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RtI Characteristics Commonly Implemented in High Performing Middle Schools

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by

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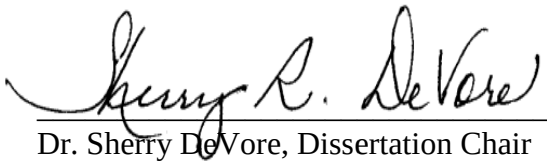

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Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work at Lindenwood University and that I have not submitted it for any other college or university course or degree.

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Abstract

The Individuals with Disabilities Act of 2004 allowed schools to use a Response to Intervention (RtI) model as opposed to the discrepancy model to qualify students as learning disabled. The incorporation of the RtI model provided earlier interventions for students and reduced avoidance of special services and false diagnosis. With the success of the RtI model at the elementary level, middle schools attempt to implement the program with varying success. In this study, middle school principals were surveyed to determine their respective building's current level of implementation in regard to RtI. The building's implementation scores were compared to academic achievement to determine if there was a relationship using a Pearson product moment correlation coefficient (PPMC). Academic achievement was determined by students' MAP index scores relating to the 8th grade Communication Arts test, as well as the percentage of students who scored below basic. The PPMC determined little to no relationship existed between implementation levels and MAP index scores, as well as the percentage of students scoring proficient. Quartile tables were developed to determine which surveyed buildings had the highest academic achievement. The survey responses were analyzed to determine what essential components of RtI they were implementing. The essential components being implemented were determined to be universal screening, professional development, establishing clear goals and expectations, and administrator participation.

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Chapter One: Introduction

Response to Intervention (RtI) allows schools to provide assistance to students who are experiencing academic deficits through a research-based instructional framework (Hughes & Dexter, 2011). The underlying premise for RtI is that students should be provided intervention when deficits are detected, instead of waiting until they incur a discrepancy that would qualify them for special education services (Buffum, Mattos, & Weber, 2010). RtI delivers a multi-tiered method of service delivery which affords students an appropriate level of evidence-based instruction individualized to their specific needs (Barnes & Harlacher, 2008).

According to Sanger (2012), RtI has the capability to address struggling learners' needs, avoid special education labeling, and prevent academic failure. Early-literacy research provides the context supporting RtI's empirical foundation, resulting in practical challenges when applied to a middle school design (Fagella-Luby & Wardell, 2011). With the success of RtI at the elementary level, secondary schools that previously had no structured literacy programs are attempting to institute RtI (Brozo, 2009). Through this study it was determined which essential elements of RtI are being implemented within high achieving middle schools.

The background relating to RtI and its relationship to the federal and state educational laws was discussed in this chapter. Current literature and previous research related to the lack of scientific evidence that RtI is effective at the middle school level was analyzed within the conceptual framework. Examined also in this chapter were the problems associated with the student achievement gap and how RtI has the potential to narrow this gap. Further, the purpose of this study and accompanying research questions

were presented to determine what RtI elements implemented in middle schools are deemed to have high rates of student achievement. Limitations and assumptions considered in the study were posed. Finally, this chapter concluded with an examination of the limitations and assumptions related to this study.

Background of the Study

Momentum increased for RtI after the Individuals with Disabilities Act (IDEA) of 2004 defined it as an alternative option for labeling students as learning disabled (LD) (United States Department of Education, 2006). The IDEA of 2004 brought considerable attention to RtI, including RtI's process of identifying students who are found to have a learning disability (Marston, 2005). Whereas, school practitioners previously were encouraged to utilize an IQ-achievement discrepancy to identify learning disabilities in students, they could now use the RtI method (Fuchs & Fuchs, 2006).

The population of students served under the IDEA has grown at nearly twice the rate of the general population over the past thirty years (New America Foundation, 2013). According to the National Center on Response to Intervention (2010), districts use RtI to assist in maximizing student achievement, while effectively identifying students with learning disabilities by monitoring student progress, providing evidence-based intervention, and adjusting intensity of interventions related to students level of responsiveness. RtI has the potential to provide a framework for educational decision making that aims to improve all students' learning, while generating a dataset designed for making special education decisions (Vanderheyden, 2011).

Johnson and Smith (2008), believed that "RtI is proposed as a valuable model for educators because of its potential utility in the provision of appropriate learning

experience for all students as well as in the early identification of students as being at risk for academic failure" (p. 46). RtI has become well established in many elementary school settings as a system-wide intervention tool for academic interventions (Prewett et al., 2012). Prewett et al. (2012) further described the fact that many elementary schools have implemented RtI with a high rate of success due to this early identification aspect.

Realizing the impact RtI has at the elementary level, middle schools have attempted to replicate the model based on elementary practices (Prewett et al., 2012). Johnson and Smith (2008) noted that "although state agencies and practitioners conceptually embrace the RtI concept for older students, scant research and few, if any, RtI models appropriate for secondary school settings exist" (p. 46). Johnson and Smith (2008) further explained that RtI must alter in design when transitioning to the secondary setting due to available research being geared toward the early grades.

RtI is designed as a multi-tiered approach to meet students' needs at their diverse levels (Hughes & Dexter, 2011). The three tier approach predominately discussed in the literature relates to a primary, secondary, and tertiary prevention level (Barnes & Harlacher, 2008; Fuchs & Fuchs, 2006). The primary prevention level, most commonly referred to as tier 1, includes high-quality, research-based instruction (National Center on Response to Intervention, 2011). By increasing scientifically validated differentiated instruction, students are provided a greater chance for having their goals met within the tier 1 classroom setting (Fuchs & Deshler, 2007).

Students, who require remediation beyond tier 1, move into tier 2 and are provided more intensive services with a heightened level of monitoring their skill growth (Greenwood, et al., 2011). Further, students who continue to struggle through secondary

prevention, transition into tier 3 where they are typically referred for special education services (Beecher, 2011). Students are provided evidence based instruction and early intervention followed by support for those who are not initially successful through this tertiary design. The three tiered model differs from previous methods of suspecting a student is academically behind their peers and referring them to special education, than waiting for them to qualify before providing interventions (Ehren, 2012).

The Missouri School Improvement Plan 5th revision (MSIP 5) established a scoring guide for student performance on the Missouri Assessment Program (MAP) test which awards one point for students who score *below basic*, followed by a drastic increase to three points for students who score *basic* (Missouri Department of Elementary and Secondary Education [MODESE], 2013). The goal of academic growth has led districts and buildings to seek programs that will assist students scoring *below basic* to increase proficiency in order to improve the district's level of accreditation. This increased pressure of accountability has led to a failure to implement RtI as it was intended (Buffum et al., 2010). The authors (Buffum et al., 2010) further described the lack of effective planning throughout intervention as what leads middle school administrators to develop some of the right practices for the wrong reasons.

Conceptual Framework

The conceptual framework for this study was based on the need for greater information related the effective implementation of RtI in the middle school setting. Special education reforms have a profound effect on students who struggle with reading; the largest diagnosis for special education students is LD, with the majority showing serious problems in reading (Dimino & Gersten, 2006). Additionally, determining a

student's eligibility criteria for the diagnosis of LD has been controversial since its inception (Bradley, Danielson, & Doolittle, 2005). Under this traditional method, students were required to qualify for special education services through an IQ-achievement discrepancy (Fuchs & Fuchs, 2006). The authors, Fuchs and Fuchs (2006) explained that this resulted in students lacking services related to their disability, often until the second or third grade.

Although many students do meet the eligibility requirements for a disability, the students require instructional modifications to maintain the pace of their peers (Lose, 2008). In 2004, the IDEA was reauthorized to support an RtI design which provided students access to interventions for educational needs without being qualified as learning disabled (Bradley et al., 2005). This transitioned practices from waiting for a child to qualify before services were provided to intervening immediately to prevent delays (Greenwood et al., 2011).

RtI's foundation is designed for an elementary school setting with few models existing for the middle school setting (Johnson & Smith, 2008). Brozo (2009) noted that approximately 66% of 8th grade students read below a proficient level. Statistics relating to these have motivated middle school administrators to imitate the RtI model with no significant research proving its effectiveness among these age levels (Allington, 2011). Educators can become informed through research concerning middle school RtI implementation; however, the differences in school structure and operations results in the requirement of a different design compared to the elementary level (Johnson & Smith, 2008). The National Center on RtI (2011) stated that "many practical and logistical questions have emerged as state education agencies and local education agencies

investigate and implement an RTI model, based on elementary frameworks, at the secondary level" (p.1).

There are many concerns discussed within current literature relating to the implementation of RtI in the middle school. While middle school buildings may implement an RtI program, the design and process for implementation must take into count many unique features and considerations when altering the elementary based design to fit the unique structure of a middle school (National Center on Response to Intervention, 2010). The National Center on Response to Intervention (2010) listed some of these unique features of middle schools to be student schedules, rigorous curriculum, credits relating to specific courses needed for graduation, and increased grading requirements among subjects.

Statement of the Problem

State and Federal mandates such as No Child Left Behind of 2001 and the IDEA 2004 requirements for teachers to implement evidence-based practices have driven schools to change their approach to closing the achievement gap (Emmons et al., 2009). This pressure of accountability for student growth at the state and national level motivated districts to effectively plan for measures to increase student achievement. As a result of the incorporation of special language into legislation, educators are increasingly moving toward RtI implementation to meet these accountability requirements (Hughes & Dexter, 2011).

State and Federal education mandates have motivated educators to find ways to improve student performance and show progress on state accountability tests (Vaughn et al., 2012). As discussed previously, a multitude of intervention protocols that are geared

toward the elementary level exist. However, there is a lack of secondary interventions with an equal level of scientific base that are available for use by educators (Johnson & Smith, 2008). Johnson and Smith (2008) further noted that there is little to no evidence proving the scientific effectiveness of RtI at the middle school level.

The success of RtI at the elementary level in increasing student performance has led middle school educators to attempt implementation desiring similar results (Brozo, 2009). A multitude of factors must be considered at the middle school setting that result in struggles relating to implementation compared to the elementary level (Brozo, 2009). Student class schedules, increased grading requirements among subjects, course credits, and an increased rigor of individualized curriculum are some of the predominant factors that middle schools have to take into account when implementing RtI (National Center on Response to Intervention, 2010).

In an interview conducted by the National Center on RtI (2010), administrators indicated that accountability has led to a focus on solidifying the general education instruction with 80% proficiency. Canter, Klotzh, and Cowan (2008) noted that RtI is an effective method when implemented correctly to help struggling learners with their general education environment. RtI practices can guide instructors to assist students before they fail and face special education placement (Canter et al., 2008).

Purpose of the Study

This study was conducted to determine what essential elements are implemented in high achieving middle schools. Building leaders may feel a program is successful in its implementation, but this may be determined inaccurate through authentic survey data. Additionally, this study provided principals reassurances and knowledge of what

essential elements to implement as they incorporate RtI in their building. The information gathered through this study will allow current and future principals to gain knowledge of essential RtI elements before determining if implementation of RtI is the right choice for their building.

There is a high level of professional significance in this study for middle school principals. RtI is an ever-increasing process that is utilized more and more by school districts. Because RtI is transitioning into the middle and high school programs, it was important to determine its level of effectiveness in middle school student achievement. The priority for RtI is student achievement, and it is imperative that building principals know the effects the program has in accomplishing this. Having this knowledge base of effective implementation will assist in improving student achievement.

The researcher determined through this study the relationship between levels of implementation of RtI in a middle school setting and academic achievement. Additionally, RtI characteristics commonly implemented in high performing middle schools were identified through this study. The information gathered through this study provided middle school principals a resource to utilize in making decisions regarding RtI implementation in their buildings.

In this study, student achievement was designated as the percentage of students who have tested in the *below basic* category on the 8th grade Communication Arts MAP test. Lower percentages of students in this category signified a high level of student achievement. Additionally, the overall MAP index scores were analyzed to determine the middle school buildings with the highest level of academic achievement. The higher the building's MAP index scores the greater the building's academic achievement.

The MAP test is one that all 8th graders in the state of Missouri must take, and therefore, allowed for equal comparison between buildings. The 8th grade Communication Arts test was chosen as a comparison tool. This assessment is a middle school grade level test that has been geared toward overall student ability including reading, writing, vocabulary, and comprehension.

Research Questions

The research questions that guided this study were:

RQ1. What is the relationship between the level of implementation of RtI in middle school and student achievement as measured by the percentage of students in the *below basic* category on the 8th grade Communication Arts MAP Assessment?

RQ2. What is the relationship between the level of implementation of RtI in middle school and student achievement as measured by the index scores on the 8th grade Communication Arts MAP Assessment?

RQ3. Which RtI characteristics are commonly implemented in high performing middle schools?

Null Hypotheses

$H1_o$ There is no relationship between the level of implementation of RtI in middle school and student achievement as measured by the percentage of students in the *below basic* category on the 8th grade Communication Arts MAP Assessment.

$H2_o$ There is no relationship between the level of implementation of RtI in middle school and student achievement as measured by the index scores on the 8th grade Communication Arts MAP Assessment.

Definitions of Key Terms

***Below basic* achievement level descriptors.** The lowest achievement level descriptor offered on the MAP assessment. In regard to Grade 8 Communication Arts, a student who scores *below basic* will have an index score of 530-638 and will be limited by his or her ability to have mastered the following:

> Reading: In fiction and nonfiction, students identify author's purpose, identify figurative language, identify plot and setting, find supporting details, and use context clues to choose vocabulary.
>
> Writing: Students create a graphic organizer, write a basic paragraph, and shows some awareness of audience. (MODESE, 2013, para. 4)

Data-based decision making. An established procedure to make instructional decisions that are immediately responsive to students' needs based on screening and progress monitoring data (National Center on Response to Intervention, 2010).

Differentiated instruction. Differentiation is an umbrella concept that incorporates many effective traditional methods and strategies as well as merging many aspects of critical thinking, brain research, interdisciplinary instruction, and constructivism. Its roots are in gifted and special education, but it has been developed as a means of accommodating the range of readiness levels, learning styles and interests of heterogeneous schools and classrooms (Allan, 2013).

Missouri Assessment Program (MAP). Augmented norm-reference tests that are delivered annually each spring in Communication Arts and mathematics for grades 3-8 and science for grades 5 and 8 (MODESE, 2013, para. 5)

Multi-level prevention system. Systems that include three levels of intensity or prevention. The primary prevention (often called tier 1) includes high-quality core instruction. The secondary level (tier 2) includes evidence-based interventions of a moderate intensity, and the tertiary level (tier 3) includes individualized interventions (National Center on Response to Intervention, 2010).

Primary intervention tier 1. The system of screening and progress monitoring, contained within an interactive process of data collection, analysis, and decision-making supporting a proactive approach to ensuring academic success (Mellard & Johnson, 2008).

Progress monitoring. Assessing students' performance over time to quantify student's rates of improvement or responsiveness to instruction, to evaluate instructional effectiveness, and for students who are least responsive to effective instruction, to formulate effective individualized programs (National Center on Response to Intervention, 2010).

Response to Intervention (RtI). RtI integrates assessment and intervention within a multi-level prevention system to maximize student achievement and reduce behavior problems. With RtI, schools identify students at risk for poor learning outcomes, monitor student progress, provide evidence-based interventions and adjust the intensity and nature of those interventions depending on a student's responsiveness, and identify students with learning disabilities (National Center on Response to Intervention, 2010).

Secondary intervention tier 2. Utilization of strategies conceptualized through a standard treatment protocol, a problem-solving model, or a combination of both (Hernandez-Finch, 2012).

Tertiary intervention tier 3. In a traditional RtI program, tier 3 consists of special education instruction focusing on in-depth program analysis (Ysseldyke, Burns, Scholin, & Parker, 2010).

Universal screening. Quick and efficient assessments administered two to three times per year to determine if students are meeting their learning goals and benchmarks appropriate for their grade level (National Center on Response to Intervention, 2010).

Limitations and Assumptions

One primary limitation to this study was the reliability of accurate survey results provided by practicing school administrators. Another limitation to the study was determining how RtI relates to student achievement. Although there are a great number of factors that result in student achievement, this study concentrated on the level of RtI's relation to student achievement in regard to 8th grade MAP data. The researcher did not examine the teachers implementing the program or the material being utilized for the program.

The survey statements were another limitation. The statements were designed to determine if there were high or low fidelity of implementation as ranked by the principal. By analyzing fidelity, limitations arise in the strength of the tool. The principals' fidelity in the program being implemented coincides with this limitation.

The sample was also a limitation for this study. The sample being used in this case was middle school principals whose districts are part of the Southwest Center for

Educational Excellence (SCEE). Teachers, students, and parents were not a part of the study which would provide additional insight into the research question. In relation to the sample, the survey itself was a limitation since this was the predominant source of information; it was limited based on the validity of each person's answers. The study was created based on current research, which poses a final limitation.

Summary

Prior to the IDEA 2004, students were required to qualify as LD before services were provided for them. Qualification was determined using an IQ-achievement discrepancy model. The IDEA allowed districts to qualify students as LD using an RtI method. The RtI method provided intervention prior to qualification and resulted in a number of students avoiding special education altogether.

RtI provides students intervention at the moment deficits are detected through a multi-tiered system. RtI is capable of addressing students' needs while limiting the number of students mislabeled as LD. The foundation of RtI comes from elementary educators with the focus on reading intervention. Once the effectiveness of RtI was determined at the elementary level, middle schools attempted to mimic the design in hopes of similar results. Unfortunately, scientific evidence that supports RtI's effectiveness at the middle school level was essentially non-existent.

The pressure of accountability has motivated middle school educators to ignore the lack of research and proceed with the implementation of RtI. The purpose of this study was to provide administrators the opportunity to assess their building's level of implementation compared to the essential components deemed necessary for effective

RtI. Additionally, the essential components of RtI implemented in high performing middle schools were identified through this study.

In the next chapter the literature relating to RtI was examined. First the discrepancy model and intervention methods used to assist struggling students prior to the IDEA 2004 were discussed. Within the IDEA 2004, RtI was established and provided an alternative method of assisting struggling students and more adequately labeling students as LD. Next, the essential components implemented for RtI to be effective were analyzed at the elementary level. A description was provided of the intended outcomes that are desired when the essential components are implemented effectively.

Traditional three-tiered RtI design was discussed with a focus on differentiated instructions role in tier 1. The intended outcomes related to all tiered instruction followed. Next, the principals' roles and teachers' perception of the RtI program was discussed to determine how effectively these individuals can implement the design. Finally, a comparison between the elementary and middle school versions of RtI in regard to implementation and effectiveness relating to student growth was completed.

Chapter Two: Review of Literature

Among the research available relating to effective practices designed to provide interventions for young students, there are few proven methods that effectively remediate struggling students at the middle school level (Vaughn et al., 2012). While the theories and ideas about middle school RtI are readily available, studies explaining the positive effects of RtI in the middle school as it relates to student achievement is scarce (Johnson & Smith, 2008). The focus of this chapter was a review of available literature in regard to RtI as well as its implications at the elementary and secondary levels.

This chapter reviewed RtI from conception through its impact in the school setting. An analysis of the discrepancy model used to qualify students for special education was discussed. The gaps in federal regulations and the adoption of the RtI process recommended by the United States Department of Education were related through this analysis. Continuing from the discrepancy model, this chapter examined the intervention methods used in schools prior to implementing the RtI design. Following this, a discussion of how the ability to qualify students for special education utilizing the RtI method was established through the IDEA, 2004.

Within the RtI process, this chapter focused on the essential components of intervention, as well as a discussion of how differentiated instruction is used in the general classroom setting. A description of the intended outcomes, as well as the obstructions related to RtI was analyzed. Next, the teacher's perception of how effectively RtI can be implemented and the role of the principal through the RtI process were discussed. Finally, the literature related to the implementation of RtI at the middle

school level and the intended implementation methods at the elementary school level were analyzed.

Discrepancy Model

Prior to the implementation of RtI, students typically were provided two methods of instruction: First, if they were on grade level, they were instructed in the regular classroom; second, if they were unable to stay on level they were referred to special education (Fuchs & Fuchs, 2006). Once the student qualified due to a discrepancy between their IQ and ability level, they were pulled out of the general classroom and provided an education in the special education classroom for children with disabilities (Hale, 2008). There was no examination of inter-relationships between regular and special education classrooms or incorporating any contemporary innovation in the school under this model (Nunn & Jantz, 2009). Fuchs and Fuchs (2006) reported that this cost up to three times more to educate a child with special needs compared to a student in the general education setting due to the costs associated with individualizing the instruction. These are some of the many concerns that led those in the education field to desire a program that provides intervention sooner and avoid excessive expenses.

Prior to the IDEA 2004, a discrepancy model was utilized to diagnose if a student was learning disabled (Buffum et al., 2010). According to Restori, Katz, and Lee (2009) a discrepancy model can guide practitioners to determine if: (a) a discrepancy exists between intellectual and cognitive ability, (b) a deficit exists regarding cognitive processing, and (c) educational needs cannot be met without special education. Early elementary aged students often struggled in general education classrooms for two to three years before they qualified for special education services under this model (Restori et al.,

2009). Additionally, Lose (2008) believed there are many students who would not qualify as learning disabled, but still require instructional modification to keep up with the classroom.

