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The Effects of a Systematic Progress Monitoring Program on Sixth Grade Middle School Reading Scores and Teacher Perceptions

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by

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A Dissertation submitted to the Education Faculty of Lindenwood University

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This dissertation has been approved as partial fulfillment of the requirements for the

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at Lindenwood University by the School of Education

Dr. Lynda Leavitt, Dissertation Chair — Date

Dr. John Long, Committee Member — March 25, 2011 Date

Dr. Jennifer Patterson, Committee Member — March 25, 2011 Date

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 here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

Full Legal Name: Jamie Alexander Smith

Signature: Jamie Alexander Smith Date: 3/25/11

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Abstract

The development of quality educational programs, designed to meet the needs of all students, is a pivotal responsibility of educators and yet a considerable challenge due to the diverse needs in each school. Many consider the Response to Intervention (RtI) model to be one initiative with the greatest potential to improve education for all students (Tilly, 2006). RtI is a process that screens students for concerns, uses scientifically based strategies to teach, intervenes to address identified learning needs, assesses and charts progress, and ultimately adjusts the educational support to meet the varied needs of all learners (Dickman, 2006).

A vast majority of RtI research has focused on elementary models; however, there is a need for research regarding RtI at the secondary level. It is likely that students benefiting from RtI at the elementary level may require similar supports in middle and high school. This mixed method study was designed to consider the appropriateness of implementing progress monitoring, a component of an RtI model, in a middle school setting. The study measured the reading growth of sixth grade students following the implementation of a systematic progress monitoring program and examined teachers' perceptions regarding the impact of this program on student achievement, instructional decision-making, and the classroom learning environment.

Sixth grade student reading scores were compared prior to and following the implementation of the progress monitoring program. Additionally, data from classroom observations, teacher responses to reflection questions, and teacher interview responses were analyzed to measure the perception of teachers regarding the effectiveness of

implementing class-wide progress monitoring. The results indicated that student achievement was positively impacted by the systematic progress monitoring program without interruption to the learning process. The qualitative data from teachers provided insight and recommendations to further aid in the development of an appropriate middle school RtI model. The quantitative data provided evidence to support the benefit of allocating additional time and energy to the development of a model that supports continued screening, monitoring, and intervening to support the learning needs of students across the educational continuum.

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Chapter 1: Introduction

As an eager administrator introduces a new program or instructional approach, a veteran teacher sighs and whispers to colleagues about the familiarity of the *new* program and the swing of the pendulum. The history of reading instruction and the varied approaches implemented across time is one example of such a pendulum swing. Some educators believe that the newest educational *fad* riding this pendulum is the legislative initiative referred to as Response to Intervention (RtI) (Tilly, 2006). Conversely, research and literature clearly support and encourage educators to embrace the RtI movement noting longitudinal accounts and evidence to support the development and use of these practices in an effort to produce outcomes that are more positive for all students (Buffum, Mattos, & Weber, 2009; Tilly, 2006). Published research related to various aspects of RtI spans thirty years (Jenkins & Jewell, 1993; Shinn, Good, Knutson, Tilly, & Collins, 1992; Wesson, 1991; Deno, 1985; Guthrie, Seifert, Burnham, & Caplan, 1974). Briefly summarized, RtI is a process of screening students to identify those at-risk of failure, monitoring students' responsiveness to provided instruction, and finally determining a plan of action to address realized concerns (Strangemen, Hitchcock, Hall, & Meo, 2006).

While RtI in name is not explicitly addressed, the 2004 reauthorization of the Individuals with Disabilities Education Act (IDEA) stimulated current educational trends, as it forced educators to begin researching, discussing, and ultimately defining RtI and clarifying its use in individual school districts. A wealth of educational resources, strategies, and terminology has been introduced in the field of education as the RtI movement has gained momentum (Kame'enui, 2007; Zirkel, 2007). To some educators

this is new information, while for others, depending on their educational experience and length of tenure, the information represents just another educational reform or initiative (Tilly, 2006). As districts and states work to address the implementation of RtI and its various components, some educators are concerned that the eagerness to increase student achievement has resulted in publishers lining-up to assist schools through the sale of new and improved packaged programs and materials (Nichols, 2009).

Based on the primary investigator's experience as a Director of Special Services, these packaged materials appear to vary based on individual district or building needs. These educational companies offer comprehensive new research-based curriculum series, costing hundreds of dollars, or tailored data management systems that may cost $1 to $5 per student to implement. The primary investigator has collaborated with various educators and administrative groups to learn that districts often examine these new materials through small pilot programs or staff review committees, ultimately to select the materials believed to meet their needs most adequately. Some districts have eagerly plunged ahead with the adoption and implementation of these new programs, determined to positively affect student achievement. However, due to the lack of training and support, inadequate resources, and the haphazard implementation of these new programs, the result is often a lack of student achievement (Nichols, 2009). Ultimately, many educators are waiting for history to repeat itself: "frustrated teachers abandon the approaches, new ones appear, and the pendulum swings again" (Nichols, 2009, p. 1).

Legislation, such as IDEA 2004, has provided the catalyst for states and local education agencies to consider the merits of a school-wide RtI approach. There are

districts that have already worked diligently to incorporate components of the RtI framework into their implementation of other professional development and school improvement initiatives such as Professional Learning Communities (PLC) (Fuchs & Fuchs, 2006). Despite these efforts, there continue to be educators who do not welcome the RtI initiative.

In the foreword of the book, *Pyramid Response to Intervention*, DuFour (2009) addressed the trend in some schools to view this initiative or any that expects educators to work collaboratively and to synchronize their teaching efforts as "an annoying departure from their day-to-day labors" (p. xv). In other schools with a student-focused culture, educators "acknowledge and embrace a shared purpose of helping all students learn at high levels and take collective responsibility for achieving that shared purpose" (DuFour, 2009, p. xv). The latter approach of collective responsibility for the shared purpose that all students can learn, outlined by DuFour, is the heart of the RtI movement whether combined with other educational initiatives or not.

DuFour further noted that the purpose of *Pyramid Response to Intervention* "is not about responding to legislative initiatives or implementing new programs" (DuFour, 2009, p. xvi) but about transforming schools. School districts have a similar responsibility. Their responsibility is to find a philosophy or framework that supports a common goal their community of educators can collectively work together to meet.

Background

This study looked at progress monitoring, one component of an RtI model, in an effort to consider the potential merits and benefits of an RtI model in the middle school

setting. RtI, while simplistic in some respects, is complicated in others. As stated, RtI is not a packaged program that a school can order and implement through a well-designed professional development workshop hosted by the sponsoring company. RtI is one approach schools can take in their efforts to transform education and improve learning outcomes for all students.

With RtI, individual districts and schools need to consider long-standing educational practices, such as progress monitoring and the utilization of curriculum-based measurement, and combine them in the development of a systematic approach to address the learning challenges their students face regularly. Teachers and administrators know that learning challenges vary; therefore, the systematic approach must be multifaceted in order to address the needs of all students in a particular building or community. This study explored the process of developing a school specific RtI model and specifically focused on the implementation of one component of an RtI model, progress monitoring, through the use a specific reading assessment, the Maze. Figure 1 represents the major aspects of an RtI model as discussed in research, while Figure 2 illustrates the various sub-components that comprised the assessment component of the RtI model for the researched district.

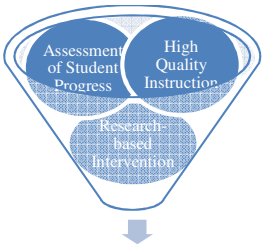

Figure 1. Major aspects of an RtI Model.

