there was a plan for evaluating RTI reported higher implementation levels. The presence of an electronic data management system for RTI data produced a significant difference for only one of the eight components.

Discussion and Implications

This section will discuss implications of the study findings and make suggestions for future research. This section is organized around the study's three research questions.

RQ1. What is the overall level of RTI implementation in West Virginia's elementary schools?

According to Rinaldi, Averill and Stuart (2011), it is a school's responsibility to ensure that high-quality instruction and intervention within an RTI framework are implemented to ensure all students have access to the general curriculum with appropriate supports and services. West Virginia has developed an RTI framework consistent with

Mellard's (2004) model which states the critical components include the use of high quality core classroom instruction using research based methods, tiered interventions, universal screening, progress monitoring, and fidelity measures.

Study findings indicate that the 64 RTI attributes addressed in this study were usually or always implemented in West Virginia elementary schools. Vaughn and Fuchs (2003) explained that progress monitoring, data tracking, research based practices, and high quality instruction must be pervasive in a successful RTI implementation. This belief is validated by the findings of this study. Curriculum team members believe West Virginia schools are utilizing an RTI framework consistent with West Virginia's K-3 reading model to deliver instruction and intervention to at-risk students. This confirms findings from an unpublished study in 2009 in which principals reported RTI was established in their schools (Lochner, 2009).

Findings suggest that, overall, curriculum team members believe the school's responsibility for instruction and intervention within an RTI framework is being met and West Virginia schools are implementing RTI in K-3 statewide. Colorado completed a statewide implementation study in which data demonstrated most Colorado schools believed they were in a developing phase of RTI implementation in which they were working to build capacity for RTI (Colorado Department of Education, 2010). In comparison, West Virginia's schools would appear to be further along than Colorado in their implementation, as the schools are gaining consistency and are ready to begin refining the process. Furthermore, West Virginia schools also appear to be further along than Indiana schools. In a study conducted at Indiana University, 60% of respondents

indicated their schools were in the initial implementation stage of RTI with only 13% reporting full implementation (Spradlin et al., 2009).

Torgeson (2006) reported that Reading First principals believed that the 90 minute reading block and the focus on data were significant components in their programs. West Virginia principals likely concur, as data from this study showed the reading block and the focus on data were highly implemented in the schools.

The New York State Response to Intervention Technical Assistance Center (2009) suggested using their Self-Assessment Tool for RTI Readiness and Implementation, after which the instrument in the study was patterned, to identify specific RTI indicators that need further attention, support, or modification. When considering the lowest-rated attributes, the data in this study suggest that West Virginia elementary schools should increase efforts on the following seven elements of RTI implementation: 1. offering tier three intervention in addition to the core instruction, 2. "refresher" practice sessions prior to each screening administration, 3. fidelity checks of screening procedures, 4. "refresher" practice sessions as indicated by fidelity checks, 5. the principal provides input for instructional planning based on student reading performance data, 6. the RTI/problem-solving team is given adequate time to meet regularly and 7. the literacy coach or specialist meets regularly with teachers to assist them with core reading instruction and other aspects related to RTI implementation.

Interestingly, two of the lowest-rated attributes were related to fidelity checks. Neglecting fidelity checks of key implementation components can present significant issues when multi-level intervention and data collection are used for potentially high-

stakes decision making (Keller-Margulis, 2012). When fidelity of implementation occurs at the school level, schools achieve positive outcomes. Successful building leadership provides frequent fidelity checks to confirm that good intentions are translated into successful actions (Kukic, 2008). Although fidelity checks occur sometimes and clearly need to increase in frequency in West Virginia elementary schools, the data in this study did not provide information as to how fidelity checks are being used. It would be interesting to determine whether schools are using the fidelity measures of observation, teacher questionnaires, or videotaping instruction as suggested by Gresham (1989).

Two of the remaining low-scoring attributes, providing tier three in addition to the core instruction time and regular meeting time for the problem-solving team to meet, could be improved with changes to the master schedule at the school level. One remaining low scoring attribute could lead to further study. Respondents did not have the opportunity to specify whether their schools did not have a literacy specialist, or whether scheduling inhibited frequency of working with teachers. A study to determine how many schools have access to the services of a literacy specialist would provide valuable insight to the process.

