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THE RELATIONSHIP BETWEEN TEACHER BELIEFS ABOUT RESPONSE TO

INTERVENTION AND STUDENT OUTCOMES:  AN ATTEMPT TO GAIN

TEACHER BUY IN AND INCREASE STUDENT OUTCOMES


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THE RELATIONSHIP BETWEEN TEACHER BELIEFS ABOUT RESPONSE TO
INTERVENTION AND STUDENT OUTCOMES:  AN ATTEMPT TO GAIN
TEACHER BUY IN AND INCREASE STUDENT OUTCOMES


A DISSERTATION APPROVED FOR THE DEPARTMENT OF
EDUCATIONAL LEADERSHIP AND POLICY STUDIES


BY


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Dedication

This dissertation is dedicated to my family.  To my husband Colin, I thank you for your support, motivation, and encouragement.  Thank you for the many reminders along the way that I had come too far to give up!  I am grateful to have you by my side each day.  To my children Carter and Chloe, I love your enthusiasm for learning.  Carter, you are my sweet, smart, funny boy!  Chloe, my "mini-me", your determination and strong resolve will serve you well!  I hope my work serves as an example to you both that you can accomplish your goals with hard work.  Colin, Carter, and Chloe – I love you with all my heart!

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*"If you want to change the world, go home and love your family."*

*-Mother Teresa*

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Abstract

Response to Intervention (RtI) is a tiered system of supports designed to offer early prevention services, blend general and special education services, focus on research-based strategies, and emphasize data-based decisions.  This study examines teacher beliefs about Response to Intervention (RtI) and teachers' perceptions of the skill set they possess to implement RtI through a survey method.  Examining the role of educators in the implementation and sustainment of a mandated initiative is fundamental to successful usage of the framework.  Additionally, the study examines the connection between teacher beliefs/skills and student learning outcomes on a reading curriculum-based measurement.  A regression analysis is conducted to determine if a relationship exists between teacher beliefs/skills and an increase in student learning.  Furthermore, teacher feedback was gathered on how they obtained their skill set and what supports they need in the future from the participating school district. This study found a significant relationship exists between teacher beliefs/skills and student learning.  Specifically, teacher beliefs about data-based decision making were found to have a significant relationship with class average student growth rates on a reading curriculum-based growth measurement.


**Keywords:**  response to intervention, teacher beliefs, teacher self-efficacy, teacher perception of skill sets, teacher perception, reading curriculum-based measurement, district level educational change initiative

Chapter 1

Introduction

This quantitative study investigated teacher beliefs and perceptions of their skill set to utilize components surrounding a district wide learning framework referred to as Response to Intervention (RtI) and explored its association with student learning. Through survey questions, the study gathered data to help guide a large-urban school district in plans to advance their work in supporting teachers in the utilization of the RtI framework. Specifically, the study looked at four factors: teacher beliefs about student academic abilities and performances of students with disabilities, data-based decision making, functions of core and supplemental instruction, and teacher perceptions of RtI skills applied to academic content. To successfully integrate new practices in school systems, districts must examine teachers' thoughts and belief systems along the way. Teachers are the ones who execute the components of the framework and have the most direct relationship with student learning. When planning the deployment of the actual steps necessary to carry out the practices associated with RtI, the teacher must be the primary focus (Hall, n.d.).

Response to Intervention (RtI) is a tiered system of supports designed to offer early prevention services, blend general and special education services, focus on research-based strategies, and emphasize data-based decisions. The National Center for RtI (2007) defines RtI as the framework which integrates assessment and intervention within a multi-level prevention system to maximize student achievement and to reduce behavior problems. With RtI, schools identify students at risk for poor learning outcomes, monitor student progress, provide scientific research-based

interventions and adjust the intensity and nature of those interventions depending on a student's responsiveness, and identify students with learning disabilities when appropriate.

RtI may offer benefits over more traditional methods of serving students with learning disabilities (SLD) and struggling learners (Isbell, 2015). RtI may also identify students with SLD at earlier ages, thereby potentially lessening the impact of the disabilities or preventing some students from developing disabilities; however, further research is needed (Steecker, Fuchs, & Fuchs, 2008). Special education services must shift from only the special education classroom to general education classrooms for all students to benefit. Shinn (2007) questioned if the field of education can go further, and if teachers can apply these fundamental concepts regardless of labels. Educators should first address the concerns, challenges, and limitations of teacher efficacy before executing RtI in schools.

Educators need to demonstrate higher levels of efficacy in RtI implementation to reduce inappropriate student placement. Ball and Christ (2012) posit the most challenging point for schools is often the decision making at the individual student level which includes technical components:

> (a) number of data points needed to make a decision regarding response, (b) the amount of time necessary to evaluate whether an intervention is successful, (c) whether progress monitoring data are sufficient in lieu of more traditional standardized assessments for making special education placement decisions, and (d) the most appropriate action once an intervention is deemed successful

or unsuccessful (e.g., continue, discontinue, intensify, or change interventions) (p. 232).

To support educators in their efforts to implement intervention programs and improve student outcomes, strong professional development is necessary (Kratochwill, Volpiansky, Clements, & Ball, 2007). By preparing teachers to implement RtI as a problem-solving model which intervenes early and incorporates ongoing progress monitoring, educators are given the opportunity to build the capacity of all teachers to serve students with learning difficulties. Much research is still needed in how to best prepare future general and special educators in the RtI model.

If implemented as intended, this new model changes how schools function. "RtI is more than an educational fad; RtI is a fundamental change in how we provide services to struggling learners" (Swartz, Geraghty-Jenkinson, & Frankin-Guy, 2011, p. 1). The complete reorganization of the school district and its individual schools has become necessary to carry out the principles and practices of the RtI framework. This structure is not a prescriptive method, and it looks different across states and even across schools within the same school district. RtI is not characterized by just one set of curriculum, programs, or interventions; instead it is a framework, or model, which is meant to transform or shape how the overall school system operates. Therefore, in theory, RtI changes the way professionals within the school system operate. Yet, "research suggests that even when supported by legislation, most educational change efforts result in limited implementation success (Berendes, Bodilly, & Kirby, 2002). Because of the challenges in educational reform, Sansosti and Noltemeyer (2008) suggest that schools must work on conditions that build capacities of both the schools

district and individual educators working in the schools.  It is important that school districts can identify growth in student academic achievement through RtI implementation.  Additionally, school districts must monitor the supports in place for the educators who directly carry out the components and work required in the RtI structure.

Currently, our nations' schools seek to meet the academic needs of students thorough a tiered system of services.  While many researchers have addressed effective RtI implementation and its benefits, others have shared concerns about the model.  Graves and Graves (2016) support this need by positing, "RtI for all its good intentions is only a theory without empirical validation.  It remains to be seen if this is because the program is inappropriately designed, or if schools are unable or unwilling to implement it appropriately" (p. 3).  This study examines teacher beliefs about RtI as well as teachers' perceptions of the skills they currently possess to implement RtI through a survey method.  A regression analysis will be used to determine if a relationship exists between teacher beliefs/skills and an increase in student learning.  This study determines which of these factors, if any, result in increased learning outcomes.  Finally, the findings describe teachers' responses about sources of RtI training and what supports are needed from the school district for successful RtI practices.

**Problem Statement**

*Teachers are no longer the drivers of the reform, but the driven* (Shirley & Hargreaves, p. 32, 2006).

Prior to the inception of RtI, policy was derived from laws that aim to engineer social factors. Federal policy mandates that states adopt either the RtI model or use another federally approved model. RtI has been touted as a tool that can be used in the transformation of schools into agents of social change. Rationale for usage of the new framework includes early prevention, the blending of general and special education delivery systems, focusing on research-based strategies, and the emphasizing of data-based decisions. Referencing policy mandates, Turnbull (2005) states:

It is important at the outset to recognize that law is a form of behavior modification. It regulates behavior between the government and the governed, and it shapes the behavior of both. In this respect, the law plays its traditional role of social engineering – shaping the ways that society operates (p. 302).

District level reform is more successful when teachers are successfully prepared. Datnow and Springfield (2000) found that "clear, strong district support positively impacted reform implementation, and the lack thereof often negatively impacted implementation" (p. 200). Teacher buy-in is crucial to maintaining reform efforts and district support through professional development and resource allocation is essential. Gaining teacher buy-in helps to move the process forward. This concept of educator buy-in and building capacity among individuals is not new. Sarason (1995) stated:

School reformers know one thing: changing the attitudes and practices of school personnel is as difficult as it is necessary [and] I have never met a school reformer who did not struggle against the perception that he or she was trying to level a mountain with a teaspoon (p.186).

A school district must intentionally build educator capacity by building its necessary components, which include teacher beliefs and skills. When utilizing an externally developed reform method such as RtI, school districts must allow individual schools to develop their own flexible and internal method of implementation. This process of support and flexibility can help schools adapt models to local needs, increase teacher buy-in, and increase the possibility that implementing the reform will actually result in school change (Datnow & Springfield, 2000). Teachers are responsible for carrying out the steps of RtI: conducting the assessments, providing interventions, progress monitoring, completing paperwork, providing research-based instruction, and communicating the process to parents. Furthermore, teachers have both voluntary and involuntary roles in reform efforts, but their perspectives as teachers are seldom presented and sparingly considered when discussing the effectiveness of reform and school change (Darling-Hammond, 2009). Examining the role of educators in the implementation and sustainment of an initiative that has been mandated is fundamental. However, teachers' perspectives are rarely examined and documented before, during, or after reform initiatives (Greenfield, 2010). If teachers perceive RtI as another initiative that will come and go, the framework may not receive support from teachers. Alternatively, if teachers are supportive and understand the vision and value of the framework, they are more likely to support it and put their full effort into the success of the model. Teachers are an essential part of the RtI process, its implementation, success, and its dissemination to parents and the community.

For over 30 years, teacher efficacy – the level of confidence a teacher has in their ability to increase students learning (Hoy, 2000) – has been a major topic of interest. Current research results suggest that the likelihood of teachers' acceptance of new practices significantly increases when two conditions are present: (1) teachers recognize the need for the practice, and (2) they either have the necessary skills to carry out the practice or will receive support to develop the required skills (Castillo, Batsche, Curtis, Stockslager, march, Minch, & Hines, 2016). Teachers who set high goals, who persist, who try another strategy when one approach is found wanting--in other words, teachers who have a high sense of efficacy--are more likely to have students who learn (Shaughnessy, 2004). Additionally, research findings indicate that teachers' beliefs about issues such as student learning, styles of teaching, and instructional strategies impact their willingness to implement new practices (Fang, 1996; Sparks, 2002). Because of the importance of educator perception, this study examines teacher beliefs about RtI and teachers' perceptions of the skills they possess to implement RtI. Additionally, student data was collected to determine if a relationship exists between teacher beliefs/skills and an increase in student learning. This study also sought to determine what, if any, specific factors lead to increased student learning outcomes. Finally, teacher opinions of the sources of RtI training and what supports are needed for successful RtI practices were collected and described.

This study examines the influence of teacher beliefs and skills on student reading curriculum-based measurement (R-CBM) scores. The independent variables include different types of teacher beliefs: academic ability and performance of students with disabilities; data-based decision making; functions of core and

supplemental instruction; and teacher perceptions of RtI skills as applied to academic content. The dependent variable is a reading curriculum-based measurement of average student growth rate taken from aimsweb universal screening scores during the 2016 – 2017 school year. Participants include second through fifth grade teachers who teach English Language Arts in their classrooms from one school district in a west, south-central state in the United States.

**Background of the Problem**

The implementation of RtI varies at the state, district, and school level. The concept of RtI remains somewhat elusive because of the complex nature of the framework. "RtI means different things to different people: pedagogical philosophy; diagnostic tool; a means to reduce the overrepresentation of minorities in special education; a research tool that will allow the collection of data regarding best teaching methods" (Ciolfi & Ryan, 2011, pp. 307 – 308). While that is true; there are some key features of RtI which have garnered universal agreement among most educators and policy makers. Most agree RtI it is a systematic approach to learning and responding to the needs of students that includes early identification and response to students who are struggling. RtI includes universal screening for all students as well as a three-tier process. Progress monitoring occurs at time-specific intervals to identify each qualifying student's progress or lack thereof. Beyond these basic components, a variety of beliefs and understandings surround RtI.

RtI's design focuses on closing learning gaps, increasing student achievement, and reducing the disproportionate number of referrals for special education evaluations. The purpose of the framework includes providing early prevention,

blending of general and special education needs, focusing on research-based strategies, and emphasizing data-based decisions. Students are universally screened to determine their academic levels. Next, qualifying students receive research-based interventions, and their progress is monitored regularly. If a student is improving, then the intervention continues until the student reaches a specified learning goal. If a student is not improving, a different intervention is provided and monitoring continues.

**Policy Context**

To better understand the historical roots of RtI, an examination of the foundation of the "equal protection clause" of the Fourteenth Amendment is helpful. The Fourteenth Amendment of the United States Constitution includes an equal protection clause prohibiting a state from denying anyone within its jurisdiction the "equal protection" of the law. Turnbull and Turnbull (1978; 2005) state that the Fourteenth Amendment itself was the basis on which students with disabilities first gained access to public education as a matter of constitutional right. In 1965, President Lyndon B. Johnson signed the Elementary and Secondary Education Act (ESEA) into law. President Johnson believed that "full educational opportunity" should be "our first national goal" (ESEA, 1965). From its inception, ESEA was a civil rights' law. Public Law 94-142 (1975) was passed stating the guarantee of a free appropriate public education (FAPE) to each child with a disability. The law intended to improve access to education for children with disabilities. Implicit changes in the P.L. 94-142 included the following efforts: (a) improve how children with disabilities were identified and educated, (b) evaluate the success of these efforts, and (c) provide

due process protections for children and families.  In addition, the law authorized

financial incentives to enable states and localities to comply with P.L. 94-142.  In

1990, P.L. 94-142 was renamed as the Individuals with Disabilities Education Act

(IDEA).

Even after the passage of ESEA and P.L. 94-142, education reform initiatives

searched for methods to support struggling learners.  Both general and special

education specialists supported the needs of assessing students' skills, knowing each

student's progress, and adjusting teaching to build on each student's skill levels

(Belisle, 2017).   One such initiative was The Learning Disabilities Initiative (LDI),

which was established by the Office of Special Education programs in the U.S.

Department of Education.  One of its main findings was the need for other methods

than using an achievement discrepancy formula to identify students with learning

disabilities.

In 2001, President Bush signed No Child Left Behind (NCLB, 2001) into law.

NCLB amended Title I of the Elementary and Secondary Education Act (ESEA) of

1965, and this led to a major shift towards federal input in state accountability of

education.  The third principle of NCLB is noteworthy in its support of RtI practice as

evidenced by the following statement: "The highly-qualified teacher will use

scientifically-based instruction" (NCLB, 2001).  This key phrase that teachers will use

"scientifically-based instruction" is woven throughout the expectations of RtI.  The

usage of research-based instruction and interventions is foundational to the RtI

framework.

In 2004, President Bush reauthorized IDEA with the intention to enhance and align IDEA and NCLB. This reauthorization was referred to as the Individuals with Disabilities Education Improvement Act (IDEIA). Ten alignment areas between NCLB and IDEA have been emphasized by the U.S. Department of Education: definitions, use of funds for state-level activities, funds for school-wide programs, funds by LEA in ESEA activities, requirements for qualification of special education teachers, performance goals and indicators, reporting requirements, development of alternative assessments, linking of records of migratory children across states, and eligibility determination regarding lack of appropriate instruction (Sugai & Horner, 2009).

RtI was derived from the reauthorization of IDEA in 2004. RtI not only replaced the former special education discrepancy model, but it also assisted all students with scientifically based interventions designed to measure students' mastery of grade-level learning. The alignment between NCLB and IDEA was noteworthy because it established that RtI applied to both general and special education students. Each student, regardless of general or special education status, who did not respond positively to generalized scientifically based interventions would then be moved through more intensive and specific intervention. If students are still not successfully responding to a set number of interventions, then they may be referred for special education testing. The approach was intended to promote prevention and evidence-based instruction based on formative assessment of student performance rather than the special education discrepancy model (IDEA, 2004). The idea that education should be or become an evidence-based practice and that teaching should be or

become an evidence-based profession has also recently come to prominence in several

countries around the world (Biesta, 2007). NCLB and IDEA were intended as

complementary and effective legislative tools that when comprehensively employed

would have a greater impact on the efforts made by schools to address the needs of the

entire school population (Greenfield, Rinaldi, Proctor, and Cardarelli, 2010).

In 2015, President Obama authorized updates to NCLB with the Elementary

and Secondary Schools Act (ESSA). However, ESSA retains the focus on evidence-

based interventions which are the foundation of RtI. It is noteworthy that ESSA

continues the focus on advancing equity in education and the focus on evidence-based

learning, both foundational components of RtI. This most recent legislation has

transferred much of the responsibility for developing, implementing, and evaluating

effective school and schooling processes to state departments of education across the

country. However, the term "RtI" or any of its derivatives never appears in the new

ESSA bill. The term "multi-tiered systems of supports" does appear several times in

the law and the acronym "MTSS" never appears. In ESSA, the definition of multi-tier

system of supports is a comprehensive continuum of evidence-based, systemic

practices to support a rapid response to students' needs, with regular observation to

facilitate databased instructional decision making.

**State Level RtI**

The state in which this study takes place is a Southern State, more specifically

a west, south-central state (retrieved from www2.census.gov). The State's

Department of Education asserts that their model was developed and supported by a

2011 State Personnel Development Grant II, a grant to their State Department of

Education from the U.S. Department of Education. The primary goal of the grant is to improve student academic and behavioral outcomes using tiers of research-based interventions matched to the needs and levels of students. According to their state website, critical components of their multi-tiered intervention system include: leadership, teaming, professional development, universal screening/benchmarking, tiered interventions, progress monitoring, data-based decision making, and family engagement. Furthermore, the State Department of Education emphasizes the importance of school professionals and parents working together to make informed decisions based on student needs and data. The State Department of Education also emphasizes that the strength of collecting data is the allowance of better decision making about the difference in which students need to continue in the general education intervention and which students might qualify for special education programs.

**Participating School District**

Cedar Creek School District (CCSD), a pseudonym, is a large urban school district in consisting of 19,447 students in the 2016 - 2017 school year. The district is comprised of 3 high schools, 5 middle schools, 18 elementary schools, one alternative high school, one alternative middle school, one early childhood center and two offsite prekindergarten centers. Additionally, the district employs 1,485 certified personnel and 725 support employees. Cedar Creek adopted the RtI model eight years ago. The school district introduced the model through the special education department which led many to perceive RtI as a special education initiative. The district's first introduction of RtI was disjointed in its implementation. A renewed effort for an

effective usage of the RtI policy began in the 2013 – 2014 school year, focusing first in elementary schools, and then in the 2014 – 2015 school in the district's middle schools.  Efforts included the creation of a district RtI coordinator, district level RtI committee, building leadership teams, and district wide professional development.