Assessment of Student Progress
High Quality Instruction
Research-based Intervention
Learning Outcomes

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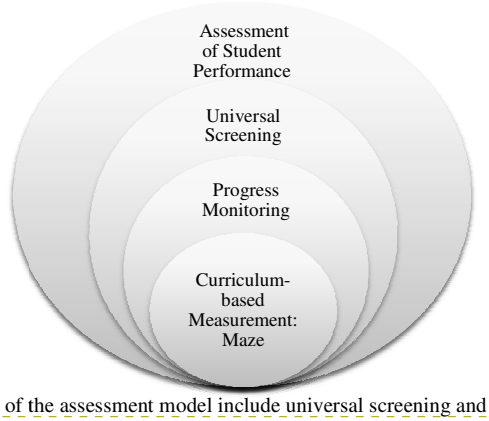

Figure 2. Sub-components of the assessment model include universal screening and progress monitoring. Curriculum-based measurements are one type of assessment used for progress monitoring. Maze is one type of curriculum-based measurement tool.

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Research Problem

Response to Intervention has been an initiative primarily rooted in the elementary setting. Until recently, the consideration and adoption of RtI, or any of its components, at the middle and high school level has been delayed or absent altogether, specifically school-wide systems designed to support such a process (Johnson & Smith, 2008). One consideration is that the instructional model at the middle school level differs from the model used at the elementary level. With this in mind, Mellard and Layland (2009) noted the need to develop new RtI models to address the differences between an elementary and secondary setting effectively. In the area of reading, students face increased expectations to read and comprehend complex text in the secondary setting; however, teachers charged with addressing the needs of students who struggle, have little research to cite in their search for scientifically-based interventions appropriate in a middle or high school setting (Brozo, 2009).

Johnson and Smith (2008) outlined the great need for successful RtI models at the middle school level, as this is a critical point in a student's educational career and one that lays the foundation for future success in high school. The demands of the middle school setting include a more rigorous curriculum, various teachers for content classes, increased responsibility, and more, which lead to additional stress for typical students (Johnson & Smith, 2008; Mellard & Layland, 2009). Intervention models, such as RtI, may support all students struggling with these typical demands and are increasingly imperative for students with additional basic skill deficits (Johnson & Smith, 2008).

At the middle school level, most students have moved beyond the need for reading instruction and have matured into confident and competent content readers who read with the purpose of learning (Brown-Chidsey, Johnson, & Fernstrom, 2005) rather than working to learn how to read. Unfortunately, there are middle school students who continue to struggle with the mechanics of reading fluency and comprehension (Brozo, 2009). Through this transitional period, middle school teachers and administrators have a tremendous responsibility to address the literacy needs of these adolescent readers adequately (Brozo, 2009). These educators are charged with the important task of determining which students have mastered these reading skills and are ready for the next level of instruction, as well as identifying the struggling students in need of further instruction in reading.

Reading and Language Arts teachers, as well as middle school administrators, may benefit from a systematic progress monitoring program as an early component of an RtI model. The purpose of the progress monitoring program in this study was to provide

staff with individual and class data to guide instructional decisions, design supportive learning environments, and develop and monitor the effectiveness of implemented research-based interventions in the general education setting. The initial goal was to support the learning of all students in the general education classroom as outlined in RtI literature (Buffum, Mattos, & Weber, 2009; Bradley, Danielson, & Doolittle, 2007). The design of this study was to assist one middle school as it began to implement an RtI model intended to provide greater support to students who were not responding adequately to the primary reading instruction provided in the general education classrooms.

Purpose of the Study

At-risk readers are in jeopardy of school failure and, ultimately, of dropping out of high school (Brozo, 2009). School districts should continue to develop and implement appropriate reading interventions for below-level readers, starting in the middle school setting and continuing into high school. Ehren (2009) stated, “It is a myth that adolescence is too late for intervention” (Ask the Experts, question 14). Ehren (2009) noted that the RtI experience at the secondary level lacks the history of evidence that is present in the elementary setting. The recommendation noted the need to focus on the prevention of future failures such as alienation, dropping out, and anti-social behavior at the secondary level (Ehren, 2009). One necessary component of an RtI model is a method to gauge the effectiveness of research-based interventions; one option is the practice of progress monitoring (Stecker, Fuchs, & Fuchs, 2005).

At the elementary level, there has been an increased trend to monitor students' academic progress using curriculum-based measures (CBM) as a means for screening and progress monitoring (Mellard & Layland, 2009; Duffy, 2007). The incorporation of these assessment measures, which may include the use of the oral reading fluency or a cloze-reading procedure, is an important component of an RtI model. Unfortunately, faculty in a middle school setting are less likely to employ systematic progress monitoring of students and, therefore, have less data to use when making instructional decisions or developing specific strategies for intervention (Johnson & Smith, 2008). Johnson and Smith (2008) noted the lack of scientific-based support for secondary-level interventions.

The purpose of this study was to measure the reading growth of sixth grade middle school students following their participation in a systematic progress monitoring program as a component of an RtI model. Students' overall reading growth was measured by a 3-minute curriculum-based measurement administered through the universal screening process used to assess all students at the beginning, middle, and end of the school year. Staff utilized a static reading passage for this process. This comparison provided evidence of the effectiveness of progress monitoring and the impact that the monitoring had on students' reading achievement in a middle school setting. Additionally, this study examined teachers' perceptions regarding the impact of a progress monitoring program on student achievement, instructional decision-making, and the classroom learning environment, as these perceptions are critical for program fidelity and longevity.

Significance of the Study

Fuchs, Mock, Morgan, and Young, 2003, (as cited in Deno et al., 2009) noted, "One of the foundational elements of RtI is a technically adequate system of screening and progress monitoring" (p. 44). To be technically adequate, a system is required to be specific in its design, meeting the research-based requirements. The body of evidence to support the utilization of progress monitoring as a valid and reliable tool for informing instruction is strong; however, the research has a greater emphasis on the use of progress monitoring in the elementary setting, or with students identified with a specific learning disability (Brown-Chidsey, Johnson, & Fernstrom, 2005; Jenkins & Jewell, 1993; Fuchs, Fuchs, Hamlett, & Ferguson, 1992). Additionally, much of the related research has focused on oral reading fluency (R-CBM), a more time-intensive CBM that would require students to be assessed individually (Jenkins, Graff, & Miglioretti, 2009; Stecker, Lembke, & Foegen, 2008; Hale et al., 2007; Hamilton & Shinn, 2003; Shinn, Good, Knutson, Tilly, & Collins, 1992)

Unfortunately, the R-CBM form of progress monitoring may not be suited or well received for use at the middle and high school level, due to the time and effort necessary to obtain individual oral reading fluency samples (Mellard & Layland, 2009). Nevertheless, progress monitoring is a critical component of the RtI model. Mellard (2009) clearly addressed the importance, noting that "if a school doesn't have an approach for formative assessment such as progress monitoring and using the results to inform instruction, RTI won't make any sense" (para. 1).

To understand how other Missouri districts are embracing RtI and progress monitoring, the primary investigator sent a request to more than twenty districts, seeking information regarding their level of RtI implementation. Eleven districts responded and verified that most districts had more RtI components implemented at the elementary level than at the middle school level. Responses to questions about implementation in grades six through eight illustrated that four districts had few, if any, RtI components implemented at the middle school level, while four had emerging components such as universal screening and progress monitoring, and three had more established systems in place, but were only in the second year of implementation. Table 1 provides a summary, and Appendix A gives a detailed account of this information.

Table 1

Level of RtI Implementation in 11 Districts

Level of Implementation	Number of MO Districts	Years of Implementations
No Implementation to Minimal	4	1-3
Emerging Implementation	4	0-2
Established Implementation	3	2

The information from area districts coupled with the chapter 2 literature review indicated a need for further research related to the development, implementation, and effectiveness of an RtI model at the middle school level. This study provided quantitative and qualitative data regarding the effects of a systematic progress monitoring system, as a

component of an RtI model, on student achievement, instructional decisions made by classroom teachers, and the learning environment at the middle school level.

Hypotheses and Research Question

Null hypothesis. Sixth grade students will not increase their rate of reading growth after participation in a progress monitoring program.