RQ2. What is the level of RTI implementation for each of the major components of RTI in West Virginia's elementary schools?

Further examination of the component mean scores divided by the maximum range score allowed for ranking of the RTI component implementation levels. This method revealed the component of targeted instruction (89.56%*), t*o have the highest implementation level, followed by intensive instruction (87.63%), core instruction

(86.73%), screening (85.36%), progress monitoring (85.25%), and leadership (84%). Lowest implementation levels were demonstrated in the components of infrastructure (82.28%) and teaming/collaboration (81.23%). Even though all major components have a high level of implementation, effective instruction is the lynchpin of RTI (Murawski & Hughes, 2009).

Study results suggest reasonably high implementation levels for targeted, intensive, and core instruction, the tiers of the multi-tiered system. Given that core instruction had the lowest overall proportionate implementation level, schools may need to examine this component in greater detail. According to Stecker, Fuchs, and Fuchs (2008), high-quality general education instruction is the first order when implementing RTI. This focus is critical because schools must be able to ensure that the core instructional procedures used have been effective in promoting achievement or have empirical validation to be certain their instructional practices did not contribute to a student's poor learning. Not providing students with a scientifically validated core curriculum can be one of the most difficult challenges to address within RTI (Kovaleski, 2007).

The leadership component ranked slightly lower than these student instruction and assessment components. These results support Hamilton's (2010) claim that the principal's role in this process is vital to successful RTI implementation due to the fact that the student and school situations change and the principal's skills are necessary to maximize the effects of RTI implementation. Because implementation is high, one can assume the leadership of West Virginia elementary principals is contributing to the success of RTI implementation.

The framework for the roll out of RTI implementation in West Virginia consisted of three main steps: 1) build the infrastructure for RTI, 2) fill the infrastructure with high quality instruction, and 3) use the resulting data in determining eligibility for special education services (Boyer, personal communication, 2008). With these factors in mind, it reasonably could have been expected for infrastructure scores to be the highest when ranking the components above or near the instructional components. Surprisingly, results indicated the opposite with infrastructure ranking second lowest. The level of infrastructure implementation could perhaps be a contributing factor for three of the seven lowest attributes. These three attributes are directly related to areas addressed when building school infrastructure for RTI. Although Johnson et al. (2006) explained that resource allocation must be present to support teachers for fidelity of the model resources for providing time for grade level planning, time for problem-solving teams to meet, and access to a literacy coach may not be present in elementary schools.

RQ3. What are the differences, if any, in the overall levels and each of the major components of RTI implementation in West Virginia's elementary schools based upon selected school attributes including size, staff role, socioeconomic status, Title I status, AYP status, and principal tenure?

Principals consistently reported the highest levels of implementation, followed by other professionals, with lowest mean scores reported by classroom teachers. In light of the literature on teacher efficacy, it could be presumed that there is room to improve teacher efficacy in RTI in West Virginia. Although teachers believe there is high RTI implementation, they are the least confident. Guskey and Passaro (1994) explained that

results for students increase as teacher efficacy increases. Increasing teacher efficacy in RTI may facilitate higher student achievement.

Mellard, Stern, and Woods (2011) remarked that the framework for the implementation of RTI should be applied in all schools within the United States. By its design, RTI allows for customization to reflect the needs, resources, or demographics of a particular school or district. The literature does not presently reflect any specific variables that strongly correlate with successful district RTI implementation. However, the literature does suggest a possible relationship between students from economically disadvantaged homes and students with reading difficulties. Gettinger and Stoiber (2007) reported that 68% of economically disadvantaged fourth graders taking the National Assessment of Educational Progress (NAEP) in 1998 scored below the basic level in reading compared with 25% of their non-economically disadvantaged peers. Consequently, it could be expected that schools with higher levels of poverty have more students struggling with reading making RTI implementation more difficult. However, results did not indicate this.

Only the role of the respondent showed significant differences in all eight areas. Since principals rated implementation higher than classroom teachers and other professional staff conclusions found in an earlier unpublished implementation study that principals may have over rated their schools implementation were confirmed (Lochner, 2009).