RtI is a framework for schools to operate within a multi-tiered system of supports for academic skills and student behaviors.  Cedar Creek Public Schools (CC RtI manual) lists key components of RtI as:  universal screening; tiered intervention model of service, progress monitoring, use of problem solving model/problem solving team, and focus on instruction and not eligibility.  The Cedar Creek RtI Manual lists eight belief statements:  all students can learn; research based practices should guide instruction, intervention, and assessment; educational decisions are data-based; because all students are a part of the general education system, there is a shared responsibility for student achievement across the entire school community; the best intervention is one that works; differentiated instruction is an essential part of an instructional program; we can't change the past; we can impact the child's present and future; and RtI is an essential component of our Professional Learning Communities.

**Study Purpose**

The participant school district operates under the RtI framework to support student learning.  Cedar Creek has allocated a considerable amount of time, money, resources, and professional development towards putting RtI into practice.  School districts are wise to examine educators' beliefs/skills and the impact on student achievement along the way during the deployment of new ways of operating.  The purpose of this study is to examine teachers' beliefs about RtI and teachers'

perceptions of the skills they currently possess to implement RtI.  In addition, an examination of student learning outcomes will be conducted.  A regression analysis will be performed to determine which, if any, of these factors are related to an increase in student learning.  This study will use a survey to gauge teachers' beliefs about RtI and their skill set as they relate to RtI.   Using the survey results and student assessment scores, a regression analysis will be performed.  A need exists for empirical evidence to determine if teachers' beliefs/skills of the RtI framework are related to student outcomes on a reading curriculum-based measurement. Furthermore, an examination of which specific factors, if any, within teachers' belief systems/skills influence an increase in student achievement will be determined. Finally, the survey will gather information from teachers about sources of RtI training and what supports are needed from the school district for successful RtI practices.

**Research Questions**

1.  Research Question #1 (RQ1):  What are teacher beliefs about RtI?

2.  Research Question #2 (RQ2):  To what extent do teachers perceive they possess the skills necessary to carry out RtI practices?

3.  Research Question #3 (RQ3): What is the relationship between teacher beliefs and perception of skills and student learning outcomes?

4.  Research Question #4 (RQ4):  What kinds of supports do teachers need and where did teachers report receiving their training?

This study seeks to gather teachers' beliefs about RtI and their skill set for utilizing RtI through a survey method.  Student outcome data from a reading screener will also be obtained to determine if these teacher beliefs/skills influence student

learning outcomes. The purpose of this study is to determine which specific beliefs/skills from the teacher survey correspond with an increase in student learning as measured by aimsweb R-CBM growth rate. Survey data from teachers is collected and analyzed and a multiple regression is conducted. A final section in the survey includes two open-ended questions asking teachers where they gained their skill set and what the district can do to better support their needs related to RtI.

Results from this study found that overall teachers have positive beliefs/skills about RtI. The factor receiving the highest positive agreement among teachers is data-based decision making. The lowest area of positive agreement is teacher's beliefs about academic abilities and performances of students with disabilities. Additionally, the multiple regression produced an overall model which is significant suggesting that collectively the teacher beliefs/skills factors have a predictive relationship with student outcomes. Specifically, data-based decision making is found to be a significant predictor of student outcomes. The open-ended survey questions reveal where teachers gained their skill set with 36% of teachers reporting from the school district and 27% from their school sites. The most requested support needed from the school district is additional interventions and resources with this being mentioned 16 times. The second most requested support with 12 selections was for additional staffing to help carry out the requirements. Third was more training with nine responses. And, the fourth most requested theme was for more time with seven mentions of needing more time.

**Definitions**

**Aimsweb** is a universal screening, progress monitoring, and data management system that supports RtI and tiered instruction (aimsweb.com, 2017).

**Data Based Decision Making** occurs at all levels of RtI implementation and all levels of instruction. Teams use screening and progress monitoring data to make decisions about instruction, movement within the multi-level prevention system, and disability identification in accordance with state law (RTI4success.org, 2017).

**First, Best Instruction** is a term used to describe tier one level instruction which all students receive. The instruction should be research based and considered best practice. First, best instruction is meant to provide adequate instruction for approximately 80% of students, with the other students needing more intensive interventions.

**Grade Level Reading Benchmarks** are set according to aimsweb universal screening criteria.

**Perceptions of RtI Skills** is used in this study as the participant group's perception of their ability to utilize the skills necessary in RtI. This is referred to throughout the study as "skills".

**Problem Solving Process** is based around four basic questions: (1) What is the problem? (2) Why is it occurring? (3) What are we going to do about it? and (4) Did it work? Additionally, the problem-solving approach uses data to help determine if the problem is due to curriculum, instruction, environment, or student centered (Cedar Creek School District Manual, 2016).

**Reading Curriculum-Based Measurement** (R-CBM) is a general outcome-based measurement for reading.

**Response to Intervention** is the framework which "integrates assessment and intervention within a multi-level prevention system to maximize student achievement and to reduce behavior problems. With RtI, schools identify students at risk for poor learning outcomes, monitor student progress, provide scientific research-based interventions and adjust the intensity and nature of those interventions depending on a student's responsiveness, and identify students with learning disabilities." (The National Center for Response to Intervention, 2017).

**Teacher Beliefs about RtI** is used in this study to gage teachers' beliefs about factors conducive to a successful RtI framework. The beliefs gathered in this study are of the educator participant set.

**Tier One core instruction** includes the State Standards for all students and consists of first, best instruction for all. According to the Participating Schools Manual, components include: research-based instruction, differentiated instruction, core program should meet the needs of at least 80-90% of the students, core program is viable, rigorous, standards driven and implemented with integrity and universal supports are available to all students for academics and behavior.

**Tier Two and Tier Three Supplemental Instruction** are structured, small-group interventions that target specific skills based on a variety of data collected on the student.

**Tiered Service Delivery** is a process that integrates assessment and intervention within a multi-level prevention system to maximize student achievement.

With RtI, schools identify students at risk for poor learning outcomes, monitor student progress, provide evidence-based interventions, adjust the intensity and nature of those interventions depending on a student's responsiveness and may identify students with disabilities.

**Universal Screening** is used to determine which students need more intensive interventions. Aimsweb assessments are norm-references screeners and will be used for the Universal Screenings in fall, winter, and spring.

# Chapter 2

## Review of Literature

**Introduction**

School districts are responsible for enacting policy into practice. When implemented at the district and individual school level, RtI is a complex policy that can restructure the way instruction is approached (Fuchs, Fuchs, and Compton, 2012; Sansosti and Noltemeyer, 2008; Elliott, 208.) School districts must be mindful of the educators who will carry out practices and seek their collaboration. This literature review will explore current research on large-scale change specifically including teacher beliefs and teacher skill set to utilize RtI. Additionally, the relationship between teacher "buy in" and implementation of an initiative such as RtI and an examination of the elements of assessment in RtI will be explored.

Now more than ever, the fields of both general and special education are being called upon to educate and provide meaningful outcomes for all students, regardless of disability or learning needs (Basham, Israel, Graden, Poth, & Winston, 2010). The RtI framework aims to move away from the practice of allowing students to continually fail prior to receiving more support and intervention. RtI is a framework that does not have just one prescribed method; instead, it provides a flexible framework which offers a wide variety of options. Moreover, the "roll out" of RtI can be adapted to meet the needs of each school district. Some districts may mandate a "top down" approach without strategic planning, while some districts may use a multi-year plan to phase-in the changes over several years. Additionally, some districts seek teacher "buy in" while others provide little or no professional development for teachers

(Feuerborn, Sarin, & Tyre, 2011). Because of the complexity of RtI as a reform effort, teacher assessments of the transition must be examined.

**Large-Scale Education Change**

Change in education is inevitable. Change in education is defined in many ways. Fullan and Miles (1992) state "change is a process of coming to grips with new personal meaning, and so it is a learning process" (p. 749). Creating actual change on a large-scale basis is a challenge faced by all school districts and individual schools. Districts must be cognizant of practices that help to motivate change and not move forward in ways that will be counterproductive to the change efforts.

School districts have come to expect new policies and procedures to be implemented each year. The changes run the gamut from small to large scale changes. These changes range from new graduation requirements for students, training requirements for teachers, changes in state standards, changes in special education laws, and many more. Some of the new policies and procedures come with the need for comprehensive changes within the school system. Schools systems may need to realign personnel, reconsider financial allocations, purchase new resources, provide professional development, and educate stakeholders in order to create the changes needed for new policies. For change to be successful and sustainable in the long term, districts must be thoughtful about their approach to change. Hargreaves (2004) points out the connections between change and emotion by stating that they are inseparable. He further states, "There is no human change without emotion and there is no emotion that does not embody a momentary or momentous process of change" (p. 287).

Without consideration of the individuals carrying out the change – their perceptions and beliefs – a school district may have difficulty creating change.

Creating change by itself is a challenge; creating change that is sustainable over time is even more difficult. "Transforming culture – changing what people in the organization value and how they work together to accomplish it – leads to deep, lasting change" (Fullan, 2002, p. 19). Kozleski and Huber (2010) point out that RtI involves the need for increasingly complex systems of instructional design. New ways of learning to think and act that sustain systemic learning, and thus, change (P. 259). "Exploring the fit between current practices and an RtI model, as well as creating a system of support for organizational change, can alleviate some of the challenges of changing both practices and perspectives" (Hollenbeck, 2007, p. 142).

When working to create large-scale change, districts must be intentional in strategically moving forward through involving all stakeholders through collaboration. Bridich (2016) points out that "regardless of the intentions behind a reform at the legislative level, reforms that fail to incorporate teachers' and administrators' beliefs and perceptions are often doomed at the implementation level" (p. 3). She further posits: "the lack of teacher and administrator input into state and national policies may play into the troubled and cyclical nature of reform efforts, but that another factor to be considered is the schism between teachers' and administrators' understanding of how education reforms are perceived within individual schools" (p.3). For schools to create large-scale change, they must consider individual educators at the school level. None of the changes a school district puts in motion matter without the "buy in" or

input from educators carrying out the change. Districts must consider perceptions and beliefs of all these educators.

**Overview of Educator Beliefs and Perceptions**

Since teacher beliefs play a significant role in shaping their instructional behaviors, teacher beliefs are worthy of further study (Turner, Christensen, Meyer, 2009). The more information schools have about the perceptions of teachers, the more likely they will be able to provide training to positively impact implementation, thereby indirectly increasing the learning of students. According to Gibson and Dembo (1984) teacher efficacy "may influence certain patterns of behavior known to influence achievement gains" (p. 579). Ashton and Webb (1986) observed that "teachers with a high sense of efficacy seemed to employ a pattern of strategies that minimized negative effects, promoted an expectation of achievement, and provided a definition of the classroom situation characterized by warm interpersonal relationships and academic work" (p. 125). Since the implementation of RtI in public schools, the responsibilities for general and special education teachers have increased in U.S. classrooms. As RtI has been increasingly applied in schools, research has begun to focus on the impact that this process has had on teachers and support personnel (Nunn, Jantz, & Butikofer, 2009).

Ingram, Louis, and Schroeder (2004) have shown the importance of studying educators' beliefs and their development, agreement between beliefs and practice, and the struggles in changing beliefs that may make these practices more predictable. While extensive research suggests that beliefs are the best predictor of individual behavior and that educators' beliefs influence their perceptions, judgments, and

practices, beliefs remain highly resistant to change (Dewey, 1933; Pajares, 1992). A distinction should be made between the differences in studying knowledge and studying beliefs. Some studies seek to examine the knowledge base teachers have for implementing RtI, while others seek to explore the beliefs, perceptions, and/or thinking teachers possess about RtI. The concept of "teacher efficacy" is the belief that teachers develop regarding their influence upon student outcomes (Ashton & Webb, 1986). As RtI continues spreading throughout our nation's school systems, research has emerged on the impact this process has had on teachers. One such research study conducted by Nunn, Jantz and Butikofer (2009) examined concurrent validity between two measures developed by one of the authors to define elements of teacher efficacy. It further studied associated outcomes expected from the implementation of RtI. Consistent research findings indicate that increases in teacher efficacy are associated with perceptions of improved outcomes of intervention, satisfaction with results, collaborative team process, and data-based decisions. The researchers determined the existence of a significant relationship between teachers' belief and their self-efficacy. Additionally, Rubie-Davies, Flint, and McDonald (2012) conducted a study utilizing a survey method with 68 participants from a variety of socio-economic areas from rural and urban locations in New Zealand. This study sought to explore relationships between teacher characteristics of gender and teaching experience, school contextual variables, and three teacher socio-psychological variables. The researchers concluded that teacher beliefs, teacher characteristics, and school contextual variables can result in differences in teacher instructional practices and differing classroom climates. Furthermore, investigation of these variables is

important because differences in teachers can contribute to differences in student outcomes.

Another study by Donnel and Gettinger (2015) examined the influence of four variables on teachers' ratings of acceptability of the state-mandated reform initiative for RtI.  The four variables studied included belief congruence, self-efficacy, years of teaching experience, and professional development.  Belief congruence exemplifies a paradigm shift for focusing on the needs of special education students (Bean & Lillenstein, 2012).  Self-efficacy is made more evident by teachers being more open to executing new instructional practices as compared to teachers who exhibit less self-efficacy (Guskey, 1988).   Hargreaves (2005) discovered that teachers interpreted educational change differently based on their years of experience.  Investing in teachers through professional development is critical to bringing about school improvement and educational reform (Leiberman & Mace, 2008).  The authors concluded that teacher perceptions are vital in planning for school-wide reform.  The results of their study confirmed that congruent pedagogical beliefs, self-efficacy, and professional development significantly influence elementary teachers' perceptions, thereby providing greater acceptability of reform.

Many teachers believe our education system continues to use similar systems under new names with approaches to education that are more similar than different. In fact, Knoff (projectachieve.info, n.d.) discussed that the U. S. Department of Education changed the names of RtI and PBIS to the Multi-Tiered System of Supports (MTSS) designation.  Additionally, he indicated that the U. S. Department of Education had changed the name due to educators' frustrations with the original

approaches of RtI and PBIS. He further stated that MTSS frameworks and approaches have not worked any better. Ultimately, Knoff concluded that the state departments of education will continue to follow the unsuccessful NCLB, RtI, PBIS, and MTSS approaches, but hopefully that districts and schools will work together to change the concept of best practice.

Another teacher perceptual factor for consideration is the ongoing "push and pull" of high-stakes standardized testing versus the usage of formative assessments. For example, Pedulla, Abrams, Maduas, Russell, Ramos, Miao (2003) conducted a national survey and found that 90% of teachers reported feeling pressure from district administration and 79% felt pressured by their principal to improve test performance. The study also revealed that one-third of teachers wanted to transfer out of tested grades (Pedulla, et al., 2003). "The professional development of classroom assessment practice requires teachers to understand the potential for the social construction of knowledge to improve student learning, particularly teaching strategies that emphasize high-quality interactions" (Clark, 2011, p. 166). Assessments in RtI are foundational, but teachers could perceive it as more testing.

**Teacher Self-Efficacy as Perceptions of RtI**

Teacher efficacy, sometimes referred to as self-efficacy, is defined as teachers' competence in their ability to promote student learning. Teachers who possess high self-efficacy are more likely to set ambitious goals, approach difficult tasks with competence, persevere in the face of difficulty, and quickly recover from setbacks (Bandura, 1994; Pajares, 2002; Steinberg, 2008). These qualities are nurtured in a school environment where teachers are expected to try new skills while receiving

appropriate feedback and encouragement (Armstrong, 2006; O'Shea, 2005; Whitaker, 2004). Jerald (2007) noted the following characteristics of teachers with strong self-efficacy: tendency to exhibit greater levels of planning and organization; open to new ideas and more willing to experiment with new methods to better meet the needs of their students; persistence and resiliency when things do not go smoothly; to be less critical of students when they make errors; and are less inclined to refer a student to special education.

The role of teachers in the implementation and sustainment of an initiative enacted upon them is fundamental. If teachers perceive this as just another initiative that will come and go, the framework will not receive support from those teachers. Alternatively, if teachers are supported and see the vision and value of the framework, they are more likely to support it and to put their full effort into the success of the model. Teachers' perspectives are rarely examined and documented before, during, or after reform initiatives (Greenfield, et al. 2010). Furthermore, if RtI is to take root as a systems-reform, then those who actually implement the requirements of RtI - the teachers - must be supported. In order to achieve this goal, their perceptions, attitudes, and beliefs must be examined.

Although federal policy mandates that teachers must comply with their district's selected framework, they must also conduct the assessments and interventions, carry out action steps, and work with parents. Additionally, teachers play active roles in reform efforts, some voluntary and others not, but their perspective as teachers are seldom presented and sparingly considered when discussing the effectiveness of reform and school change (Darling-Hammond, 2009). Teachers are

an essential part of this process, its implementation, its success, and its dissemination to parents and the community.  Teachers' perspectives play a key role in the delivery of instruction in the classroom and for referral for interventions and/or special education testing (Dunn, Cole & Estrada, 2009).

In 2008, Hoover and Patton posited that teachers viewed the top three benefits of utilizing RTI as access to early intervention, meeting unique student needs, and collaborating with other staff members.  Additionally, the teachers were gratified that they had the ability to differentiate learning opportunities based on student need, use of evidence-based interventions, and collaboration.  Marinez and Young (2011) determined to study not only how RtI was utilized, but also to discover how school personnel perceived the process.  Using an online survey, participants included diagnosticians, administrators, counselors, general education teachers, and special education teachers.  The part of the study examining participant opinions about the survey found that the majority of participants found RtI to benefit students.  However, when the researchers examined the accompanying comments, they found a common theme:  respondents indicated that they were already helping their students before RtI. Comments included  "The students included in the RtI process are the same students who were being serviced before RtI was part of the process;" "There are some benefits, yes;"  "But if you are a good teacher you are not going to let a student having problems fall by the wayside;"  "We are here for the children;"  "It just takes so much extra time to document every little thing that you do to prove that you are helping the child; and we do interventions all the time for all the students as needed;" and "RtI

helps put a process/structure in place but the time and documentation is sometimes

prohibitive" (Martinez & Young, 2011).

Casto-Villarreal, Rodriguez, and Moore (2013) assessed teachers' perceptions

of RTI by utilizing a qualitative methodology.  Four themes emerged from their study:

(a) overall understanding of RtI, (b) teachers' perceptions of barriers to RtI in their

schools, (c) teachers' suggestions to improve RtI, and (d) teachers' suggestions for

making paperwork more efficient.  This study further identified teachers' perceptions

of barriers to an effective RtI program.  The top five major themes were:  training,

time, resources, the RtI process, and RtI paperwork.  The research was based on the

belief that understanding teacher's perceptions is key to implementation and

sustainability efforts (Reinke, Stormont, Herman, Puri, & Goel, 2011).