Alternate hypothesis. Sixth grade students will increase their rate of reading growth after participation in a progress monitoring program.

Research question (RQ). What are reading teachers' perceptions regarding the impact of a progress monitoring program at the middle school level for the sample of sixth grade students?

RQ (a): What are the teachers' perceptions regarding the impact of a progress monitoring program on student achievement?

RQ (b): What are the teachers' perceptions regarding the impact of a progress monitoring program on instructional decision-making for their classes and individual students?

RQ (c): What are the teachers' perceptions regarding the impact of a progress monitoring program on their classroom learning environments?

Definition of Terms

AIMSweb. AIMSweb is a web-based data management system that provides a benchmark and progress monitoring program with direct, regular, and continuous student assessment. Students, parents, teachers, and administrators receive results through an

online reporting system and provide information regarding students' responses to provided interventions (AIMSweb, 2008c).

Curriculum-based measurement (CBM). Curriculum-based measurement (CBM) is an approach used to screen students or monitor their progress and proficiency in basic school skills on a continual basis. With CBM, teachers and schools can assess individual responsiveness to instruction (National Center on Response to Intervention, n.d.; Deno, 1985).

eMINTS. The eMINTS National Center is a program developed through the collaborative efforts of the University of Missouri, Missouri Department of Elementary and Secondary Education, and the Missouri Department of Higher Education. This non-profit organization provides professional development for educators, created by educators, with the purpose of "transforming education for all learners through high-quality teaching powered by technology" (eMINTS, 2009, para. 1).

Local Education Agency (LEA). The term Local Education Agency may refer to an individual public school district or a cooperative group that oversees multiple schools in rural areas. The responsibility of a LEA could include, but may not be limited to, the operation of educational programs and finances for the district or cooperative group (education.com, n.d.).

Maze. Maze is an assessment that students complete while reading silently. The Maze is a multiple-choice close task in which the first sentence of the passage is undisturbed. From then on, every seventh word is removed and replaced with three words inside parenthesis. One of the three words is the correct word from the original passage.

Research has provided evidence of the Maze as a reliable and valid measure of reading comprehension (AIMSweb, 2008a).

Missouri Department of Elementary and Secondary Education (MO DESE). This is a service agency that serves as the administrative branch of the Missouri State Board of Education. The agency works with all stakeholders to maintain a quality public education system. The responsibilities of the agency range from early childhood education through adult educational services (MO DESE, 2010a).

Oral Reading Fluency (R-CBM). The standard oral reading fluency assessment is also referred to as the reading curriculum-based measurement (R-CBM) (AIMSweb, 2008b). This assessment tool utilizes a standardized set of administration procedures and grade-level passages to measure the number of correct words a student can read aloud in 1-minute. The calculation of number of words read correctly per minute is highly reliable and valid in measuring the general reading ability, including comprehension, for most students (Shinn, Good, Knutson, Tilly, & Collins, 1992).

Professional Learning Community (PLC). The PLC model focuses on the three big ideas that include ensuring all students learn, educators collaborate, and a focus on results. Professional Learning Communities require educators to collaborate and to monitor individual student achievement and success to ensure that all students are learning (DuFour, 2004).

Progress Monitoring. Progress monitoring is a scientifically based practice used with individual students or entire classes as a means to assess the academic performance

of students and evaluate the effectiveness of instruction (National Center on Student Progress Monitoring, n.d.).

Response to Intervention (RtI). Response to Intervention is an educational model focused on early identification of students at risk for learning difficulties. The basis of the model is on the premise that "most students thrive in general education classrooms" (National Research Center on Learning Disabilities, 2007b, para. 1). For students who do not, this model provides additional attention to the academic area of concern, through a second tier of instruction or intervention. When necessary, additional tiers may be available for students with more severe learning difficulties (National Research Center on Learning Disabilities, 2007a; 2007b).

School-wide/Universal screening. School-wide screening refers to the practice of assessing all students, typically three times each academic year. This information identifies students who are not achieving at the expected benchmark level for those at that grade or age level. These students may be at risk of failing high-stakes assessments (Deno et al., 2009).

Scientifically-based research. Research related to the field of education that analyzes and presents the impact of effective teaching on student achievement, includes sufficient numbers of participants in the study, includes study and control groups, applies a rigorous peer review process, and includes replication studies to validate results (IDEA Partnership, 2007a).

Specific Learning Disability (SLD). The Missouri State Plan for Special Education states that a specific learning disability is "a disorder in one or more of the

basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations (MO DESE, 2010b, Reg. III, p. 8).

Tiered Intervention. A component of the RtI model is to have clearly defined levels of intervention. There are varying models with three or more levels of support. The following outlines a three-tiered model approach (Bradley, Danielson, & Doolittle, 2007; Fuchs & Fuchs, 2006).

Tier 1. Tier 1 is research-based general education instruction with universal screening and ongoing progress monitoring to seek out those students not responding to the primary/core instruction (Bradley, Danielson, & Doolittle, 2007; Fuchs & Fuchs, 2006).

Tier 2. Tier 2 includes intervention which increases the intensity of instruction potentially through small group instruction and standard protocol tutoring in addition to the primary instruction, coupled with continued assessment (Bradley, Danielson, & Doolittle, 2007; Fuchs & Fuchs, 2006).

Tier 3. Tier 3 implements intensive instructional interventions; these interventions are specific and individualized to meet the identified need. In some systems this may include special education (Bradley, Danielson, & Doolittle, 2007; Fuchs & Fuchs, 2006).

Limitations of the Study

The duration of the study was a limitation. The study was limited to one school year in an effort to make a statistical comparison of the sample prior to and following the

implementation of the systematic progress monitoring program, while maintaining other constant variables such as maturation, curriculum, and teacher. First semester students were instructed without the use of progress monitoring data; the implementation of the systematic progress monitoring program took place over a period of 15 weeks during second semester. Due to the outlined duration of the study, an associated limitation was the reduced opportunity for progress monitoring. With less monitoring, there were minimal data points obtained throughout the study, thus limiting the data available to teachers when considering potential instructional changes to address student needs.

The population for this study was another limitation. The primary investigator worked exclusively with one rural middle school serving 710 students in sixth through eighth grade. The specific sample group was limited further as the study focused on data from sixth grade reading students and their general education teachers in the selected middle school. With a narrow focus, as applied in this study, the research data may be more difficult to generalize to middle school settings with different demographics. Table 2 provides a comparison of demographic data from the studied middle school and schools across the state of Missouri.

Table 2

Comparison of Demographic Data, 2007-2009

	Middle School			Missouri		
Year	2007	2008	2009	2007	2008	2009
Total Enrollment	682	674	710	900,781	895,833	892,279
Asian	0.7	0.6	0.1	1.7	1.8	1.9
Black	2.6	3.6	3.1	18.1	17.9	17.8
Hispanic	2.1	3.4	3.2	3.4	3.6	3.8
Indian	0.7	1	1.1	0.4	0.4	0.4
White	93.8	91.4	92.4	76.5	76.3	76.1
Free/Reduced Lunch (FTE)*	36	35	40.7	41.8	42.1	43.7

Note. *January Membership Data is used as the denominator when calculating the percent.

Adapted from MO DESE, Core Data as submitted by Missouri Public Schools.

The generalization of the findings from this study to older middle school students in seventh and eighth grade is another limitation for educators and researchers. The studied middle school had a specific reading curriculum in place for sixth grade students, which may not be applicable to other grade levels or schools.

The position of the primary investigator was another specific limitation to this study. As the Director of Special Services, the primary investigator attempted to format the research design in a way that would maximize the confidentiality of participating teachers, especially for the qualitative components. The goal was to afford teachers a

sense of security that would allow for honest and candid responses to the reflection questions and the interview questions. However, due to the sample size of four participating teachers, and the primary investigator's position, it is plausible that the responses may have been impacted by the primary investigator's professional relationship with the teachers. Note that the primary investigator had no direct supervisory duties with the participating staff.