Jimerson, Burns, and VanDerHeyden (2007) state that successful, wide-scale RTI implementation will take time, resources, leadership, and preparation of professionals for

implementation. Data in this study support this claim as schools in which the principal was in the position prior to the July 1, 2009 implementation deadline produced higher mean scores. Principals in these positions at this time were offered a variety of state wide professional development opportunities to develop knowledge and efficacy about RTI.

This efficacy of professionals is supported by this study's data when examining responses based on whether the faculty believes RTI benefits all children. Schools in which the faculty has developed this understanding rated implementation higher in every component. This fact supports Nunn and Jantz's (2009) statement that teacher efficacy about RTI implementation can influence the outcomes. Furthermore, it reiterates O'Connor and Freeman's (2012) statement that the prevailing attitudes and beliefs of staff, as well as the traditions and values of the school, have a strong influence on the behaviors of staff and students.

According to Perry and McConney (2010) there is a relationship between a school's socioeconomic status (SES) and the level of performance. Typically, schools with a greater percentage of low SES students have lower performance. This performance level relationship is found to be similar for all students attending the school regardless of their individual SES. Combined with the relationship between students from economically disadvantaged families and the likelihood for reading difficulties previously discussed, it is therefore reasonable to expect attributes commonly correlated to school achievement, such as socioeconomic and Title I status, to affect RTI implementation. Interestingly, the findings in this study do not support these assertions.

Title I schools and schools with a moderate level of economically disadvantaged students did demonstrate higher mean implementation levels. This result may be explained by the availability of extra resources, including fiscal and staff resources. Kosters and Mast (2003) claim that Title I has failed to produce any significant narrowing of achievement gaps between the low and high income students and schools. However, when considering the higher implementation levels reported by Title I schools, it may be discerned that Title I resources may not be narrowing achievement gaps but may be preventing them from growing larger.

VanDerHeyden (2010) explained RTI must be evaluated to determine the degree to which it serves its intended purpose as a diagnostic tool because of the diagnostic implications of a specific learning disability. Significant differences were found in five of eight RTI components when results were analyzed based on whether the school had a plan for evaluating the effectiveness of RTI. Schools with a plan reported higher mean implementation levels. The greatest difference in mean scores was in the progress monitoring component, indicating that schools are comfortable with formative assessment and its purposes in RTI. Screening and progress monitoring clearly are occurring in West Virginia schools as suggested by Mellard (2004) and Johnson et al. (2006).

No significant difference was found when data were analyzed based upon student enrollment, however, the component of targeted intervention demonstrated a significant difference. Schools with smaller enrollment did report higher implementation scores in this study. Hoover (2011) explained that schools should have about 15% of students in need of targeted intervention. Using this statistic for calculation, it is expected that a

school with a small enrollment would have a much lower number of students requiring targeted instruction than a school with a large number of students, thus making implementation of this component somewhat easier.

High quality instruction is a basis for RTI as well as achieving adequate yearly progress (AYP). Consistent with RTI practices, Gamble-Risley (2006) advised that schools struggling with AYP should begin taking a personal approach to raising test scores. Successful schools use data to gauge student progress at any time during the school year, and then use the information to personalize curriculum and instructional programs. The data inform the schools when and where interventions are necessary. Although the data did not demonstrate significance in any component, schools achieving AYP reported higher mean scores in this study. The components coming closest to demonstrating significance include core and targeted instruction, which is where a focus on differentiated instruction and personalized learning begins. This supports Gamble-Risley's statement that a personal approach to instruction facilitates attainment of AYP. West Virginia elementary schools making AYP are likely differentiating instruction in the core and targeted levels.

Discussion and Implications for Ancillary Findings

The *RTI Implementation Inventory* used in this study appears to reliably measure implementation levels for RTI in elementary schools. The reliability statistics indicated that the findings from this study would likely be repeated if conducted at a different time. Individual districts or regions may want to re-administer the inventory to attain a more specific level of implementation for a district to assist with determining professional development and technical assistance needs.

As West Virginia schools refine RTI as the leveled instructional component of the Support for Personalized Learning (SPL) initiative, data from this study may serve as a catalyst. The premises of RTI serve as a foundational element of SPL, and when educators realize that schools are already implementing one part of this new initiative, anxiety may lessen while teacher efficacy with SPL may increase.