For teachers to feel increased self-efficacy in RtI, teachers' skill level to carry

out the technical components must be examined.  Datnow, Foster, Kemper, Lasky,

Rutherford, Schmidt, Stringfield, Sutherland and Thomas (2005) advocate "The more

participatory the adoption process as far as teachers are concerned, the more likely it is

that there will be support and enthusiasm for implementation " (p. 201).  Having

teachers committed to the process of RtI allows them to understand revised

perspectives as well as revised procedures.  Equipping teachers with the skills and

professional development necessary to implement research-based strategies and

interventions competently can lead to increased teacher self-efficacy.  Providing

teachers with tools and links to resources will help them guide improved student

outcomes in their classrooms (Hardcastle & Justice, 2006).

**Teacher Skill Level with RtI**

Educators in both special and general educator classrooms remain unclear about the specific roles and responsibilities to identify students with SLD and then utilize RTI as a method of intervention as a result of limited or non-existent training (Isbell, 2015). Teacher preparation must focus not only on ensuring that teachers receive and incorporate validated intervention models and methods, but it should also center on developing expertise in accurately and separately identifying students who have learning disabilities from other students who are not achieving for other reasons (Goodman & Webb, 2006). Without useful teacher training, RtI will never achieve successful results for either general or special education students.

Four annual surveys conducted by the Council for Exceptional Children's (CEC) Council of Administrators of Special Education (CASE) with Spectrum K12 educators, each indicated a lack of teacher training as the biggest obstacle to implementing RtI between the years of 2008 – 2011. In the 2011 Survey Report, 60% indicated the lack of training as the largest barrier of implementation. The 2010 RtI survey report analyzed data from 1,101 respondents, 761 of whom completed the entire survey. In the 2010 report, 53% indicated insufficient teacher training as somewhat of an obstacle and 37% indicated training as a significant obstacle to implement RtI (Isbell, 2015).

The criticism mentioned should by no means be regarded as critical flaws; rather, they should reflect RtI as a new model, one that researchers, educators, and practitioners must grow and change with as they meet the needs of struggling students in schools. Despite criticisms or limitations, research suggests that RtI has been found

as a promising approach, particularly because of its focus on sound instructional principles such as effectively teaching all children, early intervention, use of research-based interventions, student progress monitoring, and using assessments to inform instructional decision-making (Colemen & Buysse, 2006).

Teachers must receive ongoing professional development to help cultivate and refresh their skills and knowledge required to implement RtI.  Strong professional development includes training in (a) the conceptual; methodological, and practical aspects of RtI and (b) the systemic change factors that influence the process of implementing a new framework.  This emphasis on sound professional development should be the focus of scaling up to implementation (Kratochwill, Volpiansky, Clements, & Ball, 2007).   An understanding of RtI's professional language, vocabulary, and concepts is essential for teachers to successfully utilize this model. Teachers should receive ongoing job-embedded professional development related to the three tiers of instructional practices.  Teachers must also know how to identify an intervention that is considered research-based, how to use the intervention with fidelity, and know who to ask for guidance.  "Professional development that clarifies not only what qualifies as evidence-based practice but also guidance as to how to implement the practice would be helpful to teachers at the classroom level" (Regan, Berkelye, Hughes, & Brady, 2015, p. 245). Additional learning must occur on how to implement and apply the universal screening and progress monitoring systems.  Each school should wisely plan for how much new information is presented and expected for implementation each year since this process will take years to fully implement as

well as require embedded professional development for teachers to continually update and refine practices.

Schools must have the capacity to utilize RtI correctly. This comes with a need for a sophisticated skill set for teachers, administrators, school psychologists, district leadership, and all other educators involved. Teachers must be adequately trained to recognize if a student positively responds to an intervention. Measurement of students' response to intervention "is limited by (a) a lack of student outcome measures with strong psychometric features, (b) limited screening measures, (c) lack of standardization in assessment, and (d) lack of clear-cut criteria for determining responsiveness to an intervention" (Kratochwill, 2007, p. 619). Some students are simply slower learners or may have lacked opportunity for first, best instruction. Additionally, some question the assumption that students who respond to individualized tier two or three instruction do not have a disability because they responded to an intervention. Some argue this is the level of support a student requires for success but may still have a learning disability (Ciolfi & Ryan, 2011). Furthermore, some question the capacity for schools to provide the more intensive and individualized instruction required in tier 2 and tier 3 instruction given the lack of resources schools are provided (Ciolfi & Ryan, 2011). The selected intervention could be inappropriate for the student. For example, perhaps an English Learner (EL) is receiving an intervention that was not shown to be effective for EL students. Klinger and Edwards (2006) posit that culturally and linguistically diverse students, particularly English-language learners, are often omitted from participant samples because of their limited English proficiency, and yet research findings often tout as

applying across student populations.  Also, RtI does not diagnose what to do when a student does not respond to an intervention.  Instead, the teacher must discern the reason for the non-responsiveness:  student behavior, inappropriate intervention, incorrect utilization, not used with fidelity, and/or intervention does not match student needs.  RtI is a complicated process requiring a sophisticated skill set from educators to pinpoint the correct intervention.

Many schools and districts have systems in place for universal screenings to identify students who are at risk based on assessment data.  Additionally, many schools have adopted interventions for students who need more intensive interventions.  Ball and Christ (2012) state, "The point at which many schools struggle is data-based decision making at the student level." For example, common issues include:  (a) the number of data points needed to make a decision regarding response, (b) the amount of time necessary to evaluate whether an intervention is successful, (c) whether or not progress-monitoring data is sufficient in lieu of more traditional standardized assessment for making special education placement decisions, and (d) the most appropriate action once an intervention is deemed successful or unsuccessful (e.g., continue, discontinue, intensify, or change interventions).  RtI is complex, and it requires the appropriate level of professional development, expertise for guidance, and a sophisticated skill set to properly fulfill the model's purpose.

The Response to Intervention Model shows a pyramid of interventions where approximately 80% of students should be successful in tier 1 instruction, approximately 15% needing tier 2, and approximately 5% needing tier 3 intensive support (Elliott, 2008; Gruman & Hoelzen, 2011).  However, many schools report that

their pyramids are "flooded". In other words, tier 2 and tier 3 have a significantly higher number of students who qualify for tier 2 and tier 3 support. Schools may not have the resources to support the total number of qualifying students. Resources needed by the school include adequate personnel to carry out interventions of additional supports, time to plan levels of support, materials such as paper or electronic devices for interventions, and access to research based practices.

A survey-based study including 70 school districts in Texas public schools was conducted by Mask and McGill (2010). They found that respondent concerns fell into three categories: RtI framework, intervention personnel, and time constraints. Survey results showed a strong concern in the area of having enough personnel or intervention coaches to provide intervention to all qualifying students at each tier. Further concerns included the desire for a more structured model to follow to clarify the different tiers, training for general and specific aspects of RtI, and the phrase "team player" was referenced multiple times regarding how special education personnel could be supportive (Mask & McGill, 2010).

Increasing teacher knowledge about academic interventions can result in positive support for RtI implementation. The systematic approach to academic interventions and the requisite teacher technical skill levels needed to utilize RtI are complicated. Hardcastle and Justice (2006) posit that "teachers become anxious when they lack confidence and many lack confidence when it comes to knowing what to do for kids who are having difficulty" (p. 29). If teachers do not have the knowledge and support to carry out RtI, it may impact student learning. Lack of confidence can stem from a lack of skills. Training can provide teachers with a greater sense of

competency to effectively implement the interventions. Ultimately, teachers want and need to believe that what they are doing for their students is helpful, and student assessment outcomes are one measure which determines if teachers possess the skills to utilize the model effectively.

**Assessment in RtI**

Several different types of assessments are used in RtI. The International Reading Association (IRA) formed a commission on RtI to provide guidance on language and literacy for the implementation of appropriate RtI approaches. Of the six key areas for which guiding principles have been developed, the topic of assessment, including the assessment requirements and the intent of the RtI legislation is the most pertinent to this study. RtI uses several different types of assessment depending on the purpose behind the assessment. Ball and Christ (2012) summarize the assessments used in RtI as: (a) problem identification for universal screening, (b) problem analysis to isolate skill deficits, (c) progress monitoring to determine "response" to instruction, and (d) program evaluation for evaluating effectiveness of the curriculum.

Wixson and Valencia (2011) break assessment into five categories: screening, diagnostics, formative progress monitoring, benchmark progress monitoring, and summative outcome assessment (Wixson & Valencia, 2011). Basham, Israel, Graden, Poth, and Wiston posit that:

> Universal screening is a core component within the prevention approach; that is, there must be an assessment system in place to screen all students in order to (a) assess the effectiveness of core instruction and supports in meeting the

needs of most students (typically defined as at least 80% of student on whatever is being measured) and (b) identify those who are in need of more intensive intervention (2010, p. 248).

Universal screening data are typically used to draw inferences regarding students' current performance, falling either above or below a predetermined cut score. Another type of assessment is the diagnostic assessment, which refers to assessments that help identify a student's specific strengths and weaknesses for the purpose of planning instruction and identifying appropriate interventions. Formative progress monitoring refers to data gathered during instruction to determine the appropriateness of that instruction as evidence by student progress and to help the teacher determine how to revise the instruction. Once students have been identified as below level, they are provided extra levels of support in tier 2 and/or tier 3. Those students receiving extra support are assessed using benchmark progress monitoring data, which consists of data gathered at pre-determined times of the year to ascertain if students are making adequate progress in overall performance in relation to grade level benchmarks. The final type of assessment used is summative outcome assessment, which refers to data at the end of the year to determine the effectiveness of instruction in comparison to grade-level expectations (Wixson & Valencia, 2011). These summative outcomes can be used at the school site or district level to evaluate programming and make adjustments for continual improvement of practices.

Curriculum-based measurement (CBM) is the most popular method of universal screening (Ball & Christ, 2012). According to Fuchs and Fuchs (2006):

More than 200 empirical studies published in peer-reviews journals (a) provide evidence of CBM's reliability and validity for assessing the development of competence in reading, spelling, and mathematics and (b) document CBM's capacity to help teachers improve the outcomes at the elementary grades (p. 1).

CBM is considered a general outcome measure (GOM) because it measures a broad range of general skills associated with overall competence in a specific skill area such as oral reading fluency (Fuchs & Deno, 1991). Many programs are available to collect data and monitor the progress of students using CBM such as DIBELS and aimsweb. According to Ball and Christ (2012), DIBELS and aimsweb assessment systems are currently popular choices to support RtI implementation due to their relatively low cost, ease of administration, and ability to address schoolwide needs for both screening and progress monitoring assessment.

CMB can be used to determine effectiveness of the instruction for all students and to enhance educational programs for student who are struggling (McMaster & Wagner, 2007). Tasks that can be measured by CBM include pre-reading, reading, mathematics, spelling, and written expression (Hughes & Dexler, 2011). Poncy, Skinner, and Axtell (2005) used the generalizability theory with a sample of 37 third-graders to assess variability in words correct per minute (WCPM) scores. Their findings showed that 81% of the variance in WCPM scores were accounted for by the student reading skills, 10% was due to passage variability, and 9% of the variance was unsubstantiated. The findings support the notion that CBM data reliability rank-orders students and can inform relative decision making with fewer errors than when making absolute decisions.

When looking at group data, a school can determine if they are moving forward as a school. Data-based decision making is a key component in RtI. Assessments in RtI can also help determine if overall instruction is effective at schools. Diving into individual student data can help teachers make decisions on the progress of individual students. Theses short, frequent assessments directly measure student competency and progress in the basic skill areas of reading fluency, spelling, mathematics, and written language. Through an evaluation of assessment measures, progress can be determined to ensure that no students are falling below grade level without interventions in place for those students.

**Reading Curriculum-Based Measurement**

Curriculum Based Measurements (CBM) were conceptualized to be short samples of work that would represent indicators of academic performance. The samples would not only need to be valid and reliable with respect to the broader academic domain they represent, but the samples would also need to be designed to be given on a frequent and repeated basis (Wayman, Wallace, Wiley, Ticha, & Espin, 2007). Reading-Curriculum Based Measurement (R-CBM) is one type of a general outcome-based measurement for reading. CBM's are a method for monitoring student growth in an academic area and evaluating the effects of instructional programs on that growth (Deno, 1985). Furthermore, they are designed to be part of a problem-solving approach for special education so that the academic difficulties of students would be viewed as problems to be solved rather than as permanent characteristics within a child (Deno, 1990). A problem-solving approach requires teachers to be the "problem solvers" who are continually evaluating and modifying students'

instructional programs. For the problem-solving approach to be effective, teachers must have a tool that can be used to measure growth in response to instruction, and R-CBM was developed to serve this purpose.

Historically, R-CBM is situated in the definition of fluency, of which there are many different definitions in both research and literacy. Rate (speed at which words are read), accuracy (percentage of words read automatically and correctly), and prosody (expression and tone) are the most common characteristics defined as fluency (Applegate, Applegate, & Modla, 2009). Many definitions also include comprehension and learning as well. A frequently given comparison is that of a reader being compared to athletes in a sense that multiple opportunities for practice will improve the skill. Notably, the ability to read fluently is one of the most accurate predictors of comprehension, the ultimate goal of reading.

In the past, teachers frequently responded to students' low reading scores by automatically referring them to special education. As a result, students with academic deficits became more likely to receive special education services. Historically, this may have also impacted many teachers' sense of self-efficacy. To a certain extent, special education programming may have negatively impacted teacher efficacy by creating a process in which all struggling learners were immediately removed from the classroom to receive instruction in a more restrictive setting (Isbell, 2015). The need for teachers to be able to identify students accurately and understand the difference between students requiring placement in special education and students needing more support services in general education is imperative. "RtI serves as a method to detect

student achievements, but often students spend undue time in limbo where they may linger between special and general education without due process" (Isbell, p. 257).

R-CBM offers support and simplifies the relationship between reading aloud and general reading proficiency. Additionally, it examined alternatives to reading aloud, including maze selection (Fuchs & Fuchs, 1990) and word identification. It has also examined the generalizability of the results to different student populations and for different uses. Regarding the reading-aloud measure, results generally replicated earlier research demonstrating a strong relationship between R-CBM read aloud and reading proficiency, when correlations were calculated within grade. Reading aloud was found to be a better indicator of reading comprehension than were other "typical" comprehension measures, and results revealed that reading aloud was not just a speed-of-processing measure. Torgesen (2004) has reported that to ensure a strong reading foundation for students, schools must (a) increase the quality, consistency, and "reach" of instruction in every kindergarten through grade three classroom; (b) engage in universal screening and as well as timely and valid assessments of reading growth (i.e., frequent progress monitoring); and (c) provide more intensive interventions to "catch up" struggling readers. Ultimately, research provides insight into the theoretical nature of the relationship between reading aloud and reading proficiency for elementary school students (Wayman, Wallace, Wiley, Ticha, & Espin, 2007).

Research has consistently indicated that between 20 and 25 percent of students have some difficulty reading during the early school years (National Reading Panel, 2000; Podhajski, Mather, Nathan, & Sammons, 2009). Since reading is the foundation of educational achievement in school over the long term, these deficiencies have

implications for overall school success (Katz, Stone, Carlisle, Corey, & Zeng, 2008; NRP, 2000).  The initial results on the efficacy on RtI procedures in reading indicate that the reading problems of many students are reduced or eliminated through participation in specific, targeted reading interventions delivered in progressively intensive instructional tiers (Fuchs, et al, 2001; Abbot, Walton, & Greenwood, 2002; Denton, Fletcher, Anthony, & Francis, 2006).  Due to the predictive nature between a student's score on the measurement and reading proficiency, R-CBM is utilized.

**Conclusion**

Policy changes have led to the inception and widespread usage of RtI in our nation's schools.  "RtI is the practice of providing high-quality instruction and intervention matched to student need, monitoring progress frequently to make decision about changes in instruction or goals and applying student response data to important education decisions" (Elliott, 2008, p. 10).  The goals of RtI include acting as an early prevention model, reducing the disproportionate referral of minority students to special education, and closing achievement learning gaps between different groups of students.   A growing realization that the effects of teacher variables on student achievement is second only to the influence of home-related factors has supported the need to focus professional development on the complex relationship between teacher skill and student outcomes (Kratochwill, et al., 2007).  Teacher beliefs and teacher self-efficacy are essential to the study of the RtI framework.  Teachers beliefs about student learning and their skill set to carry out RtI practices must be examined.  Teachers directly impact student learning through the ongoing usage of the RtI framework.  R-CBM is one of the components of RtI which helps to screen students

who require more support.  Additionally, the exploration of what, if any, teacher

beliefs and skills are tied to an increase in student learning would contribute to the

potential benefits of using RtI.  Almost every state in the United States now employs

some type of RTI, which has noticeably transformed the methods teachers utilize in

regular education classes (Kame'enui, 2007; NASDE, 2006).

# Chapter 3

## Research Method

### Introduction

School districts are charged with the monumental task of educating every student at high levels. Response to Intervention (RtI) is a framework that swept our nations school systems as a way to use research-based-components to support learning for all students. Swartz, et al. (2011) posited that RtI is not a fad that will come and go, but a fundamental change taking place in our schools. RtI is a substantial undertaking that involves the reallocation of time, money, professional development, and support systems for students who struggle with grade level learning. This study examined one school district and their usage of RtI from the teacher perspective. Additionally, the study examined if teacher beliefs and skill level influenced student outcomes on a reading-based measurement. The study also gathered information to help guide the district in its next steps for continuing their efforts to operate under the RtI framework.

The purpose of this study was to examine teacher beliefs and skill set surrounding RtI. Also, this research sought to better understand how teacher beliefs and RtI skill set influence the learning outcomes of their students. The study additionally gathered feedback from teachers on how they obtained their skill set in the components necessary to carry out RtI practices as well as what the district can do to better support them moving forward. To gauge teacher beliefs and skills, a survey was utilized which included statements designated to answer the questions "What are teacher beliefs about RtI?" and "Do teachers believe they possess the skills necessary

to carry out RtI practices?" A final section in the survey included two open-ended questions asking teachers where they learned their skill set and what the district could do to better support their needs related to RtI. Student outcome data was collected as the second data set. A multiple regression analysis was performed using the survey results and student scores. This portion of the study related to the third research question which explored the relationship between teacher beliefs/skills and student learning outcomes.

**Research Questions**

1. Research Question #1 (RQ1): What are teacher beliefs about RtI?

2. Research Question #2 (RQ2): To what extent do teachers percieve they possess the skills necessary to carry out RtI practices?

3. Research Question #3 (RQ3): What is the relationship between teacher beliefs and perception of skills and student learning outcomes?

4. Research Question #4 (RQ4): What kinds of supports do teachers need and where did teachers report receiving their training?