Lyon, Fuchs, and Chabra (2006) noted that it is typically not until third or fourth grade when a large enough discrepancy exists that will qualify students for special education. This identification process is characterized by extensive time lapses and waiting for the child to fail before services could be provided (Barnes & Harlacher, 2008). Hernandez-Finch (2012) additionally cautioned psychologists against relying on individual screening measure results when qualifying students as learning disabled.

Intervention Methods Prior to RtI

A traditional teaching model consists of whole group instruction where the teacher focuses on one topic, regardless of the students' varied ability levels in the classroom. Teachers in this setting limit active participation from the students throughout the lesson in favor of whole group instruction involving predominantly the instructor (Galton, Hargreaves, & Pell, 2009). With a whole group instruction design, students become accustomed to passive learning directed by the teacher, wanting the teacher to provide the information as opposed to seeking it out oneself (Geok Chin Tan, Kim Eng Lee, & Sharon, 2007). Although students are multifaceted in their learning abilities, they are often presented with a single method of instruction and either understand it or fail.

Students incapable of maintaining the classroom's pace are often viewed as ineffective learners and referred for special education testing (Hale, 2008). Hale further described the concept that for students to access the help they needed under this design, they had to first be labeled with a disability. Under this method, districts would wait until

the end of second or beginning of third grade to determine if a student had a learning disability (Dimino & Gersten, 2006). By the time students accomplished the exhaustive task of qualifying for special education, they were typically one to two years behind their classmates. Once students qualified for special education, they would then have an individual education plan developed in accordance with federal regulations to meet their specific educational needs (Capizzi, 2008). The traditional means of qualifying for special education resulted in a system that failed to adequately address the needs of many children who really needed help (Hale, 2008).

Special education qualification often meant that the student would be removed from the classroom during the instructional time and sent to an outside classroom for special education instruction (Dimino & Gersten, 2006). Since children who are identified as having a learning disability also tend to engage in problematic or antisocial behaviors, teachers show little resistance to having these students removed from the classroom (Ingalls, Hammond, & Trussel, 2011). Ingalls et al. (2011) also found that interventions presented in a resource room setting focus predominantly on academic skills and lack the behavioral interventions that these children would equally benefit from.

Instruction in a special education classroom commonly consists of small group instruction focusing on specific skills in which the students share a deficit in a resource room setting (Dimino & Gersten, 2006). Students in this setting struggle to keep up with their general education classroom peers which results in the trend that far fewer students receiving special education services obtain a high school diploma than those in the general education setting (Aron & Loprest, 2012). Hernandez-Finch (2012) added that

students who are labeled as a special education student within the school setting face specific challenges in regard to achievement, high school graduation, and post-secondary education.

IDEA 2004 and RtI

Hale (2008) described there is no way to determine if a child has a learning disability by using an achievement discrepancy model or by using a non-RtI model. This concept led to a discussion concerning the probability of accurately identifying a learning disability as null. After years of unreliable diagnosis and practicing the "wait to fail" method, the United States Department of Education (2007) issued the following guidelines:

> The provisions related to child find in section 612(1)(3) of the Individuals with Disabilities Act, require that a State have in effect policies and procedures to ensure that the State identifies, locates and evaluates all children with disabilities residing in the State, including children with disabilities who are homeless or are wards of the State, and children with disabilities attending private schools, regardless of the severity of their disability, and who are in need of special education and related services. (p. 1)

In order for these guidelines and mandates to be met, the Department of Education set forth the process for districts to implement RtI. Schools that were implementing RtI quickly found the traditional special education categories to be less important than ever (Galvin, 2007).

With the reauthorization of the IDEA Education Act of 2004, RtI became a prevalent issue for students who had the potential of being labeled LD. Prior to the

IDEA, school practitioners significantly used the IQ-achievement discrepancy to identify and qualify students as LD in order to receive special services (Gersten et al., 2009). With the revised law educators now could use RtI as a new alternative method for qualifying students for special education (Fuchs & Fuchs, 2006). With this reauthorization, "countless secondary schools across the United States that had no structured literacy program prior, began adopting the RtI model almost overnight" (Brozo, 2009, p. 486).

The United States Department of Education (2006) acknowledged that RtI is supported by federal and state accountability policies. Further, these guidelines require annual reporting of individual student's progress and set an expectation of improving student proficiency. Districts and buildings required to meet the federally mandated Adequate Yearly Progress (AYP) implemented RtI as a tool to increase student learning and raise achievement scores for those below proficiency. RtI has the potential to provide both early intervention for struggling learners and a valid means of disability identification (Fuchs & Deshler, 2007). Although statistical evidence was only available to support RtI at the elementary level, middle and high schools began implementation as well (Johnson & Smith, 2008).

According to Rampey, Dion, and Donahue (2013), approximately two-thirds of students in eighth grade read at a lower grade level equivalency than what the National Assessment of Educational Progress test deems a proficient level. One reason for this is due to the long standing discrepancy formula used in schools for students to qualify for special education at the elementary level. This practice has been deemed the "wait to fail" method, stating that a child will continue to struggle until there is a large enough

discrepancy between his/her intelligent quotient and academic ability to qualify for special education services (Beecher, 2011). Due to this lack of assistance towards elementary age students, middle school educators are likely to encounter students who have fallen through the cracks and are now having serious learning struggles (Ehren, 2012).

The empirical foundations of RtI have been developed within the research of early literacy, specifically in the elementary school context (Fagella-Luby & Wardell, 2011). Fagella-Luby and Wardell (2011) also reported that the use of early literacy research causes many problems when the model is directly applied to the middle school setting. However, Ehren (2012) noted that elementary school level instruction that has been validated is also effective at the middle school level. The middle school setting increases the challenge of implementation due in part to the complexity of the organization compared to the elementary school including the immense challenge of scheduling (Ehren, 2012).

Burns (2008) described RtI as a school wide initiative that aligns itself with both school reform and school improvement efforts with the main objective being to help all students achieve proficiency. This shift in design moves away from the wait to fail method to one that intervenes immediately to prevent delays and challenges that may lead to the diagnosis of a learning disability (Greenwood et al., 2011). When RtI is implemented successfully, it can assist buildings in meeting their state requirements by providing the greatest level of instruction to each student (Ysseldyke et al., 2010).

Essential Components

The foundation of RtI is an alternative and promising change initiative used to comprehensively address the diverse academic needs of all students (United States Department of Education, 2006). Evelyns and Lori (2011) pointed out that RtI's critical features contain universal screening of academics and behavior, high quality evidence-based instruction, progress monitoring of student performance, research-based interventions, and data-based decision making. Byrd (2011) found that many schools use the philosophy and processes of RtI to direct choices regarding curriculum, assessment, and even decisions about special education services.

Universal screening of students is a school wide requirement to identify each child's specific academic needs (Johnson & Smith, 2008). Schools typically choose the procedures for screening as their first steps when implementing RtI (National Center on Response to Intervention, 2011). Universal screening allows the building to determine which students have a specific need for intervention (Canter et al., 2008). Lose (2008) stated that "if schools expect their learners to meet achievement standards, then learners must be identified early using assessments that explore the full range of their multiple knowledge sources, interests, and skills" (p.22).

Another core RtI component is the use of evidence or research-based instruction (Beecher, 2011). Scientifically-based classroom instruction should be provided by teachers to all students in the classroom setting (Johnson & Smith, 2008). For quality instruction to be effective, it must be designed to meet the needs of students through early-intervening services (Lose, 2008). Providing scientifically based instruction in the

classroom reduces the chance of later intervention being required (Dimino & Gersten, 2006).

The next component of RtI is progress monitoring. The task for progress monitoring is to monitor student growth and use this data to make modifications to the instruction as needed (Ysseldyke et al., 2010). Progress monitoring must be embedded so that it is specific to the individualized learning issues of the student. Progress monitoring allows for instruction to be tailored to student weakness, which when implemented effectively will lead to the greatest level of growth (Friedman, 2010). The instructional protocol of progress monitoring requires the provision of ongoing support in instructional delivery to ensure that the least amount of change occurs between RtI research and the teacher's instructional focus (Friedman, 2010). Phillip et al. (2002) believed that progress monitoring must be frequent since some children may end the first grade on level but be struggling readers during their sixth grade year.

Christ (2006) found that in order to gather reliable data that could be sufficiently used for instructional decision, at least 8-10 weeks of bi-weekly assessments were needed. Christ (2006) further explained that an effective RtI assessment model must contain both periodic and continuous assessments. These periodic assessments are characterized by collecting general outcome data of student performance three to five times per year.

To support the components of RtI, data-based decision making is used to assess and plan for student academic improvement. For data teams to be the most effective they should be an eclectic combination of administrators, teachers, counselors, special education teachers, and specialist from multi-level instructional backgrounds (National

Center on Response to Intervention, 2011). The primary goal of the data team is facilitating decision making to establish quality instructional practices and how to guide children through these practices (Ysseldyke et al., 2010).

Differentiated Instruction

Today's learners constitute a wide range of diversity: culturally, linguistically, cognitively, and among learning styles (Huebner, 2010). As schools attempt to effectively educate these multi-level learners, differentiated instruction is a natural selection to meet the needs of each child in the classroom. Differentiated instruction's primary goal is a decline in the overrepresentation of diverse students placed in special education services (Walker-Dalhouse et al., 2009).

The long-term goal of differentiated instruction is for teachers to avoid following skilled sequence mastery that does not match students' ability level and instead adjust instruction based on students individualized needs (O'Connor & Simic, 2002). A subsequent goal of differentiated instruction is the decrease in the number of students struggling in the classroom as a result of inadequate instruction (Walker-Dalhouse et al., 2009). Additionally, O'Connor and Simic (2002) argued that data-based differentiated instruction can mediate reading problems when implemented appropriately.

A multitude of reasons exist that condemn an instructionally uniform classroom. Tomlinson (2005) argued that a uniform classroom exists because teachers lack high quality professional development relating to differentiated instruction. Rock, Gregg, Ellis, and Gable (2008) provided a review of vast amounts of research proving positive student growth outcomes related to the complete implementation of differentiated instruction within a mixed-ability classroom. Tieso (2005) found that students who were

instructed through differentiation and the utilization of same level groups demonstrated significantly higher achievement over students whose teacher utilized whole-class instruction.

To support tiered intervention at the general classroom level and beyond, instructors must be effectively trained in differentiated instruction (Jones, Yessel, & Grant, 2012). Scientifically validated instruction focuses on a process in which tested instructional procedures are implemented to accomplish student achievement (Fuchs & Deshler, 2007). Classroom instruction must incorporate differentiation in order to meet the diverse needs and learning styles of the students (Tomlinson, 2005). For these reasons, differentiated instruction is a substantial requirement when effectively implementing tier 1 RtI within the classroom.

In order to incorporate differentiated instruction in the classroom, teachers must have effective professional development relating to its implementation (Jones et al., 2012). Teachers must be provided significant investments in professional development to provide the array of skills needed for effective implementation (Fuchs & Deshler, 2007). Training for teachers regarding differentiation must focus on the teacher becoming cognizant of the correlation between student assessment and instruction (Demos & Foshay, 2009). When teachers have been effectively trained on differentiated instruction they will understand that each child is unique in their learning style as well as their preferences for learning (Demos & Foshay, 2009).

Traditional RtI Design

The traditional elementary RtI framework consists of three levels of intervention, each providing prevention strategies (Fuchs, Fuchs, & Compton, 2010). For this study, a

three-tiered level was referred to as the tertiary RtI design. The three levels include research-based classroom instruction, small group intervention, and intense intervention (Fuchs et al., 2010). Assessment and intervention are integrated within the RtI levels to maximize student achievement at the same time as reducing behavior problems (National Center on Response to Intervention, 2010). The delivery of research-validated instruction, as well as the degree of student responsiveness determined by assessment measures, is incorporated at each tier (McKenzie, 2010).

Progress monitoring is another essential element of RtI implementation because it is vital to determine the instructional practices that lead to student achievement (Mellard, McKnight, & Woods, 2009). Fuchs and Fuchs (2006) found that much of RtI assessment throughout the tiers includes progress monitoring. Progress monitoring is a formative assessment tool used to determine if students are benefiting from instruction while assisting the instructor in determining the metric of change in the students' rate of learning (Mellard et al., 2009). Further, progress monitoring allows for frequent formative assessment that enables the instructor to carefully measure each child's individual success (Galvin, 2007).

A final design component of the three-tiered RtI model includes research-based training for teachers. High quality professional development is provided for teachers to deliver the most effective instruction to students through RtI (Vaughn et al., 2012). Allington (2011) found that elementary teacher professional development produced gains in reading that surpassed one-to-one expert tutorial interventions. Professional development, along with progress monitoring, are part of the crucial features within the RtI model (Johnson & Smith, 2008). The National Center on RtI (2010) stated that for

staff to effectively implement RtI, professional development is a pivotal part in the process.

The Three Tiers of Intervention

RtI has a three-tiered design to provide students intervention as needed for academic success (Barnes & Harlacher, 2008). How intensely each intervention is provided will depend on what the intervention team sees fit to meet the student's needs (Dorn & Schubert, 2008). To gain the maximum effectiveness of RtI in order to prevent long-term academic failure, high quality intensive intervention must be provided at all levels (Lose & Best, 2011). The three tiers most often include research-based classroom instruction, supplemental instruction, and intense intervention, most commonly resulting in a special education referral and placement (Barnes & Harlacher, 2008).

According to Johnson and Smith (2008), 80-85% of the general student population should be successful in the classroom at the 1st tier of intervention. Within tier 1 intervention the focus is on scientifically based instruction that is provided to all students (Ehren, 2012). Ehren (2012) further explained that teachers must examine their current teaching practices to effectively include differentiated instruction in order to enhance student learning in a tier 1 setting.

Practitioners refer to research-based classroom instruction as tier 1 intervention (Fuchs & Deshler, 2007). When utilized to its full potential, tier 1 interventions have the potential to guide teachers in identifying students who require additional intervention before the child experiences frustration and failure (Beecher, 2011). Hale (2008) described the premise of tier 1 as providing high quality instruction and tracking how each child is performing in the classroom.

Tier 1 of RtI allows a teacher to intervene with a struggling student by utilizing targeted instruction immediately instead of waiting for a measurable discrepancy to be determined (Beecher, 2011). Hernandez-Finch (2012) cautioned educators to consider factors that may impede the student's instruction throughout the first tier. By establishing a strong foundation within tier 1, Barnes and Harlacher (2008) noted, "schools can increase the probability of achieving desirable levels of student performance and rule out poor instruction as a cause of low performance" (p. 425).

Tier 2, or secondary prevention, focuses on students who fail to progress adequately from evidence-based classroom instruction in tier 1 (Friedman, 2010). For tier 2, a great majority of schools have created a menu of standard protocol interventions to select from when determining students' instructional needs (National Center on Response to Intervention, 2010). Gersten et al. (2009) stated that student intervention relating to tier 2 should consist of this type of explicit and systematic instruction.

By using benchmark scores with additional sub-skill mastery measures specific targets for tier 2 interventions can be developed for use with struggling learners (Ysseldyke et al., 2010). Educators are allowed to adjust the intensity of interventions based on the student's responsiveness, leading to greater success within tier 2 intervention (National Center on Response to Intervention, 2010). Vaughn et al. (2012) found that students who received tier 2 interventions outperformed students in several measures using comparative data with equally low learners who were not provided interventions.

A challenge for educators is determining what interventions should be provided at the tier 2 level beyond the tier 1 level. Fagella-Luby and Wardell (2011) believed that

schools must consider when and how to deliver supplemental instruction when facing the challenge of differentiating tier 1 from tier 2 instructions. Students who receive tier 2 instruction require additional instruction and targeted interventions (Hernandez-Finch, 2012). In addition, the decision of which qualified practitioners are able to deliver the intensive instruction required at tier 2 can be difficult (Fagella-Luby & Wardell, 2011).

Friedman (2010) believed that building capacity is one of the most challenging aspects of tier 2 implementation. Friedman (2010) also stated that "to build capacity in a sustained way, professional development must be nested so that administrators at the school level and above are informed of effective practice protocols, as are all levels of school-based instructional staff" (p. 209). Students who have overcome their limitations in tier 2 are returned to the classroom in hope that they will not demonstrate the same learning problems that marked them as tier 2 candidates (Fuchs & Fuchs, 2006).

Torgesen (2000) estimated that 2-6% of the general classroom students do not respond during tier 2 interventions. Students who continue to show limitations in tier 2 are referred to tier 3 for increased individualized instruction. After students receive high quality tier 2 instruction, those who are non-respondent during the years of intervention are provided this tertiary level focusing on individualized needs (Wilson , Faggella-Luby, & Wei, 2013). Tier 2 and tier 3 provide a problem-solving framework that allows educators to select the most appropriate intervention to meet the immediate needs of the student (Dorn & Schubert, 2008).

Students who continually have difficulty, even after scientifically based instruction and intervention have been provided, are often labeled with a learning disability in tier 3 (Ehren, 2012). In previous methods this disability was often

determined by an intelligence test, but RtI design supports diagnosis through data to determine a learning disability based on an unsuccessful rate of intervention (McKenzie, 2010). Tier 3 desires to assist students in growing academically instead of simply providing the same activities from tier 1 or 2 with additional time (Wilson et al., 2013).

Johnson and Smith (2008) found a significant challenge in designing tier 3 interventions is selecting an intervention that goes beyond what was implemented at tier 2 to truly address the individual needs of students. In order to provide the most student gain, practitioners should always select the simplest and least intrusive intervention that is necessary for the student (King, Lemons, & Hill, 2012). This tier, which includes the highest struggling learners, requires the most skilled teachers able to make immediate instructional decisions in response to the learner's ability (Lose, 2008).

Unfortunately for students in tier 3, not much has changed to distinguish it from the traditional deficit-based system provided through special education services (Hernandez-Finch, 2012). This has led to the mandate that tier 3 students have access to the general curriculum that is provided to students with learning disabilities (Dimino & Gersten, 2006). One of the most basic issues that must be addressed when developing a tier 3 intervention practice is establishing exit criteria for students. Establishing this criteria, along with balancing services provided to students in the general and special education classroom, makes tier 3 intervention complicated to effectively implement compared to tier 1 and 2 (Hernandez-Finch, 2012).

Intended Outcomes

King et al. (2012) believed that elementary schools are the foundation of research relating to RtI. RtI emerged predominantly within the setting of primary level

instruction, which is one reason why the studies of RtI at the elementary level are the frame of reference on how RtI should be implemented (Duffy, 2007). Unfortunately for middle schools, there is minimal research-based guidance for effective implementation of tiered interventions for older students (Kamil et al., 2008).

RtI has evolved to meet the need of intervention within multiple curriculum subjects, although it is largely used for literacy intervention at the elementary level (Beecher, 2011). Prior to RtI, districts typically waited until the end of second or beginning of third grade to determine that a student needed additional instruction regarding literacy and reading (Dimino & Gersten, 2006). RtI provides a method to provide interventions at an earlier age, without labeling students who are risking academic failure with a false diagnosis (Lose, 2008). As a result, LD identification implemented through the RtI process has brought about extensive debate relating to the efficacy of intervention practices and the implementation of evidence-based instruction by the teacher (Fuchs, Fuchs, & Stecker, 2010).

Buffum, Mattos, and Weber (2010) found that students who fail in school have a greater risk of entering poverty, becoming dependent on welfare, becoming incarcerated, or dying at an early age. The intended effects of RtI are to increase student skill sets in order to find success in education and avoid these negative outcomes (Fuchs & Fuchs, 2006). Burns (2008) noted that RtI allows teachers to become involved with the student population that lacks sufficient skills for success, resulting in students who enjoy school at a greater level.

Vanderheyden (2011) believed that if implemented properly, RtI can assist in the creation of a dataset for educators to intervene with the learning needs of the child.

Additionally, a determination can be made regarding intervention services when the needs for support surpass what can be provided with general instruction. Dimino and Gersten (2006) added that "the hope of many is that RtI will reduce the inappropriate placement of students into the LD category when their only problem was that they were taught improperly in the early grades or could not keep up with the rest of the class" (p. 106).

As schools strive to make adequate yearly progress, the lowest learners are often overlooked as they are typically so far behind that intensive classroom instruction will not bring the gains needed on state assessment (Buffum et al., 2010). The process supported by RtI focuses on how to instruct students for whom previously attempted methods were found ineffective (Ysseldyke, Burns, Scholin, & Parker, 2010). Often, this challenge is left to the instructor to provide the appropriate instruction that must be offered for the struggling learners (Allington, 2011). This situation requires the support of the RtI team for teachers and to develop interventions that will help these students avoid failure.