Concluding Remarks

This study described the levels of RTI implementation in West Virginia elementary schools using data collected from the *RTI Implementation Inventory*. The primary conclusion from this study is that West Virginia educators serving on the school's curriculum team believe RTI is being implemented in the area of reading at a high level in West Virginia elementary schools as indicated by their responses of usually or always on a majority of indicators.

One-sample *t*-test results demonstrated a statistically significant difference for all 64 indicators and the eight components. Principals reported higher implementation levels than did classroom teachers and other professional educators. Higher levels were reported by schools in which the faculty possesses a belief that RTI benefits all students and that have an evaluation plan for examining RTI implementation. School size, socioeconomic status, Title I status, AYP status, and principal tenure did not make significant difference in levels of implementation overall or for the major RTI components.

Recommendations for Further Study

This study investigated the levels of implementation of RTI in the area of reading in West Virginia elementary schools that included grades K-3. Areas for further investigation which emerged from this study include:

1. This study focused on perceptions of implementation of RTI of the professionals serving on the school's curriculum team. Extending the study to include all professionals in the school may lead to further insight regarding implementation levels.
2. This study focused on individuals' self-reported perceptions of RTI implementation. By repeating this study and adding classroom observation and focus group interviews of problem solving teams, implementation may be investigated more accurately.
3. The demographic data for this study indicated that interventions are provided by a variety of individuals in schools. Further study is necessary to examine the quality of interventions provided.
4. Data from this study indicate a high level of RTI implementation at a particular time. This study could be repeated in the future to confirm legitimacy or to expose barriers that schools are facing in maintaining the high levels of implementation reflected in this study.
5. West Virginia has now shifted instructional focus to include leveled instruction as a part of the Support for Personalized Learning (SPL) initiative. Future studies could examine the long term impact of the RTI model as a part of the eight components comprising SPL.

6. Data from this study indicated a high level of RTI implementation at this particular time. A more detailed study would be necessary to determine the impact of RTI implementation on student achievement.
7. Data from this study provided a statewide snapshot of RTI implementation levels. This study could be replicated with modification to provide implementation levels at a RESA level.

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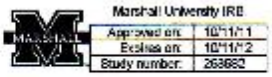
APPENDICES

Appendix A: Instrument

Anonymous Survey Consent



Dear West Virginia Educator,

West Virginia elementary schools have been working to implement the Response to Intervention (RTI) process in the area of reading as mandated by Policy 2419, Regulations for the Education of Students with Exceptionalities. Elementary schools were required to have the process in place in the area of reading by July 1, 2009.

You are invited to participate in a research project entitled "A Descriptive Study of RTI Implementation at the Elementary Level in West Virginia." This study of RTI implementation is being conducted as part of the dissertation requirements for my Education Doctoral program in Curriculum and Instruction at Marshall University.

To examine RTI implementation, I am asking you to complete the RTI Implementation Inventory. The survey is comprised of questions and statements related to components typically within a school's RTI process.

Your replies will be anonymous. There are no known risks involved with this study. Participation is completely voluntary and there will be no penalty or loss of benefits if you choose not to participate in this research study. Completing the electronic survey indicates your consent for use of the answers you supply.

If you have any questions about the study you may contact Dr. Ron Childress at rchildress@marshall.edu and 304.7446.2074 or Sarah Lee at lee41@marshall.edu or 304.226.5949. If you have any questions concerning your rights as a research participant you may contact the Marshall University Office of Research Integrity at 304.696.4303.

By completing this survey and returning it you are also confirming that you are 18 years of age or older. You may print this page for your records.

The survey can be accessed at www.xxxxxxx.com.

Sincerely,

Sarah Lee

Co-Investigator

RTI Implementation Inventory

This tool is used to examine the current school years implementation of RTI in **elementary reading**. Please respond to each question using the responses provided. Choose your selections carefully, as you will not be able to return to previous screens after advancing to the next one.