**Research Design**

This study utilized survey research and a multiple regression analysis to better understand teacher beliefs about a specific policy initiative which required a change in instructional practices and whether their beliefs/skills influenced their students' assessment scores. Teacher beliefs and skills were gathered through an online survey format. Student outcome data was gathered through aimsweb, a software program used in the RtI process. Descriptive statistics were provided and analyzed for the teacher survey portion of this study. Then through the utilization of a regression

analysis, the relationship between the teacher survey results and their students' outcome data was analyzed. This analysis was performed to examine what factors of teacher beliefs/skills, if any, are associated with a change in student scores.

A survey uses a quantitative or numeric description of trends, attitudes, or opinions of a population by studying the sample of that population (Creswell, 2014). Survey measurement is not effort free, like all other measures in science. Three methodologies are brought together in surveys: sampling, designing questions, and data collection (Fowler, 2014). An internet-based survey is beneficial due to the low cost of data collection, potential high speed of returns, and the allowance of time for thoughtful answers, and convenience. Numerous potential advantages and disadvantages exist. Fowler (2014) highlights several potential considerations:

Potential advantages of internet surveys:

- Low unit cost of data collection;

- Potential high speed of returns;

- Provides time for thoughtful answers;

- Checking records, or consulting with others;

- Ease of presenting questions requiring visual aid;

- Asking questions with long or complex response categories;

- Asking batteries of similar questions;

- Respondent does not have to share answers with an interviewer;

- Makes collection of sensitive data more valid (p. 73).

Potential disadvantages of internet surveys:

- Limited to samples of internet users;

- Need for comprehensive address lists;

- Challenges of enlisting cooperation;

- Various disadvantages of not having interviewer involved in data collection (p. 73).

The second component of this study, non-experimental correlational research, while not causal, can be used to inform practice and implementation. Correlational research shows a relationship or association between two or more numerical variables (Ravid, 2011). It is important to note that correlation does not mean causation; variables may be related or correlated to one another, but this does not mean that one causes the other. Implications for educators exist when two variables are related. For example, if teachers who hold certain beliefs about their abilities to carry out RtI practices can be correlated with higher student outcomes, targeted professional development in schools becomes imperative. Upon observing a high correlation between two variables, a researcher may want to use one variable to predict the other. An appropriate technique used for prediction is called regression (Ravid, 2011).

The combination of survey research and correlational analysis help clarify how teacher beliefs around RtI policy initiative influences student outcomes. This information can then be used to inform practice and implementation. Educators can use the information to plan necessary professional development for teachers on skills that are still lacking, scale up to the next skill level, or to provide new teachers the skills teachers perceived as most helpful. Additionally, the information can be used to build upon the teachers' personal cultural belief systems about student learning. Ultimately, the goal is to better understand teachers' beliefs and skill sets about RtI

and its influence on student learning outcomes.  This information can be considered at the school district level to inform next steps for professional development and resource allocation.

**Study Context**

This study was conducted in the Cedar Creek (CC) School District.  Cedar Creek was a pseudonym used to protect the confidentiality of study participants. Cedar Creek (CC) was an ideal district for this study for several reasons.  Cedar Creek was a district that serves a diverse student population with a high percentage of students qualifying for free and reduced school lunches.  School districts who educate traditionally underserved students continually work to find the most effective systems to increase learning since a well-established correlation exists between students of poverty and lower learning achievement as measured by standardized tests scores. Also, CC has put much time, effort, and financial support into operating under the RtI framework.  These conditions led Cedar Creek to be an advantageous district in which to study the complexities surrounding RtI.  Additionally, CC was selected in part due to convenience sampling as the researcher works in this school district.

Cedar Creek was a large urban school district in a west, south-central state consisting of 19,447 students in the 2015 – 2016 school year.  The district was comprised of 3 high schools, 5 middle schools, 18 elementary schools, one alternative high school, one alternative middle school, one early childhood center and two offsite prekindergarten centers.  Additionally, the district employed 1,485 certified personnel and 725 support employees.  The Office of Educational Quality and Accountability collected district profiles, key Cedar Creek Public School's district points for 2015

include:

- Socioeconomic status as measured by students eligible for free and reduced lunches:  75% as compared to 61% for the state average

- Ethnic makeup based on Fall enrollment: 42% Caucasian district, 59% state average; 25% African American district, 9% state average; Asian 4% district, 2% state average; 26% Hispanic, 16% state average; 3% Native American, 15% state average

- Students Identified as Gifted/Talented:  15.7% district, state average 14.2%

- Students Identified in Special Education:  15.1% district, 15.4% state average

- Students as English Learners:  11.5% district, 7.1% state average

Cedar Creek was a diverse school district with a high poverty rate.  Because of the demographics, Cedar Creek was an ideal district to use in studying the connection between teacher beliefs and RtI's goal of increasing student outcomes.  RtI is purported to intervene early and support all learners regardless of background or economic status through tiered intervention services in their learning.

Cedar Creek School district adopted the RtI model in the 2009 – 2010 school year.  Initially, the school district introduced the model through the special education department, and many perceived it to be a special education initiative.  The first introduction of RtI was a disjointed implementation.  School psychologists were responsible for sharing information about the RtI processes and procedures with schools.  The district special education department created a folder with checklists and

required student documentation to be housed in the folder. The concept was that students who needed more support would each have a folder where teachers would keep a collection of student samples including classroom work, test scores, attendance, and behavior records. No clear definition of how to define a student who needed more support was provided. The process was seen by teachers as more paperwork and felt like more work with little return for the efforts. The rationale behind RtI was completely missing. The perception was that this folder was needed to get a student in need qualified for special education. Also missing from this first attempt at RtI implementation were the resources, professional development, and teacher input. Needless to say, the first attempt in this school district to utilize RtI was a resounding failure.

A renewed effort for an effective usage of the RtI policy began during the 2013 – 2014 school year focusing first on elementary schools and then in the 2014 – 2015 school year on middle schools. Efforts included the creation of a district RtI coordinator, district level leadership team (DLT), building-level leadership teams (BLT), and district wide professional development. This revamped attempt to create systemic changes under the RtI framework included an allocation of finances, resources, professional development and full district-level support. Additionally, this effort was intentionally not conducted through the special education department, in part to emphasize that RtI is a framework for all students, not exclusively for the purpose of qualifying a student for special education. The district RtI coordinator worked with the DLT to strategically plan action steps in re-visioning and re-

launching RtI.  This renewed effort was supported by district-level administration and has led to many changes within the district's schools.

The DLT consisted of both district and school level administrators, school psychologists, and curriculum specialists.  Each school in the district had a BLT to help carry out the work and share the vision for RtI.  The BLT members vary depending on each school site.  In most cases the BLT included an administrator, counselor, instructional coach, school psychologist, and teachers.  During the 2015 – 2016 school year, the DLT provided several days of professional development (PD) for the BLT groups.  Then, the BLT went back to the school site and provided further PD for the teachers in their building.

The DLT created a forty-eight-page Cedar Creeks Schools RtI procedural manual (CC RtI Manual).  The CC RtI Manual also outlined district expectations for roles and responsibilities, expectations for each tier, a parent communication letter, and required assessments.  This guide was updated each year with changes based on feedback from the school BLT teams, new understandings of best practices, and/or changes in the law.  All employees have access to the manual through the district portal system.  Additionally, the Cedar Creek RtI Manual emphasized eight belief statements: all students can learn; research based practices should guide instruction, intervention, and assessment; educational decisions are data-based; because all students are a part of the general education system, there is a shared responsibility for student achievement across the entire school community; the best intervention is one that works; differentiated instruction is an essential part of an instructional program;

we can't change the past; we can impact the child's present and future; and RtI is an essential component of our Professional Learning Communities (CC Manual, 2016).

The CC RtI Manual lists five key components of RtI: universal screening; tiered intervention model of service; progress monitoring; use of problem solving model/problem solving team; and focus on instruction, not eligibility. The first key component listed is universal screening of students. According to the CC RtI Manual, the primary purpose of universal screening is to determine which students need more intensive interventions. Aimsweb assessments will be used for the universal screenings in the fall, winter, and spring. The second key component is that RtI is based on a tiered intervention model of service. All students are to receive tier one instruction; this is often referred to as first, best instruction. As students are universally screened, it may be determined they need a more intensive tier of service. The Cedar Creek Manual outlines the number of minutes and days per week a student should receive services in tier two and/or tier three. The district further provides a flow chart to outline the process. Students who are receiving tier two and/or tier three support are to receive the third key component, progress monitoring. Again, the manual outlines expectations. The fourth key component listed is the usage of the problem-solving model/problem solving team (PST). Each school is to have a monthly PST meeting where the team members look at students who score below the 40th percentile on the universal screenings. These students are provided an intervention, and after four intervention points, progress monitoring occurs. At the PST meetings, the progress of each student is examined. If progressing, the student continues with their intervention. If the student is not making progress, the committee

determines the next step.  Cedar Creek uses a problem-solving approach based on four basic questions: (1) What is the problem? (2) Why is it occurring? (3) What are we going to do about it? and (4) Did it work? (CC RtI Manual).  Each school has a problem-solving team (PST) that helps to answer these questions as well as focus on data analysis, decision-making, and intervention development.  These school-based teams also vary by school, but typically include a classroom teacher, instructional coach, school administrator, school psychologist, and special education teacher, other members could include the English Learner (EL) teacher, nurse, counselor, title one teacher, or any other school specialists.  The final key component is the focus on instruction and not eligibility.  This statement was included as a focus reminder that RtI is for all students to receive the first, best instruction and have their individual learning needs met; this model is not intended as simply a means to qualify students for special education.  The model emphasizes reflecting on the effectiveness of instructional practices and whether students are responding to instruction.  If a student is not, then the instruction needs to be reconsidered.

This manual, along with professional development and the creation of district and site level RtI leadership teams, helped to reinvigorate the usage of and understanding of RtI in Cedar Creek Schools.  Although Cedar Creek's challenges in implementation are varied, the focus on developing an integrated model of instruction, providing early interventions, and utilizing assessments to support student learning provides educators the opportunity to align and focus their efforts on ensuring appropriate learning experiences for all students.

**Participants**

Participants consisted of general education teachers in grades two through five who teach English Language Arts (ELA) content area in their classrooms. These teachers were included because of their direct involvement and impact on the RtI process. This group of teachers were able to identify struggling learners early in the school year and while they were still in elementary school. Additionally, because students were universally screened in September, students were identified in time to provide intervention services throughout the school year with the goal of filling in missing skill gaps. General education teachers were responsible for providing tier one first, best instruction and were involved in universal screening, progress monitoring, and PST meetings. Additionally, these teachers were chosen because the outcome data set being utilized is the R-CBM that was given to students in grades two through five, and their subject matter most closely aligns with the area being assessed and analyzed. The teacher must also have taught in CC schools during the prior school year in order to have aimsweb data for utilization in the study to answer research question number three.

A list of teachers who fit these criteria was obtained from the study school district. The list contained 190 teachers who taught during the 2016 – 2017 school year in 2nd, 3rd, 4th, or 5th grade general education classroom. All 190 teachers were invited to participate in the study; three teachers declined to participate via the online consent form, four teachers did not have matching aimsweb data from the prior school year, eight teachers did not finish the survey and so their data was removed, and 113

teachers did not respond to the survey.  The group who participated in the study

consisted of 62 teachers.

**Data Sources**

Two data sources were included in this study.  The first data source was an

educator survey that was administered in the fall semester of 2017 designed to gather

teacher beliefs on RtI and their skill set to conduct RtI practices.  The second data set

included student scores from the 2016 – 2017 school year captured through the

aimsweb software program. Together, these two data sources were used to determine

the answers to the four research questions posed in this study.

**Survey**

This study utilized two existing surveys from the Florida Problem

Solving/Response to Intervention Project (Florida PS/RtI Project) to collect data on

teacher beliefs and skill set on RtI.  The Florida Department of Education (FDOE) and

the University of South Florida (USF) partnered to create the Florida PS/RtI Project in

2006 in order to aid and advise a problem solving/RtI model in the state of Florida.

The original mission of the Project was to (1) provide training, technical assistance,

and support across the state on the PS/RtI model, and (2) systematically evaluate the

impact of PS/RtI implementation in a limited number of demonstration sites (Castillo,

et. al, 2016).  The Florida PS/RtI Project created several surveys to assist school

districts in evaluating PS/RtI.  Two of these surveys were selected to use in this

current project because they aligned with the research questions posed.  The surveys

selected include the RtI Beliefs Survey and the Perceptions of RtI Skills survey.

Permission was gained from Florida's Problem Solving/Response to Intervention

communications coordinator, who sent written permission for usage of the surveys (see appendix B).  For the purpose of this research, the two surveys were combined into one 35 question survey.  Additionally, all questions related to student behavior were removed because the focus of this research project is academic outcomes.  Some modifications of language were made to match the participating state's usage of terms.  However, the content of the questions remained the same in order to maintain the validity and reliability of the survey results.

The technical adequacy of the RtI Beliefs Scale and the Perceptions of RtI Skills Survey were addressed in the technical manual (Castillo, et al., 2010).  For both surveys, the manual addressed content validity, construct validity, and internal consistency reliability.  According to Castillo et. al, (2015) to determine content validity of the Beliefs Survey, project staff developed an item set representative of beliefs important for consideration when starting RtI practices, and a draft was sent to an Educator Expert Validation Panel.  Feedback was provided and revisions were made using a structure process resulting in the Beliefs Survey.   For the Skills Survey, a similar process was followed, but with skill sets.  To address construct validity and determine the underlying factor structure of the Belief Survey, Castillo, et al. (2015), used exploratory common factor analysis, single-level confirmatory factor analysis, and multilevel confirmatory factor analysis.  For the Perception Survey, exploratory common factor analytic and confirmatory factor analysis procedures were used.  Both processes provided several factors for each survey.  Finally, to address internal consistency reliability, the RtI beliefs technical manual estimates as measured by Cronbach's alpha for each of the three factors at the educator level:  factor one $\alpha =$

.70, factor two $\alpha$ = .79, factor three $\alpha$ = .55. and at the school level: factor one $\alpha$ = .78, factor two $\alpha$ = .73, factor three $\alpha$ = .60. Similar information was provided in the technical manual for the Skills Survey (Castillo et al., 2015). For the Skills Survey, factor 1 reliability estimates as measured by Cronbach's alpha for factor one $\alpha$ = .97. Only factor one was listed as it is the only factor used in this study for the Skills Survey.

Each survey revealed several factor structures that were measured in the survey. The beliefs survey included three factors: The Academic Abilities and Performances of Students with Disabilities, Data-Based Decision Making, and Functions of Core and Supplemental Instruction. Results from these three domains served as indicators of the extent to which educators possessed beliefs that created a climate supportive of RtI practices (Castillo, et al., 2016). The RtI Skills Survey included three factors; however, only the factor for RtI skills applied to academic content was retained for the study. The factor related to behavior was removed as behavior was not included in this study. The factor for data display was also removed because the skill set did not align with the participating school district expectations. One factor was maintained from the skills survey: RtI skills applied to academic content. Results from the survey revealed diverse areas of belief systems that teachers have about practices that are in line with RtI procedures. Additionally, results showed professional development areas of strength in their skill set or deficiency areas which required more training.

The response selections for the RtI Beliefs Scale Survey included five choices from which respondents chose their level of agreement or disagreement with

statements. The scale choices were: strongly disagree (SD), disagree (D), neutral (N), agree (A), and strongly agree (SA). An example statement for the first factor was, "The majority of students with learning disabilities achieve grade-level benchmarks in reading". An example statement for the second factor is, "The use of additional interventions in the general education classroom would result in success for more students." A statement tied to the third factor reads, "Core instruction should be effective enough to result in 80% of the students achieving benchmarks in reading." The second portion of the survey addressed RtI skills and addresses factor four. For this portion of the survey, respondents read the statement about a skill related to an assessment, instruction and/or intervention and evaluate their skill level. They rated their skill using the response scale: I do not have this skill at all (NS); I have minimal skills in this area, need substantial support to use it (MnS); I have this skill, but still need some support to use it (SS); I can use this skill with little support (HS); and I am highly skilled in this area and could teach others this skill (VHS). An example statement for factor four was, "The skill to access data necessary to determine the percent of students in core instruction who are achieving benchmarks (i.e. district grade-level standards in academics)."

Two open-ended questions were included at the end of the survey. These questions were designed by the researcher to determine how teachers gain their skill set related to RtI components and what needs teachers have moving forward in which the district can support them to carry out RtI practices. These final questions will help inform the school district in future planning of professional development and resource allocation.

**Student Outcome Measures**

Scores from aimsweb Reading Curriculum Based Measurement (R-CBM) for the 2016 – 2017 school year were collected. Class scores from teachers in grade two, three, four, and five who participated in the survey were included in this set of data. Students in these grade levels participated in R-CBM universal screenings in the fall, winter, and spring. This allowed for three data points to be collected during the school year, and a class growth rate to be calculated. Each grade level has a targeted growth goal of number of words per week; students should grow on average per week over the course of the year. Aimsweb calculated the overall class growth rate for the classroom over the school year. This classroom growth rate for each teacher participant was the second data source used in the study.

R-CBM is a brief, individually administered, standardized test of oral reading as well as a type of general outcome measurement specific to reading. The passage lengths varied by grade level. Also, varied by grade level was the expectation of words read correctly per passage. Students were given three passages to read in a one-minute time period for each passage. The test administrator marked down the words read correctly and words missed. The score recorded for the student was the median score. Additionally, these were nationally norm-referenced scores. Reading aloud is found to be an indicator of reading comprehension. Research provides insight into the relationship between reading aloud and reading proficiency in elementary aged students (Wayman, et al., 2007).

The aimsweb Technical Manual addressed properties that were important for general outcome measurement tests and addresses the following technical properties:

equivalence, alternate form reliability, interrater reliability, content validity, criterion validity, and classification accuracy (aimsweb Technical Manual, 2010). The manual further reported the steps taken to write and review the R-CBM passages. The manual asserted that gender, race, and region were all studied in attempts to reduce gender, race, and regional bias in the universal screening and progress monitoring probes. Between-score stability for the reading test was addressed; the mean was .94. This was an important item to study because students read the same probes in the fall, winter, and spring. At each interval of universal screening, a different target number of words read correctly was expected. Criterion validity for the R-CBM screener ranged from .53 to .72 and was grade-level dependent (aimsweb Technical Manual, 2010). Internal validity in the areas of history, maturation, testing, instrumentation, statistical regression, selection, attrition, and selection interactions were addressed in order to provide more information on the meaningfulness of potential results (Campbell & Stanley, 1966).

Utilizing class growth rates showed how groups of students responded to year-long instruction and can have value for illuminating the effectiveness of instructional practices according the aimsweb technical manual. This data was useful to "evaluate effects after extended periods (e.g. 3 months) of intervention; therefore, the method remains a potentially useful approach, provided sufficient time is permitted for the effects of intervention or instruction to be reflected in R-CBM (Ball, et al, 2012). Using these group growth scores served to determine how programs were operating, but group growth scores did not determine the growth of individual students. Group scores determined if the system was impacting overall student achievement.