Baker, Fien, and Baker (2010) believed that the system of academic interventions developed through RtI is designed to accomplish two major tasks – prevention of academic failure and diagnosis of learning disabled students. According to Ehren (2012), RtI practices lead educators to interpret learning disabilities from two standpoints:

> a) preventing students who struggle with reading from being labeled as students with disabilities when the difficulties they are facing could be resolved by different or more intense instructions and b) providing an alternative to

> discrepancy formulas for identifying students as having LD who instead need "specialized instruction" as required by federal law. (p. 18)

Sanger (2012) believed that if RtI is implemented effectively it can address the needs of struggling learners promptly, prevent labeling of special education, and avoid a constant educational struggle for the student. The goal of RtI therefore, is to provide early intervention for students at risk of failure in addition to developing a more valid procedure for identifying students with disabilities (Dimino & Gersten, 2006).

Obstructions to Implementing RtI

Keller-Margulis (2012) believed that while RtI has many anticipated benefits in the school setting, there are limitations to the design. RtI has progressed from research to practice and Barnes and Harlacher (2008) feared that a constricted model is being presented to educators as opposed to the flexible model it was designed to encompass. Beecher (2011) felt that RtI must extend beyond evidence-based instruction to include teaching methods providing the highest level of support to the students. Zirkel and Thomas (2010) further noted that regardless of RtI being viewed as a negative or positive design, its legal dimension in regard to providing alternative interventions has yet to be established.

Student success relies heavily on a positive relationship between school and home (Beecher, 2011). Friedman (2010) further argued that it is crucial to keep parents informed so that they understand the RtI process and how it will benefit their children. Moreover, students represent positives attitudes in regards to learning and school, higher achievement scores, improved behavior, increased homework completion and attendance, more participation in academic activities, and fewer mislabels of special education when

families are more involved in their students education (Kashima, Schleich, & Spradlin, 2009). Without the support of parents, RtI may not have the chance to be implemented effectively in certain school settings.

Another obstruction to implementing RtI involves the general education teachers and the specialists who design the interventions. Sanger (2012) noted that it is highly important to avoid power struggles between the classroom teacher and those trained to provide specialized services, such as the special education teacher or the speech-language pathologist. In this context of RtI, teachers are encouraged to examine their current strategies implemented and ensure that the focus is on scientifically-based instruction to include differentiated instruction (Ehren, 2012).

The discrepancy between the teachers' philosophy of instruction and the intervention team has resulted in tier 1 being the most criticized level in current literature. Hernandez-Finch (2012) stated that additional research is required to develop an agreed upon outcome to measure tier 1 success. This concept is supported by Dimino and Gersten (2006) who articulated that the teacher's lack of effective training was the cause of the child not responding in tier 1. A related argument by teachers is that benchmarks of success indicate nothing more than guidelines for where a student should be academically at a certain point throughout the year (Dimino & Gersten, 2006). Such disputes between teacher and team regarding RtI implementation is a perpetual issue that must be confronted for successful implementation.

Teachers Perception of RtI

Swanson, Solis, and Cullo (2012) found that the time it takes to complete assessment procedures, progress monitoring, and evidence based instruction often

overwhelms teachers. According to the Swanson et al., (2012) these overwhelming feelings lead to a panic that the additional requirements will come at the expense of the students' learning. District level backing must be provided for teachers to support the principles of RtI and effectively implement it in their classrooms (Fuchs & Deshler, 2007). This includes high quality professional development and teacher flexibility relating to service delivery (Bradley et al., 2005).

One of the essential components of an effective RtI program is the instruction provided by the classroom instructor (Swanson et al., 2012). The IDEA 2004 requires that high quality instruction be documented prior to students qualifying for special services under an RtI approach (Swanson et al., 2012). This requirement is set to ensure a lack of effective instruction, or intervention, was not the cause for a student qualifying for special services. The IDEA 2004 incorporates high quality teacher professional development to be a necessity when implementing a system change as intense as RtI (O'Connor & Simic, 2002).

Fuchs and Deschler (2007) found that teachers often struggle with the range of new skills required to adequately implement an effective RtI program in their building. For RtI to be effectively implemented a reasonable amount of teacher training must be provided (Dimino & Gersten, 2006). To accommodate this, professional development provided by districts must be more than a simple workshop or day long in-service to effectively train teachers for RTI implementation (Boyle, Lamprianou, & Boyle, 2005).

Swanson et al. (2012) determined that the top three benefits in regard to teachers' perception of RtI implementation are: collaborating with staff members, meeting the unique needs of the student, and early intervention. If teachers buy into the program and

are provided adequate professional development, the implementation of RtI will show high rates of success (Kozleski & Huber, 2010). Teachers' perception of RtI leads to the greatest impact on effective implementation (Swanson et al., 2012).

The Principal's Role in RtI

Sansosti, Noltemeyer, and Goss (2010) considered that the success of RtI directly relies on the support it receives from the school principal. Fullan (2007) went further to explain that change efforts throughout the education system have limited implementation when principals are untrained or unsupportive. For RtI to deliver academic success, the principal must assist the teacher as well as allow for classroom restructuring (Samuels, 2008). If RtI is to be implemented effectively in the classroom, principals must provide a supporting role throughout the process.

Principals can support teachers by providing collegiality among the staff, encouragement, and time for reflection (Benjamin, 2006). Principals must ensure the program reflects the importance of success in educating children by supporting students and teachers alike (Callendar, 2012). Fuchs and Deshler (2007) believed administrators must be engaged and set high expectations to guide the incorporation of RtI in the classroom.

Administrators must be engaged while setting expectations for the implementation of RtI as well as provide teachers the necessary resources to ensure fidelity (Fuchs & Deshler, 2007). Benjamin (2006) stated that principals must explain to the teachers that it is not expected for them to continually lead instruction with an RtI design but use it as the foundation for lesson planning. The author also suggested that the principal express to the teachers that classroom observations are viewed as a natural

science, where students are free to express ideas and opinions openly (Benjamin, 2006). This change in the traditional evaluation system requires extensive discussion and training for both the principal and the teacher.

Research conducted by Bernard (2012) found that numerous leadership skills must be effectively conducted during the implementation of RtI . For example Dimino and Gersten (2006) found that when supported and monitored by an effective leader, the implementation of progress monitoring and research-based instruction by the teacher was greater. Bernard (2012) further stated that principals have the responsibility of supervising the RtI process from conception and tying all facets of the program together. These requirements put a great deal of responsibility on the principal. This is one reason why substantial and adequate professional development must be provided to effectively lead the implementation of RtI (Fuchs & Deshler, 2007).

RtI in the Middle School

Canter, Klotzh, and Cowan (2008) believed that successful implementation of an RtI program can translate into fewer Individualized Education Plans (IEP's), reduced rates of student disengagement, and increased numbers of students achieving grade-level standards in general education. However, Sansosti, Noltemeyer, and Goss (2010) argued that while the elementary level is modifying classroom practices in the general and special education setting to support RtI , research authenticating the application of RtI within secondary settings is limited. Allington (2011) added that one of the primary concepts that must be realized regarding RtI implementation at the middle school level is there is essentially no research in which to draw.

While the research available for elementary implementation of RtI is readily available, the difference in middle school design reflects multiple alterations in implementation (Evelyns & Lori, 2011). Middle school RtI must take on a different format and design foundationally from its construction at the elementary level (Vaughn & Fletcher, 2010). Pyle and Vaughn (2012) supported the idea that for a middle school RtI model, teachers must have the skills needed to address a varied level of learners, predominantly those struggling in literacy. Pyle and Vaughn (2012) further explained that instruction, as well as intervention, at the middle school level is conceptually different than what is found at the elementary level.

Students who struggle in middle school still deserve the best interventions available to improve literacy and long-term outcomes (Graves, Brandon, Duesbery, McIntosh, & Pyle, 2011). King et al. (2012) found that the leaders responsible for implementing RtI at the middle or high school level are hesitant to replicate the elementary design due to its foundational basis on early literacy. For this reason secondary administrators are cautioned to avoid the same approach taken by early education specialist regarding tiered interventions (King et al., 2012). For example, Burns (2008) found that interventions within the middle school level are typically implemented in specially designed courses as opposed to a pull out system found in the elementary setting.

Allington (2011) argued that before beginning implementation, educators must first realize that there is limited research to draw upon that shows the effectiveness of RtI at the middle school level. Regardless on the design or method of implementation, Bradley and Danielson (2004) stated that RtI may relieve the issues related to the ability-

achievement discrepancy model, but secondary education has proven little success from applying the intervention approach either. Gains similar to the elementary design simply have not been observed for students at the secondary level (Edmonds et al., 2009).

According to Brozo (2009), "in spite of the lack of scientific evidence for secondary level RtI , numerous middle and high schools across the United States are moving ahead with three-tier approach to instructional intervention" (p. 278). At the middle school level, RtI has the potential to build capacity for meeting the needs of all students (Evelyns & Lori, 2011), but without adequate implementation of the key elements, success is unlikely. Ehren (2012) found that by the time some students reach middle school, their experience with academic failure is so complex that interventions are often ineffective, even through high school.

Ehren (2012) wrote that the complexity of the organization, in addition to the complexity of students scheduling, creates an increased challenge over the elementary setting. Elementary schools are able to modify and implement intervention within a school day with ease due to more flexible schedules. Scheduling issues are commonly found to cause issues with students receiving tier 2 services. This is due to the inability of their schedules to allow for accommodative interventions (National Center on Response to Intervention, 2011).

Due to the scheduling issues with middle schools, classroom instruction to meet the needs of students in tier 1 is the most accessible. Tier 1 interventions in the middle school provides the core curriculum and interventions students would receive within the general education classroom by utilizing regular classroom instruction through supportive professional development for the teachers (Dorn & Schubert, 2008). In addition to

schedule concerns, the responsibilities of staff members, course requirements, and school culture are additional challenges that RtI faces at the middle school level (Pyle & Vaughn, 2012).

Allington (2011) documented that the 2011 NAEP scores reported 25% of eighth-grade students performing below the basic level of proficiency. Statistics relating to a lack of proficiency represent a driving force for middle school educators to desire a program that will increase student achievement. Unfortunately, middle school staff often begins implementation of the program without addressing logistical and structural conditions related to RtI implementation (Prewett et al., 2012).

Because of the aforementioned concerns, RtI at the secondary level is proven to need alterations from the elementary design that research supports. A need is apparent for studies to focus on intervention for students at any grade level identified as inadequate responders (Vaughn & Fletcher, 2010). K-12 districts across the country are moving forward with RtI implementation, and those at the middle school level need additional proven research that supports this transition to make it successful. Due to the struggle with meeting tier 2 and 3 needs, RtI may not be an adequate route for students to reach grade level expectations who portray chronic problems in the middle school (King et al., 2012).

Summary

Schools have struggled for some time to find a method for meeting all children's academic needs and ensuring that all are on track for success. Prior to the IDEA 2004, a discrepancy model was the only option to provide students with a specific learning disability individualized assistance at their academic level. Once the IDEA provided the

option for an RtI model, not only to qualify students for special education, but also to assist all learners, schools quickly began utilizing the program.

The essential components of RtI are universal screening, evidence-based instruction, progress monitoring, and data-based decision making. By utilizing these components schools are able to intervene at early stages in a child's academic career, which can lead to higher rates of academic success over time. Within the essential elements, a primary component to intervention within the general classroom is differentiated instruction. Differentiated instruction allows teachers to match instruction to student's individualized ability levels and adjust that instruction as needed.

The traditional design of RtI is comprised of three tiers. Tier 1 is high quality instruction in the classroom, tier 2 is small group focusing on specific skills, and tier 3 allows for services provided in a special education setting. RtI initially was designed for the elementary level learners to prevent them from falling behind as they begin their education. As the success of the program proved valid, middle schools began to replicate the design, finding that there were many obstacles which included greater gaps in ability and the structural design of the middle school schedule.

Teachers and principals involved with the intervention require professional development and support to make the program effective. Teachers require collaborative time to meet with fellow educators as well as professional development on how to effectively meet the students' needs within each tier of intervention. Principals are required to be the source of knowledge and be able to provide for and guide the teacher to ensure students success.

The following chapters focused on a study constructed to determine what essential components of RtI are found in high achieving middle schools. In Chapter Three, the rational of the methodology of the study is discussed including how the data were collected. Next, data collected relating to the results of each middle school buildings survey response and their academic achievement were analyzed in Chapter Four. Finally, in Chapter Five a summary of all the findings related to the study was provided.

Chapter Three: Methodology

Problem and Purpose Overview

The research for this study was quantitative in nature. Quantitative research as defined by Leedy and Ormond (2005) is "used to answer questions about relationships among measured variables with the purpose of explaining, predicting, and controlling phenomena." (p. 94) A quantitative design was chosen as the study compared 8th grade students MAP scores to the building's level of implementation as ranked by the principal through the use of a survey.

All building principals' districts were members of the SCEE in Southwest Missouri. This project was used to determine the relationship between levels of implementation of RtI in a middle school setting and academic achievement. Additionally, RtI characteristics commonly implemented in high performing middle schools were identified within this study.

Burns (2005) stated that "research has consistently found that RtI initiatives lead to gains in student achievement and school wide improvements, such as reduced referrals to and placements in special education and a higher rate of students scoring proficiently on state tests" (p. 382). The focus of Burns's (2005) research dealt with elementary age students prior to their introduction of RtI to the middle school setting. The International Reading Associations Commission on RtI (2009) cautioned secondary level educators against instituting RtI based on elementary approaches. The relationship of RtI implementation and academic achievement in middle schools was determined through this study.

Research Questions

The research questions that guided this study were:

RQ1. What is the relationship between the level of implementation of RtI in middle school and student achievement as measured by the percentage of students in the *below basic* category on the 8th grade Communication Arts MAP Assessment?

RQ2. What is the relationship between the level of implementation of RtI in middle school and student achievement as measured by the index scores on the 8th grade Communication Arts MAP Assessment?

RQ3. Which RtI characteristics are commonly implemented in high performing middle schools?

Null Hypotheses

$H1_o$ There is no relationship between the level of implementation of RtI in middle school and student achievement as measured by the percentage of students in the *below basic* category on the 8th grade Communication Arts MAP Assessment.

$H2_o$ There is no relationship between the level of implementation of RtI in middle school and student achievement as measured by the index scores on the 8th grade Communication Arts MAP Assessment.

Rationale for Quantitative Research

For the purpose of this research, a correlational study was conducted. Bluman (2010), described that the purpose of a correlational study is to determine the existence of a relationship between two variables. The correlational study was used to analyze the data and determine the relationship between the level of implementation of RtI and student achievement. The advantages of a correlational study are that it "enables

researchers to analyze the relationships among a large number of variables in a single study" (Gall, Gall, & Borg, 2007, p. 336).

This correlational study allowed the researcher to determine the existence of a relationship between high performing buildings and their level of implementation with RtI. It does not specify that the level of implementation was the cause of the level of academic achievement. According to Leedy and Ormond (2005), "a correlation exists if, when one variable increases, another variable either increases or decreases in a somewhat predictable fashion" (p. 181).

Analysis was completed to determine if the higher implementation score of RtI as determined by the building principal correlates to higher student achievement. The independent variable in this study was the implementation score of each middle school building that is a member district of the SCEE. Implementation scores were obtained via survey sent to each of the 50 middle school principals of the consortium. The dependent variable was the *below basic* percentages and MAP Index Scores relating to the 8th grade Communication Arts MAP test of each building. The correlation was not used to specify that implementation of RtI was the cause of higher student achievement, only that there was a correlation between the two variables.

Context and Access

This study was conducted in southwest Missouri during the summer and fall of 2013. This study was completed utilizing an online survey to collect responders' answers. This study did not require access to be assured at any location since the survey was emailed to each participant. If the minimum number of surveys required were not

achieved, contact was made through phone or email communication until the minimum number for statistical significance was met.

Instrumentation

The data collection instrument used in this study consisted of a survey to determine the level of implementation within each responding middle school. The survey has been included in Appendix A. The survey was utilized for this study due to the ability to pose a series of questions and summarize responses with percentages (Leedy & Ormond, 2005).

The survey was developed based on current literature regarding the essential elements of RtI (Bernard, 2012; Fuchs & Fuchs, 2006; United States Department of Education, 2006). The essential components used to create the survey statements were: universal screening, progress monitoring, multi-level prevention system, relative professional development, administrators role, and data-based decision making (National Center on Response to Intervention, 2010; Samuels, 2008).

The survey consisted of four questions and 10 implementation statements. The first four questions were information and contingency questions. The 10 statements were used to determine the level of implementation within each responding building. The 10 implementation statements were built around the essential components of RtI.

The survey was field tested. Superintendents, teachers, college professors, and school psychologists participated in the field testing. This allowed for professional critiques of the survey statements to determine clarity. Also, field testing allowed for statements to develop into formal direct statements relating in a clear manner to the implementation of RtI.

A Likert scale was used for the principals to respond to each of the 10 implementation statements (see Appendix B). The Likert scale allowed the researcher to simplify and easily quantify attitudes (Leedy & Ormrond, 2005). The rating scale ranged from 0-4 regarding implementation related to each statement. Through further field study, it was determined that a 0-4 scale provided less potential for confusion or over-examination of the statement.

Population and Sample

The persons recruited as participants in the study were principals who have eighth grade students in their building and whose public school districts are members of the SCEE. The SCEE is a regional professional development consortium located in Southwest Missouri. There are a total of 42 public school district members of the SCEE. Of these 42 districts, there are three districts that have more than one middle school containing an eighth grade. The other 39 have one middle school containing an eighth grade. This made the maximum number of persons eligible to have completed the survey 50. The sample was focused strictly on principals of these schools.

The buildings selected for the survey varied in population, financial stability, resources, and staffing. Student populations also varied greatly among buildings. Some buildings had only a principal and teaching staff, while others consisted of curriculum directors and instructional coaches in addition to the principal. By selecting these buildings, a fair and equal representation was provided for the study.

Building principals were chosen as respondents based on their high level of involvement with both the RtI program, as well as their familiarity with the level of implementation within their building. These principals provided a heightened insight as

to the level of implementation that RtI has developed within each of their buildings. By utilizing these individuals as a resource, the results of this survey were authentic.

Once approval was given by the Institutional Review Board of Lindenwood University (see Appendix C), all 50 principals were recruited through a letter of introduction sent via email (see Appendix D). The email contained a link to a survey that was constructed using SurveyMonkey. Follow up emails or telephone calls were provided until a minimum of 30 participants were obtained. In order for the sample size to be justified, the minimum number of respondents must have reached 30. A sample size of 30 or more was needed to assure a normal distribution of the sample means (Bluman, 2010). No further recruitment processes was utilized for this study.

Limitations with the study population were that the only individuals within the school building who were surveyed were the principals. Principals were chosen as the primary source of information because of their leadership role with the curriculum, instructor evaluation, and as leaders to the implementation of RtI within their building. By surveying principals and not teachers or other professionals involved in the implementation of RtI, the study limited its information sources. Also, by surveying the principals in the fall, there was a concern of maturation due to the time off during summer vacation.

Data Collection

For the purpose of this study, a quantitative survey was used to collect data from the 50 building principals. A survey was chosen as the data collection tool in order to adequately collect the responses from the sample population. Leedy and Ormond (2005) stated that the survey allows the researcher to “pose a series of questions to willing

participants; summarize their responses with percentages, frequency counts, or more sophisticated statistical indexes; and draw inferences about a particular population from the responses of the sample" (p. 184).

The method of surveying used for this study was purposive sampling. Purposive sampling selects specific people with commonalities for a select purpose (Leedy & Ormond, 2005). This survey was a valid method of measurement for this study. Leedy and Ormond (2005) defined internal validity as "the extent to which its design and the data it yields allow the researcher to draw accurate conclusions about cause-and-effect and other relationships within the data" (p. 97). The survey results allowed the researcher to determine implementation scores which were compared to student achievement to determine a correlation.

This survey was valid in regard to purposive sampling by its representation of principals' responses to the implementation of RtI in their buildings. It was unfeasible to survey all middle school principals; however, the representation of the principals belonging to the SCEE was a fair and equal representation of the population as a whole. Purposive sampling allowed the researcher to select specific individuals for survey for the purpose of determining the building's RtI implementation score.

Initially, statements for the survey were developed utilizing current literature documenting the RtI in a structured format. Responses were developed relating to a level of implementation. Survey statements were created to assess the implementation of the key components found within effective RtI implementation. The National Center on RtI (2010) stated the essential components found within RtI are: universal screening, progress monitoring, multi-level prevention system, relative professional development,

administrators' role, and data-based decision making. Survey statements were designed to analyze the building's implementation within each of these key categories.

Survey implementation statements were developed in a clear manner so there was little opportunity for confusion from the respondent regarding the intent of the statement. In order to confirm the readability of the survey statements, school psychologists, acting principals, and superintendents analyzed these statements before finalization. This ensured the statements were clear and concise.

Two initial survey questions required the respondents to list their district and building. Followed were two contingency questions which were asked at the beginning of the survey to determine if the person who had received the survey was in fact the principal of the school. If the answer was no, the survey stopped. If the answer was yes, a second question requested that the principal voluntarily participate. These contingency questions ensured that the data collected were from the building principal. Once voluntary participation was confirmed, the survey proceeded to 10 implementation measuring statements.