There was no reliable CBM survey available at the time of this study. The developed reflection questions and interview questions align with the literature. Additionally, a panel of three educators, recognized as authorities on RtI, provided input in the development of the reflection questions and interview questions. These tools were limitations due to insufficient evidence of their reliability and validity.

Summary

Response to Intervention is an educational approach that has been deemed another educational fad by some and our best hope for true reform by others since the 2004 reauthorization of IDEA (Buffum, Mattos, & Weber, 2009; Tilly, 2006). As noted in this chapter, the RtI initiative has been heavily rooted in the elementary setting across the nation (Mellard & Layland, 2009). Literature and input from practitioners in the field support the need for further study of RtI and its critical components at the middle and high school level (Brozo, 2009; Buffum, Mattos, & Weber, 2009; Johnson & Smith, 2008). The research in this area is scant, and some practitioners question the appropriateness of an RtI model at the secondary level (Johnson & Smith, 2008). However, educators can agree that middle and high school students are in need of

educational programs and systems that assist them in developing the strong academic foundation that is imperative for their future successes within the rigors of middle and high school curriculum (Duffy, 2007).

In the literature review to follow, the history of educational legislation is discussed, as well as the continued efforts to improve the educational system to enable America's students to move forward in the race to achieve academic excellence. This review examined the history and modern use of RtI, the components of curriculum-based measurements and progress monitoring, as well as the current educational trends and uses of these practices and tools as components of a school-wide system of intervention intended to support the learning and success of all students. A review of these topics as they relate to an elementary setting and their application in a middle school setting are explored. Specific attention was focused on the use of the curriculum-based measurement, the Maze, as the primary tool for gathering student data in this research study.

The purpose of this study was to examine the effects of a systematic progress monitoring program, as one component of an RtI model in a middle school setting, on the reading growth of sixth grade students. Additionally, this study examined teachers' perceptions regarding the impact of a progress monitoring program on student achievement, instructional decision-making, and the classroom learning environment. The outcomes of this research provide educators with some evidence regarding the effectiveness of progress monitoring in the middle school setting. This research will aid in the development of future research studies and educational programs designed to

support the academic growth and success of middle school students, while adding to the body of knowledge regarding the use of one specific RtI component in a secondary setting.

Chapter 2: Review of Literature

This chapter provides an overview of the research on RtI and an examination of researchers' and practitioners' beliefs about this framework and its components. This review examines the research regarding RtI, discussing aspects related to the elementary level and the secondary level. Note that research regarding the implementation of RtI at the elementary level has been ongoing and continues to grow; however, there has been scarce research related to the appropriateness and usefulness of RtI at the middle and high school level (Brozo, 2009; Johnson & Smith, 2008; Mellard & Layland, 2009; Duffy, 2007). The various components of the RtI model, which include universal screening, progress monitoring, and various curriculum-based measurements are examined from the elementary and secondary perspectives as are relevant to this study.

For the purpose of this research, the literature review ultimately focuses on the use of the Maze, a progress monitoring tool, as a potential component of a middle school RtI framework, and investigates teachers' perceptions regarding a systematic progress-monitoring program. Deno et al. (2009) noted that the use of the Maze as a component of a school-wide screening plan was relatively new. Essentially, the literature has documented a need for further guidance at the secondary level, regarding RtI as a framework to address the increased challenges students face in middle and high school settings (Brozo, 2009). More specifically, the literature review illustrates the need for research related to the individual components that are most useful to teachers and can yield a positive impact on overall student achievement. Research across all content areas would aid educators at the secondary level in developing tiered instructional and

intervention models, with the expectation that these models would become common components of the preschool through high school educational systems (Duffy, 2007).

Educational Reform through Legislative Initiatives

A historical review of educational reform could easily be mistaken for a more modern day reform agenda for education, as many of the overarching themes of each are strikingly similar. In 1965, President Lyndon B. Johnson requested that Congress take action to address the educational needs of students in America. In his State of the Union address, President Johnson outlined a national agenda that proposed, "we begin a program in education to insure every American child the fullest development of his mind and skill" (U. S. Department of Health, Education & Welfare, 1965, p. 5). President Johnson challenged the nation "to improve the quality of American life" through education (U. S. Department of Health, Education & Welfare, 1965, p. 7).

Fortunately, the commitment of the United States to education stands strong and now embraces *all* students in the educational process, including students with disabilities. In President Johnson's message to Congress, the concerns focused on allocations of funds, the order of priority between preschool, primary, secondary and collegial programs, and a desire to target specific areas of concern in each level of education. The particular needs addressed services for (a) children of low-income families, (b) library resources and instructional materials, (c) supplemental education centers and services, (d) regional education laboratories for research and teacher training, and (e) a commitment to strengthen state directed educational programs nationwide (U. S. Department of Health, Education & Welfare, 1965). These points of concern bear a remarkable resemblance to

the current educational issues belabored in news stories and articles across the country, 45 years later.

A review of modern-day educational reform and legislation leads to a discussion on RtI, an initiative rooted in a larger agenda focused on improving access to educational opportunities for all students (Brown-Chidsey & Steege, 2005). This movement compels educators to ensure that high-quality, research-based instruction and intervention are provided to all students (Bradley, Danielson, & Doolittle, 2007; Kame'enui, 2007). Two legislative policies require schools to utilize evidence-based practices. The No Child Left Behind Act of 2001, often referred to as NCLB, and the Individuals with Disabilities Education Improvement Act reauthorized in 2004, known as IDEA 2004, are the guiding laws behind the RtI movement (Buffum, Mattos, & Weber, 2009; Brown-Chidsey & Steege, 2005).

On January 8, 2002, President George W. Bush reignited this country's focus on the public education system and heightened the federal government's role in monitoring student achievement when he signed the NCLB legislation, the reauthorized Elementary and Secondary Education Act of 1965. NCLB was established on four pillars: greater accountability for student achievement, increased flexibility in the use of federal funds at the state and local level, additional options for students and parents to access supplemental educational resources and school choices, and the implementation of scientifically-based educational methods (U. S. Department of Education, 2004a). The intended purpose of NCLB was to provide an opportunity for all students to learn and be successful within the public school system (U. S. Department of Education, 2004a). Congress required states to

employ research-based instruction and to monitor student progress throughout the implementation. These requirements were necessary to substantiate the effectiveness of any given program (Brown-Chidsey & Steege, 2005).

While NCLB had a direct link to the RtI initiative, the final IDEA 2004 regulations were a more notable catalyst for its move to the forefront of educational reform (DuFour, Foreward, 2009; Bradley, Danielson, & Doolittle, 2007; Kame'enui, 2007; Brown-Chidsey & Steege, 2005). The regulations provided an allowance for local school districts to review a student's progress, or lack of progress, following the implementation of scientific, research-based interventions as one component of the eligibility determination process, when considering a specific learning disability (SLD) (Bradley, Danielson, & Doolittle, 2007). Additionally, the regulations granted states the ability to determine a student's eligibility based on the alternative research-based procedures, and no longer mandated the application of a significant intellectual versus achievement discrepancy model in the determination of eligibility for a SLD (Bradley, Danielson, & Doolittle, 2007). Finally, the regulation required public agencies to employ comprehensive evaluation procedures that include a component of responsiveness to evidence-based interventions, while employing the state criteria in determinations of a child's eligibility for a SLD (U. S. Department of Education, 2007). While NCLB is applicable to all students, and IDEA 2004 is applicable only to the eligibility and provisions of special education services for students with disabilities, it is clear that both policies have influenced general education practices (Brown-Chidsey & Steege, 2005).

This nation continually strives to better the educational experience of all students, including those most at-risk. One important component of the IDEA 2004 is the allowance for and encouragement of state and local educational agencies to employ an RtI approach when addressing these learners, prior to their consideration for special education eligibility. This legislative act references almost thirty years of research supporting the use of "whole-school approaches" in the areas of reading, behavior, and early intervening services, to "reduce the need to label children as disabled in order to address the learning and behavioral needs of such children" (U. S. Department of Education, 2004b, Section 601[c][5][F]).