Section I: Demographic Information

1. In the 2011-2012 school year, my school contains:
   - ❒ <100 students
   - ❒ 101-200 students
   - ❒ 201-300 students
   - ❒ 301-400 students
   - ❒ 401+ students

2. My school participated in: (check all that apply)
   - ❒ Reading First initiative
   - ❒ RTI demonstration school
   - ❒ WVDE K-3 Reading Model training (Summer 2007)

3. Which best describes your role in the school? (check only one)
   Administrator
   - ❒ Counselor
   - ❒ Classroom teacher
   - ❒ Special Education Teacher
   - ❒ Title I teacher
   - ❒ Other (please specify)_____

4. Which of the following best describes your schools current percentage of students approved for free or reduced price meals.
   - ❒ Below 35%
   - ❒ 36%-50%
   - ❒ 51%-75%
   - ❒ 76% or higher

5. My school receives Title I funding
   - ❒ Yes
   - ❒No

6. In my school, tier 2 and tier 3 interventions are delivered by the following (check all that apply)
   - ❒ Classroom teacher
   - ❒ Special Education teacher
   - ❒ Title I teacher
   - ❒ Speech-Language Pathologist
   - ❒ Part time interventionist
   - ❒ Full time interventionist
   - ❒ Other (please specify) _____

7. My principal became principal
   - ❒ prior to July 1, 2009.
   - ❒ after July 1, 2009.

8. My school made AYP for the 2010-2011 school year
   - ❒ Yes
   - ❒No

9. The majority of faculty and staff in my school believe RTI benefits ALL students.
   - ❒ Yes
   - ❒No

10. My building has a detailed plan for evaluating the effectiveness of the overall RTI implementation.
    - ❒ Yes
    - ❒No

11. My school has established an electronic data management system for student RTI data.
    - ❒ Yes
    - ❒No

Although a public domain document, permission was requested from New York State's RTI Technical Assistance Center to adapt the instrument. No response was received.

For section II-IX, use the scale provided to respond to each of the following questions.

Section II: Core Instruction					
In my school, core instruction …	Never	Infrequently	Sometimes	Usually	Always
1. addresses the 5 components of reading.					
2. meets the needs of at least 80% of **ALL** students as demonstrated by benchmark assessments.					
3. reflects systematic, explicit instruction.					
4. is provided during a 90 minute block per day.					
5. is differentiated based on the needs of ALL students in the core program.					
6. is routinely checked for fidelity (checklists, walk-throughs, etc.).					

Section III: Targeted Intervention					
In my school, targeted intervention(s)…	Never	Infrequently	Sometimes	Usually	Always
1. available in my school are research-based.					
2. are matched to targeted student needs.					
3. are offered in addition to the 90 minutes provided in core reading instruction.					
4. instruction is consistent with core instruction vocabulary.					
5. instruction is consistent with core instruction instructional strategies.					
6. are implemented by staff knowledgeable about student needs.					
7. are implemented by staff trained in the needed area of instruction.					
8. are implemented consistently as specified by research or program.					
9. are delivered in small homogenous group formats (up to 6 students per group).					
10. are provided as soon as student at-risk status is determined.					
11 progress is evaluated by progress monitoring assessment data.					

Section IV: Intensive Intervention					
In my school, intensive intervention(s)….	Never	Infrequently	Sometimes	Usually	Always
1. is offered in addition to the 90 minutes provided in core reading instruction(at least 45 minutes per day, 5 times per week).					
2. are delivered in groups smaller than targeted instruction.					
3. are implemented on a consistent basis at the fidelity level that is specified by research or program.					
4. are research-based.					
5. implemented by staff trained in the needed area of instruction.					
6. progress is evaluated by progress monitoring assessment data.					

Section V: Screening					
In my school….	Never	Infrequently	Sometimes	Usually	Always
1. the regular schedule established for screening ALL students (minimum of 3 times per year) has been followed.					
2. established screening arrangements (who, what, where, and when) are followed.					
3. training relative to administration of screening measures has been provided to staff (teachers, interventionists, administrators) prior to screening.					
4. "refresher" practice sessions are provided prior to each screening administration.					
5. fidelity checks of screening procedure and administration are conducted on a regular basis.					
6. screening data accurately determine at-risk status.					
7. screening data from each administration are graphed according to grade level and/or classroom per skill area assessed.					
8 screening/benchmarking data are routinely shared at staff meetings and/or grade level team meetings.					
9. decision rules based on local or national norms are used to identify students needing differentiated instruction or additional intervention.					