The Likert response scale was used to measure answers on an interval level. A 0-4 ranking was used for the Likert response scale measuring RtI implementation in each building. The survey was created using SurveyMonkey in which the respondent was only allowed to click the circle relating to his/her answer and no other answers for each statement. If the respondent chose to change an answer to any statement, he/she was able to do so before final submission of the survey.

An email containing a cover letter and a link to the survey was sent to the 50 middle school principals whose districts are members of the SCEE. A cover letter was used to explain the purpose of the email. Additionally, the cover letter provided a description of how the results of the survey would be used, including assurances of anonymity to the participant. Once the principals had accepted the terms of the cover letter, they clicked on the link to respond to the survey.

In order for the sample to be valid, a minimum of 30 principals must have responded to the survey. If after a period of 2 weeks, the minimum number of respondents had not been met, a follow up email was sent reminding them of the survey and providing another link to the survey. During the second week of August 2013, if the minimum number of 30 surveys had not been completed, phone calls were made to the principals who had not completed the survey, requesting their involvement in the study and answering any questions they may have had. Once a minimum of 30 school surveys were collected, the data were analyzed.

Data Analysis

The primary data analyzed for this study were the implementation scores and their comparison to student achievement in regard to the percentage of 8^{th} grade students scoring *below basic* on the MAP and the buildings MAP Index scores. Survey results provided by the principals who completed the Likert scale responses were analyzed. Implementation scores were then calculated by adding the responses from the 10 Likert scale statements on the survey. Implementation scores ranged from a minimum of 0, representing no implementation, to a maximum of 40, representing full implementation.

The sample buildings were coded using a numerical number to assure confidentiality when tracking implementation scores.

In order to determine the relationship between implementation and effectiveness, MAP data were also collected from each building. The MAP assessment data were gathered from the MODESE website during the late summer of 2013 when the information was released. Data collected consisted of the percent of students scoring below basic on the 8th grade Communication Arts MAP assessment, as well as the buildings MAP Index Scores (see Table 1).

Table 1.

Data Collected for Analysis

Data Collected	Date Collected	Provided By
Implementation Scores of Survey	July 2013	Building Principals
8th Grade Communication Arts MAP *Below Basic* Scores	August 2013	MODESE
8th Grade Communication Arts MAP Index Scores	August 2013	MODESE

Note. Data collected to determine the relationship between RtI implementation and academic achievement in middle schools.

The implementation scores of each building were compared to the school's percentage of students scoring below basic on the 8th grade Communication Arts MAP assessment as well as their school's index score. Principals who responded had the implementation and MAP scores of their respective school entered into a spreadsheet.

Once all implementation and MAP scores were collected, a Pearson product moment correlation coefficient (PPMC) was calculated to determine the strength of relationship between the level of RtI implementation and student achievement. A PPMC was completed to ensure validity of this study. A measurement instrument's validity is the extent to which it measures what it is supposed to (Leedy & Ormond, 2005).

Through the use of the PPMC, the relationship between two variables could be determined. Bluman (2010) stated that the correlation coefficient computed from the sample data measures the strength and direction of a linear relationship between two variables. The symbol of *r* was used for the sample and population correlation coefficient. The range of linear relationship using the correlation coefficient is -1 for a negative linear relationship and +1 for a positive linear relationship. A value for *r* of or around 0 shows a weak linear relationship between the two variables.

Next, two quartile tables were created to compare the buildings' percentage *below basic* and index scores on the 8th grade Communication Arts MAP test. Buildings in the top 25% of student achievement had their survey answers analyzed to identify which, if any, RtI characteristics were more prevalent. A list was compiled of RtI characteristics utilized in the high performing middle schools surveyed. By analyzing this data, the researcher found what common elements were being implemented in high performing buildings.

Summary

This study was conducted in a quantitative manner to compare buildings' levels of RtI implementation to their academic achievement as determined by the 8th grade Communication Arts MAP test. Buildings selected for the study had an 8th grade, and

their district was a member of the SCEE in Southwest Missouri. The project determined if there is a relationship between the levels of RtI implementation and academic performance.

There are 42 public school districts that are members of the SCEE and comprise a total of 50 buildings that have an 8th grade. A survey was sent to building principals to determine their level of RtI implementation. All building principals responding to the survey had their MAP data collected for the 8th grade Communication Arts test. A PPMC was computed to determine the relationship between RtI implementation and student achievement among all buildings.

In the following chapter, a review of the methodology related to the study was presented. Survey results were tallied from all responding buildings to determine their overall implementation score. Survey statement responses were further calculated based on level of implementation relating to each RtI element. Once scores were finalized, each responding building's MAP data were collected and analyzed. Percentage of *below basic* students and MAP index scores was collected and analyzed for each building. A PPMC was conducted to determine the linear relationship between the level of implementation and the buildings academic performance.

Next, quartile tables were created to determine which buildings were in the top 25% relating to student achievement. The buildings in the highest percentage had each of their survey statements analyzed to determine which essential components of RtI were most prevalent in their buildings. Once these components were determined, a description of how the elements are implemented in the buildings was discussed.

Chapter Four: Analysis of Data

Review of Study

Due to recent Federal and State mandates, school districts are required to increase student achievement at a historically high rate (Greenwood et al., 2011). In order to accomplish this daunting task, school administrators are attempting to implement effective programs that result in high levels of student achievement. RtI is one program that many districts have implemented to assist with this goal (Sanger, 2012).

RtI's framework for success was founded by elementary school principles and guidelines. Due to the success of RtI at the elementary level, middle school principals have attempted to mimic this design (Sansosti et al., 2010). The success rate in middle schools is not consistent due to the differences in age level, greater academic deficits with older students, and logistical issues in design including class scheduling (Burns, 2008). Therefore, the purpose of this study was to determine what essential elements are being implemented, in regard to RtI, among high achieving middle schools. Additionally, the relationship between RtI implementation and student achievement was analyzed using building responses and MAP data.

The results gathered through this study determined the relationship between the level of RtI implementation in a middle school building and student achievement. This study provided a blueprint for principals who are considering the implementation of RtI in their building and what elements are being implemented in effective building programs. Additionally, principals had the opportunity to assess their own building's level of implementation through survey statements.

The research questions that guided this study were:

RQ1. What is the relationship between the level of implementation of RtI in middle school and student achievement as measured by the percentage of students in the *below basic* category on the 8th grade Communication Arts MAP Assessment?

RQ2. What is the relationship between the level of implementation of RtI in middle school and student achievement as measured by the index scores on the 8th grade Communication Arts MAP Assessment?

RQ3. Which RtI characteristics are commonly implemented in high performing middle schools?

Null Hypotheses

$H1_o$ There is no relationship between the level of implementation of RtI in middle school and student achievement as measured by the percentage of students in the *below basic* category on the 8th grade Communication Arts MAP Assessment.

$H2_o$ There is no relationship between the level of implementation of RtI in middle school and student achievement as measured by the index scores on the 8th grade Communication Arts MAP Assessment.

Survey Process

To gather data related to implementation, a survey instrument was developed for this study. The individuals recruited to take part in this survey were building principals who had an eighth grade in their building and whose districts were members of the SCEE in Southwest Missouri. The survey administered to the building principals was developed through SurveyMonkey.

Building principals were selected to respond to the survey because of their leadership role in the building. As a building leader, these individuals are expected to have ownership of all programs in their building, including RtI. As the leader, their knowledge of the RtI components within their building provided insight to the level of implementation that exists.

The survey was developed to determine the level of RtI implementation in each building. All building principals were recruited through a letter of introduction to participate in the survey. The survey was developed in a manner conducive with purposive sampling. The survey consisted of four questions and ten statements.

Information gathering questions: 1. What school district do you work for? 2. What building are you the principal of?

Following the information gathering questions, the principal was required to answer two contingency questions. These questions guaranteed the person responding to the survey agreed to participate voluntarily and was the building principal.

Contingency questions: 1. I agree to voluntarily participate in this study. 2. I am a building principal.

If the respondent did not answer yes to each contingency question, the survey would stop. Once the information gathering and contingency questions were successfully answered, the respondent was presented with 10 statements related to the implementation of RtI in their building. These statements were developed based on current literature related to RtI.

Building principals were provided a Likert response scale to rate their building's implementation for each of the 10 statements. The Likert response scale was developed

with a 0-4 interval ranking. This scale allowed the principal to effectively rate their building's level of implementation regarding RtI.

Table 2.

Likert Scale Responses for Survey Statements

Response	Score
Not Implemented	0
Researching Implementation	1
Beginning Implementation	2
Partial Implementation	3
Full Implementation	4

Note. Principals scored each implementation statement using the Likert scale response score. Principals determined what level of implementation categorized each of the survey statement relating to RtI.

The member districts of the SCEE consisted of 50 middle school buildings that contain an eighth grade class. The principal of each building received the request to complete the survey through an introductory email. Initially 18 principals responded to the survey in this manner. Additional email requests and phone calls made to the remaining 32 principals that resulted in a total of 35 principals responding to the survey.

Implementation Scores and Map Data

The maximum implementation score for a building that was fully implementing RtI would be 40. The minimum implementation score for a building not implementing RtI would be 0. Implementation scores ranged from 4 to 40 showing a variance in the level of RtI implementation within buildings. The sample buildings were coded using a

numerical number to assure confidentiality. Each composite implementation score was placed into Table 3.

Table 3.

Implementation Scores from Responding Buildings

Building	Score	Building	Score
School 1	40	School 2	38
School 3	15	School 4	6
School 5	13	School 6	13
School 7	15	School 8	13
School 9	11	School 10	34
School 11	31	School 12	13
School 13	19	School 14	33
School 15	31	School 16	37
School 17	29	School 18	27
School 19	20	School 20	4
School 21	17	School 22	32
School 23	29	School 24	39
School 25	32	School 26	37
School 27	40	School 28	28
School 29	14	School 30	40
School 31	40	School 32	32
School 33	19	School 34	8
School 35	37		

Note. Thirty-five middle school building principals in Southwest Missouri scored their buildings level of implementation regarding RtI. Implementation scores were determined by a Likert response scale ranging from 0-4. Buildings implementation scores ranged from 4-40.

After the implementation scores were totaled, MAP data were collected. The data collected referred to the 2013 Communication Arts 8th Grade MAP test. Scores were collected for each building relating to the percentage of students who scored *below basic* and the overall MAP index score. Data were collected from the MODESE website and depicted in Tables 4 and 5.

Table 4.

Buildings' Percent Below Basic

Building	Score	Building	Score
School 1	3.5	School 2	3.2
School 3	4.5	School 4	0.0
School 5	5.1	School 6	3.2
School 7	4.7	School 8	7.4
School 9	12.0	School 10	10.5
School 11	8.3	School 12	6.7
School 13	3.8	School 14	2.9
School 15	3.9	School 16	2.3
School 17	0.0	School 18	4.5
School 19	6.5	School 20	3.4
School 21	0.0	School 22	3.8
School 23	2.2	School 24	4.8
School 25	15.0	School 26	5.0
School 27	0.0	School 28	5.4
School 29	3.3	School 30	7.1
School 31	0.0	School 32	5.3
School 33	0.0	School 34	5.9
School 35	0.0		

Note. The 35 buildings whose principals completed the implementation survey had their students *below basic* scores for the 8th grade Communication Arts MAP test collected from the MODESE website. All buildings scores are displayed by the percentage of students scoring *below basic* on this test.

Table 5.

Buildings' Map Index Scores

Building	Score	Building	Score
School 1	367.44	School 2	360.39
School 3	413.64	School 4	353.85
School 5	320.48	School 6	358.33
School 7	388.37	School 8	341.18
School 9	313.00	School 10	336.84
School 11	352.78	School 12	377.78
School 13	361.54	School 14	338.24
School 15	352.63	School 16	355.49
School 17	383.78	School 18	345.45
School 19	351.61	School 20	369.83
School 21	346.15	School 22	363.39
School 23	382.61	School 24	306.15
School 25	360.61	School 26	355.00
School 27	386.20	School 28	341.07
School 29	385.25	School 30	314.29
School 31	376.47	School 32	368.42
School 33	425.00	School 34	347.06
School 35	402.44		

Note. MAP index scores were collected for buildings whose principals completed the implementation survey. This score indicated the level of academic achievement on the 8th grade Communication Arts MAP test for each building.

Pearson Product Moment Correlation Coefficient

A PPMC (see Table 6) was completed to determine if there was a statistical relationship between the implementation score and academic achievement. The implementation score was considered the independent variable for this study because it

was determined by the respondents' rankings of RtI implementation within buildings. The MAP scores collected was the dependent variable because it was the result of students' scores on the state exam.

Table 6.

Formula for the Pearson Product Moment Correlation Coefficient

$$r = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{[n(\Sigma x^2) - (\Sigma x)^2][n(\Sigma y^2) - (\Sigma y)^2]}}$$

Note. The Pearson product moment correlation coefficient formula was used in this study to determine the relationship between academic achievement and level of RtI implementation.

The PPMC was conducted to determine the relationship between the *x* and *y* variables. The first correlation was completed to determine the relationship between implementation score and academic achievement as described as MAP index score or percentage *below basic*. The number for responding middle school buildings was represented by *n*. The level of implementation score was determined to be $\sum x$. This number was determined by adding all 35 buildings implementation scores. Next, $\sum y$ was found by adding all 35 buildings *below basic* percentages or MAP index scores (see Table 7). To find $\sum xy$ each building's implementation score was multiplied by the buildings academic achievement and then the totals were added. To find $\sum x^2$ each implementation score was squared and then the composite scores were added together. Finally, to find $\sum y^2$ the academic achievement totals were squared and the composite scores were added.

Table 7.

Composite Data for PPMC Comparing Implementation Score and Below Basic Percentage

Implementation Score ($\sum x$)	% *Below Basic* ($\sum y$)	$\sum xy$	x^2	y^2
886	154.2	142635	26876	1086.96

Note. Composite data were calculated to uses in the PPMC to compare buildings implementation score and students below basic percentage on the Map test.

Once the data were finalized, the PPMC was first calculated (see Table 8) to measure the relationship between the implementation score and the percentage *below basic*.

Table 8.

PPMC Formula for Relationship Between Implementation Score and Percentage Below Basic

$$r = \frac{35(3811.9) - (886)(154.2)}{\sqrt{[35(26876) - (886)^2][35(1086.96) - (154.2)^2]}}$$

Note. The formula was completed to determine the relationship between building's implementation score and the percentage of students scoring below basic on the MAP test.

This calculation resulted in r equaling - .068, which showed little to no linear relationship between implementation scores and percentage of students *below basic*. As Bluman (2010) determined, "When there is no linear relationship or only a weak relationship, the value of *r* will be close to 0" (p. 533). As a result, the null hypothesis was not rejected.

Next, the relationship between the level of implementation and the MAP index score was calculated (see Table 9). The PPMC again was calculated to determine the relationship.

Table 9.

Composite Data for PPMC Comparing Implementation Score and MAP Index Scores

Implementation Score ($\sum x$)	MAP Index Score ($\sum y$)	$\sum xy$	x^2	y^2
886	12602.76	11166045.36	26876	4562237.05

Note. The data were used to complete the PPMC determining the relationship between implementation score and MAP index scores for each building that completed the implementation survey.

This calculation resulted in r equaling - .060, also showing little to no linear relationship between implementation scores and MAP index scores. Therefore, the null hypothesis was not rejected.

High Achieving Middle Schools

Two quartile tables were created to determine which buildings had the highest MAP index scores and the lowest level of *below basic* percentage. The first quartile data were used to examine the *below basic* percentage. Buildings were placed in quadrants

relating to their percentage of *below basic* scoring students (see Table 10). The table is ranked highest to lowest in regard to students who scored in the *below basic* category.

Table 10.

Quartile Table Ranked by Least Percentage of Students Scoring Below Basic

75-100%		50-74%	
Building	% Below Basic	Building	% Below Basic
School 4	0	School 16	2.3
School 17	0	School 14	2.9
School 21	0	School 2	3.2
School 27	0	School 6	3.2
School 31	0	School 29	3.3
School 33	0	School 20	3.4
School 35	0	School 1	3.5
School 25	1.5	School 13	3.8
School 23	2.2	School 22	3.8
26-49%		**0-25%**	
Building	% Below Basic	Building	% Below Basic
School 15	3.9	School 34	5.9
School 3	4.5	School 19	6.5
School 18	4.5	School 12	6.7
School 7	4.7	School 30	7.1
School 24	4.8	School 8	7.4
School 26	5.0	School 11	8.3
School 5	5.1	School 10	10.5
School 32	5.3	School 9	12.0
School 28	5.4		

Note. A quartile table was constructed to determine which buildings that completed the implementation survey had the lowest percentage of students scoring in the *below basic* category on the 8th grade Communication Arts test. The buildings that were in the highest quartile had the least percentage of students scoring *below basic* resulting in a higher level of academic achievement.

Each implementation statement was compiled and analyzed for the buildings in the top quartiles regarding academic achievement. Buildings that responded with *not or researching implementation* were described as being in the no student implementation phase as students in those buildings had not yet been directly affected by the particular characteristic of RtI. Buildings that responded as *beginning, partial, or full implementation* were described as being in the student implementation phase as students had experienced effects directly related to the implementation of the RtI characteristic.

The buildings in the highest quartile regarding student achievement as determined by the least percentage of *below basic* scores had their survey responses collected and analyzed first. The schools that were in the highest quartile relating to percentage of *below basic* scores were: 4, 17, 21, 27, 31, 33, 35, 25, and 23.

The first implementation statement examined for the buildings in the highest quartile related to students scoring *below basic* regarded the level at which data were collected in regard to universal screening. After analyzing the response data, it was determined that 88.89% of buildings were in the student implementation phase (see Figure 1). In contrast, 11.11% of the buildings were in the no student implementation phase. Additionally, 33.33% reported full implementation while 11.11% responded as not implementing.

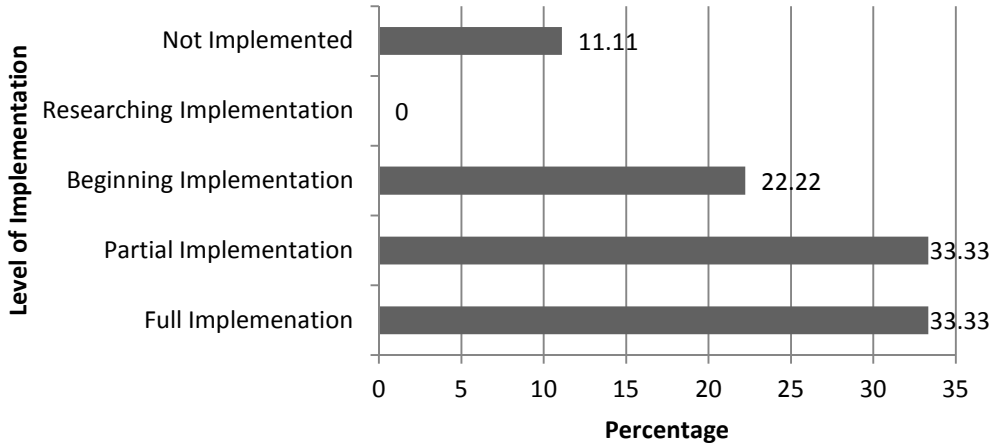

Figure 1. Implementation statement 1 results for buildings in the highest quartile as determined by the least percentage of *below basic* scores: Data from student's assessments are collected as part of a universal screening process multiple times throughout the year.

Implementation statement 2 examined the level at which professional development in regard to RtI was provided. After analyzing the response data, it was determined that 55.56% of buildings were in the student implementation phase (see Figure 2). In contrast, 44.44% of the buildings were in the no student implementation phase. Additionally, 11.11% reported full implementation while 33.33% responded as not implementing.

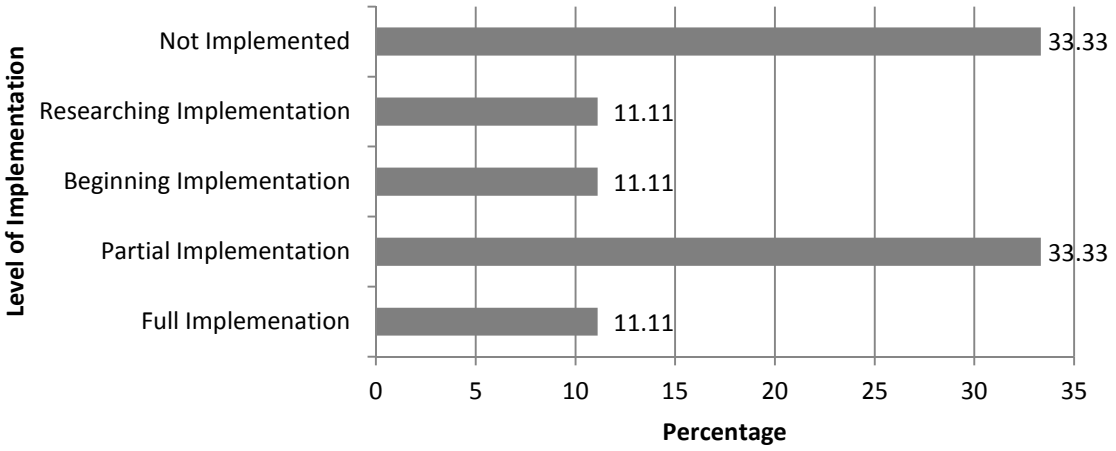

Figure 2. Implementation statement 2 results for buildings in the highest quartile as determined by the least percentage of *below basic* scores: Professional development in regard to RtI is provided.