One of the most noteworthy components of RtI in modern schools is its focus in the general education setting. RtI places the initial responsibility to mediate student concerns with the front-line, general education teachers. With this focus, the need and expectation to consider a student for special education services under IDEA has become second to the implementation of "a series of timely, systematic, increasingly focused, and intensive research-based interventions, which are the responsibility of the regular education program" (Buffum, Mattos, & Weber, 2009, p. 3). Buffum, Mattos, and Weber (2009) further noted that our public education system is on the "precipice of dramatic positive change" (p. 9), as educators begin to focus on the learning outcomes for all learners, integrating "'special education' and 'regular education' into simply 'education'" (p. 9).

Understanding and Supporting Educational Reform

The age-old concern of enlisting the support and buy-in of veteran teachers for any new initiative can be a tremendous hurdle for school administrators. Komp (n. d.) provided guidance for administrators charged with addressing sentiments that RtI is just another swing of the pendulum. This guidance stated that data gathered through RtI validates good instruction, and good teachers will want more data to assist their efforts to improve instruction. Furthermore, Komp (n. d.) shared that RtI can complement teachers' experience, and together with their decision-making skills, the data can become a powerful tool. However, DuFour (2009) cautioned that some educators might view such tasks as disruptions to their daily labors. DuFour (2009) further explained that select educators "inevitably . . . respond to these intrusions with a spirit of compliance rather than a spirit of commitment and thus are able to minimize the impact of improvement initiatives" (p. xv).

Some educators, specifically those who continue to view teaching as a job performed in isolation, feel validated in their reservations with RtI because of the increased expectation that they will work collaboratively with peers to review data, discuss patterns in achievement scores, and brainstorm appropriate evidence-based interventions for at-risk learners (Buffum, Mattos, & Weber, 2009). Many of these long-time, dedicated educators have braved numerous educational initiatives (Komp, n.d.). While the core values of RtI may not be fundamentally new and are not part of an educational fad, they are providing an innovative and more flexible perspective on some of the successful systems developed in schools across America (Sweet, 2004; Stecker &

Fuchs, 2000). A review of NCLB and IDEA 2004 illustrates these are companion laws, focused on an increase in data-based decision making, aimed at closing the achievement gap of students in the various subgroups (IDEA Partnership, 2007b). These concerns, similar to those addressed in President Johnson's January 1965 State of the Union, validate the continued need for educators to find practices that are more effective to address the enduring concerns rooted in our national education system.

Many school district leaders have begun to research the defining characteristics of RtI, the legal implications associated with it, and methods for applying it in their school district; and most importantly, school district leaders have initiated the development of an RtI framework that will improve the educational experience for their students (Stecker, Lembke, & Foegen, 2008; Tilly, 2006). Tilly (2006), described RtI as "the single best opportunity we have had to improve education for all students" (p. 1). As district leaders in the United States continue to explore RtI, district-level discussions and expectations are beginning to move away from the wait-to-fail model and focus more on practices that incorporate this framework as a problem-solving approach coupled with a system of tiered interventions. Educators have begun to lay the foundation for an educational model focused on student outcomes, with an emphasis on learning for all (Bradley, Danielson, & Doolittle, 2007).

This shift in focus results in positive change for students and staff, as individual school cultures and educational philosophies transform (Buffum, Mattos, & Weber, 2009). Staff members are beginning to view problem-solving teams and the tiered-model of intervention approach as an integral component of their primary job responsibility,

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which is to ensure that all students are learning (Buffum, Mattos, & Weber, 2009). The Principal of Keysor Elementary in Kirkwood, Missouri, described the change within his building as the adoption of a new "habit of mind, a mindset, a philosophy, a habit – that is part of good teaching" (Daesch, Gatcombe, & Painter, 2009, slide 5).

Based on the primary investigator's experience as a Director of Special Service, there has been an increase in RtI professional literature and staff development opportunities throughout the state of Missouri in recent years. Many professional journals have provided overviews of the RtI initiative. Other information has outlined the impact RtI will have in the general education setting, the potential implications it will have on special education eligibility, specific components used within the framework of individual RtI models, and considerations for districts and schools working to develop a tailored RtI model. RtI has been a key theme in sessions offered by the Missouri's Department of Elementary and Secondary Education (MO DESE), as well as conference programs for the Missouri Council of Administrators of Special Education since 2006 (Missouri Council of Administrators of Special Education, 2010; MO DESE, 2010c). There have been books and special editions of professional journals written with the sole intent of broadening the knowledge base for practitioners and providing districts with RtI guidance. Local education agencies (LEAs) may chose to use this information in the development of policies, procedures, and practices to ensure consistency with the intent and spirit of the existing legislation, NCLB and IDEA 2004 (Council for Exceptional Children, 2007; Sonoma State University, CalSTAT, 2006).

State and Local Support in Missouri

State departments, as well as the U. S. Department of Education, have taken specific steps to provide reliable resources to educators as the RtI initiative continues to grow (Fuchs & Fuchs, 2006). The Missouri DESE is a state department taking specific action to support the RtI initiative. Missouri's DESE has developed a new state-level position, the Director of Three-Tiered Model Coordination, effective August 2009. The design of the position has created a climate of collaboration between the Division of School Improvement, the Division of Career Education, and the Division of Special Education. The title and design of the position have established the expectation that various avenues of education work together.

Missouri DESE has provided educators with ongoing RtI support through the state website's three-tiered model page and specific professional development opportunities (2010c). One example was the 2010 statewide RtI Summit held in Springfield, MO, designed to display "RtI as a tiered instructional model to implement systems of change" (Lieberman, 2010) for superintendents, principals, directors, and other school leaders. The success of the summit led to multiple presentations across the state. Missouri's DESE worked to ensure that all state stakeholders were able to participate and have a common understanding from a national perspective, and hear from schools actively implementing RtI. Moreover, the state department provided a free presentation during the summer of 2009 on integrating tiered models of support. The presentation topic focused on the use of RtI and PLC models in elementary and secondary schools.

There has been a growing interest and demand for RtI related support in recent years. The available information and data on RtI at the elementary level have been greater than the information and data on RtI at the middle or high school level (Johnson & Smith, 2008; Duffy, 2007). However, during the 2009-2010 school year, personal communication with school leaders from the researched district and surrounding districts, revealed a heightened interest in RtI and tiered-models of intervention among middle school leaders.

The interest shown by school leaders focused on how components of the RtI initiative could become meaningful components in a middle school program that could operate in conjunction with other district initiatives such as Positive Behavior Support and/or PLC. The number of middle school educators in attendance at the RtI Forum hosted in November 2009 confirmed this increased interest (C. Montgomery, personal communication, July 12, 2010). The forum, hosted by the St. Louis area Regional Professional Development Center, provided districts that were ready and planning for further implementation of their RtI model a means to collaborate with other local educators. Through professional development such as this, Missouri's educators were seeking additional support in the area of elementary and secondary RtI models.

The Components of an RtI Model

One essential aspect of the RtI initiative for LEAs to understand and embrace is the fact that there is not a single-specific and regimented program that effectively addresses individual situations (Bradley, Danielson, & Doolittle, 2007). This initiative, alone or in combination with other educational models such as PLC, provides a

framework from which districts create their own RtI model tailored for their needs (Tilly, 2006). This framework supports and encourages LEAs to work collaboratively among their pool of highly qualified educators to develop and build tiered-models of instruction and interventions that will meet the needs of their unique student body and community in an effective and appropriate manner.