Section VI: Progress Monitoring					
In my school….	Never	Infrequently	Sometimes	Usually	Always
1. the staff has received training in the administration of progress monitoring measures.					
2. the staff has received training in the interpretation of progress monitoring measures.					
3. established progress monitoring arrangements (who, what, where, and when) are followed.					
4. regular checks of fidelity of progress monitoring administration are conducted.					
5. "refresher" practice sessions are provided as needed and indicated by fidelity checks.					
6. established decision rules determine student movement through the tiers.					
7. progress monitoring tools include curriculum based measures (CBM) and informal measures (e.g. reading inventories, checklists and rubrics, running records).					
8. students performing below grade level expectations are progress monitored weekly or biweekly.					
9. progress monitoring data are graphed in terms of performance level.					
10. progress monitoring data are graphed in terms of progress per skill area assessed.					
11. progress monitoring data are routinely shared at each grade level with teachers, administrators, and parents.					
12. progress monitoring data are used to determine the effectiveness of interventions.					
13. graphed progress monitoring data are used to inform individual student movement through the tiers.					

Section VII: Infrastructure					
In my school, data are used to determine….	Never	Infrequently	Sometimes	Usually	Always
1. effectiveness of RTI by examining the number of students meeting benchmark by grade level per year.					
2. effectiveness of RTI by examining the number of students receiving interventions by grade level per year.					
3. effectiveness of RTI by examining the number of students referred to special education by grade level per year.					
4. effectiveness of RTI by examining the movement of students across tiers over time.					
5. improvements to the school's overall RTI process.					

Section VIII: Leadership					
In my school, the principal….	Never	Infrequently	Sometimes	Usually	Always
1. participates with the building-based RTI Team to analyze student data.					
2. participates in grade-level team meetings to analyze student reading performance data.					
3. provides input to help teachers plan instruction based on student reading performance data.					
4. participates in professional development opportunities that support the RTI implementation process.					
5. allocates the necessary resources essential for effective RTI implementation.					
6. schedules core reading instruction that ensures 90 minutes of reading instruction daily.					
7. communicates with district office regarding the RTI process, student data, and professional development needs in his/her building.					

Section IX: Teaming /Collaboration					
In my school….	Never	Infrequently	Sometimes	Usually	Always
1. shared responsibility for all children is evident among faculty.					
2. data from fidelity checks are used to inform instruction.					
3. data from fidelity checks are used to inform professional development (topics, methods, and intensity).					
4. an RTI/problem-solving team reviews student data to make decisions about tiered interventions.					
5. the RTI/problem-solving team is given adequate time to meet regularly to discuss student data.					
6. the RTI/problem-solving team discussions are data driven.					
7. the literacy coach or specialist meets regularly with teachers to assist them with core reading instruction.					

Click the finished button below to submit your survey.

Thank you very much for sharing this information.

Appendix B: Expert Panel

Butcher, Pamela	RESA 4 Special Education Director, former elementary principal and West Virginia Department of Education Reading Cadre Member
Fisher, Jamison	West Virginia Department of Education RTI Specialist
Jelich, Rhonda	Director of Elementary Education, Jackson County Schools
Malcolm, Jo	Principal at Summersville Elementary, former Nicholas County Schools Special Education Coordinator
Palenchar, Linda	Fayette County Special Education Director, former West Virginia Department of Education RTI Coordinator
Richmond, Nancy	West Virginia Department of Education RTI Specialist

Appendix C: Principal Email

October 26, 2011

Dear West Virginia Principal,

West Virginia elementary schools have been working to implement the Response to Intervention (RTI) process in the area of reading as mandated by Policy 2419, Regulations for the Education of Students with Exceptionalities. Elementary schools were required to have the process in place in the area of reading by July 1, 2009.

I am currently working on my doctorate at Marshall University. The purpose of this letter is to invite you to assist me in disseminating a survey to the curriculum team members at your school. My research project is entitled, "A Descriptive Study of RTI Implementation at the Elementary Level in West Virginia. It explores the implementation of components typically within a school's RTI process.

In a few days, you will receive an email containing a survey consent with a link to the electronic survey. I am asking that you forward the email to all members of your school's curriculum team for completion.