**Variables**

Independent variables for this study were the four factors included in the surveys: academic abilities and performances of students with disabilities, data-based decision making, functions of core and supplemental instruction and perceptions of RtI skills applied to academic content. The first three factors were individual components of the overarching theme of the teacher belief survey. These domains were used as markers of the extent to which educators hold belief systems that were conducive to a climate supportive of utilizing RtI practices (Castillo et al., 2015). The fourth domain assessed teacher's perceived skill level to carry out RtI practices. These independent variables were used to determine if they influenced the dependent variable: student R-CBM class growth scores.

**Research Procedures**

In order to conduct this study, Internal Review Board approval from the researcher's university account and school district approval was obtained. For those teachers who participated in the study, their classroom aimsweb growth rate R-CBM scores were collected. Once all survey information and classroom data were collected, data analysis and interpretation of results was conducted. Finally, recommendations and final conclusions were drawn from the results of the study.

In fall 2017, an email invitation was sent to general education teachers of grades two through five who work with students in the area of English Language Arts (ELA) and were also teaching in the participating school district in the 2016 - 2017 school year. The quantitative style survey was emailed to teachers through their school district email account from the researcher's University email account. The

email invitation included an introduction of the researcher, how to contact the researcher, the purpose of the study, and online consent to participate in the research. A link was included in the study for participants to consent or decline participation in the study. If the participant clicked "yes", it took them directly to the survey. The online consent to participate in the research included an introduction, the title of the research project, the reason the person was selected to participate in the study as well as requirements for participation. The email also included the IRB approval number and district level approval information. Additional information was also included in the participant solicitation to participate email, including the purpose of the study, the estimated time to fill out the survey, potential risks and benefits for participation, and confidentiality information. Participants received a direct link to select that takes them to the survey. An initial email was sent soliciting participation in the study. A follow-up email was sent one week after the initial email, and one week later, a final reminder email with the closing date for the survey was sent to potential participants.

Educators' names and email addresses were captured to allow the researcher to match the teacher survey to their class results. Once matched, teacher identification was removed and was not utilized in the analysis portion of the survey. This was to assure confidentiality of the educator participants.

The second data source included students' scores from universal screening data housed in the aimsweb system. The researcher collected data from those students whose teachers participated in the study. Teacher overall class growth rates were obtained. No individual student name or score was gathered. Each teacher class growth rate was matched to the individual teacher survey data. Each grade-level has

its own expected growth rate target for words read correctly per minute (aimsweb.com). In order to accurately predict the influence of teacher beliefs/skills at each grade level, a replacement score was created with the ratio scores for each teacher's class growth rate target for that grade level. This score was calculated by dividing each teacher's class growth rate by the growth rate target for their grade level. Scores were placed into the Statistical Package for the Social Sciences (SPSS) IBM software system for analyzing results.

**Data Analysis**

Research question one asked, "What are teacher beliefs about RtI?" and research question two asked, "To what extent do teachers perceive they possess the necessary skills to carry out RtI practices?" These questions were answered through a survey method. Descriptive statistics were run to determine the levels of agreement with each of the statements in the survey. The levels of agreement and disagreement with each of the statements was analyzed. The belief survey measured three factors in line with conditions that foster a positive belief system supportive of carrying out RtI practices. The perception of skills survey measured one factor that determines teacher's perceptions of their RtI skills applied to academic content. Teacher beliefs/skills were analyzed and discussed based on their percentages of agreement and disagreement with survey items.

The open-ended survey questions added information to inform the district on sources of RtI training and supports needed for successful RtI practices for their district educators who participated in the survey. This portion of the survey was analyzed by tallying phrases to determine how many times a source or phrase is

mentioned for each question.  A chart with the results was created, and results were interpreted.

Research Question Three:  What is the relationship between teacher beliefs and perception of skill set and student learning outcomes?   In order answer research question three, a multiple regression was performed.  The primary purpose for regression analysis procedures was the development of an equation that could be used for predicting values on some dependent variable for all members of a population (Mertler & Vannatta, 2001).  When one single variable alone cannot predict an outcome, multiple variables may be used to more accurately predict an outcome variable and multiple regression is the procedure used.   This study applied multiple regression to determine if any of the four factors included in the teacher survey correlate to an increase in student learning as measured by R-CBM class growth scores.  The independent variables in this study include the four domains from the teacher belief and teacher perception surveys.  The four factor domains are: (1) teacher beliefs of academic ability and performance of students with disabilities, (2) data-based decision making, (3) functions of core and supplemental instruction, and (4) perceptions of RtI skills applied to academic content. The dependent variable was student scores from aimsweb R-CBM growth score.  A regression was run in order to determine if any of the educator belief/perception domains correlate with higher student outcome scores.  The results do not show causation but are able to determine if a correlation existed between the four independent variables and the dependent variable.

**Limitations of the Study**

A few potential limitations existed for this study.  The researcher worked in the participating school district.  However, steps were taken to reduce researcher bias.  Classroom growth scores are used as a secondary data set, and the researcher did not have a role in obtaining student data.  Another potential limitation was the possibility for survey participants to be hesitant in filling out a survey which identifies themselves.  This concern was reduced by ensuring confidentiality and removing any identifying information as soon as teachers were matched to classroom data and before data analysis.  Additionally, the researcher corresponded with research participants through her University of Oklahoma email account as well as emphasized that the information was collected for research purposes and would follow research ethics and procedures.  Additionally, a survey was self-reported data.  The researcher took the educators' beliefs at face value because the information cannot be validated independently.  This study is non-experimental.  It was not intended to assign causality between variables and student growth scores.  Variables were not being controlled, manipulated, or attributed to cause an outcome, only to be potentially correlated to an outcome.  A final limitation was the small response rate of teachers participating in the survey.  With a sample size of 62 participants, only a large effect size could be obtained in this multiple regression test (Cohen, 1992).

**Summary**

The design utilized in this study was survey research as well as a multiple regression analysis to better understand teacher beliefs and skill sets as related to RtI.

An electronic survey was utilized to gather beliefs/skills.  Student outcome data was gathered through aimsweb, a software program used in the RtI process.  For the teacher survey portion of this study, descriptive statistics were provided and analyzed to determine teachers' agreement level of:  academic abilities and performances of students with disabilities, data-based decision making, functions of core and supplemental instruction, and perceptions of RtI skills applied to academic content. Then through the utilization of a multiple regression, the relationship between the teacher survey results and their students' outcome data was analyzed.  This analysis was performed to examine what factors of teacher beliefs/skills, if any, were associated with an increase in student scores.  Open-ended survey questions gathered information that could be useful to the school district on how teachers gained either skill sets for RtI usage and what future support they would need from the participating school district. Participants included in the study were teachers of grades two through five whose students participated in the aimsweb universal screening three times a school year.

**Chapter 4**

**Results**

**Introduction**

School districts are charged with meeting the learning needs of all students. Educators must ensure that all students are achieving at grade level standards and when they are not schools must have systems of supports in place to provide supplemental instruction to move those students towards grade level learning. RtI is recommended as a structure to help schools with this monumental task. This study examines one school district and their efforts to operate under the RtI framework from the viewpoint of teachers and its influence on student outcome scores. Specifically, the focus of this research study was to examine teacher beliefs about RtI and teachers' perceptions about the skills they possess to carry out RtI practices. Districts are wise to examine these beliefs and adjust their approaches and supports simultaneously while making structural changes. To measure this, a teacher survey was conducted. Additionally, student scores for teacher participants were gathered to determine if a correlation between teacher beliefs/skills with student learning as measured by student scores on a reading-based measurement exists. First, survey results were analyzed to show how teachers responded to the survey questions. Then, a multiple regression analysis was run to determine if a relationship existed between the survey results and the student growth scores. The findings of the study are presented in this chapter.

**Research Questions**

1. Research Question #1 (RQ1): What are teacher beliefs about RtI?

2.  Research Question #2 (RQ2):  To what extent do teachers perceive they

    possess the skills necessary to carry out RtI practices?

3.  Research Question #3 (RQ3):  What is the relationship between teacher

    beliefs and perception of skill set and student learning outcomes?

4.  Research Question #4 (RQ4): What kinds of supports do teachers need and

    where did teachers report receiving their training?

**Participants**

The researcher requested a list from the participating school district of all

second through fifth grade regular education teachers who were in the district during

the 2016 – 2017 school year.  The list consisted of 190 teachers.  Teachers must have

been in the school district during the prior year of the study in order to have student

data in the aimsweb software program that will be collected for part of the research.

All 190 teachers were invited to participate in the study; three teachers declined to

participate via the online consent form, four teachers did not have aimsweb data from

the prior year, eight teachers did not finish the survey, and 113 teachers did not

respond to the survey.  Sixty-two teachers were in the study sample set.  Aimsweb

data was obtained from teachers who agreed to participate in the study.  The average

yearly class growth rate scores were used from R-CBM measurements.

**Data Analysis Programs**

This study utilized two existing surveys, RtI Beliefs Scale and Perceptions of

RtI Skills Survey, from the Florida Problem Solving/Response to Intervention Project

(Florida PS/RtI Project, 2016).  The survey questions were entered into the program

Qualtrics.  The researcher input survey results and student test score data into a

purchased software program, Statistical Package for the Social Sciences (SPSS)

version 25.0 for MacBook, in order to conduct data analysis. Additionally, Excel was

used for data collection, and creating charts and graphs for data display.

**Research Question One**

Research question one asks: What are teacher beliefs about RtI? The results

were analyzed from the online teacher survey; RtI Beliefs Scale (Florida PS/RtI

Project, 2006). This research question looked at teacher beliefs connected to three

different factors: academic abilities and performances of students with disabilities,

data-based decision making, and functions of core and supplemental instruction. For

the belief portion of the survey the scale used was Strongly Disagree (SD), Disagree

(D), Neutral (N), Agree (A), and Strongly Agree (SA). For an overall percentage rate

of teachers' ratings on factors one through three, disagreement was determined by

combining SD and D categories, and agreement was determined by combining A and

SA categories. Figures one, two, and three show the percentage of teacher agreements

by question for factors one, two, and three.

Academic Abilities and Performances of
Students with Disabilities

Q1: The majority of students with learning disabilities achieve grade-level benchmarks (general education standards) in reading.

Q2: Students with high-incident disabilities who are receiving special education services are capable of achieving grade-level benchmarks (i.e., general education standards) in reading.

0%  20%  40%  60%  80%  100%
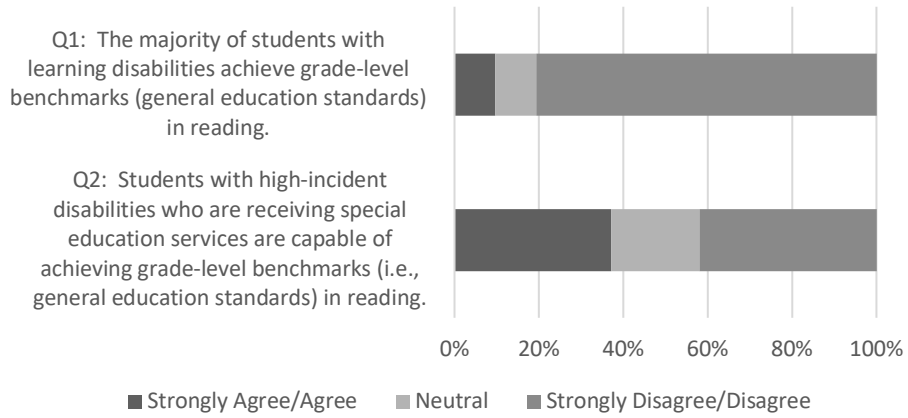
■ Strongly Agree/Agree    ■ Neutral    ■ Strongly Disagree/Disagree

*Figure 1* Results from the teacher belief survey for factor one.
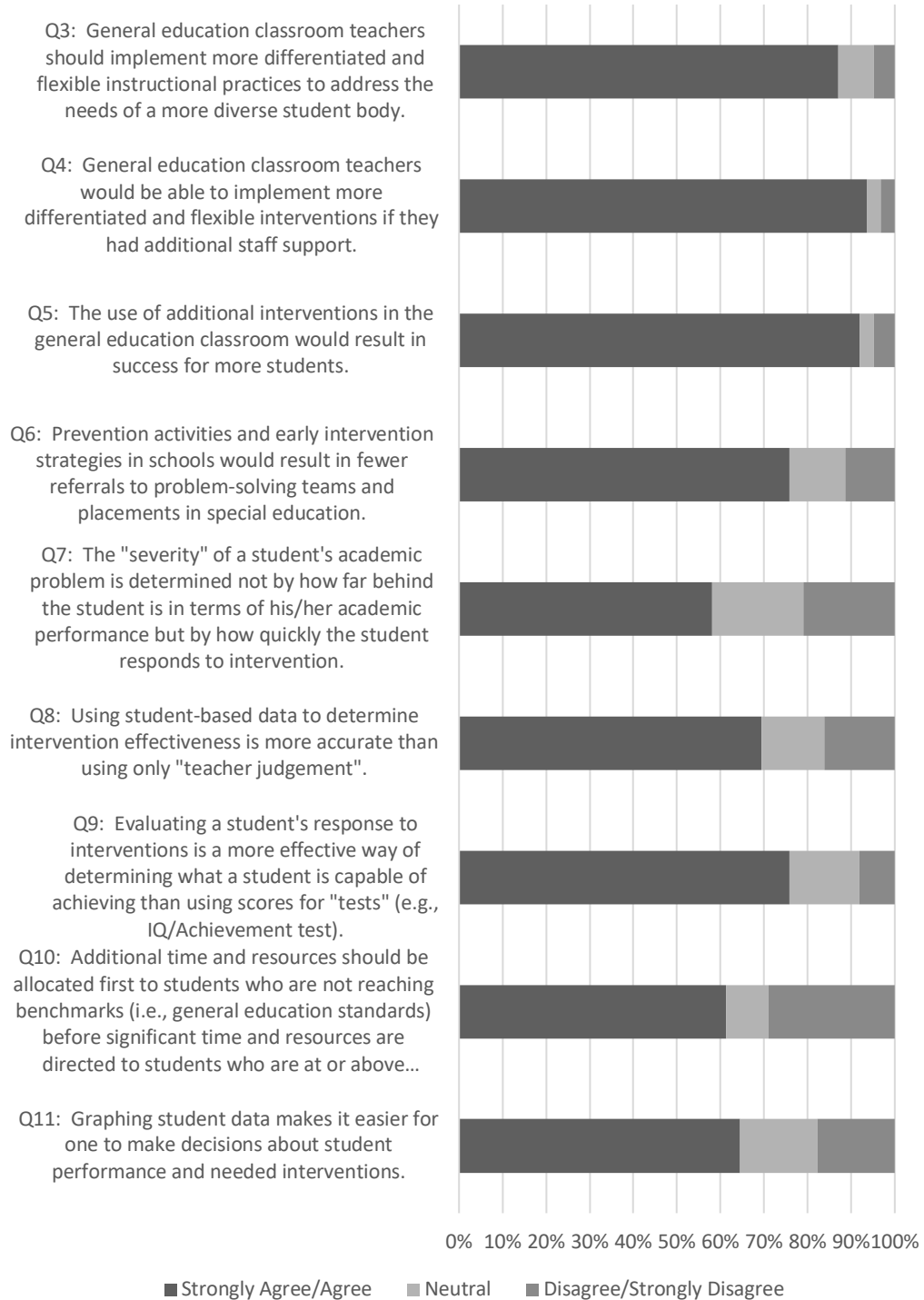
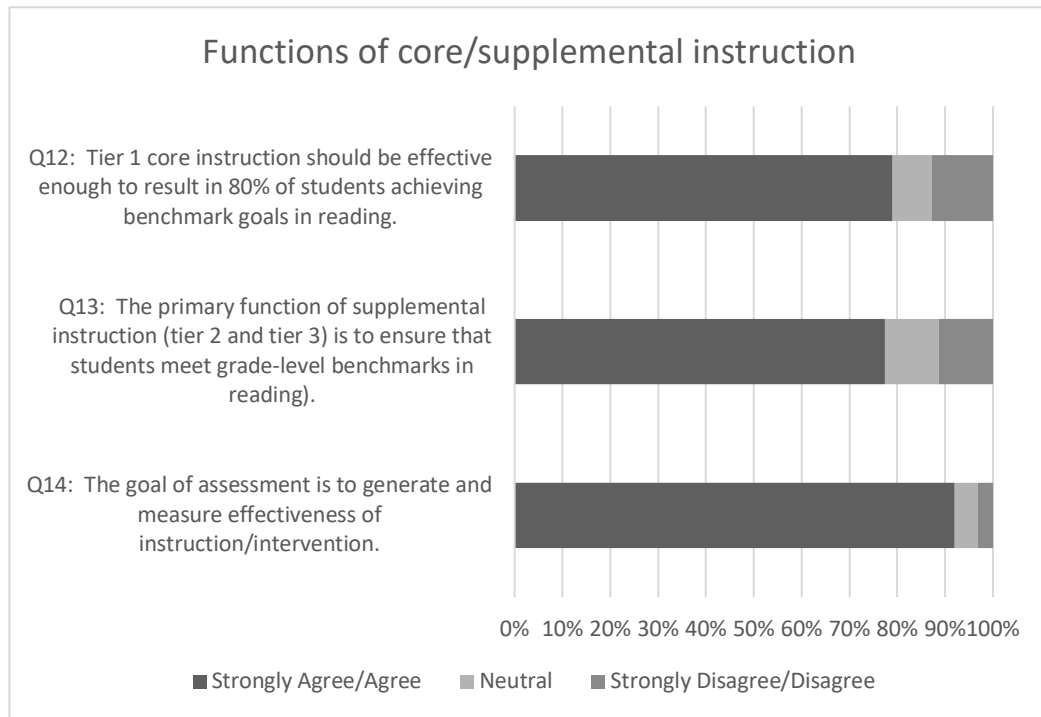*Figure 2* Results from the teacher belief survey for factor two.

*Figure 3* Results from the teacher belief survey for factor three.

Table one shows descriptive statistics for each question in factors one, two, and three.