Bradley, Danielson, and Doolittle (2007) addressed that the U. S. Department of Education has recognized that a one-size fits all approach to RtI implementation would be problematic in districts and schools across the nation. Bradley, Danielson, and Doolittle (2007) quoted the analysis of comments of the IDEA Regulations that supported the need for flexibility with RtI implementation and special education eligibility:

> New § 300.307(a)(3) (proposed § 300.307(a)(4)) recognizes that there are alternative models to identify children with SLD that are based on sound scientific research and gives States flexibility to use these models. For example, a State could choose to identify children based on absolute low achievement and consideration of exclusionary factors as one criterion for eligibility. Other alternatives might combine features of different models for identification. We believe the evaluation procedures in section 614(b)(2) and (b)(3) of the Act give the Department the flexibility to allow States to use alternative, research based procedures for determining whether a child has an SLD and is eligible for special education and related services. (p. 9)

As states and LEAs study and determine their capacity to implement RtI in their schools, there are key elements to incorporate into individual models. Dickman (2006) outlined six succinct parts of the RtI Process: "screen, teach, intervene, probe, chart, and adjust" (p. 33). Similarly, the RTI Action Network has denoted four essential components with specified sub-areas that nearly mirror these simple categories. These components include high quality instruction, use of tiered instruction through three levels of intervention (core, group, and individual), ongoing student assessment through use of universal screening and progress monitoring with data based decision making rules, and family involvement (National Center for Learning Disabilities, n.d.).

The components of many RtI models incorporate three tiers of instruction or intervention (Missouri Department of Elementary & Secondary Education, 2010c; Buffum, Mattos, & Weber, 2009; Tilly, 2006). The basis for Tier-1 instruction is research-based general education instruction, with universal screening and ongoing progress monitoring, to identify those students not responding to the primary/core instruction (Fuchs & Fuchs, 2007). Tier-2 interventions increase the intensity of instruction through small group intervention, in addition to the primary instruction, coupled with continued assessment (Vaughn & Roberts, 2007). Finally, Tier-3 is available for students continuing to respond inadequately at Tier-2. These students move to Tier-3 for an even more individualized and intensive instructional intervention (Fuchs & Fuchs, 2007). In some systems, this may include special education (Bradley, Danielson, & Doolittle, 2007; Fuchs & Fuchs, 2006). Figure 1 illustrates how students

move between each tier based on noted progress or continued concerns of inadequate progress based on individual data.

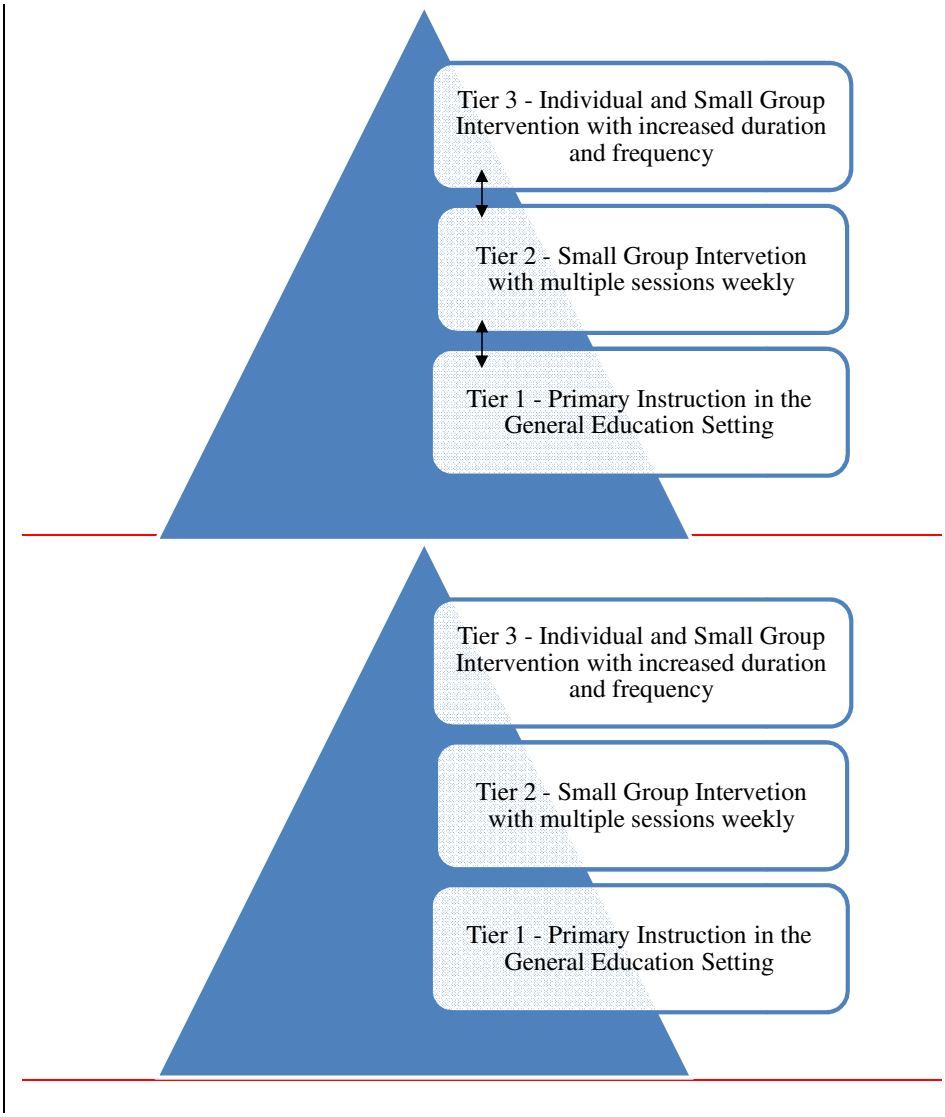

Figure 3. Three-Tiered Model of Intervention. Progress monitoring data assists staff members in determining the level of intervention individual students require for continued growth.

Two Distinct RtI Approaches

Within the framework of tiered-intervention, a district selects one of the two specific approaches used to intervene and support struggling learners. The first approach is the standard treatment protocol, which employs a more systematic series of steps to strengthen fidelity of treatment and eliminate the need for team review and determination prior to the implementation of research-based interventions (Duffy, 2007). The second approach is problem solving. The problem-solving approach relies on a series of steps, but has more individualization. In the problem-solving approach, a team reviews and analyzes individual student data, then develops specific intervention strategies for the identified deficits (Duffy, 2007).

A review of the framing literature provides specific RtI components that districts and schools are encouraged to address when developing their individual RtI framework. The National Research Center on Learning Disabilities (2007a) stressed the need to involve general education staff in evaluating students' performance within the curriculum. The use of universal screeners to evaluate behavioral and academic needs is encouraged. The research outlines varying expectations in terms of an appropriate schedule of consistent and ongoing progress monitoring, depending on type and need. Some sources discuss blueprints indicating the need to tailor programs for individual buildings or districts (Jenkins, Graff, & Miglioretti, 2009; Johnson & Smith, 2008;

Stecker, Lembke, & Foegen, 2008; Fuchs & Fuchs, 2007; Stecker, Fuchs, & Fuchs, 2005).

The progress monitoring components should be conducted with clearly established data rules to identify struggling learners who need an instructional change, referral to the problem-solving team, or placement in Tier-2 or Tier-3 to receive the appropriate evidence-based interventions (Brown-Chidsey & Steege, 2005; Stecker, Fuchs, & Fuchs, 2005). Researchers discuss the need to develop a system to analyze progress monitoring data (Bradley, Danielson, & Doolittle, 2007). The progress monitoring system would help ensure appropriate implementation of the interventions, measure the effectiveness of specific interventions, and indicate any need for additional modifications (Stecker, Lembke, & Foegen, 2008; Fuchs & Fuchs, 2007; National Research Center on Learning Disabilities, 2007; Dickman, 2006). The fidelity of intervention implementation in each of the established tiers also needs monitoring. Finally, individual districts and schools should reference designated RtI models such as the standardized treatment protocol or an individualized, problem-solving model, to determine which approach is best suited for their purpose (National Research Center on Learning Disabilities, 2007a).