Survey responses will be completely anonymous and used only for the intended purposes of this doctoral research project.

If you have any questions about the study you may contact Dr. Ron Childress at rchildress@marshall.edu or 304.7446.2074. You may contact me at lee41@marshall.edu or 304.226.5949. If you have any questions concerning your rights as a research participant you may contact the Marshall University Office of Research Integrity at 304.696.4303.

Sincerely,

Sarah Lee

Co-Investigator

Your assistance with this task is greatly appreciated!

Appendix D: Institutional Review Board Approval

MARSHALL UNIVERSITY
www.marshall.edu

Office of Research Integrity
Institutional Review Board
401 11th St., Suite 1300
Huntington, WV 25701

FWA 00002704

IRB1 #00002205
IRB2 #00003206

October 11, 2011

Ron Childress Ed. D.
Education and Professional Development

RE: IRBNet ID# 263982-1
At: Marshall University Institutional Review Board #2 (Social/Behavioral)

Dear Dr. Childress:

Protocol Title:	[263982-1] A Descriptive Study of RTI Implementation at the Elementary Level in West Virginia	
Expiration Date:	October 11, 2012	
Site Location:	MUGC	
Submission Type:	New Project	APPROVED
Review Type:	Exempt Review	

In accordance with 45CFR46.101(b)(1), the above study and informed consent were granted Exempted approval today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Chair for the period of 12 months. The approval will expire October 11, 2012. A continuing review request for this study must be submitted no later than 30 days prior to the expiration date.

This study is for student Sarah Lee.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/Behavioral/Educational) Coordinator Michelle Woomer, B.A., M.S at (304) 696-4308 or woomer3@marshall.edu. Please include your study title and reference number in all correspondence with this office.

Appendix E: Inter-Item Correlation Tables

Inter-Item Correlation Matrix for Core Instruction

	1	2	3	4	5	6
1		.363	.498	.290	.507	.464
2	.363		.589	.148	.413	.291
3	.498	.589		.327	.597	.457
4	.290	.148	.327		.415	.335
5	.507	.413	.597	.415		.580
6	.464	.291	.457	.335	.580	

Inter-Item Correlation Matrix for Targeted Instruction

	1	2	3	4	5	6	7	8	9	10	11
1		.519	.335	.452	.458	.424	.350	.652	.314	.249	.396
2	.519		.397	.531	.600	.499	.444	.581	.458	.519	.531
3	.335	.397		.374	.364	.246	.291	.406	.293	.312	.315
4	.452	.531	.374		.840	.486	.436	.559	.291	.369	.549
5	.458	.600	.364	.840		.564	.440	.553	.288	.387	.539
6	.424	.499	.246	.486	.564		.462	.495	.357	.415	.559
7	.350	.444	.291	.436	.440	.462		.568	.354	.425	.445
8	.652	.581	.406	.559	.553	.495	.568		.403	.469	.543
9	.314	.458	.293	.291	.288	.357	.354	.403		.486	.461
10	.249	.519	.312	.369	.387	.415	.425	.469	.486		.442
11	.396	.531	.315	.549	.539	.559	.445	.543	.461	.442	

Inter-Item Correlation Matrix for Intensive Intervention

	1	2	3	4	5	6
1		.393	.530	.343	.387	.355
2	.393		.677	.508	.458	.568
3	.530	.677		.688	.667	.692
4	.343	.508	.688		.601	.643
5	.387	.458	.667	.601		.655
6	.355	.568	.692	.643	.655	

Inter-Item Correlation Matrix for Screening

	1	2	3	4	5	6	7	8	9
1		.704	.523	.235	.230	.185	.287	.317	.387
2	.704		.591	.320	.373	.274	.379	.359	.440
3	.523	.591		.522	.529	.312	.335	.333	.379
4	.235	.320	.522		.721	.422	.423	.321	.428
5	.230	.373	.529	.721		.442	.473	.315	.454
6	.185	.274	.312	.422	.442		.458	.421	.412
7	.287	.379	.335	.423	.473	.458		.426	.600
8	.317	.359	.333	.321	.315	.421	.426		.574
9	.387	.440	.379	.428	.454	.412	.600	.574	