Table 1

*Descriptive Statistics for Survey Questions for Factor One, Factor Two, and Factor*

*Three*

| Survey Question | Min | Max | Mean | SD |
|---|---|---|---|---|
| Factor 1: Academic Abilities and Performances of Students with Disabilities | | | | |
| Q1 | 0 | 3 | 1.15 | .786 |
| Q2 | 0 | 4 | 1.90 | 1.112 |
| | | | | |
| Factor 2: Data-Based Decision Making | | | | |
| Q3 | 1 | 4 | 3.00 | .678 |
| Q4 | 0 | 4 | 3.47 | .783 |
| Q5 | 1 | 4 | 3.16 | .706 |
| Q6 | 1 | 4 | 3.00 | .975 |
| Q7 | 0 | 4 | 2.39 | .947 |
| Q8 | 1 | 4 | 2.68 | .19 |
| Q9 | 1 | 4 | 2.84 | .793 |

| | | | | |
|---|---|---|---|---|
| Q10 | 0 | 4 | 2.35 | 1.088 |
| Q11 | 0 | 4 | 2.87 | 1.000 |
| | | | | |
| Factor 3: Functions of Core and Supplemental Instruction | | | | |
| Q12 | 1 | 4 | 2.76 | .803 |
| Q13 | 1 | 4 | 2.74 | .767 |
| Q14 | 1 | 4 | 2.98 | .528 |

**Factor One: Academic Abilities and Performances of Students with Disabilities.**

Survey questions one and two correspond to factor one. Factor one measured teachers' beliefs about the academic abilities and performance of students with disabilities. These survey questions have the lowest agreement rates of the entire survey. For survey question one, only 9.7% of teachers strongly agree or agree that "the majority of students with learning disabilities achieve grade-level benchmarks (i.e. general education standards) in reading." On survey question two, 37.1% of teachers strongly agreed or agree that "students with high-incident disabilities who are receiving special education services are capable of achieving grade-level benchmarks (i.e., general education standards in reading)." The overall positive agreement rating for factor one is 23.4%. The disagreement rating average is 61.3%. These questions reveal the majority of teachers do not hold the belief that students with learning disabilities achieve grade-level benchmarks, and also that those with high-incident disabilities are not capable of achieving the grade-level benchmark.

**Factor Two: Data-Based Decision Making.**

Survey questions number three through eleven correspond with factor two within the belief's portion of the survey. Survey questions four and five had over 90%

positive response rates with 93.6% of teachers agreeing that "general education classroom teachers would be able to implement more differentiated and flexible interventions if they had additional staff support" and 91.9% agreeing that "the use of additional interventions in the general education classroom would result in success for more students." Eighty-seven percent of teachers agree that "general education classroom teachers should implement more differentiated and flexible instructional practices to address the needs of a more diverse student body." The third highest area of agreement was "graphing student data makes it easier for one to make decisions about students' performance and needed interventions" with a 76.1% agreement rating. Both statements, "Prevention activities and early intervention strategies in schools would result in fewer referrals to problem-solving teams and placements in special-education" and "evaluating a student's response to interventions is a more effective way of determining what a student is capable of achieving than using scores from 'tests' (e.g. IQ/Achievement test)" were agreed to by 75.8% of teachers. "Using student-based data to determine intervention effectiveness is more accurate than using only teacher judgement" received a 69.3% agreement rating. Additional time and resources should be allocated first to students who are not reaching benchmarks (i.e., general education standards before significant time and resources are directed to students who are at or above benchmarks" received a 61.3% agreement rating and a 29% disagreement rating. Fifty-eight percent of teachers agreed with the statement, "the 'severity' of a student's academic problem is determined not by how far behind the student is in terms of his/her academic performance, but by how quickly the

student responds to the intervention." This question also received the highest neutral responses at 21% and received 20.9% disagreement.

Factor two assessed teacher's beliefs in the usage of data-based decision making. The overall average factor agreement rating for factor two was 76.5%. The majority of teacher participants agree with survey questions that show a belief in the usage of data-based decision making. Factor two received the overall highest agreement rating of the four factors. Universal screening, progress monitoring, creating interventions based on data, and adjusting student interventions are all foundations to the RtI framework. A majority of teachers in this school district are in agreement with making decisions based on the usage of data.

**Factor Three: Functions of Core and Supplemental Instruction.**

Survey questions number twelve, thirteen, and fourteen address teacher beliefs about core and supplemental instruction as they are foundational structures to the RtI process. Overall teachers had positive agreement to these questions, with an average agreement percentage of 82.9%. The highest response was 92% agreement for question fourteen, "the goal of assessment is to generate and measure effectiveness of instruction/intervention." Followed by 79.1% agreement of "Tier 1 core instruction should be effective enough to result in 80% of students achieving benchmark goals in reading". Finally, 77.5% of teachers agreed that "the primary function of supplemental instruction (tier 2 and tier 3) is to ensure that students meet grade-level benchmarks in reading." Teachers had very little disagreement with the ideals and beliefs of the functions of core and supplemental instruction. These are also core

principles in RtI: the systematic delivery system of core instruction for all with

supplemental instruction for those not achieving at grade level.

**Teacher Beliefs**

An overall impression from the teacher belief survey indicates that teachers

believe in the factors that comprise of the foundational conditions needed to foster a

culture for successful RtI practices. The average of the entire survey shows 68%

agreement with survey belief items. However, when breaking down each factor

individually, factor one agreement rating is 23.4%, factor two is 76.5%, and factor

three is 82.9%. Factor one clearly stands out as receiving lower response agreement

than factors two and three. Both items within factor one received low response

agreements with 9.7% and 23.4% agreement. Within factor two the range of

agreements were from 58% agreement to 93.6%. In factor three the range was from

77.5% to 92% in agreement. It is also important to break down each individual

question to determine what specific beliefs teachers hold within each category.

**Research Question Two**

Research question two asks: To what extent do teachers perceive they possess

the skills necessary to carry out RtI practices? The results from the online teacher

survey were analyzed. This part of the survey was from the Perceptions of RtI Skills

Survey (Florida PS/RtI Project, 2006). This portion of the survey measured the fourth

factor of the survey: teacher perceptions of RtI skills applied to academic content.

Figure 4 shows the percentage of teachers' response rates to each individual survey

question.

*Figure 4.* Results from the perception of skills portion of teacher survey.

Table one shows descriptive statistics for each question in factors one, two, and three.

Table 2

*Descriptive Statistics for Factor Four Survey Questions*

| Survey Question | Min | Max | Mean | SD |
|---|---|---|---|---|
| Factor 4: Perceptions of RtI Skills as Applied to Academic Content | | | | |
| Q15 | 1 | 4 | 3.21 | .727 |
| Q16 | 1 | 4 | 3.13 | .757 |
| Q17 | 0 | 4 | 3.11 | .791 |
| Q18 | 1 | 4 | 2.66 | .723 |
| Q19 | 1 | 4 | 3.11 | .655 |
| Q20 | 1 | 4 | 3.11 | .680 |
| Q21 | 1 | 4 | 2.76 | .740 |
| Q22 | 1 | 4 | 2.52 | .741 |
| Q23 | 1 | 4 | 2.73 | .750 |
| Q24 | 0 | 4 | 2.85 | .765 |
| Q25 | 0 | 4 | 2.79 | .813 |
| Q26 | 0 | 4 | 2.79 | .792 |
| Q27 | 1 | 4 | 2.74 | .808 |
| Q28 | 0 | 4 | 2.95 | .711 |
| Q29 | 0 | 4 | 2.97 | .724 |
| Q30 | 0 | 4 | 2.98 | .713 |
| Q31 | 1 | 4 | 2.98 | .713 |
| Q32 | 1 | 4 | 2.90 | .620 |
| Q33 | 2 | 4 | 3.66 | .510 |

**Factor Four: Perceptions of RtI Skills Applied to Academic Content.**

Survey questions fifteen through thirty-three measured teachers' perceptions of their abilities to carry out skills necessary to utilize RtI processes. The scale used was: I do not have this skill (NS), I have minimal skills in this area; need substantial support to use (MnS), I have this skill but need some support to use it (SS), I can use this skill with little support (HS), I am highly skilled in this area and could teach others this skill (VHS). For analysis, NS and MnS were combined and HS and VHS

were combined.  The categories of HS/VHS are referenced as teachers perceiving themselves to have the skill while NS/MnS are considered as teachers perceiving themselves to need support and not having that skill.  The range of responses for teachers perceiving themselves to be capable of the skill varies from 98.3% to 50%. The skill area with the highest percentage of teachers perceiving themselves confident is "the collection of R-CBM data."   The skill ranked lowest in perceived ability by teachers' is "identify the most appropriate type(s) of data to use for determining reasons (hypothesis) that are likely to be contributing to the problem for academics."

Survey questions 15, 16, 17, 19, 20, 28, 29, 30, and 31 indicate a range of 80% of teachers perceive having that skill category.  Of the other 20%, less than 5% stated they did not have or had minimal skills and needed substantial support.  Most of the 20% fell into the SS category.  This shows the majority of teachers feel confident that they have the skill needed in the following specific areas:

- Access data necessary to determine the percentage of students in core instruction who are achieving benchmarks in academics

- Use data to make decisions about individuals and groups of students for core academic curriculum

- Define the referral concern in terms of a replacement behavior

- Use data to define the current level of performance of the target for student academics

- Determine the desired level of performance for academics

- Ensure that the proposed intervention plan is supported by the data that were collected for academics

- Provide the support necessary to ensure that the intervention is implemented appropriately

- Determine if an intervention was implemented as it was intended

- Select appropriate data to use for progress monitoring of student performance during an intervention

Survey questions 24 and 32 fell into the 70% range agreement of having the skills range with only 3.2 or less percentage feeling they did not have the skill. Survey question 24 assessed the skill necessary to access resources to develop evidence-based interventions for academic core curricula. Survey question 32 asked about the skill to make modifications to intervention plans based on students' response to the intervention.

Survey questions 18, 21, 23, 25, 26, and 27 resulted in 60% range agreement that they had the skill. These questions assessed teacher perceptions of the following skill sets:

- Define a referral concern in terms of a replacement behavior instead of a referral problem for academics

- Develop potential reasons that a group of students is/are not achieving desired levels of performance for academics

- Identify the appropriate supplemental intervention available in my building for a student identified at-risk for academics

- Access resources to develop evidence-based interventions for academic supplemental curricula

- Access resources to develop evidence-based interventions for academic individualized intervention plans

- Ensure that any supplemental and/or intensive interventions are integrated with core instruction in the general education classroom.

The majority of teachers perceive they are equipped with the skills necessary to carry out the RtI practices being asked of them. Even in the lowest perceived skill, 50% of survey respondents chose highly skilled/can use this skill and only 8.1% of respondents selected "do not have skill." The remaining respondents selected "have the skill but need support to use it." This shows movement towards a knowledge base in that area, not a complete lack of the skill. The teachers in this participant group show a perception of a solid knowledge base in RtI skills. Overall, the survey results show teachers possessing a strong skill set in RtI skills applied to academic content.

**Research Question Three**

Research question three asks: "What is the relationship between teacher beliefs and perception of skill set and student learning outcomes?" The results were obtained from a multiple regression analysis between the four factors in the teacher survey and student growth scores. The independent variables were the four factors from the teacher survey: (1) academic abilities and performances of students with disabilities, (2) data-based decision making, (3) functions of core and supplemental instruction, and (4) perceptions of RtI skills applied to academic content. The dependent variable was overall class growth rate from aimsweb R-CBM data.

Before running the regression, several items were explored and assumptions tested. First, the four factors from the teacher survey were averaged. Each survey

answer was assigned a point value with 0 being assigned to "strongly disagree", 1 assigned to "disagree", 2 assigned to "neutral", 3 assigned to "agree", and 4 assigned to "strongly agree". On the perception survey, 0 corresponds to "I do not have this skill at all", 1 corresponds to "I have minimal skills in this area; need substantial support to use it", 2 corresponds to "I have this skill, but still need some support to use it", 3 corresponds to "I can use this skill with little help" and a 4 corresponds to "I am highly skilled in this area and could teach others this skill". The teacher results from each factor were averaged and descriptive statistics are in shown in Table 3. The factor with the lowest minimum and maximum was factor one: academic abilities and performances of students with disabilities. Factor two had the highest minimum rating of 1.78 and represents teachers' beliefs on data-based decision making. Both factors three and four ranged from 1.00 to 4.00 on their minimum and maximum average ratings. Factor three represents teachers' beliefs of core and supplemental instruction, while factor four assesses teachers' usage of RtI skills.

Table 3

*Descriptive Statistics*

|  | N | Min | Max | Mean | Std. Dev. |
|---|---|---|---|---|---|
| Factor 1 Average | 62 | .00 | 3.50 | 1.5242 | .78629 |
| Factor 2 Average | 62 | 1.78 | 3.89 | 2.8620 | .45108 |
| Factor 3 Average | 62 | 1.00 | 4.00 | 2.8280 | .51123 |
| Factor 4 Average | 62 | 1.00 | 4.00 | 2.9457 | .52649 |

Next, the assumptions of multicollinearity, linearity, and normality were checked. Multicollinearity was checked by running correlations between the four independent variables: (factor one) academic abilities and performances of students with disabilities, (factor two) data-based decision making, (factor three) functions of

core and supplemental instruction, and (factor four) perceptions of RtI skills applied to academic content. Factors one and two had a significant correlation of .297 at the .05 level. Factors two and three had a .280 correlation at the .05 level. This indicates a relationship between teacher's beliefs about data-based decision making and their beliefs about academic abilities and performances of students with disabilities. A relationship also existed between teachers' beliefs about data-based decision making and functions of core and supplemental instruction. However, these relationships are not strong enough to create an unstable model. Table four shows the results of the correlations.

Table 4

*Correlations*

|  |  | Factor 1 Avg | Factor 2 Avg | Factor 3 Avg | Factor 4 Avg |
|---|---|---|---|---|---|
| Factor 1 Avg | Pearson Correlation | 1 | .297** | .160 | .018 |
|  | Sig. (1-tailed) |  | .010 | .107 | .445 |
|  | N | 62 | 62 | 62 | 62 |
| Factor 2 Avg | Pearson Correlation | .297** | 1 | .280* | .039 |
|  | Sig. (1-tailed) | .010 |  | .014 | .381 |
|  | N | 62 | 62 | 62 | 62 |
| Factor 3 Avg | Pearson Correlation | .160 | .280* | 1 | .153 |
|  | Sig. (1-tailed) | .107 | .014 |  | .118 |
|  | N | 62 | 62 | 62 | 62 |
| Factor 4 Avg | Pearson Correlation | .018 | .039 | .153 | 1 |
|  | Sig. (1-tailed) | .445 | .381 | .118 |  |
|  | N | 62 | 62 | 62 | 62 |

**Correlation is significant at the 0.01 level (1-tailed) *Correlation is significant at the 0.05 level (1-tailed)

Linearity was checked by running scatterplots of each continuous variable (the four factors from the survey) with the dependent variable (student average growth on

aimsweb R-CBM score).  The scatterplot for factor two is located in Appendix D.

Normality was also checked by running histograms for each of the independent

variables (see Appendix C).  Finally, a multiple regression was run to determine if any

of the factors from the teacher survey predicted the student growth scores.

**Results of the Multiple Linear Regression**

Table 5 represents the results of the multiple regression.  Results of the overall

model of the multiple linear regression were statistically significant, $(F(4, 57) = 2.814,$

$p = .034$, with an $R^2$ of .165) suggesting that collectively there was a significant

predictive relationship between teacher beliefs in factors related to RtI and teacher

skills to carry out RtI components and student overall growth scores on aimsweb R-

CBM.  The $R^2$ value indicates that approximately 16.5% of the variances in aimsweb

R-CBM growth scores can be explained by the predictor variables.

The individual predictor factors were examined further to address the research

questions.  Factor two is shown to be a significant predictor on class growth scores at

$p<.05$ (B=-.180, t= -2.468, p =.017).

Table 5

*Results for Regression with Teacher Beliefs and Perceptions of RtI Predicting
Outcome on R-CBM Average Student Growth Scores*

| Source | B | SE | β | t | p |
|--------|------|------|------|--------|------|
| Intercept | 1.764 | .273 | | 6.471 | .000 |
| Factor 1 | -.028 | .041 | -.086 | -.679 | .500 |
| Factor 2 | -.180 | .073 | -.323 | -2.468 | .017 |
| Factor 3 | -.053 | .063 | -.107 | -.839 | .405 |
| Factor 4 | -.015 | .059 | -.031 | -.250 | .804 |

*Note.* $(F(4, 57) = 2.814, p = .034$, with an $R^2$ of .165)

**Feedback for the School District**

The survey data provides rich information for the participating school district on the teacher's beliefs/skills and RtI. It is also important to determine how teachers are gaining their skill set; and if the school district is meeting its teachers needs as the provider of the professional development. Additionally, it adds to the richness of the study to learn where teachers perceived they needed more support. In order to gather this feedback to assist the school district, two additional questions were added to the survey: "Where did you gain your skill set for RtI (i.e. district training, school leadership team, self-taught, college course work, other)?", and "What support do you need from the school district for improving the practice of RtI?" These questions will help the district determine if they are in fact meeting teachers' professional development needs related to RtI. Also, these questions will help aid in future planning to support their RtI efforts. The school district has created its own district leadership team which provides 'in house' training to school leadership teams who in turn provide training at school sites. The first question will help the district to determine if their efforts to provide professional development are actually reaching teachers. This information, along with the teachers' perceived abilities of their skill set can help to inform the school district on next steps.

**Open Ended Question Number One. Where did you gain your skill set for RtI (i.e. district training, school leadership team, self-taught, college course work, other)?**

Respondents were able to select multiple answers to this question, and they could also add their own answer response. Responses were tallied to obtain numbers for each category. The most frequent response received was from the "school district" with thirty-six affirmations. Next was from the "individual school site" which was mentioned twenty-seven times. Next, was self-taught with eight responses, then "instructional coaches" with seven responses, Professional Learning Communities (PLC) with six responses and on-the-job training (OTJT) receiving six responses. Learning from colleagues was selected three times. College coursework and outside professional development were selected twice. Receiving only one response were new teacher meetings, clinical rounds, and school psychologists. Table 6 shows the results for the number of times each choice was selected and percentage of total responses. There were 100 responses so the total is also representative of the percentage chosen.

Table 6

*Teacher responses to question, "Where did you gain your skill set for RtI"?*

| Category | N | % |
|---|---|---|
| School District | 36 | 36 |
| School Site | 27 | 27 |
| Self-Taught | 8 | 8 |
| Instructional Coaches | 7 | 7 |
| PLC | 6 | 6 |

| | | |
|---|---|---|
| OTJT | 6 | 6 |
| Colleagues | 3 | 3 |
| College Coursework | 2 | 2 |
| Outside PD | 2 | 2 |
| New Teacher Meetings | 1 | 1 |
| Clinical Rounds | 1 | 1 |
| School Psychologists | 1 | 1 |

**Open Ended Question Number Two. What support do you need from the school district for improving the practice of RtI?**

This question allows teachers to express what support is needed most of all. Beyond the survey responses, this allows teachers to express what their most pressing needs are regarding support from the school district. Teachers are able to share their thoughts on how to improve the RtI practice. Sixty-five responses were received. Phrases were tallied according to themes in order to find what matters most to teachers moving forward. The most requested support was additional interventions and resources with this being mentioned 16 times. The second most requested support with 12 selections was for additional staffing to help carry out the requirements. Third was more training with nine responses. And, the fourth most requested theme was for more time with seven mentions of needing more time. Beyond these four categories, responses became individualized with phrases such as, "keep strong leaders around in the school", "innovating ideas" and "I have a great understanding of the RtI process in our district". Only one response was overtly negative stating, "getting rid of it".