Criticism of RtI

There has been some criticism of RtI, noting a shortfall in research that supports the efficacy of the problem-solving approach in the same manner as the standardized treatment protocol approach (Strangemen, Hitchcock, Hall, & Meo, 2006). Other criticism has specifically discussed the impact of RtI on SLD identification. Kavale,

Holdnack, and Mostert (2005) voiced concern over the lack of specificity in determining a student's responsiveness to an intervention. The RtI model addresses no response to intervention but neglects to address marginal responsiveness. The inability of the RtI approach to consider underachievement during the SLD evaluation process was an addressed issue and could limit an RtI eligibility determination to a single criterion (Kavale, Holdnack, & Mostert, 2005). These points would be relevant for school leaders to be cognizant of when making decisions regarding the most appropriate RtI approach to adopt and when developing specific guidelines and goals for the program. Careful consideration and attention to these shortfalls in the planning phase would better prepare staff to be knowledgeable and equipped to implement RtI successfully.

District leaders might benefit from reviewing the six RtI components discussed by Fuchs & Fuchs (2007), as they gather resources during the early planning stage. These considerations are similar to the aforementioned components but are still noteworthy. Leaders should consider (a) the number of tiers to include within the intervention model, (b) the methods to be used for identifying students for preventative interventions, (c) the format of these interventions, (d) the method for classifying students' response to intervention, (e) the scope of the multidisciplinary evaluation preceding special education, and (f) the role and purpose of special education (Fuchs & Fuchs, 2007). These considerations will be vital to the development process for individual leadership teams. Each team will need to establish a systematic RtI approach that will support the learning challenges facing the students within their community (Tilly, 2006).

Assessment Practices Implemented in an RtI Model

Strecker, Lembke, and Foegen (2008) discussed that reforms in education have emphasized and increased the accountability associated with assisting all learners to meet the new and higher student achievement levels regardless of ethnic background, language, or disability status. Researchers have highlighted the critical need for schools to develop technically sound systems of assessment (Deno et al., 2009; Stecker, Lembke, & Foegen, 2008). The need for specific systems that incorporate an ongoing assessment component is an essential aspect of a school RtI model. These assessment systems will directly impact efforts to effectively address and meet America's expectations that "every child must have the best education our Nation can provide" (U. S. Department of Health, Education & Welfare, 1965, p. 7) and "close the achievement gap with accountability, flexibility, and choice, so that no child is left behind" (U. S. Congress, 2002, p. 1).

Universal screening is one part of a technically sound assessment system frequently administered at the beginning, middle, and end of the school year. A primary purpose of universal screening is to identify students potentially at risk, and determine who may require additional intervention (Deno, et al., 2009; Fuchs & Fuchs, 2007). To enhance student identification, schools can consider combining universal screening with progress monitoring (Jenkins, Hudson, & Johnson, 2007).

Progress monitoring is the practice of ongoing assessment to monitor students' response to general education instruction or tiered intervention (National Center on Student Progress Monitoring, n.d.). Fuchs and Fuchs (2007) recommended the use of a universal screener in conjunction with progress monitoring for a specified duration, for example 5-weeks, to further evaluate which students are at-risk and in need of additional

support. The intention was to prevent over-identification, which could drain a school's resources by indicating a need to provide intervention to students who may not demonstrate ongoing need (Fuchs & Fuchs, 2007; Jenkins, Hudson, & Johnson, 2007).

Researchers have noted that progress monitoring is the means by which educators determine program effectiveness and the need for educational change at both the elementary and secondary level (Deno et al., 2009; Mellard D. F., 2009; Johnson & Smith, 2008; Fuchs & Fuchs, 2006). Stecker, Lembke and Foegen (2008) reported that "many schools are moving toward large-scale implementation of RTI practices with periodic screening of all students in general education and more frequent progress monitoring for targeted learners" (p. 48). Research supports the use of data from universal screening and continued progress monitoring to drive instructional decisions as a fundamental facet of any RtI model (Stecker, Lembke, & Foegen, 2008; Brown-Chidsey & Steege, 2005). Three potential criteria for schools to consider and research when choosing a progress monitoring tool are its sensitivity to student growth, significance to educational instruction, and the instructional time needed to administer (Stecker, Lembke, & Foegen, 2008).

Assessment Tools Utilized in an RtI Model

While the RtI movement and its focus on the use of curriculum-based measurement (CBM) for screening and progress monitoring have been in the national spotlight since 2004, the development of alternative approaches to assess student progress are far from new. In the mid to late 1970s, the University of Minnesota's Institute for Research on Learning Disabilities produced CBM as a resource for teachers. Dr. Stanley

Deno, a professor and coordinator for learning disabilities licensure at the University of Minnesota, along with colleagues, worked to develop CBM procedures designed to assist special educators comply with the IDEA in 1975 to monitor student performance (Stecker, Fuchs, & Fuchs, 2005). The purpose of CBM for teachers was to use simple and technically sound data to chronicle student growth and to realize the need for instructional program modification (Deno, 2005; Stecker, Fuchs, & Fuchs, 2005).

To date, CBM research literature has more than 30 years of historical evidence to maintain the position that teachers who use CBM to inform instructional decisions have a greater impact on student achievement than those who do not use CBM in both reading and mathematics (Stecker & Fuchs, 2000). The use of CBM is an accepted form of progress monitoring due to its sensitivity to student growth, its significance to instruction, and its lack of interruption to learning; additionally, CBM is less vulnerable to gender, race, ethnicity, or disability biases than other kinds of assessments, as it relies solely on the direct assessment of student performance (Stecker, Lembke, & Foegen, 2008). In the area of reading, the approach most frequently reviewed in literature is the implementation of oral reading fluency (R-CBM) and, to a lesser degree, the Maze task. Hamilton and Shinn (2003) noted the following:

> More than 20 years of research on curriculum-based measurement of reading (R-CBM) has demonstrated that counting the number of words read aloud correctly in 1 minute from standard passages is an excellent measure of general reading proficiency, including reading comprehension. (p. 228)

Research continues to emphasize oral reading fluency (R-CBM) and schools' utilization of this CBM as a universal screener and progress monitoring tool. However, one primary concern regarding a broader use of R-CBM comes from a shift in the purpose of reading, as students advance into the upper elementary grades and into middle school. Researchers have questioned whether the R-CBM is the reading assessment that is most reliable and valid for measuring student progress in the upper grades (Jenkins & Jewell, 1993; Guthrie, Seifert, Burnham, & Caplan, 1974).

Some research has supported the notion that the sensitivity of the CBM oral reading fluency (R-CBM) decreases in relationship to a student's reading comprehension at approximately the fifth grade (Shinn, Good, Knutson, Tilly, & Collins, 1992). Brown-Chidsey, Johnson & Fernstrom (2005) concurred with Shinn et al.'s findings and further noted that "starting at about fourth grade, if not before, students are often expected to 'read to learn'" (p. 388). With the shift in the purpose of reading and the noted concern that R-CBM does not provide more unequivocal evidence of comprehension, the Maze task can be utilized as an appropriate progress monitoring tool for the upper-level elementary and middle school students (Jenkins & Jewell, 1993). Currently, there have been fewer validity studies of the Maze than on oral reading fluency (Jenkins & Jewell, 1993). However, there is evidence, while small in comparison to R-CBM, which supports the validity of the Maze as a progress monitoring tool (Brown-Chidsey, Johnson, & Fernstrom, 2005; Shin, Deno, & Espin, 2000; Jenkins & Jewell, 1993; Guthrie, Seifert, Burnham, & Caplan, 1974). Guthrie, Siefer, Burnham, and Caplan (1974) stated,

> Teachers and reading specialists need a simple, accurate means to monitor the progress of children during the course of a reading program. Particularly if the program emphasizes comprehension skills, the comprehension levels of an individual or a group should be assessed regularly to supply feedback to the teacher about the effectiveness of the instructional approach. Standardized tests are insufficient for this purpose since they require time and money and cannot be given with sufficient frequency to provide the feedback that is needed for continuous revision and improvement of the teaching program. (p. 162)

Guthrie, Seifert, Burnham, & Caplan (1974) reported a correlation of .82 between performance on the Maze and standardized achievement tests, with retest reliability over .9. Jenkins and Jewell (1993) noted that a correlation study comparing the use and sensitivity of the Maze between lower and upper elementary students confirmed that the Maze is more appropriate for use with the older elementary students with learning disabilities or students considered educationally at-risk. Fuchs, Fuchs, Hamlett, and Ferguson (1992) similarly concluded that "additional research exploring use of the Maze appears warranted, because . . . the face validity for the Maze, as an overall indicator of reading proficiency, may be greater than for oral reading" (p. 448).