Inter-Item Correlation Matrix for Progress Monitoring

	1	2	3	4	5	6	7	8	9	10	11	12	13
1		.865	.696	.583	.517	.558	.476	.426	.544	.519	.482	.496	.477
2	.865		.711	.617	.590	.563	.528	.453	.560	.567	.542	.537	.526
3	.696	.711		.607	.526	.610	.538	.425	.545	.490	.564	.560	.576
4	.583	.617	.607		.671	.541	.562	.358	.527	.490	.467	.504	.530
5	.517	.590	.526	.671		.560	.410	.310	.364	.398	.446	.403	.451
6	.558	.563	.610	.541	.560		.608	.415	.496	.463	.499	.524	.591
7	.476	.528	.538	.562	.410	.608		.384	.444	.428	.518	.461	.490
8	.426	.453	.425	.358	.310	.415	.384		.585	.584	.496	.540	.411
9	.544	.560	.545	.527	.364	.496	.444	.585		.866	.544	.587	.609
10	.519	.567	.490	.490	.398	.463	.428	.584	.866		.518	.545	.566
11	.482	.542	.564	.467	.446	.499	.518	.496	.544	.518		.645	.618
12	.496	.537	.560	.504	.403	.524	.461	.540	.587	.545	.645		.635
13	.477	.526	.576	.530	.451	.591	.490	.411	.609	.566	.618	.635	

Inter-Item Correlation Matrix for Infrastructure

	1	2	3	4	5
1		.854	.731	.798	.746
2	.854		.870	.794	.778
3	.731	.870		.808	.747
4	.798	.794	.808		.785
5	.746	.778	.747	.785	

Inter-Item Correlation Matrix for Leadership

	1	2	3	4	5	6	7
1		.766	.714	.709	.590	.316	.537
2	.766		.777	.585	.610	.251	.407
3	.714	.777		.679	.622	.276	.568
4	.709	.585	.679		.694	.475	.591
5	.590	.610	.622	.694		.466	.595
6	.316	.251	.276	.475	.466		.568
7	.537	.407	.568	.591	.595	.568	

Inter-Item Correlation Matrix for Teaming/Collaboration

	1	2	3	4	5	6	7
1		.604	.520	.343	.382	.396	.298
2	.604		.828	.564	.569	.521	.417
3	.520	.828		.599	.568	.480	.429
4	.343	.564	.599		.742	.729	.433
5	.382	.569	.568	.742		.678	.523
6	.396	.521	.480	.729	.678		.444
7	.298	.417	.429	.433	.523	.444	

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EDUCATION

Marshall University Graduate College, South Charleston, WV
Ed.D. Curriculum and Instruction; Currently Enrolled
Ed.S. Educational Leadership , 011
School Leadership Certificate, 2007
Master of Arts in Reading Education, 1999

Bethany College, Bethany WV
Bachelor of Arts in Education, 1996

PROFESSIONAL EXPERIENCE

Response to Intervention (RTI) Specialist: WV Department of Education
July 2008 to present

Supplemental Reading/Title I Reading Teacher: Glade Middle School
August 2006 to June 2008

Title I Reading/Math Teacher: Craigsville Elementary
January 1999 to June 2006

21st Century Community Learning Centers
2001-02 and 2002-03 Craigsville Elementary Site,
2003-04 and 2004-05 Nicholas County High School Site

Energy Express Site Coordinator
Summer 2004 and 2002

Senior High Alternative Education Teacher
1997-1999
Richwood High and Nicholas County High (1997-98) and Nicholas County High (1998-99).

Substitute Teacher
Webster and Nicholas Counties May 1996-May 1998

Energy Express VISTA Summer Associate
Summer 1997

Energy Express Mentor
1996, 1995, 1994 Summers

PRESENTATIONS/WORKSHOPS

Crowe, P., Edwards, T., Lee, S., & Watts, L. (2010) *Staff and Administrative Views of the Preschool Collaboration Program Between Lincoln County Schools and Southwestern Community Action Council Head Start for the Year 2007-08.* SRCEA Annual Conference, Charleston, WV.

Crowe, P., Toney, H. Lee, S., Tuckwiller, B., &Triplett, M. (2009) The Conference Experience. Marshall University Doctoral Seminar, South Charleston, WV