**Summary of Results**

The purpose of this study was to assess teachers' beliefs about RtI, their skill set to carry out RtI practices and whether or not there was an influence on student reading-curriculum based measurement scores based on teacher beliefs/skills. This chapter presented the findings from the data analysis portion of the study. Survey data results were shared for research questions one and two. For research question three, a regression was conducted and results were found to be significant between teacher beliefs/skills and their influence on student scores. Factor two, data-based decision making, was found to be a significant predictor of overall student class growth rates. Two additional questions were added to inform the district about what matters most to teachers and how the school district can support teachers. The next chapter will interpret the findings, make connections to literature, and make recommendations for the school district and future research.

**Chapter 5**

**Discussion**

This study examined one school district and its efforts to implement the RtI framework from the viewpoint of teacher's and their influence on student outcome scores. The purpose of this study was to assess teachers' beliefs about RtI, perceptions of their own skill sets to conduct RtI practices, and whether or not these beliefs/skills influenced student scores on a reading-curriculum based measurement. This chapter begins with a brief overview of methodology, an interpretation of the study's findings, implications for practice, and recommendations for further study. The following research questions guided this study:

- Research Question #1 (RQ1): What are teacher beliefs about RtI?

- Research Question #2 (RQ2): To what extent do teachers perceive they possess the skills necessary to carry out RtI practices?

- Research Question #3 (RQ3): What is the relationship between teacher beliefs and perception of skills and student learning outcomes?

- Research Question #4 (RQ4): What kinds of supports do teachers need and where did teachers report receiving their training?

A survey instrument was employed to assist the researcher in answering the four research questions referenced above. Consisting of 33 multiple choice questions and two open-response questions, the survey was disseminated to teachers in the participating school district who had taught second through fifth grade during the school year prior to the study. The teacher must have taught the previous year in order to have had student aimsweb data to assist with research question number three. One

hundred ninety teachers were invited to participate in the study; three teachers

declined to participate via the online consent form, four teachers did not have aimsweb

data from the prior year, eight teachers did not finish the survey, and 113 teachers did

not respond to the survey.  Sixty-two teachers completed the survey and had matching

aimsweb data, thereby enabling them to participate in the study.  Aimsweb class

growth rate averages were collected for each teacher in the study.  Each grade level --

2nd, 3rd, 4th, 5th -- has its own expected growth rate target for words read correctly per

minute each week (aimsweb.com).  In order to predict the influence of teacher

belief/skills at each grade level, a replacement variable was created with the ratio

scores for each teacher's class average growth rate.  This was accomplished by

dividing each teacher's class growth rate by the growth rate target for that grade level.

The student scores and teacher survey results were matched in SPSS version 25.0 for

MacBook.  Descriptive statistics were analyzed, survey results tabulated and

percentages calculated.  Finally, a multiple regression was run between the factors in

the teacher survey and the student growth rate scores to determine if a relationship

existed.

   RtI is an immense change initiative requiring a reallocation of time, money,

professional development, and support systems.  O'Connor and Freeman (2012) posit

the viewpoint that RtI is closely related to the concept of "continuous school

improvement."  One of the key components in changing school systems is examining

the belief systems of teachers.  Sansoti and Noltemeyer (2008) state:

   "schools must emphasize conditions that build capacity of both the system (school)

   and the individuals (educators) who work within the system.  From this

perspective, the fundamental ingredients necessary for educational change are improving relationships and increasing the skill sets of all involved, rather than relying on top-down reform" (p.56).

In order for a district to be successful in carrying out such a complex and complicated process, an examination of teacher beliefs should be conducted prior to and during the implementation process.

Districts will not know if their approach to RtI is working without examining the beliefs and perspectives of those carrying out the work most closely with students – teachers. According to the RtI Action Network, some of the common pitfalls districts encounter in implementing RtI include: underestimating the magnitude of change, failing to view the implementation as a systems-wide change, confusing awareness training with implementation training, and using approaches to train teachers that are ineffective given the practices that have to be changed (Hall, n.d.). RtI myths can also stand in the way of district success, and if districts are not examining teacher belief systems, they will not be aware of any misunderstanding that need to be corrected. Swartz, et al. (2011) list seven myths surrounding RtI:

- only special education or general education is responsible for RtI implementation;

- tier 3 is special education;

- RtI will open the flood gates to special education;

- RtI is a panacea;

- RtI is an intervention;

- RtI is what we have always done; and

- there is limited research for RtI (p. 11 – 12).

The school district's survey results can help illuminate any myths held by teacher's in this school district. The school district may be able to correct misconceptions before they become deep-rooted in the schools' way of operating.

Ongoing professional development should include both components of beliefs and attitudes in education as well as developing a knowledge base that takes information and puts it into practice (Barns & Harlacher, 2008). "RtI implementation requires significant educational reform, including changes in the way we think and act at all levels of the system (O'Connor & Freeman, 2012, p. 298). This study examined both the beliefs and perspectives of teachers as related to RtI as well as the connections to student learning outcomes. Teacher beliefs about student learning was examined through three domain areas supportive of the RtI framework: the academic abilities and performances of students with disabilities, data-based decision making, and functions of core and supplemental instruction. Teacher perceptions of their individual abilities were also examined through the survey by gathering data on perceptions of teacher RtI skills applied to academic content.

**Interpretation of Findings**

Research Question One asks, "What are teacher beliefs about RtI?" To answer this question, a survey was conducted. Three factors specific to beliefs that support core components of RtI were included in this survey: the academic abilities and performance of students with disabilities; data-based decision making; and functions of core and supplemental instruction. This portion of the study sought to determine teacher beliefs about RtI. Results were displayed for each individual survey question

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in tables.  Additionally, the average positive agreement rating response for question one was 68.21% "agree or strongly agree" with the statements given.  The overall neutral response agreement rating was 14.55%, and the overall "disagree or strongly disagree" was 11.54%. The majority of disagreement responses came from questions one and two related to teacher beliefs about the academic abilities and performances of students with disabilities.

Results from research question one supports an overall impression of a solid basis of teacher beliefs in most of the components supporting RtI.  Teachers agree with or strongly agree with statements in line with "making data-based decisions" and with the "usage of functions of core and supplemental instruction."  This district does, however, have work to do in the belief system of teachers related to the academic abilities and performances of students with disabilities.  The district should further endeavor to study what teachers believe about students with learning disabilities.  It is often thought that the student struggles to learn because of a deficit they possess, not because of a lack of sound instruction.  Education teams traditionally work together to confirm or rule out a deficit within a child.  RtI works from a different perspective; one that looks at how a child will improve.  "The recognition that many students struggle because their instruction is inadequate is an important one, with significant implications for students who are culturally and linguistically diverse" (Kozleski & Huber, 2010, p. 261).

Research Question Two asks, "To what extent do teachers percieve they possess the skills necessary to carry out RtI practices?"  This research question was also answered through questions in the survey.  This survey asked questions to

determine teacher perceptions of RtI skills applied to the academic content area.

Results were displayed for each individual survey question. Additionally, the overall

average response for question two was that 76.22% of teachers believe they can use

the listed skills and need little help or can teach others how to use the skills. Also,

20.62% was the average response rate for "I have this skill but need some support,"

and 11.79% responded "I do not have this skill or need substantial support to use this

skill." Survey question two illuminated that the teachers in the survey have

confidence in utilizing the skills needed to implement RtI. The school district can drill

down on the individual skill sets to determine which specific skills had lower response

rates to provide professional development in those areas. Overall, the responses

yielded a high confidence level among teacher skills, so it would benefit the district to

determine which individuals believed they needed more support. Additionally,

support for teachers should be incorporated into ongoing systems of support and

professional development. The professional development approach should be ongoing

as opposed to an approach in which staff are trained without follow up (Barnes &

Harlacher, 2008). Kratochwill, et al. (2007) point out RtI requires change on multiple

levels, with the most significant pertaining to the professional practice of education

and mental health professionals resulting in the need for professional development to

be at the center of consideration. With enhanced professional learning opportunities,

teachers will be more likely to develop positive attitudes and be better equipped to use

RtI daily to improve the academic and behavioral outcomes for all students (Nielson,

Barry, & Staab, 2008).

Research Question Three asks, "What is the relationship between teacher beliefs and perception of skills and student learning outcomes?" This question sought to determine if any of the four teacher survey factors (academic abilities and performance of students with disabilities; data-based decision making; functions of core and supplemental instruction; perceptions of RtI skills applied to academic content) showed a relationship with student outcome scores. Teachers should embrace a level of "buy in" and hold a specific skill set to correctly utilize the RtI framework to increase student achievement. This portion of the study was concerned with the level of teacher belief/skills as applied to student outcomes. To determine if an increase in student level achievement, on a district wide level, is connected to teachers' positive agreement level with components that are foundational to the RtI framework, these measurements were connected to student outcomes.

Before conducting the multiple regression analysis, several topics were explored. Correlations between the four factors were explored to see what, if any, relationships existed between the four factors. Factors one and two have a correlation coefficient of 29.7% and are significant at the .05 level. This implies a relationship between teachers' beliefs about academic abilities and performances of students with disabilities (factor one) and teachers' beliefs about data-based decision making (factor two). Factors two and three show a 28% correlation at the .05 significant level. This implies a relationship between teachers' beliefs about data-based decision making (factor two) and teachers' beliefs about functions of core and supplemental instruction (factor three). Data-based decision making was the common variable in the belief portion of the survey related to both of the other two variables. Data-based decision

making is foundational to the RtI model.  Elliot (2008) lists one of the three essential core components of RtI as:  an integrated data collection/assessment system to inform decisions at each tier of service delivery.  Gruman and Hoelzen (2011) state that, "school counselors, like other team members are now required to utilize data to drive intervention planning process for individual students" (p. 183).  According to the RtI framework, all students are given a universal screening measure, students are identified who need more support, and then receive interventions.  From that point, students are progress- monitored after receiving a pre-determined number of interventions, and progress is charted and analyzed.  Each decision – to continue the intervention, change the intervention, etc. – is determined based on data.

The multiple regression test produced significant results.  This indicates that the teachers' beliefs/skills were shown to have a relationship on student growth scores.  Upon further investigation, it was also noted that factor two, data-based decision making, was a significant predictor of student growth scores at $p<.05$ (B=-.180, t= -2.468, p =.017).  The inverse relationship between data-based decision making and student outcomes seemed counterintuitive.  However, the multiple-regression did not have temporal order.  Teachers may have begun the school year with classes that had lower scores, and therefore, had reason to believe in data-based decision making to work with students who need extra interventions.  Our current high-stakes accountability environment has led to the usage of systematically collecting and using data to inform instructional decisions (Kerr, Marsh, Ikemoto, Darilek & Barney, 2006). Teachers with students who were struggling to learn at grade level may have had a greater sense of urgency to use data to help increase learning

outcomes.  Stiggins (2005) specified that "the bottom one-third to one-half of the rank order – plus all who drop out before being ranked – fail to develop the foundational reading, writing, and mathematical proficiencies need to survive in, let alone contribute to, an increasingly complex and ethnically diverse culture" (pp. 325 – 326). Teachers were tasked with bringing these students up to grade level standards.  To accomplish this task, data-based decision making was an integral component.  Again, data-based decision making was essential to the RtI process.  It was noteworthy that teachers in this district show positive agreement with data-based decision-making.  RtI uses a systematic screening system of all students to identify students who are struggling as compared to the method where students are only referred after they are perceived to experience academic difficulties (Swartz, et al., 2011).  The majority of the RtI system, rooted in data-based components as evidenced by three of the four basic components of RtI: provide research-based core instruction to all students, screen all students and monitor progress of each student, and design intervention for students not making adequate progress (Swartz, et al., 2011).

**Implications for Practice**

District leadership should be aware that teachers hold overall positive beliefs related to RtI.  They also indicate strong positive perceptions about their skill set to carry out the components needed in RtI.  The school district should consider expanding the study to all elementary teachers and gather data disaggregated by school site.  This would help the district to determine if some schools are in need of more support, or if some schools are leading the way in implementation.  Additionally, the district should consider requesting yearly feedback to measure growth as the

district continues to respond to the needs of teachers.  Furthermore, the school district should monitor the impact on student learning. The participating school district should monitor the impact on student learning by gathering baseline data and developing a plan based on strengths and weaknesses to assess their yearly growth.

District leadership should be aware of the domain receiving the lowest positive agreement ratings.  The school district should look further into the belief statements from the first domain of the survey:  academic abilities and performances of students with disabilities.  Elliot (2008) states that "we believe that we can effectively teach all children," and she posits that RtI practices are founded on this assumption and belief. Swartz, et al. (2011) indicate that "all children can learn" is the first assumption in RtI, and that although most mission statements include a similar statement, schools continue to use ability tracking, ineffective service delivery, and a disproportionate number of minority and low-income students are placed into special education.  The participating school districts RtI manual includes eight belief statements and the first statement is:  all students can learn.  Also, it is important to note this factor received lower agreement ratings than the other three factors in the survey which are not about student abilities specifically, but more directly related to teacher behaviors and teacher-controlled factors.  Swartz, et al. (2011) state: "It is still common to blame academic failure on children and their families.  Research demonstrates that appropriate instruction results in increased student performance, regardless of student demographics" (p. 9).  The district could conduct follow-up questions in an effort to understand what teachers' true beliefs are about students with learning disabilities. Teachers may also need more professional development or information about the

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purposes of RtI. The system of RtI works to blend special education and general education supports and is not meant to be a method of qualifying students for special education. Another belief statements listed in the participating school district manual includes: because all students are a part of the general education system, there is a shared responsibility for student achievement across the entire school community. This district needs to determine the root cause for the low response agreement of these beliefs: a misunderstanding about the RtI framework, the belief that students with disabilities cannot achieve at grade level, a lack of resources or strategies, or a variety of other reasons. An analysis of these root causes will help to determine the next steps.

The open feedback portion of the survey which asked "Where did you gain your skill set for RtI?" showed that 90% of the teachers received their skill set for RtI in a manner from the school district or at the school site (i.e. district, site, colleague, on-the-job-training, new teacher training). This illustrates the district is meeting its goal to provide professional development to district teachers related to RtI. The model of professional development currently provided by the district reflects its effectiveness based on this feedback and the survey results of the teachers' evaluation of their skill set. The district created a district-leadership RtI team which provides professional development to building level professional development teams, who, in turn, trained faculty at their sites. While the district maintains this structure, they have moved away from regular professional development as schools have become more familiar and gained more experience in the RtI system. Most training sessions are now offered at the school site level. The district should monitor this change to ensure this move

from less district training to more site level training continues to meet the needs of educators, especially with the higher rate of teacher turn-over. Cedar Creek should also continue to monitor the impact this framework has on student learning.

The open feedback to the district can help guide their future supports, resource allocation, and professional development plans. The number one mentioned item in the survey question "What support do you need from the school district for improving the practice of RtI?" was for interventions and resources. Because so many interventions and resources are available, the district should obtain specific feedback on what teachers are requesting. For example, do teachers want more choices or more training on how to use interventions? Do they need help matching students to the appropriate interventions? Also, when too many choices are offered, it is difficult to narrow down the best intervention. Perhaps teachers need more guidance in available interventions. The second most requested support was additional staffing. The district could review all funding sources such as Title one funding. Each school and its number of students who qualify to receive tier 2 and tier 3 services should be reviewed to determine if staffing is equitable. Additionally, the overall school budget should be analyzed to determine if additional staff could be provided to support the RtI system requirements. The third most selected response was for more training, and the district could survey teacher and school administrators to determine what areas of RtI need more training at individual sites. The district leadership team could develop training for those specific skills needed to support teachers. The final response which received multiple affirmations was for more time.

These top four mentioned areas of support needed – interventions and resources, additional staffing, more training, and more time – are consistent with findings from other studies and with empirical literature as to how to best sustain RtI usage. Castro-Villarreal, Rodriguez, and Moore (2014) examined teacher perceptions using a qualitative methodology and a computer-based text search program to determine themes. One emerging theme was barriers to an effective program. This theme was then broken down into five major themes: training, time, resources, RtI process, and paperwork. These areas teachers perceived as barriers in the Castillo study are consistent with the supports teachers identified in the current study. Pyle (2011) used a focus group to gather data describing the perspective of teachers who participated in the implementation of RtI, and the focus group identified five major themes: overemphasis on assessment, teaching demands, conflicting initiatives, systemic incoherence, and issues of identification and support. With reference to "teaching demands," teachers expressed concerns about the amount of time required by RtI. This correlates with the findings in the current study. Martinez, et al. (2011) conducted a study in which educators were asked their opinion of the time requirements of RtI. Thirty-seven percent agreed that the process takes up too much time, while 46% disagreed that the process takes too much time.

This study revealed teacher belief systems about RtI, teacher's RtI skill set, how they gained their knowledge, and what supports they need from the school district moving forward. Furthermore, the study showed a significant relationship between teachers' beliefs/skills and student scores. Continuing to foster a collaborative partnership between teachers, administrators, and the district should benefit the

continued implementation of RtI in this school district.  Greenfield, et al. (2010) suggest in their study that "schools implementing school-wide reform like RtI review their short-term and long-term goals with the entire school community, including teachers, administrators, parents, and students" (p. 59).  Without teacher input, collaboration, and support, a large-scale initiative such as this will not be successful. The district can use the data from this study to improve upon the sound systems that appear to be in place at this time.

**Recommendations for Further Study**

Several recommendations for further exploration exist.  This study was only conducted in one school district.  The researcher would recommend duplicating this study in other school districts.  Additionally, with the small teacher sample size, it would be beneficial to repeat the study with a larger teacher sample size.  A study that considers the perspective of site administrators, school psychologists, special education teachers, English Language teachers, and other support staff in the building would bring additional viewpoints of RtI.  Additionally, a deeper exploration into the relationship between teacher beliefs about academic abilities and performances of students with disabilities and what should be expected of students with varying disabilities would be insightful due to survey results in this domain.

The creation of new policy, implementation of policy, and usage of best educational research practices are all complex by nature.  Policies, best practice, and funding can work at odds with one another and are frequently not in alignment.  Policy makers must look at the alignment between special education laws, RtI expectations, and funding levels for schools to enact the steps necessary for successful usage of RtI.