Implementation statement 3 examined the level at which professional development was provided related to the specific tier of student with whom the teacher was working. After analyzing the response data, it was determined that 55.56% of buildings were in the student implementation phase (see Figure 3). In contrast, 44.44% of the buildings were in the no student implementation phase. Additionally, 11.11% reported full implementation while 22.22% responded as not implementing.

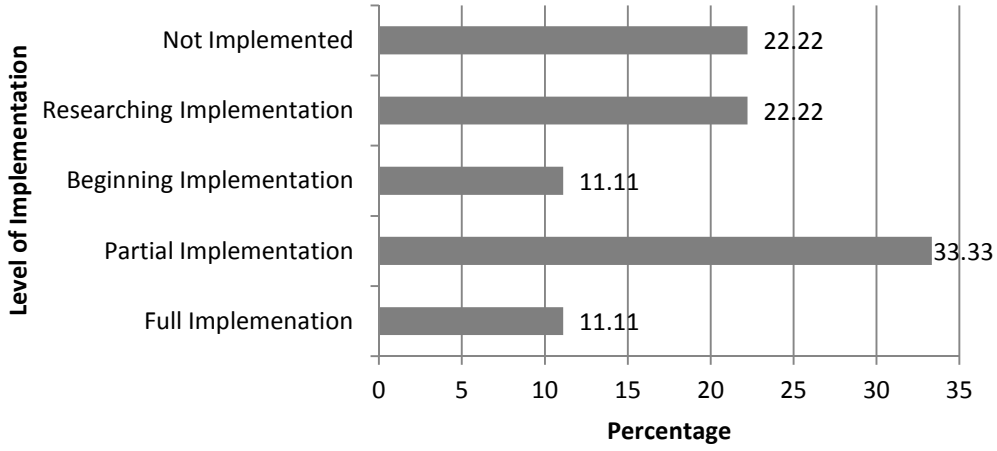

Figure 3. Implementation statement 3 results for buildings in the highest quartile as determined by the least percentage of *below basic* scores: Professional development specific to the tier of students with whom teachers are working is provided.

Implementation statement 4 examined the level at which professional development was provided related to differentiated instruction. After analyzing the response data, it was determined that 66.67% of buildings were in the student implementation phase (see Figure 4). In contrast, 33.33% of the buildings were in the no student implementation phase. Additionally, 11.11% reported full implementation while 33.33% responded as not implementing.

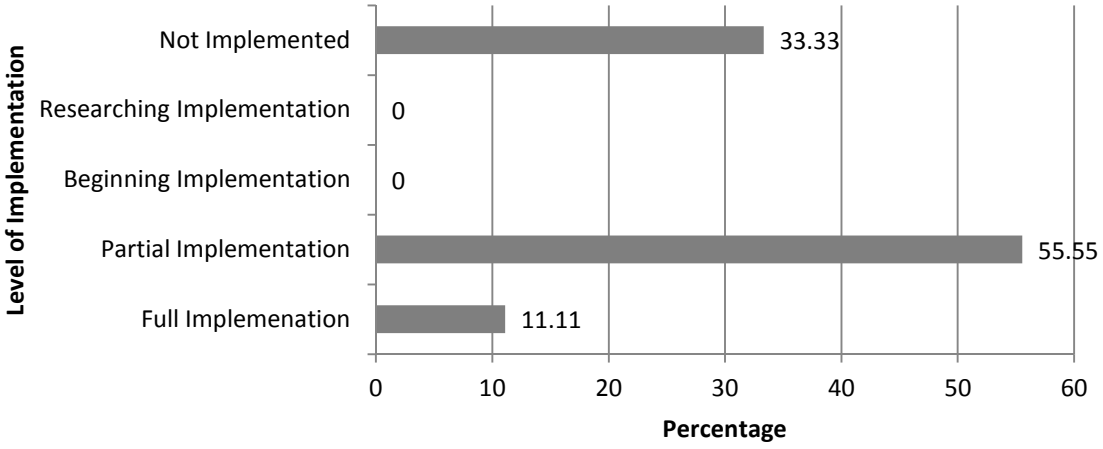

Figure 4. Implementation statement 4 results for buildings in the highest quartile as determined by the least percentage of *below basic* scores: Professional development specifically related to differentiated instruction is provided.

Implementation statement 5 examined the level at which the progress of students receiving tier 2 and tier 3 services was monitored. After analyzing the response data, it was determined that 66.67% of buildings were in the student implementation phase (see Figure 5). In contrast, 33.33% of the buildings were in the no student implementation phase. Additionally, 22.22% reported full implementation while 33.33% responded as not implementing.

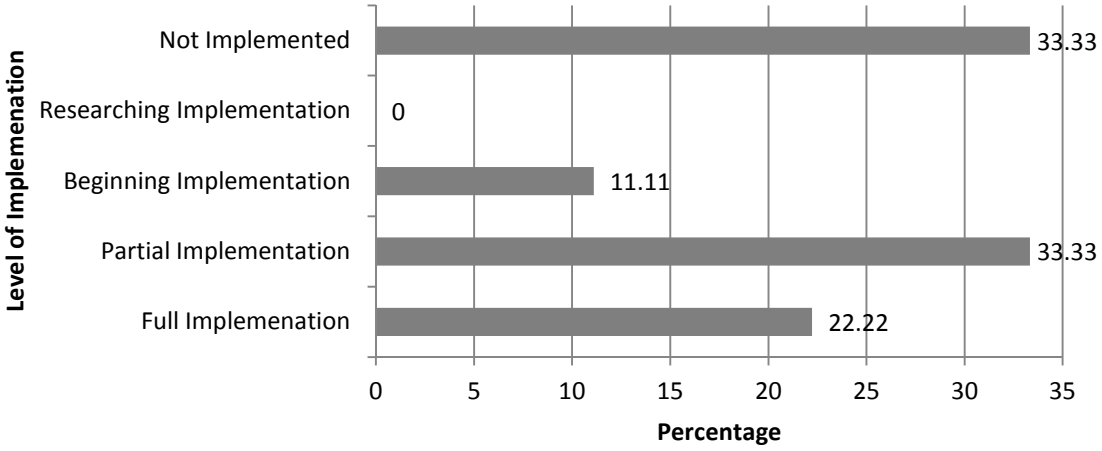

Figure 5. Implementation statement results for buildings in the highest quartile as determined by the least percentage of *below basic* scores: The progress of students receiving tier 2 and tier 3 services is monitored.

Implementation statement 6 examined the level at which standardized instructional interventions were available for teachers to use with students. After analyzing the response data, it was determined that 66.67% of buildings were in the student implementation phase (see Figure 6). In contrast, 33.33% of the buildings were in the no student implementation phase. Additionally, 22.22% reported full implementation while 33.33% responded as not implementing.

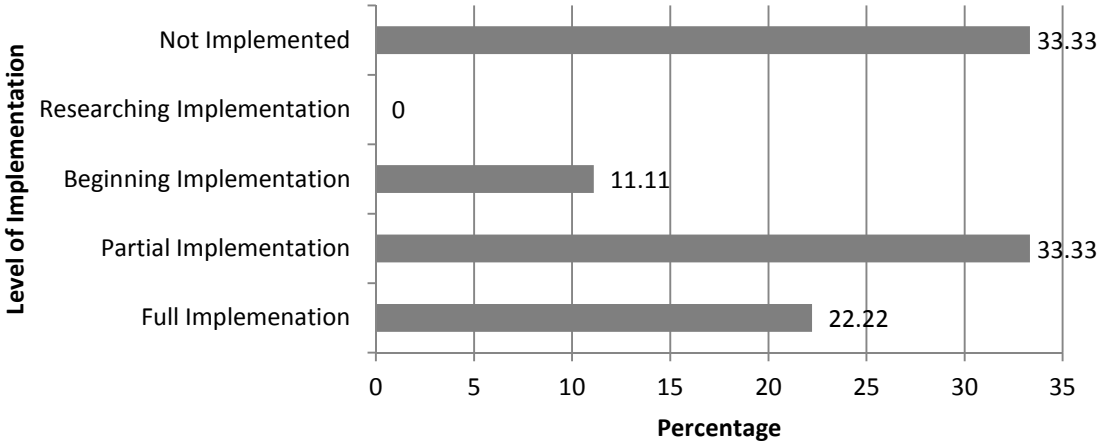

Figure 6. Implementation statement 6 results for buildings in the highest quartile as determined by the least percentage of *below basic* scores: Standardized instructional interventions are available for teachers to use with students.

Implementation statement 7 examined the level at which goals and expected outcomes were clearly established and communicated among staff and students. After analyzing the response data, it was determined that 66.67% of buildings were in the student implementation phase (see Figure 7). In contrast, 33.33% of the buildings were in the no student implementation phase. Additionally, 33.33% reported full implementation while 22.22% responded as not implementing.

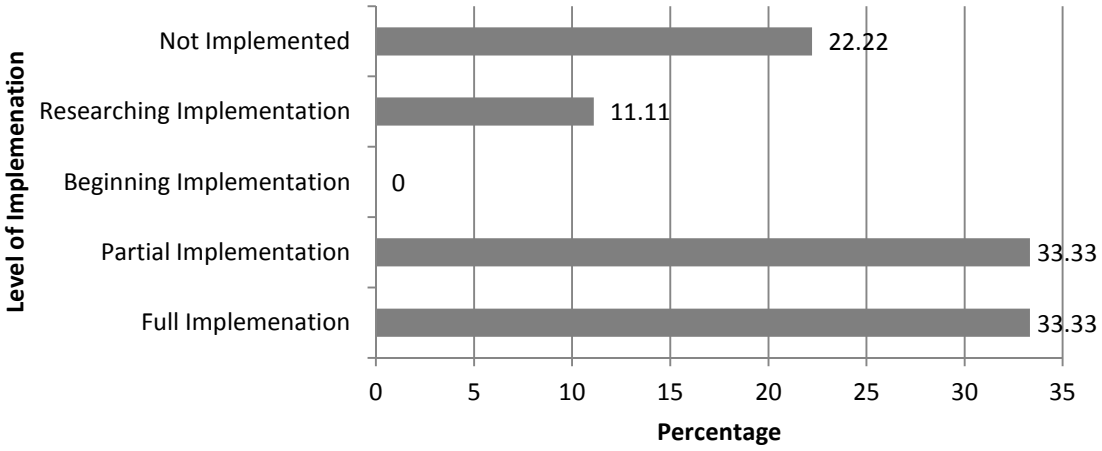

Figure 7. Implementation statement 7 results for buildings in the highest quartile as determined by the least percentage of *below basic* scores: Goals and expected outcomes are clearly established and communication among staff and students.

Implementation statement 8 examined the level at which administrators responded to participating in all steps of RtI. After analyzing the response data, it was determined that 55.56% of buildings were in the student implementation phase (see Figure 8). In contrast, 44.44% of the buildings were in the no student implementation phase. Additionally, 22.22% reported full implementation while 33.33% responded as not implementing.

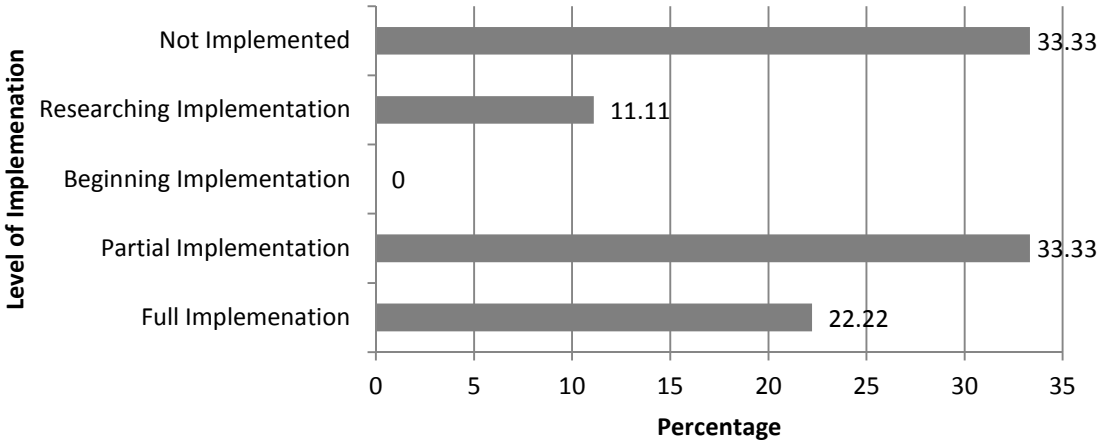

Figure 8. Implementation Statement 8: Administrators participate in all steps of RtI.

Implementation statement 9 examined the level at which RtI was a fixed component of the building wide master schedule. After analyzing the response data, it was determined that 55.56% of buildings were in the student implementation phase (see Figure 9). In contrast, 44.44% of the buildings were in the no student implementation phase. Additionally, 33.33% reported full implementation while 22.22% responded as not implementing.

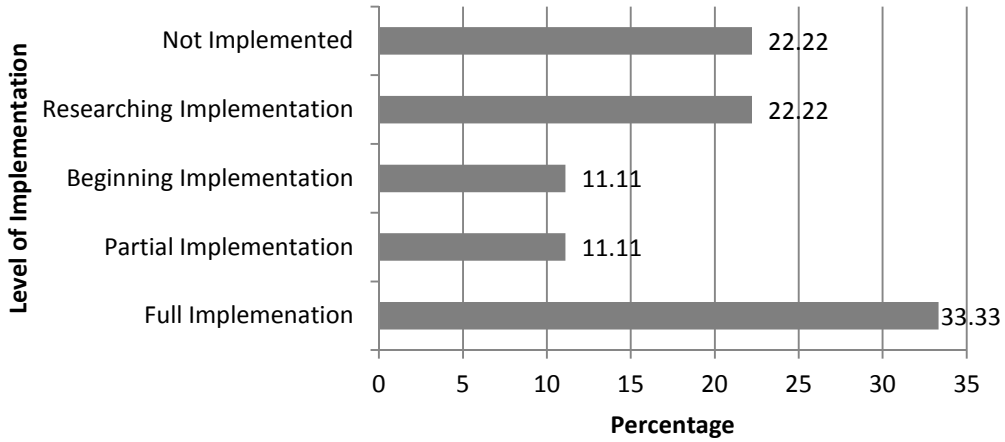

Figure 9. Implementation statement 9 results for buildings in the highest quartile as determined by the least percentage of *below basic* scores: RtI time is a fixed component of the building wide master schedule.

Implementation statement 10 examined the level at which RtI was implemented in the building. After analyzing the response data, it was determined that 66.67% of buildings were in the student implementation phase (see Figure 10). In contrast, 33.33% of the buildings were in the no student implementation phase. Additionally, 44.44% reported full implementation while 22.22% responded as not implementing.

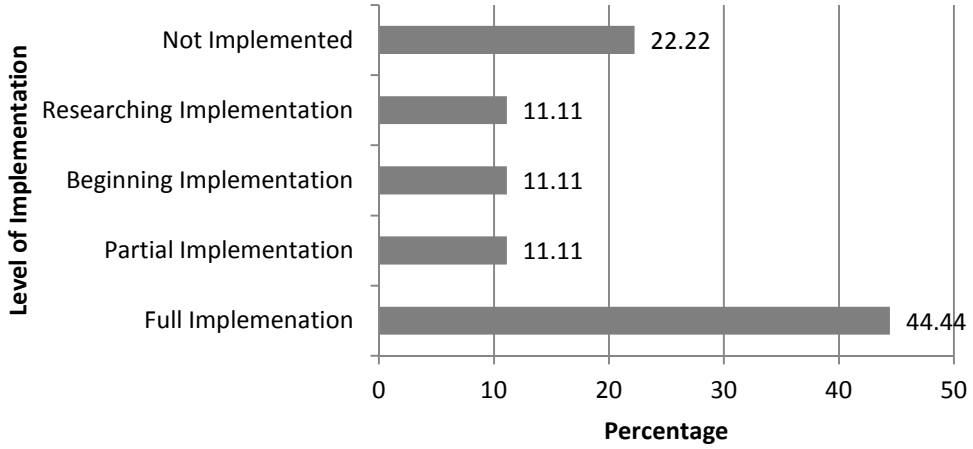

Figure 10. Implementation statement 10 results for buildings in the highest quartile as determined by the least percentage of *below basic* scores: RtI is implemented in my building.

Figures 1-10 represented the nine buildings that had the least percentage of students scoring below basic on the 8th grade Communication Arts MAP test. In 33-44% of buildings there was no implementation relating to 8 of the 9 essential elements of RtI. Respondents reported that close to 66% where implementing RtI at some level with 44.44% showing full implementation.

The characteristics of successful schools that were in the highest quartile of schools relating to lowest percentage of students scoring *below basic* indicated in Figures 3-7 and 9 that clearly established goals were highly implemented. Additionally, using standardized instructional intervention were also common in these buildings. These buildings also monitored those students in tier 2 and 3 at a heightened level. A final common characteristic was that professional development related to RtI, with a special focus on differentiated instruction, was highly implemented in these buildings.

The second quartile table allowed the achievement data to be ranked by student MAP Index Scores (see Table 11). This table ranked the schools in quadrants with highest index scores being listed first. Subsequent scores followed in each quadrant.

Table 11.

Quartile Table Ranking Buildings with Highest MAP Index Scores

75-100%		50-74%	
Building	MAP Index Score	Building	MAP Index Score
School 33	425	School 31	376.47
School 3	413.64	School 20	369.83
School 35	402.44	School 32	368.42
School 7	388.37	School 1	367.44
School 27	386.2	School 22	363.39
School 29	385.25	School 13	361.54
School 17	383.78	School 25	360.61
School 23	382.61	School 2	360.39
School 12	377.78	School 6	358.33
26-49%		0-25%	
Building	MAP Index Score	Building	MAP Index Score
School 16	355.49	School 8	341.18
School 26	355	School 28	341.07
School 4	353.85	School 14	338.24
School 11	352.78	School 10	336.84
School 15	352.63	School 5	320.48
School 19	351.61	School 30	314.29
School 34	347.06	School 9	313
School 21	346.15	School 24	306.15
School 18	345.45		

Note. The quartile table was constructed to determine which buildings had the highest MAP index scores for the 8th grade Communication Arts MAP tests. Buildings with the highest MAP index scores were determine to be the highest achieving buildings.

The buildings in the highest quartile regarding student achievement as determined by the MAP index score had their survey responses collected and analyzed. The buildings in this category were schools: 33, 3, 35, 7, 27, 29, 17, 23, and 12.

The first implementation statement examined the level at which data were collected in regard to universal screening. After analyzing the response data, it was determined that 88.89% of buildings were in the student implementation phase (see Figure 11). In contrast, 11.11% of the buildings were in the no student implementation phase. Additionally, 44.44% reported full implementation while 11.11% responded as not implementing.

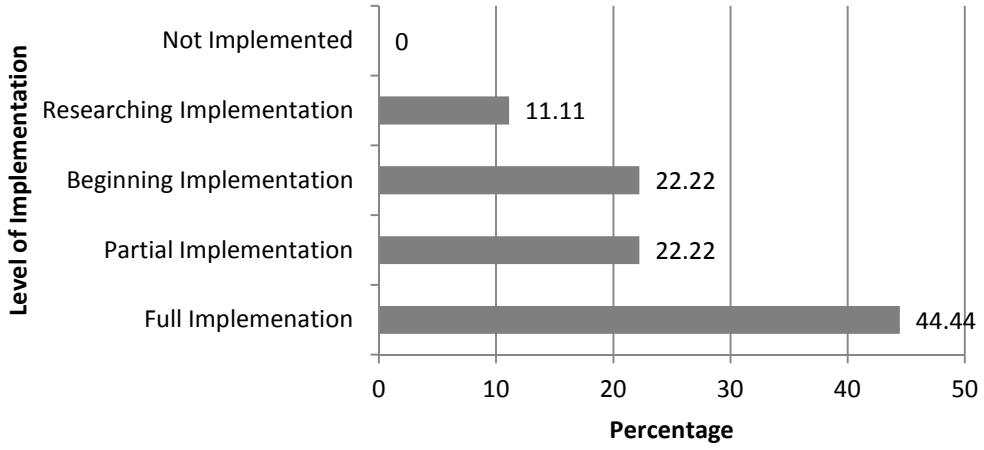

Figure 11. Implementation statement 1 results for buildings in the highest quartile as determined by MAP index score: Data from student's assessments are collected as part of a universal screening process multiple times throughout the year.

Implementation statement 2 examined the level at which professional development in regard to RtI was provided. After analyzing the response data, it was determined that 77.78% of buildings were in the student implementation phase (see Figure 12). In contrast, 22.22% of the buildings were in the no student implementation phase. Additionally, 11.11% reported full implementation while 11.11% also responded as not implementing.

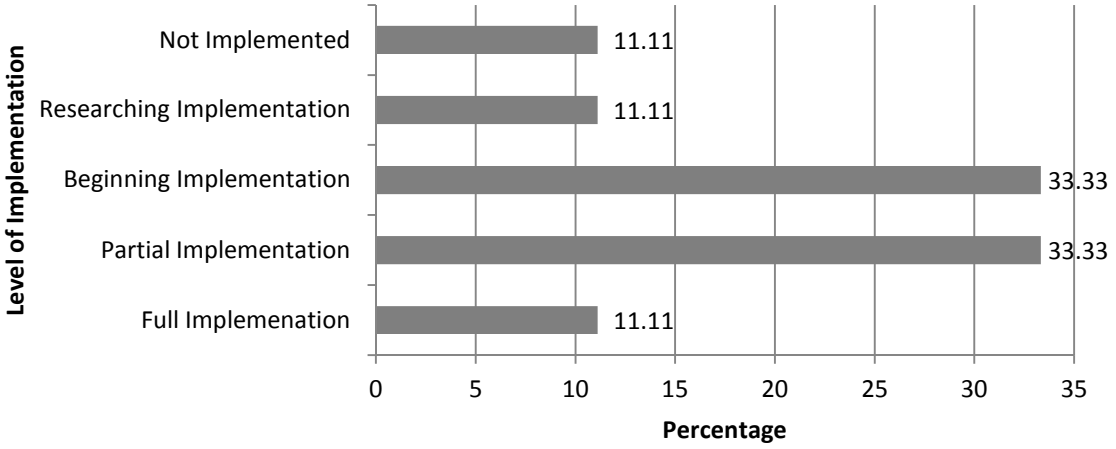

Figure 12. Implementation statement 2 results for buildings in the highest quartile as determined by MAP index score: Professional development in regard to RtI is provided.

Implementation statement 3 examined the level at which professional development was provided related to the specific tier of student with whom the teacher was working. After analyzing the response data, it was determined that 55.56% of buildings were in the student implementation phase (see Figure 13). In contrast, 44.44% of the buildings were in the no student implementation phase. Additionally, 11.11% reported full implementation while 11.11% also responded as not implementing.

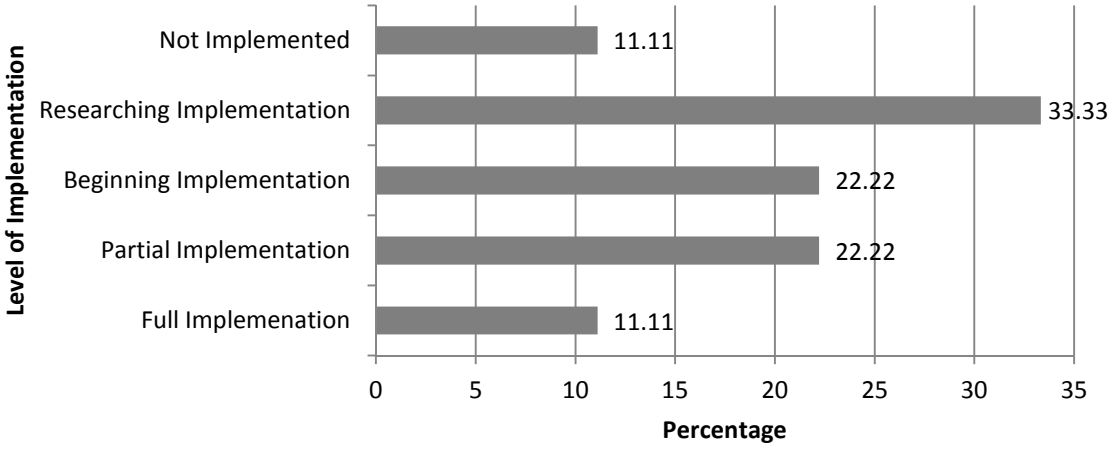

Figure 13. Implementation statement 3 results for buildings in the highest quartile as determined by MAP index score: Professional development specific to the tier of students with whom teachers are working is provided.

Implementation statement 4 examined the level at which professional development was provided related to differentiated instruction. After analyzing the response data, it was determined that 66.67% of buildings were in the student implementation phase (see Figure 14). In contrast, 33.33% of the buildings were in the no student implementation phase. Additionally, 33.33% reported full implementation while 22.22% responded as not implementing.

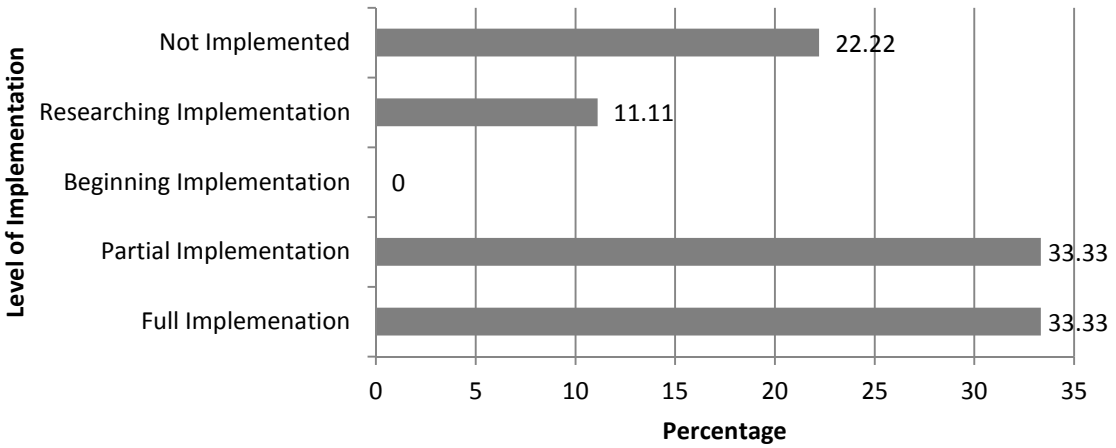

Figure 14. Implementation statement 4 results for buildings in the highest quartile as determined by MAP index score: Professional development specifically related to differentiated instruction is provided.

Implementation statement 5 examined the level at which the progress of students receiving tier 2 and tier 3 services was monitored. After analyzing the response data, it was determined that 66.67% of buildings were in the student implementation phase (see Figure 15). In contrast, 33.33% of the buildings were in the no student implementation phase. Additionally, 22.22% reported full implementation while 22.22% also responded as not implementing.

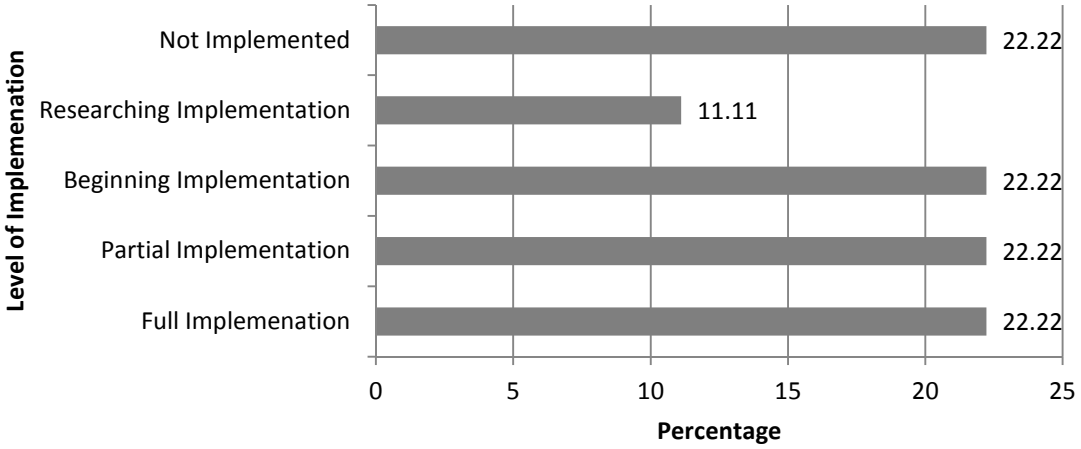

Figure 15. Implementation statement 5 results for buildings in the highest quartile as determined by MAP index score: The progress of students receiving tier 2 and tier 3 services is monitored.

Implementation statement 6 examined the level at which standardized instructional interventions were available for teachers to use with students. After analyzing the response data, it was determined that 55.56% of buildings were in the student implementation phase (see Figure 16). In contrast, 44.44% of the buildings were in the no student implementation phase. Additionally, 33.33% reported full implementation while 22.22% responded as not implementing.

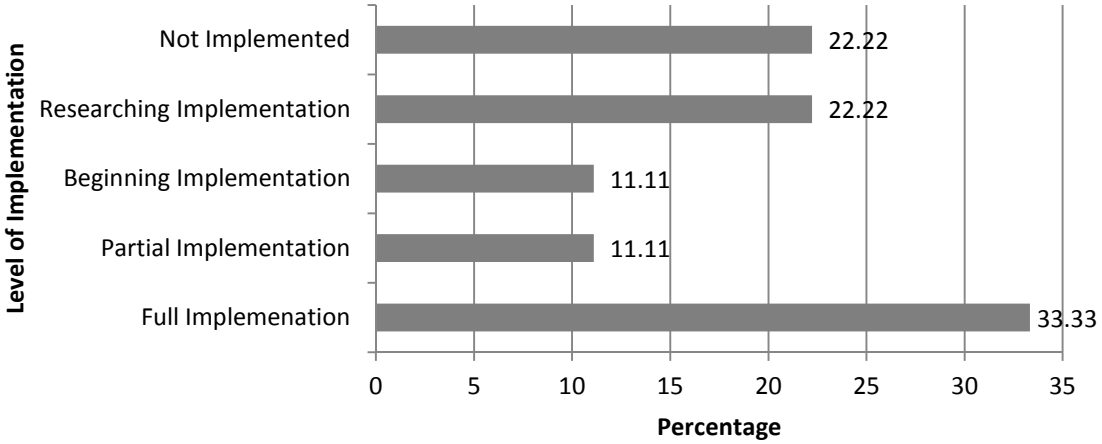

Figure 16. Implementation statement 6 results for buildings in the highest quartile as determined by MAP index score: Standardized instructional interventions are available for teachers to use with students.

Implementation statement 7 examined the level at which goals and expected outcomes were clearly established and communicated among staff and students. After analyzing the response data, it was determined that 77.78% of buildings were in the student implementation phase (see Figure 17). In contrast, 22.22% of the buildings were in the no student implementation phase. Additionally, 22.22% reported full implementation while 11.11% responded as not implementing.

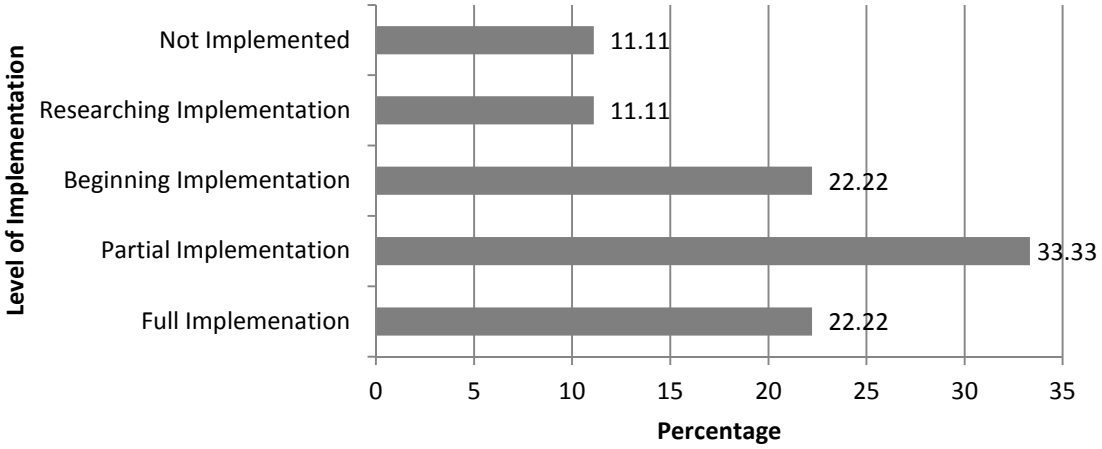

Figure 17. Implementation statement 7 results for buildings in the highest quartile as determined by MAP index score: Goals and expected outcomes are clearly established and communication among staff and students.

Implementation statement 8 examined the level at which administrators responded to participating in all steps of RtI. After analyzing the response data, it was determined that 77.78% of buildings were in the student implementation phase (see Figure 18). In contrast, 22.22% of the buildings were in the no student implementation phase. Additionally, 33.33% reported full implementation while 11.11% responded as not implementing.

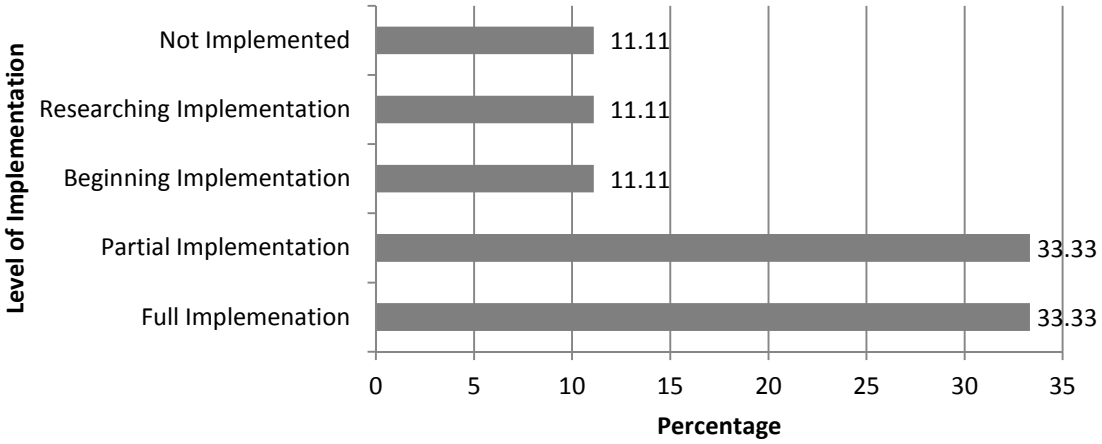

Figure 18. Implementation statement 8 results for buildings in the highest quartile as determined by MAP index score: Administrators participate in all steps of RtI.

Implementation statement 9 examined the level at which RtI was a fixed component of the building wide master schedule. After analyzing the response data, it was determined that 55.56% of buildings were in the student implementation phase (see Figure 19). In contrast, 44.44% of the buildings were in the no student implementation phase. Additionally, 33.33% reported full implementation while 22.22% responded as not implementing.

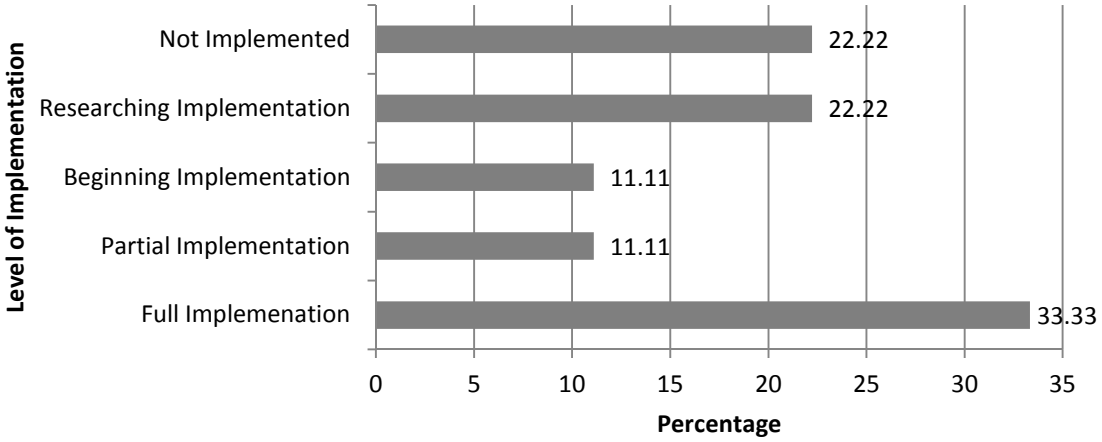

Figure 19. Implementation statement 9 results for buildings in the highest quartile as determined by MAP index score: RtI time is a fixed component of the building wide master schedule.

Implementation statement 10 examined the level at which RtI was implemented in the building. After analyzing the response data, it was determined that 77.78% of buildings were in the student implementation phase (see Figure 20). In contrast, 22.22% of the buildings were in the no student implementation phase. Additionally, 22.22% reported full implementation while 11.11% responded as not implementing.

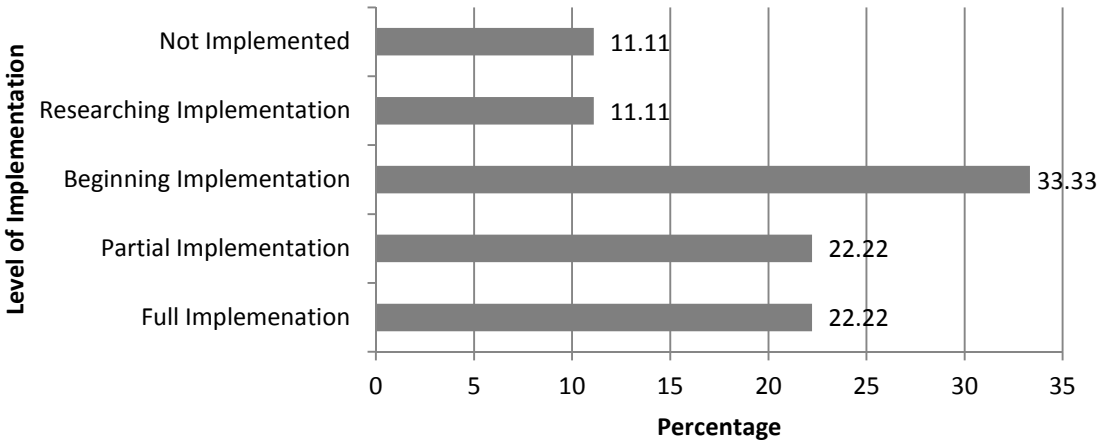

Figure 20. Implementation statement 10 results for buildings in the highest quartile as determined by MAP index score: RtI is implemented in my building.

Figures 11-20 represented the principal's implementation scores of the buildings with the highest academic achievement related to MAP index scores. In 22.22% of these buildings, the principals reported full implementation of RtI, with approximately 77% showing some level of implementation overall. In contrast, 11.11% of principals reported their buildings were not implementing RtI and an equal amount reported they were in the researching process.

Building principals in schools with the highest MAP index scores indicated that active administration participation is consistent among these buildings. Figures 1 and 5 indicated an emphasis relating to use a universal screener multiple times throughout the

year to track student growth in all tiers. The survey results indicated that these buildings provide an added emphasis on students in tiers 2 and 3 as well.

Finally, the building's academic achievement was analyzed to determine which were within the highest quartiles for both percentage of students scoring below basic and buildings with the highest MAP index scores. These buildings were determined to be 17, 27, 33, and 35. These buildings also had their implementation responses analyzed to determine common characteristics among the essential RtI elements in Figures 31-40.

The first implementation statement examined the level at which data were collected in regard to universal screening. After analyzing the response data, it was determined that 75% of buildings were in the student implementation phase (see Figure 21). In contrast, 25% of the buildings were in the no student implementation phase. Additionally, 0% reported both full implementation and not implementing.

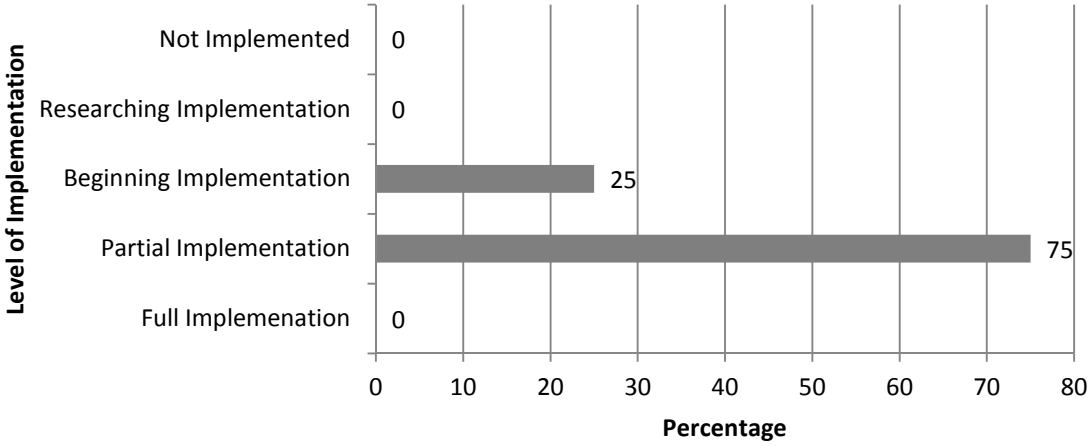

Figure 21. Implementation statement 1 results for buildings within both highest achieving quartiles: Data from student's assessments are collected as part of a universal screening process multiple times throughout the year.