A full spectrum of supports and resources are needed to fully operationalize the RtI system properly including general education teachers, special education teachers, math interventionist, reading interventionist, English Language educators, speech pathologists, school psychologists, school counselors, administrators, and behavior specialists. In addition to the human capital needs, material resources are needed as well. Examples of material resources include: time allocations during the day to carry out first, best instruction as well as tier two and tier three instruction for those who need additional supports. Furthermore, professional development is also needed to continue to scale-up the skill level of educators utilizing the RtI system. Implication for policy at the federal, state, and local levels is to align policy to move in the same direction, to support the same goals, and to fully fund the needed resources to support educators and student needs.

**Limitations of Research**

There were a few limitations in this study. First, the research was conducted using survey data. Self-reporting information is not always accurate. Sometimes participants do not accurately represent their beliefs, or their perception of their skill level may not match their actual level. The second limitation was the sample size with only 62 teacher participants. The small sample size results in a low statistical power which can affect results. The final limitation is the researcher is a district employee. However, the researcher does not supervise or evaluate teachers. Additionally, the researcher is not directly involved in school level collection of the student data. Steps were taken to reduce researcher bias including assurances of confidentiality.

**Final Conclusions**

This study was conducted to assess teachers' beliefs on RtI, their perceptions of their skill set to carry out RtI practices, and to determine if these beliefs/skills influenced student growth scores. Additionally, open response items were collected to determine how teachers were gaining their skill set and what the school district could do to provide additional support. The findings indicate that a significant relationship between the teacher survey responses and student growth scores exists. Additionally, with the survey responses and regression analysis, meaningful information was gathered about teacher beliefs/skills and their connection to student outcomes. Overall, results were positive in nature. Additionally, knowing what teachers identified as their beliefs, skills, and future needs is important for the school district. These results can help the school district allocate funds for interventions, resources, and teacher professional development.

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Teacher Survey

RtI Beliefs Scale and Perceptions of RtI Skills Survey adapted from the Florida Statewide Problem Solving and Response to Intervention Project. A collaborative Project between the Florida Department of Education and the University of South Florida

Castillo, J.M., Batsche, G.M., Curtis, M.J., Stockslager, K., March, A., and Minch, D. August (2010) Problem Solving/Response to Intervention. Developed by the Florida PS/RTE Statewide Project – http://floridarti.usf.edu

# RTI Beliefs Scale and Perceptions of RTI Skills Survey

Q2 Select the grade level you teach

○ 2 (1)

○ 3 (2)

○ 4 (3)

○ 5 (4)

---

Q3 Years of experience in education (include current school year)

○ 2 to 4 years (1)

○ 5 to 9 years (2)

○ 10 to 14 years (3)

○ 15 to 19 years (4)

○ 20 to 24 years (5)

○ 25 or more years (6)

---

Q4 Number of years in your current position (include current school year)

○ 1 to 4 years  (1)

○ 5 to 9 years  (2)

○ 10 to 14 years  (3)

○ 15 to 19 years  (4)

○ 20 or more years  (5)

Q7 Using the scale below, please indicate your level of agreement or disagreement with each of the following statements by selecting the choice that best represents your response.
0 = Strongly Disagree (SD)
1 = Disagree (D)
2 = Neutral (N)
3 = Agree (A)
4 = Strongly Agree (SA)

| | Strongly Disagree (SD) (0) | Disagree (D) (1) | Neutral (N) (2) | Agree (A) (3) | Strongly Agree (SA) (4) |
|---|---|---|---|---|---|
| 3. General education classroom teachers should implement more differentiated and flexible instructional practices to address the needs of a more diverse student body. (1) | ○ | ○ | ○ | ○ | ○ |
| 4. General education classroom teachers would be able to implement more differentiated and flexible interventions if they had additional staff support. (2) | ○ | ○ | ○ | ○ | ○ |
| 5. The use of additional interventions in the general education classroom would result in success for more students. (3) | ○ | ○ | ○ | ○ | ○ |
| 6. Prevention activities and early intervention strategies in schools would result in fewer referrals to problem-solving teams and placements in special education. (4) | ○ | ○ | ○ | ○ | ○ |
| 7. The "severity" of a student's academic problem is determined not by how far behind the student is in terms of his/her academic performance but by how quickly the student responds to intervention. (5) | ○ | ○ | ○ | ○ | ○ |
| 8. Using student-based data to determine intervention effectiveness is more accurate than using only "teacher judgement". (6) | ○ | ○ | ○ | ○ | ○ |
| 9. Evaluating a student's response to interventions is a more effective way of determining what a student is capable of achieving than using scores from "tests" (e.g., IQ/Achievement test). (7) | ○ | ○ | ○ | ○ | ○ |
| 10. Additional time and resources should be allocated first to students who are not reaching benchmarks (i.e., general education standards) before significant time and resources are directed to students who are at or above benchmarks. (8) | ○ | ○ | ○ | ○ | ○ |
| 11. Graphing student data makes it easier for one to make decisions about student performance and needed interventions. (9) | ○ | ○ | ○ | ○ | ○ |

X→

Q7 Using the scale below, please indicate your level of agreement or disagreement with each of the following statements by selecting the choice that best represents your response.
0 = Strongly Disagree (SD)
1 = Disagree (D)
2 = Neutral (N)
3 = Agree (A)
4 = Strongly Agree (SA)

| | Strongly Disagree (SD) (0) | Disagree (D) (1) | Neutral (N) (2) | Agree (A) (3) | Strongly Agree (SA) (4) |
|---|---|---|---|---|---|
| 12. Tier 1 core instruction should be effective enough to result in 80% of students achieving benchmark goals in reading. (1) | ○ | ○ | ○ | ○ | ○ |
| 13. The primary function of supplemental instruction (tier 2 and tier 3) is to ensure that students meet grade-level benchmarks in reading. (2) | ○ | ○ | ○ | ○ | ○ |
| 14. The goal of assessment is to generate and measure effectiveness of instruction/intervention. (3) | ○ | ○ | ○ | ○ | ○ |

Q8 Please read each statement about a skill related to assessment, instruction, and/or intervention below, and then evaluate your skill level within the context of working at a school/building level.  Please use the following response scale:

0 = I do not have this skill at all (NS)

1 = I have minimal skills in this area; need substantial support to use it (MnS)

2 = I have this skill, but still need some support to use it (SS)

3 = I can use this skill with little support (HS)

4 = I am highly skilled in this area and could teach others this skill (VHS)

| | I do not have this skill (NS) (1) | I have minimal skills in this area; need substantial support to use it (MnS) (2) | I have this skill, but need some support to use it (SS) (3) | I can use this skill with little support (HS) (4) | I am highly skilled in this area and could teach others this skill (VHS) (5) |
|---|---|---|---|---|---|
| 15. The skill to access the data necessary to determine the percent of students in core instruction who are achieving benchmarks in academics. (1) | ○ | ○ | ○ | ○ | ○ |
| 16..The skill to use data to make decision about individuals and groups of students for core academic curriculum. (2) | ○ | ○ | ○ | ○ | ○ |
| 17.The skill to use data to define the current level of performance of the target student for academics. (3) | ○ | ○ | ○ | ○ | ○ |
| 18.The skill to define a referral concern in terms of a replacement behavior (i.e., what the student should be able to do) instead of a referral problem for academics. (4) | ○ | ○ | ○ | ○ | ○ |

| | | | | | |
|---|---|---|---|---|---|
| 19. The skill to use data to define the current level of performance of the target student for academics. (5) | ○ | ○ | ○ | ○ | ○ |
| 20. The skill to determine the desired level of performance (i.e. benchmark) for academics. (6) | ○ | ○ | ○ | ○ | ○ |
| 21. Develop potential reasons (hypotheses) that a student or group of students is/are not achieving desired levels of performance (i. e. benchmarks) for academics. (7) | ○ | ○ | ○ | ○ | ○ |
| 22. Identify the most appropriate type(s) of data to use for determining reasons (hypotheses) that are likely to be contributing to the problem for academics. (8) | ○ | ○ | ○ | ○ | ○ |
| 23. Identify the appropriate supplemental intervention available in my building for a student identified at-risk for academics. (9) | ○ | ○ | ○ | ○ | ○ |

| | | | | |
|---|---|---|---|---|
| 24. Access resources (e.g., internet resources, professional literature) to develop evidence-based interventions for academic core curricula. (10) | ○ | ○ | ○ | ○ | ○ |
| 25. Access resources (i.e., internet resources, professional literature) to develop evidence-based interventions for academic supplemental curricula. (11) | ○ | ○ | ○ | ○ | ○ |
| 26. Access resources (e.g., internet resources, professional literature) to develop evidence-based interventions for academic individualized intervention plans (12) | ○ | ○ | ○ | ○ | ○ |
| 27. Ensure that any supplemental and/or intensive interventions are integrated with core instruction in the general education classroom. (13) | ○ | ○ | ○ | ○ | ○ |
| 28. Ensure that the proposed intervention plan is supported by the data that were collected for academics. (14) | ○ | ○ | ○ | ○ | ○ |

| | | | | | |
|---|---|---|---|---|---|
| 29. Provide the support necessary to ensure that the intervention is implemented appropriately. (15) | ○ | ○ | ○ | ○ | ○ |
| 30. Determine if an intervention was implemented as it was intended. (16) | ○ | ○ | ○ | ○ | ○ |
| 31. Select appropriate data to use for progress monitoring of student performance during an intervention. (17) | ○ | ○ | ○ | ○ | ○ |
| 32. Make modifications to intervention plans based on students' response to the intervention. (18) | ○ | ○ | ○ | ○ | ○ |
| 33. Collect data on RCBM (19) | ○ | ○ | ○ | ○ | ○ |

34. Where did you gain your skill set for RtI? (i.e., district training, school leadership team, self-taught, college course work, other)

_____

35. What support do you need from the school district for improving the practice of RtI?

_____

Appendix B

Permission to Utilize Survey

Hi Keely,

The Florida Problem Solving/Response to Intervention Project received your email dated 3/14/17, requesting permission to reproduce the following materials for your dissertation:

·   RtI Beliefs Scale
·   Perceptions of RtI Skills Survey

**Permission is granted** by the copyright holder to print and use for educational purposes with the following conditions:

·   An appropriate acknowledgment of the Florida Problem Solving/Response to Intervention Project (a collaborative project between the Department of Education and the University of South Florida) is included.
·   The material is not used for commercial purposes.

Thank you for your interest in these resources. Please contact me if you need further assistance.

Sincerely,

Judi Hyde

**Judi Hyde, MA**
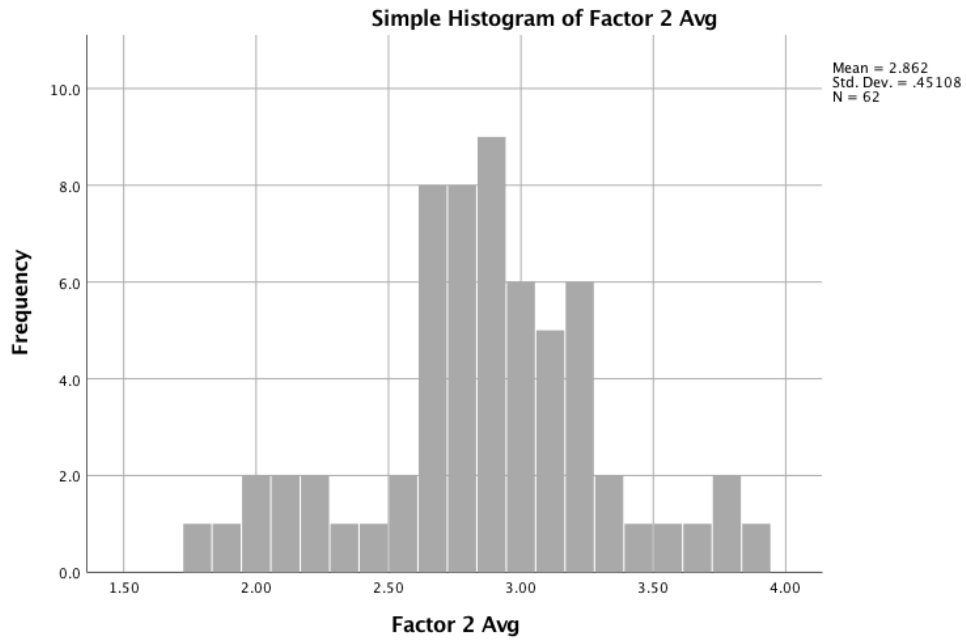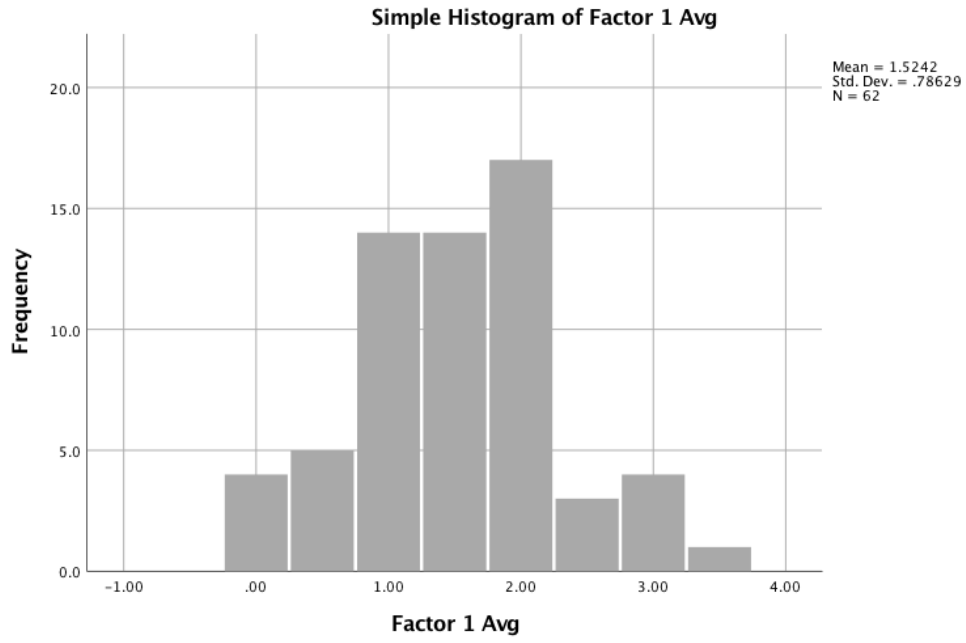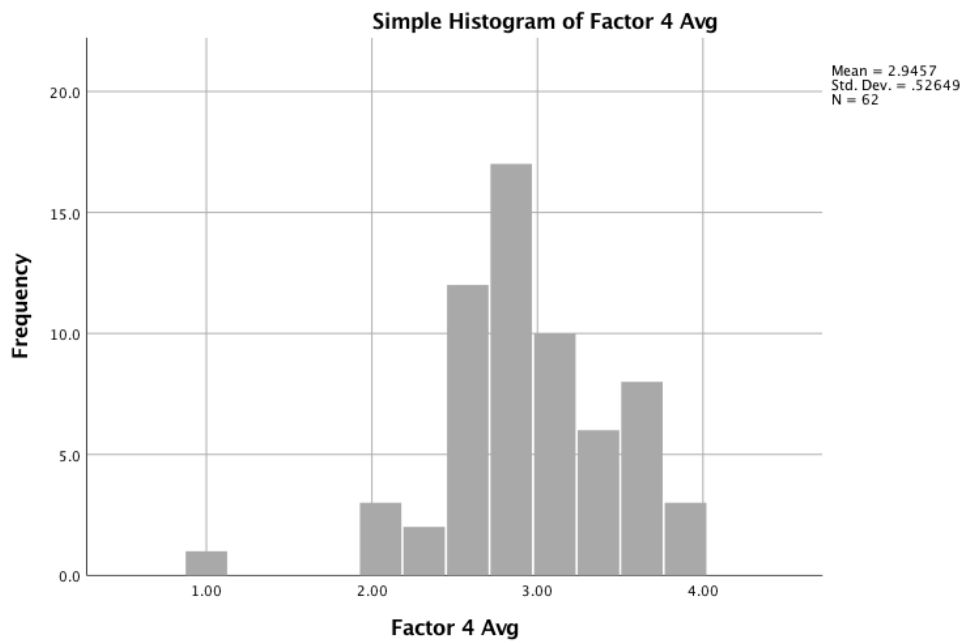Communications Coordinator  Florida's Problem Solving/Response to Intervention Project
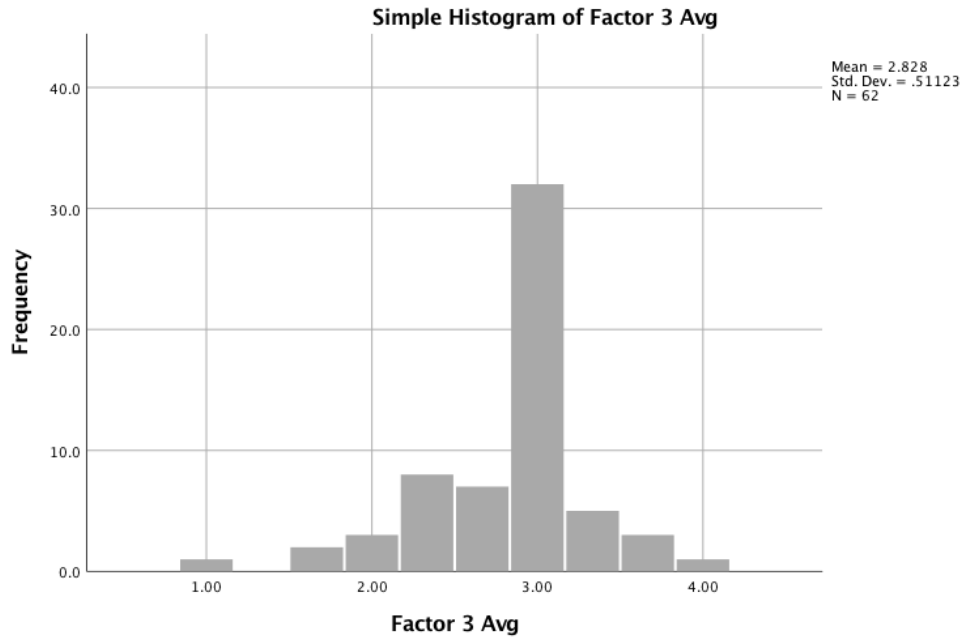judihyde@usf.edu
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**Florida's Problem Solving/**
**Response to Intervention Project**
*A Multi-Tiered System of Supports*
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Appendix C

Histograms



Simple Histogram of Factor 1 Avg

Mean = 1.5242
Std. Dev. = .78629
N = 62



Simple Histogram of Factor 2 Avg

Mean = 2.862
Std. Dev. = .45108
N = 62

Simple Histogram of Factor 3 Avg

Mean = 2.828
Std. Dev. = .51123
N = 62



Simple Histogram of Factor 4 Avg

Mean = 2.9457
Std. Dev. = .52649
N = 62

Appendix D

Scatter Plot for Factor 2



Simple Scatter of Factor 2 Avg by Class Growth Ratio