Implementation statement 2 examined the level at which professional development in regard to RtI was provided. After analyzing the response data, it was determined that 50% of buildings were in the student implementation phase (see Figure 22). In contrast, 50% of the buildings were in the no student implementation phase. Additionally, 0% reported full implementation while 50% responded as not implementing.

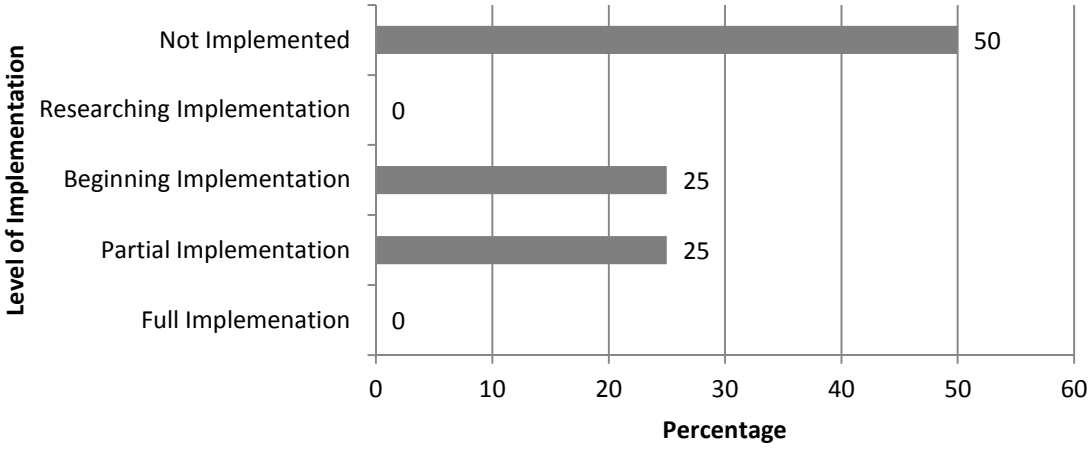

Figure 22. Implementation statement 2 results for buildings within both highest achieving quartiles: Professional development in regard to RtI is provided.

Implementation statement 3 examined the level at which professional development was provided related to the specific tier of student with whom the teacher was working. After analyzing the response data, it was determined that 75% of buildings were in the student implementation phase (see Figure 23). In contrast, 25% of the buildings were in the no student implementation phase. Additionally, 0% reported full implementation while 25% responded as not implementing.

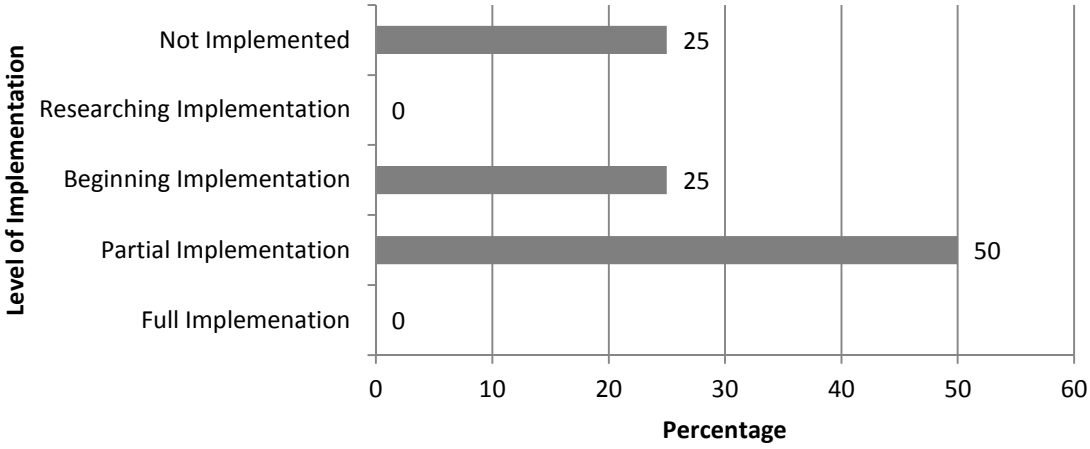

Figure 23. Implementation statement 3 results for buildings within both highest achieving quartiles: Professional development specific to the tier of students with whom teachers are working is provided.

Implementation statement 4 examined the level at which professional development was provided related to differentiated instruction. After analyzing the response data, it was determined that 75% of buildings were in the student implementation phase (see Figure 24). In contrast, 25% of the buildings were in the no student implementation phase. Additionally, 0% reported full implementation while 25% responded as not implementing.

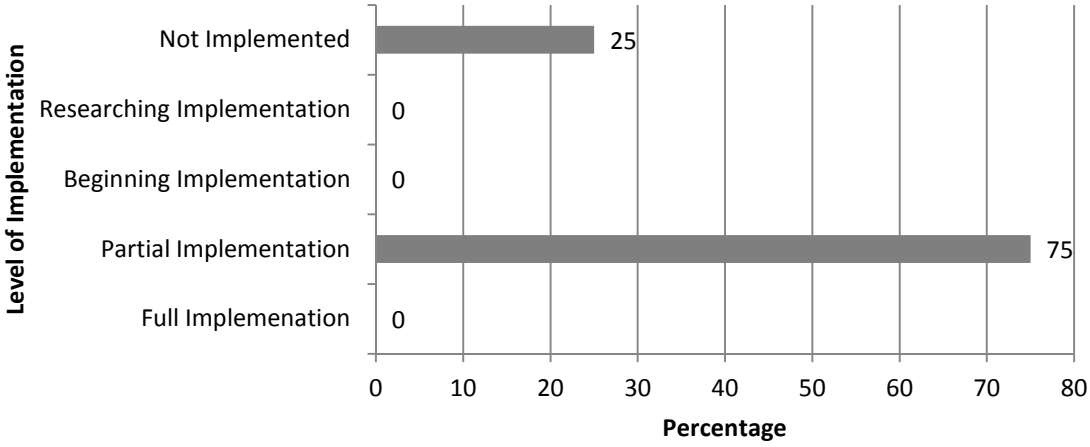

Figure 24. Implementation statement 4 results for buildings within both highest achieving quartiles: Professional development specifically related to differentiated instruction is provided.

Implementation statement 5 examined the level at which the progress of students receiving tier 2 and tier 3 services was monitored. After analyzing the response data, it was determined that 75% of buildings were in the student implementation phase (see Figure 25). In contrast, 25% of the buildings were in the no student implementation phase. Additionally, 0% reported full implementation while 25% responded as not implementing.

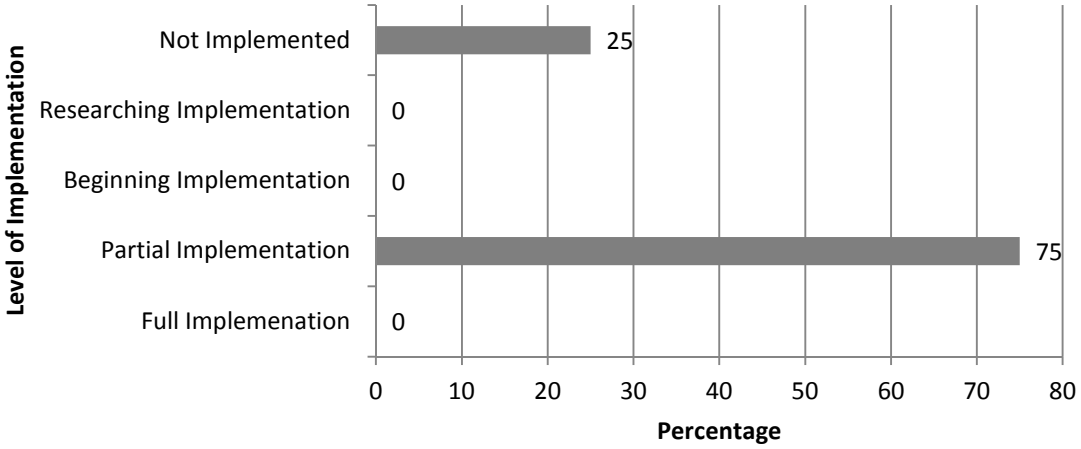

Figure 25. Implementation statement 5 results for buildings within both highest achieving quartiles: The progress of students receiving tier 2 and tier 3 services is monitored.

Implementation statement 6 examined the level at which standardized instructional interventions were available for teachers to use with students. After analyzing the response data, it was determined that 100% of buildings were in the student implementation phase (see Figure 26). In contrast, 0% of the buildings were in the no student implementation phase. Additionally, 25% reported full implementation while 0% responded as not implementing.

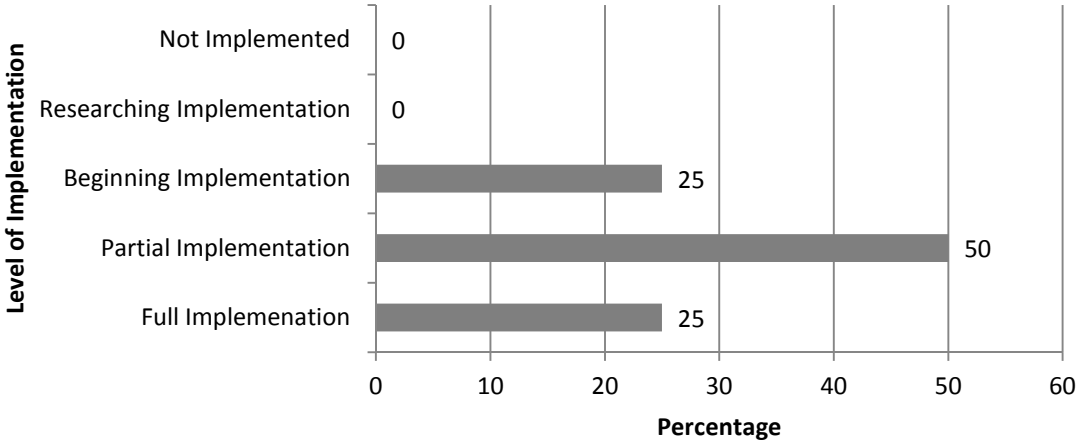

Figure 26. Implementation statement 6 results for buildings within both highest achieving quartiles: Standardized instructional interventions are available for teachers to use with students.

Implementation statement 7 examined the level at which goals and expected outcomes were clearly established and communicated among staff and students. After analyzing the response data, it was determined that 100% of buildings were in the student implementation phase (see Figure 27). In contrast, 0% of the buildings were in the no student implementation phase. Additionally, 25% reported full implementation while 0% responded as not implementing.

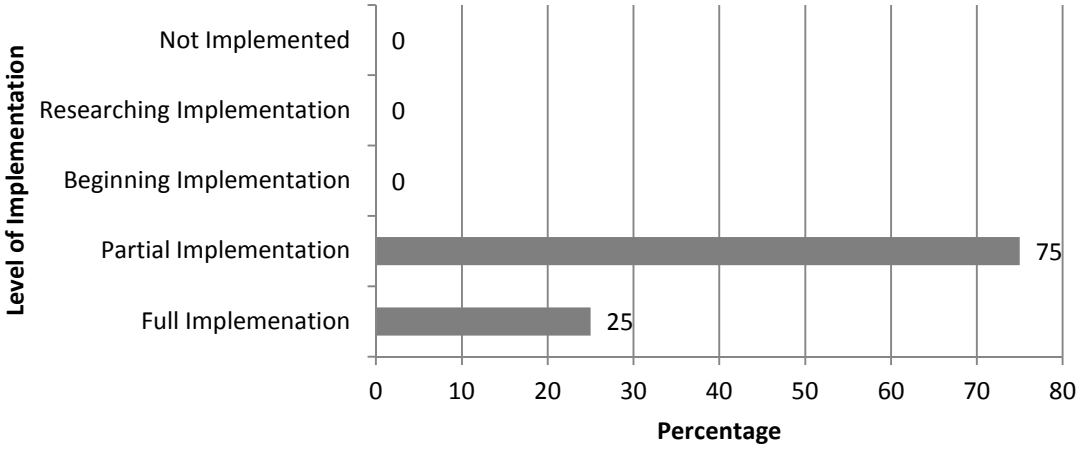

Figure 27. Implementation statement 7 results for buildings within both highest achieving quartiles: Goals and expected outcomes are clearly established and communicated among staff and students.

Implementation statement 8 examined the level at which administrators responded to participating in all steps of RtI. After analyzing the response data, it was determined that 75% of buildings were in the student implementation phase (see Figure 28). In contrast, 25% of the buildings were in the no student implementation phase. Additionally, 0% reported full implementation while 25% responded as not implementing.

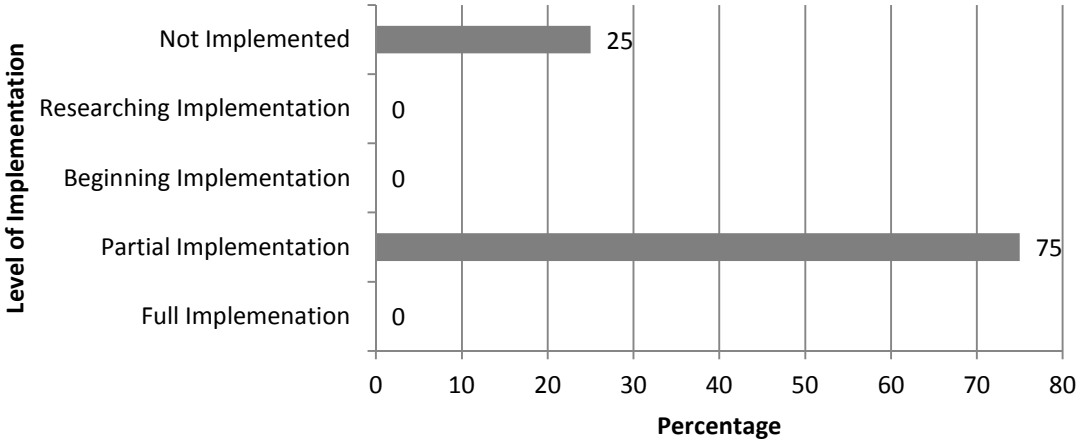

Figure 28. Implementation statement 8 results for buildings within both highest achieving quartiles: Administrators participate in all steps of RtI.

Implementation statement 9 examined the level at which RtI was a fixed component of the building wide master schedule. After analyzing the response data, it was determined that 50% of buildings were in the student implementation phase (see Figure 29). In contrast, 50% of the buildings were in the no student implementation phase. Additionally, 50% reported full implementation while 50% responded as not implementing.

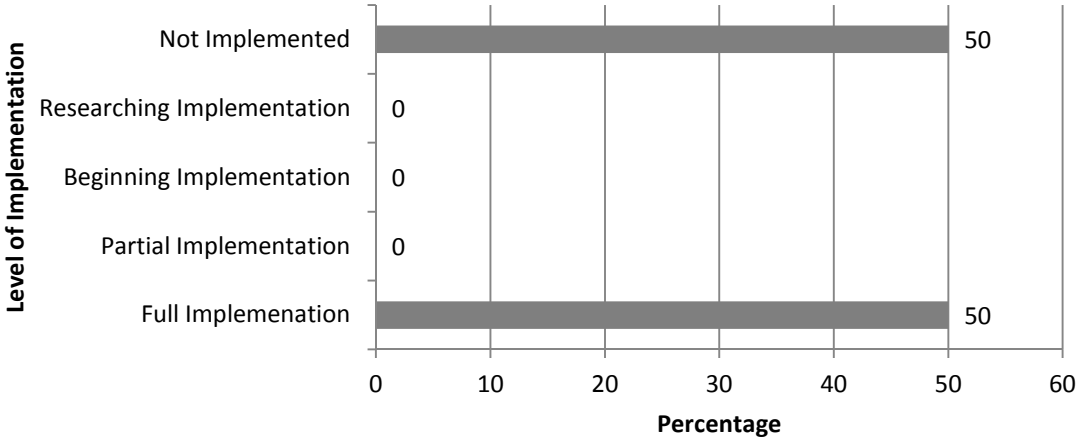

Figure 29. Implementation statement 9 results for buildings within both highest achieving quartiles: RtI time is a fixed component of the building wide master schedule.

Implementation statement 10 examined the level at which RtI was implemented in the building. After analyzing the response data, it was determined that 75% of buildings were in the student implementation phase (see Figure 30). In contrast, 25% of the buildings were in the no student implementation phase. Additionally, 50% reported full implementation while 25% responded as not implementing.

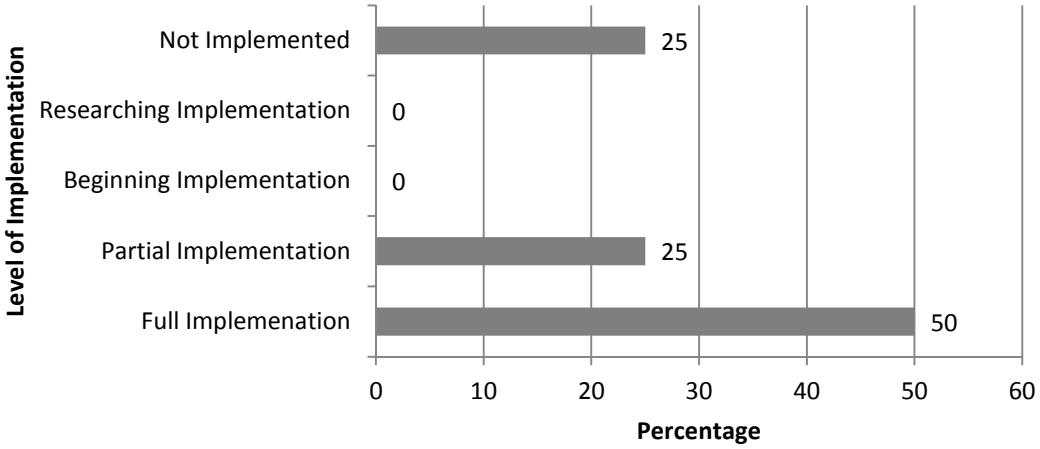

Figure 30. Implementation statement 10 results for buildings within both highest achieving quartiles: RtI is implemented in my building.

According to the results reported in Figures 21-30, the majority of the buildings were in the partial implementation level related to the majority of RtI's essential components. Fifty percent of principals believed their buildings were in full implementation related to RtI, and 25% reported partial implementation. The majority of principals did not respond to full implementation in 6 of the 9 implementation statements.

Discussed next is the implementation or non-implementation phase related to each of the survey statements (see Tables 12 and 13) in regard to the buildings in the two highest quartiles, as well as the buildings that were in both quartiles.

Table 12.

Implementation Phase Percentage by Category

Survey Statement	Top Quartile Regarding % Below Basic	Top Quartile Regarding MAP Index Score	Highest Achieving Buildings
1	88.89	88.89	75
2	55.56	77.78	50
3	55.56	55.56	75
4	66.67	66.67	75
5	66.67	66.67	75
6	66.67	55.56	100
7	66.67	77.78	100
8	55.56	77.78	75
9	55.56	55.56	50
10	66.67	77.78	50

Note. The implementation phase percentages were compiled for buildings in the top quartile regarding percentage of students scoring below basic on the 8th grade Communication Arts MAP test, as well as the buildings in the top quartile relating to MAP index scores. The four buildings that were in the highest quartiles also had their implementation phase percentages compiled.

Table 13

Non-Implementation Phase Percentage by Category

Survey Statement	Top Quartile Regarding % Below Basic	Top Quartile Regarding MAP Index Score	Highest Achieving Buildings
1	11.11	11.11	25
2	44.44	22.22	50
3	44.44	44.44	25
4	33.33	33.33	25
5	33.33	33.33	25
6	33.33	44.44	0
7	33.33	22.22	0
8	44.44	22.22	25
9	44.44	44.44	50
10	33.33	22.22	50

Note. The non-implementation phase percentages were compiled for buildings in the top quartile regarding percentage of students scoring *below basic* on the 8th grade Communication Arts MAP test as well as the buildings in the top quartile relating to MAP index scores. The four buildings that were in the highest quartiles also had their non-implementation phase percentages compiled.

Buildings that were in both quartiles have a higher implementation phase relating to the majority of survey statements. In 7 of the 10 statements, this group had an implementation phase of 75-100%. The group in the highest quartile related to *below basic* percentage had 1statetment with an implementation phase of 75-100%. Additionally, the group with the highest quartile related to MAP index score had 5 of the 10 statements with an implementation phase of 75-100%.

Summary

A survey was distributed to the 50 middle schools whose districts are members of the SCEE. Of the 50 buildings, 35 building principals responded to the survey. The survey instrument determined the level of RtI implementation within each building. The survey consisted of 14 statements, of which 10 related directly to RtI implementation levels. All statements were developed from current research relating to the essential components of RtI.

Each implementation response was examined to determine the level of implementation by building. Once implementation scores were obtained, MAP data were collected relating to each building's student achievement level. MAP data consisted of the percentage of students testing *below basic* and MAP index scores related to the 8th grade Communication Arts MAP test.

A PPMC was conducted to determine the relationship between RtI implementation and student achievement. A correlation was completed comparing the percentage of students *below basic* and MAP index score against building implementation score. For both correlations little to no linear relationship was found. This resulted in the null hypothesis being rejected.

Following the PPMC calculation, quartile tables were created to determine which buildings had the highest level of academic achievement on the 8th grade Communication Arts MAP test. Responses were analyzed relating to buildings in the highest achieving schools in regard to percentage of students scoring *below basic* and MAP index scores. Four buildings were found to score in the top quartile relating to both categories. These buildings were categorized as high achieving middle schools. The essential components

of RtI found within these buildings included universal screening, professional development relating to differentiated instruction and tiered interventions, establishing clear goals, progress monitoring, the use of standardized instructional interventions, and administrator participation.

An analysis of the major elements and findings related to the study were reviewed and examined in Chapter Five. Based on the research questions of the study, conclusions were made relating to the overall study. Recommendations for future research were discussed to conclude the study.

Chapter Five: Summary and Conclusions

RtI is not a new resource for educators. This design was popularized within the IDEA of 2004 (United States Department of Education, 2007). RtI's intention is to provide an alternative method of qualifying students who require special education services beyond the discrepancy model (Brozo, 2009). Significant gains have been proven in the elementary setting relating to this method. However, the implications at the middle school level have disputed results (Sansosti et al., 2010).

The purpose of this study was to determine what essential elements are found in high performing middle schools. Additionally, this study determined the relationship between RtI implementation and academic achievement. A summary of the study including findings were discussed within this chapter. Conclusions to the study as well as the results to the research questions were presented. This chapter concluded with implications relating to practice and recommendations for future research.

Purpose Summary

The purpose of this study was to determine the essential components of RtI that are implemented in high performing middle schools. Secondly, the relationship between levels of RtI implementation in the middle school setting and academic achievement was determined. Middle schools chosen for this study belonged to districts that were members of the SCEE in Southwest Missouri and had an eighth grade in their building. There were a total of 50 middle schools that met these criteria.

First, a survey was sent to all 50 middle school principals inviting them to participate in the study. A total of 35 middle school principals responded to the survey. All survey results were analyzed to determine the building's level of implementation in

regard to RtI. Next, each of the 35 buildings' 8th grade Communication Arts MAP scores was collected. A PPMC was calculated among the highest achieving buildings to determine the relationship between the level of implementation and academic achievement. The scores were analyzed regarding buildings with the lowest number of students testing *below basic* and highest MAP index scores. The buildings that were in the highest achieving quartile for both categories were determined and their implementation responses were analyzed.

Findings

A survey was created to gather data related to each building's implementation of RtI. Building principals were selected based on their districts membership in the SCEE and having an eighth grade in their building. Based on the answers to the contingency questions, all participants in the study were building principals and agreed to participate voluntarily.

Response selections were developed using a Likert response scale. The response selections were designed to determine if the building was implementing each item at full implementation, partial implementation, beginning implementation, researching implementation, or not implementing. Principals who rated their buildings in the full, partial, or beginning stages were described as being in the implementation phase of RtI. Principals who rated their answers as researching or not implementing were described as being in the non-implementation phase of RtI. A total of 10 statements were responded to by the building principals to determine the level of implementation.

Significant findings related to the comprehensive collection of all 35 buildings follows. One finding was that 85.72% of schools collect assessment data as an important

tool in the RtI process. Also, these results implied that universal screening is a necessary component in the implementation process of RtI within these buildings. The results aligned with recommendation of Gersten et al. (2010) that students are screened to identify those at risk for potential struggles in the classroom.

The results likewise revealed the importance of professional development related to RtI that was provided to staff. Approximately 70% of schools provided professional development for their teachers once the implementation of RtI began. Effective professional development can lead to "a shift in focus from what educators cannot do to help students to what educators can do" (Burns, 2008, p. 12). The buildings' results indicated that professional development relating RtI and differentiated instructions was implemented more strongly than in tiered interventions. This result may be evidence that buildings have not transitioned into tiers 2 and 3 when these trainings would be necessary.

Progress monitoring of students receiving tier 2 and tier 3 services was common among middle school buildings. Over 70% of buildings monitored the progress of students receiving tier 2 and tier 3 services. Within these buildings, 37.14% were fully implementing while 28.57% of these middle schools were not implementing this component. These findings were consistent with the research completed by Dorn and Schubert (2008). In their research, Dorn and Schubert (2008) believed that RtI is a process in which progress monitoring is needed to identify and monitor student's growth.

Clearly established goals and outcomes being communicated to staff and students was the highest implemented RtI characteristic among the buildings. Results indicated that 85.71% of buildings were implementing this RtI element, with 37.41% responding to

the level of full implementation. In comparison, this element had the lowest percentage of principals responding that their building was not implementing at a rate of 5.71%

The data relating to administrator's role regarding RtI were inconsistent. There were 82.85% of principals responding their role as an administrator led them to participate in all steps of RtI. However, only 40.65% of these buildings represented a fixed component of the building wide master schedule to support RtI. This information implied that while administrators feel they are participating in RtI, the schedule for RtI to work in their building is not being implemented at an equal level.

The following research questions guided the study and informed the hypotheses.

RQ1. What is the relationship between the level of implementation of RtI in middle school and student achievement as measured by the percentage of students in the *below basic* category on the 8th grade Communication Arts MAP Assessment?

$H1_o$ There is no relationship between the level of implementation of RtI in middle school and student achievement as measured by the percentage of students in the *below basic* category on the 8th grade Communication Arts MAP Assessment.

The PPMC was conducted to determine the relationship between level of implementation and students testing in the *below basic* category on the 8th grade Communication Arts MAP test. A result of -.068 was found as the relationship between these two variables. Little to no linear relationship was illustrated between the level of implementation and students scoring *below basic*. This resulted in the null hypothesis not being rejected.

RQ2. What is the relationship between the level of implementation of RtI in middle school and student achievement as measured by the index scores on the 8th grade Communication Arts MAP Assessment?

$H2_o$ There is no relationship between the level of implementation of RtI in middle school and student achievement as measured by the index scores on the 8th grade Communication Arts MAP Assessment.

The PPMC was also conducted to determine the relationship between levels of implementation and MAP index scores. This calculation resulted in a -.060 also showing little to no linear relationship. This also resulted in the null hypothesis not being rejected.

Implementation responses for high achieving middle school as determined by a low percentage of students testing *below basic,* as well as having high MAP index scores were analyzed. In 100% of buildings the use of student assessment data as part of universal screening process more than once a year was being implemented. There were zero buildings either not implementing or researching implementation regarding this component. The universal screening process is an essential component to the implementation of RtI within the building. The high rate of implementation among buildings supported the importance of this component within the process.

Professional development relating to RtI was being provided in 50% of buildings that had the highest student achievement. There were 25% of these middle schools whose results described partial implementation and 25% were beginning implementation, with 50% not implementing. This category was split showing no significant use of RtI related professional development among all buildings. However, 75% of these buildings were providing professional development specific to the tier of students with whom

teachers were working, as well as professional development related to differentiated instruction. The validity within the survey results were supported by the correlating numbers among buildings responses. Professional development relating to differentiated instruction and for teachers in relation to specific tiers proved to be essential to the buildings implementation of RtI.

Progress monitoring for students in tier 2 and 3 was reported at a level of 75% partial implementation. Only 25% of principals reported that progress monitoring was not being implemented in their buildings. The high percentage of buildings implementing RtI implied that progress monitoring was another essential element to RtI implementation.

Standardized instructional interventions were being implemented in 100% of buildings. Whereas 25% of buildings were implementing at the full and beginning implementation level, 50% were partially implementing. A 100% implementation rate indicated that standardized instructional interventions are an essential RtI element that is being implemented in high performing middle schools.

There was also a 100% implementation rate regarding clearly established goals and outcomes being communicated to staff and students. While only 25% of buildings were reported to be at full implementation, 75% were in partial implementation. These results signified that communicating clearly established goals and outcomes to staff and students is another RtI component implemented in high performing middle schools.

Partial implementation occurred in 75% of buildings regarding the administrator participating in all steps of RtI. The remaining 25% of buildings' implementations scores

ranked them at a not implemented level. This result illustrated that the administrator's role in RtI is an important component relating to implementation within these buildings.

Regarding RtI being a fixed component in the building wide master schedule, there was an even distribution. Fully implemented responses accounted for 50%, while not implemented accounted for the remaining 50%. The literature guided the researcher to determine that scheduling was one of the most difficult aspects of incorporating RtI in a middle school. The results strongly supported the research in regard to scheduling since this was not among the highest RtI components being implemented.

The final statement asked the principals if RtI was being implemented in their building. In 75% of buildings, there was some form of RtI implementation at some level. Among these buildings, 50% represented full implementation, and 25% represented partial implementation. Buildings that were not implementing constituted 25%. The results of this implementation statement corresponded with previous responses related to level of implementation among RtI's essential components. The majority of buildings are implementing some form of RtI (75%); however, due to the lower percentage of responses regarding RtI professional development and a building wide RtI schedule, all essential elements of RtI were not being implemented in all buildings' RtI programs.

RQ3. Which RtI characteristics are commonly implemented in high performing middle schools?

The results of the highest achieving buildings provided which essential elements regarding RtI were being implemented. First, these buildings provided high levels of professional development related to differentiated instruction, as well as progression through the tiers of RtI. Secondly, these programs had established clear goals and

outcomes relating to RtI implementation. The next component related to the collection of student assessment data and universal screening. Assessment data were compiled and analyzed multiple times throughout the year by using data from a universal screening process. Standardized instructional materials were provided to teachers to use with their students within the building related to the different RtI tiers. Also, the principal's role in all steps of RtI within the majority of these buildings was significant. The final essential component of RtI implemented by the high performing buildings was progress monitoring. Progress monitoring was completed through each tier of RtI at a significant rate in these buildings.

There were only two essential RtI characteristics that were not consistently implemented among the highest achieving middle schools. The first concerned the professional development as related to RtI. Although many of the essential components were implemented, the importance of professional development related directly to RtI was inconsistent. Also, a building wide RtI schedule was not a highly implemented component. This result aligned directly with the literature; one of the largest challenges with RtI at the middle school level is the establishment of a building wide schedule.

Conclusions

Four middle school buildings were determined to be the highest achieving because they were in the highest quartiles regarding percentage of students in the *below basic* category and MAP index scores. The top performing buildings' survey results indicated that 75% of buildings were implementing some level of RtI. Among the 75%, half were implementing RtI at full implementation and 25% were implementing RtI at

partial implementation. This finding is contrary to the PPMC results showing there was little or no relationship between the level of implementation and academic achievement.

Principals of these buildings conveyed through their survey results that the full implementation of all RtI components corresponded to high student achievement. There were essential components of RtI found within each of the high achieving building. In order to determine which essential components were being implemented, the researcher explored what responses resulted in at least a 75% implementation level. The essential components of RtI being implemented in these buildings included: universal screening, professional development relating to differentiated instruction and tiered interventions, establishing clear goals, progress monitoring, the use of standardized instructional interventions, and administrator participation. The essential elements that did not have a significant level of implementation in these buildings were professional development related directly to RtI and a building wide RtI schedule.

In regard to RtI implementation being a necessary component for student achievement, inconsistencies were found among buildings that are the highest achieving. Little to no relationship was expressed between implementation and achievement using the PPMC. This resulted in a lack of evidence that full implementation of RtI correlates to student achievement at the middle school level. However, many of the essential components of RtI were implemented in the highest achieving buildings.

Implications for Practice

Current researchers explain that essential components of RtI can have an effective relation to raising student achievement at the elementary level (Burns, 2008; Lose, 2008). Unfortunately, the research, including this study, support that in the middle school level

the effectiveness weakens compared to the elementary level. One reason for this may be the greater gaps in achievement middle school students have obtained by this age.

Middle schools are often eager to jump into the program when they become aware of the success it may have had at the elementary level (Allington, 2011). If the leaders of a middle school building chose to implement RtI, they must be aware of the struggles related to imitating the essential elements found to be effective at the elementary level. In order to overcome this, professional development is a strong recommendation. Staff must be trained on the design of RtI, as well as how to effectively implement RtI. Buildings must avoid implementing RtI first, then learning how to master it later.

Professional development relating to RtI should be long-term. This must consist of more than a one day workshop before implementation. The components of RtI are very extensive, and in order to effectively implement the components, educators must be effectively trained. In addition to professional development, these educators must be provided adequate resources, including time. The middle school schedule is often the most difficult aspect of implementing RtI.

Recommendations for Future Research

This study could be enhanced in a number of specific ways. First, instead of analyzing students' *below basic* percentages on the MAP test, students who tested in the *basic* category could be analyzed. Students in the *below basic* category often are students who are considered to be tier 3 students referred to special services. Students who are testing in the basic category are more commonly students receiving tier 2 services. These students tend to have academic struggles and require additional services in order to show

growth. By measuring the students in the *basic* category, a more accurate view of RtI's effectiveness regarding student growth could be measured.

Relating to students in the *basic* category, a multi-year study could also be conducted. The goal of intervention with students is to increase their academic ability, resulting in a proficiency score on the MAP test. Because proficiency is the goal of the state and federal mandates, future studies could examine the implementation of RtI and how it influences the number of students who move from the *basic* category to the *proficiency* category. By conducting this over the course of two years, the study could explore first the students who scored in the *basic* category. These students, who are being provided RtI, could then have their assessment scores analyzed the following year(s) to determine if the intervention was successful in relation to growth.

Another consideration for future research is determining the effects of RtI based on school size. School districts and buildings have a tremendous variance in student population throughout the state of Missouri, as well as the nation. A closer exploration of the effectiveness of RtI in relation to school size would provide greater resources for schools to explore. By analyzing schools without taking into account student population, the researcher is limited in finding what elements of RtI may be more effective in a larger or smaller school.

A final recommendation for future research would be the comparison of student achievement within a district's elementary schools compared to its middle schools. Research shows that elementary school RtI has a higher success rate than middle school RtI. By examining the results of student growth in the elementary level compared to the middle school level, researchers could determine which components of RtI are more or

less effective at the middle school. Once those components were identified, middle schools would be able to alter their existing or potential RtI program.

Summary

RtI's effect at the middle school level has not proven as effective as at the elementary level. Challenges relating to middle schools include schedule design, curriculum requirements, and larger discrepancies in learning ability. Before the IDEA 2004, a discrepancy model was required to determine if a child needed special services. Students who qualified had their needs met in a resource room with specialized instructors. With the implementation of the IDEA 2004, an RtI model was introduced as an alternative method to qualify students for special education placement.

The design of RtI was intended to incorporate interventions throughout the child's academic experience. These interventions were designed to assist the child with deficient skill sets in order to increase academic achievement and avoid special education placement. This model was also used as an alternative approach when qualifying students for special education. By intervening earlier, educators could assist students with their shortcomings, without having to wait for a discrepancy to be found in their ability level.

The essential components described throughout the research relating to RtI were universal screening, professional development regarding tiered instruction/differentiation/RtI, standardized instructional interventions, progress monitoring, clearly established goals and outcomes, and administrator participation. Included in these components is differentiated instruction within the general classroom. The belief with differentiated instruction was that not all learners learn at the same pace

or in the same way. By differentiating the instruction in the general classroom, students will have a higher rate of success and a lower rate of special education referral.

Within the IDEA 2004, RtI is described as a three- tiered approach to intervention. The first tier of intervention incorporates research-based instruction in the classroom. Additionally, differentiated instruction is provided to all students in the general classroom. To support differentiated instruction, instructors are provided professional development on how to meet multi-level learners. The second tier of RtI focuses on specific skill sets among small groups. Students who have similar weaknesses are provided intense interventions with a specialist to overcome their struggles. The final tier is related to special education for students who have not found success in tier 1 or 2.

A quantitative study was conducted to examine the relationship between middle school buildings' level of RtI implementation and student achievement. Student achievement was determined by 8th grade Communication Arts MAP scores. Buildings selected to take part in the study were part of districts that were members of the Southwest Center for Educational Excellence in Southwest Missouri.

Within the 42 public school districts that are members of the SCEE, there are 50 middle schools. Each of the 50 middle school principals were sent a survey. The survey consisted of four questions and 10 implementation statements, which related directly to implementation levels. All implementation statements were developed based on current research. Of the 50 principals, 35 responded to the survey. The survey instrument determined the level of RtI implementation within each building. Additionally, the percentage of students who scored *below basic* on the 8th grade Communication Arts

MAP test and the buildings' MAP index scores were collected for each of the 35 buildings.

A PPMC was conducted to determine the relationship between RtI implementation level and student achievement. The PPMC results supported little to no linear relationship between RtI implementation and student achievement. These results allowed the researcher to determine that the level of RtI implementation, therefore, has little to no relationship with student achievement and a null hypothesis not being rejected.

Quartile tables were constructed to determine which buildings had the highest level of academic achievement in relation to percentage *below basic* and MAP index score. Four buildings were determined to be the highest performing of the 35 responding. These buildings had each of their survey answers analyzed to determine which essential components of RtI were being implemented.

Within these four buildings that were categorized as highest achieving, the essential components of RtI found to be implemented included: universal screening, professional development relating to differentiated instruction and tiered interventions, establishing clear goals, progress monitoring, the use of standardized instructional interventions, and administrator participation. Essential elements of RtI that were not prevalent among these buildings included professional development related directly to RtI and a building wide RtI schedule.

Appendix A

Survey Rating Implementation of RtI

1. For what school district do you work?
2. Of what building are you principal of?
3. I agree to voluntarily participate in this study.
4. I am a building principal.
5. Data from student assessments are collected as part of a universal screening process multiple times throughout the year.
6. Professional development in regard to RtI is provided.
7. Professional development specific to the tier of students with whom teachers are working is provided.
8. Professional development specifically related to differentiated instruction is provided.
9. The progress of students receiving tier 2 and tier 3 services is monitored.
10. Standardized instructional interventions are available for teachers to use with students.
11. Goals and expected outcomes are clearly established and communicated among staff and students.
12. Administrators participate in all steps of RtI.
13. RtI time is a fixed component of the building wide master schedule.
14. RtI is implemented in my building.

Appendix B

Likert Scale Responses for Survey

0 – Not Implemented

1 – Researching Implementation

2 – Beginning Implementation

3 – Partial Implementation

4 – Full Implementation

Appendix C

Disposition Letter from IRB Committee

LINDENWOOD

LINDENWOOD UNIVERSITY ST. CHARLES, MISSOURI

DATE:	August 30, 2013
TO:	Mark Fitch
FROM:	Lindenwood University Institutional Review Board
STUDY TITLE:	[489617-1] RTI Characteristics Commonly Implemented in High Performing Middle Schools
IRB REFERENCE #:	
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
APPROVAL DATE:	August 30, 2013
EXPIRATION DATE:	August 30, 2014
REVIEW TYPE:	Expedited Review

Thank you for your submission of New Project materials for this research project. Lindenwood University Institutional Review Board has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to the IRB.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the completion/amendment form for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of August 30, 2014.

Please note that all research records must be retained for a minimum of three years.

If you have any questions, please contact Tameka Tammy Moore at (618) 616-7027 or tmoore@lindenwood.edu. Please include your study title and reference number in all correspondence with this office.

If you have any questions, please send them to IRB@lindenwood.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Lindenwood University Institutional Review Board's records.

Appendix D

Cover Letter for Survey

June 15, 2013

Building Principal

My name is Mark Fitch, and I am a student at Lindenwood University working on my Educational Doctorate. For my final project, I am examining which RTI characteristics are commonly implemented in middle schools. It has been determined that your school district is a member of the Southwest Center for Educational Excellence. As the principal of your school, I am inviting you to participate in this research study by completing the linked survey. To complete the study please select the level of implementation that you feel best describes your building in regard to each statement.

The following questionnaire will require approximately 5 minutes to complete. There is no compensation for responding or is there any known risk. In order to ensure that all information will remain confidential, please do not include your name. Copies of the project will be provided to my Lindenwood University instructor and to my dissertation committee. If you choose to participate in this project, please answer all questions as honestly as possible.

Participation is strictly voluntary and you may refuse to participate at any time. Thank you for taking the time to assist me in my doctoral pursuit. The data collected will provide useful information regarding the key factors for middle schools implementing RTI. Completion of the survey will indicate your willingness to participate in this study. If you require additional information or have questions, please contact me at the number listed below. If you are not satisfied with the manner in which this study is being conducted, you may report (anonymously if you so choose) any complaints to Lindenwood University.

Sincerely,

Mark Fitch

Dissertation Chair - Trey Moeller
tmoeller@wcr7.org

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Vita

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