Research has documented the reliability and validity of the Maze as a curriculum-based measure of students' general reading ability in or about fifth grade. While it is imperative that educators use reliable and valid measures to elicit student data to inform their instructional decisions, another factor not to overlook is the perspective of the

frontline teachers implementing a progress monitoring program. These teachers have the responsibility of utilizing the data to affect the educational experience of their learners, positively. An effort to find literature related specifically to teacher perspectives of RtI, progress monitoring, or other related topics produced limited results.

Teacher Perspectives

The reading teachers were selected for participation in the pilot program because of the district's curriculum design, which continues to provide direct reading instruction in the sixth grade. However, as this systematic progress monitoring program is considered for further extension into seventh and eighth grade, there is research that will be relevant and necessary for middle school leaders to consider and reflect upon prior to mandating the implementation of such an initiative in upper-level Language Arts classrooms. Reflection on the literature related to teachers' beliefs about reading instruction in a middle school setting and research on the impact of a progress monitoring program, coupled with diagnostic feedback, may allow school leaders to increase the comprehensiveness of their approach to planning for the needs of their learning community.

Research focused on the beliefs of middle school language arts teachers concluded that reading instruction was the responsibility of elementary teachers (Howerton, 2006). Howerton (2006) found that many teachers believed that the environment of a middle school classroom was not favorable for reading instruction. Teachers' focus on content and subject matter was more predominant than building basic skills (Howerton, 2006).

One interesting aspect of Howerton's (2006) research connected teachers' beliefs with their need to change the instructional practices they implement in an effort to prepare students for high-stakes accountability assessments. This research highlighted the notion that the success of federally or state driven initiatives, mandated through legislation, is stifled, as these reforms do not account for or allow teachers ample time to prepare for the policy changes (Howerton, 2006). Calderhead, 1996, (as cited by Howerton, 2006) noted, "instructional practices and beliefs are intricately interwoven, with one depending on the other" (p. 23). One of the most important aspects of Howerton's research was that a larger number of content teachers are not equipped to provide reading instruction beyond some basic comprehension strategies; thus, the incorporation of specific diagnostic feedback might be beneficial to and yield greater student achievement (Howerton, 2006). Furthermore, such feedback might potentially lead to increased teacher buy-in, thus nudging belief systems and changing instructional practices concerning the implementation of new systems such as progress monitoring (Howerton, 2006).

Wesson (1991) examined the reading growth of students based on teachers' use of CBM with follow-up consultation to review the student data. The results of the study indicated there was greater benefit from follow-up consultation among the studied group of teachers than there was from follow-up with the expert consultant (Wesson, 1991). This information strengthens the current trend for educators to work collaboratively.

A similar study examined the effects of CBM with and without feedback on instructional planning in reading (Capizzi & Fuchs, 2005). Prior math and spelling

research focusing on diagnostic feedback was supportive. Capizzi and Fuchs found no significant effect on teachers' differentiation of reading instruction among second grade teachers in the general education setting, following diagnostic feedback and the support it provided. However, the study did indicate that diagnostic CBM feedback was beneficial to elementary special education resource teachers (Capizzi & Fuchs, 2005).

Finally, Ball and Gettinger (2009) conducted a study regarding the effects of feedback on performance and classroom environments with kindergarten students. Their study provided teachers with performance data from administration of the *Dynamic Indicators of Basic Early Literacy Skills* (DIBELS) three times throughout the nine-month study (Ball & Gettinger, 2009). The study did not provide participating teachers with recommendations or training to utilize student data. Furthermore, the results of the study found that students of teachers who received feedback outperformed their peers in classrooms without feedback (Ball & Gettinger, 2009). The informal surveys completed at the conclusion of the study indicated that the feedback had limited impact on their approach to instructional practice and to alterations in their classroom environments. These findings were consistent with previous studies illustrating performance data alone are not significantly useful to teachers in making adaptations to their instruction or classroom environments. These researchers concluded that "providing teachers with feedback from periodic, class-wide progress-monitoring can lead to greater gains in students' performance than providing no feedback at all" (Ball & Gettinger, 2009, p. 207).

Summary

The public education system has spent more than four decades working toward a goal to ensure that American children receive a quality education that meets their individual needs, including those students with intrinsic challenges based on environment, socio-economic, or disability status. The RtI movement has been an elementary initiative working to achieve this goal. However, as students in RtI schools continue to mature and transition to the next level, schools are considering the need to expand support for these learners through a similar model that incorporates basic RtI components. This review of literature highlighted the limited research available that addresses the use of curriculum-based measurements, specifically the Maze, as a progress monitoring tool in the secondary setting. Additionally, the researcher reviewed the limited research regarding teachers' perceptions of RtI and the impact of the various components on their ability to plan and provide meaningful instruction to their students.

As the push for RtI continues, educators serving secondary students may benefit from an increase in research designed to measure the effectiveness of CBM tools in this setting. Chapter 3 will describe the research methodology utilized in this study as one district expanded progress monitoring into the middle school setting with sixth grade reading students. The chapter will outline the research design used to implement the progress monitoring program, the methods used to determine the effectiveness of the program, and tools utilized to measure teachers' perceptions of the program.

Chapter 3: Methodology

This study investigated the effects of a systematic progress monitoring program on the achievement scores of sixth grade middle school readers in the general education setting. Additionally, this study examined the participating teachers' perceptions regarding the program and its effects on student achievement, instructional decision-making, and the classroom environment. Creswell (2008) explained that an embedded, mixed method study is one that simultaneously gathers both quantitative and qualitative data, where one data source supports the other primary data. This embedded, mixed method study used classroom observations, teacher responses to reflection questions, and teacher interview responses as the qualitative data to gain a clear understanding of teacher perceptions regarding the utilization of progress monitoring in the general education setting. The students' Maze assessment scores were the quantitative data. Together, the two sources extended the primary investigator's understanding of the overall results. The mixed method approach was beneficial. The strengths of both research models were critical to establishing a comprehensive conclusion to the overarching research question on the effectiveness of a progress monitoring program (Johnson & Onwuegbuzie, 2004).

Hypotheses and Research Question

The hypotheses, research question, and sub-questions for this research study are as follows:

Null hypothesis. Sixth grade students will not increase their rate of reading growth after participation in a progress monitoring program.

Alternate hypothesis. Sixth grade students will increase their rate of reading growth after participation in a progress monitoring program.

Research question (RQ). What are reading teachers' perceptions regarding the impact of a progress monitoring program at the middle school level for the sample of sixth grade students?

RQ (a): What are the teachers' perceptions regarding the impact of a progress monitoring program on student achievement?

RQ (b): What are the teachers' perceptions regarding the impact of a progress monitoring program on instructional decision-making for their classes and individual students?

RQ (c): What are the teachers' perceptions regarding the impact of a progress monitoring program on their classroom learning environments?

Research Setting

The study was conducted in a rural middle school in a community approximately 60 miles outside of St. Louis, Missouri. Permission was secured from the superintendent (Appendix B), and invitational letters were submitted to participating teachers (Appendix C). As an administrator of the district, the primary investigator had access to the quantitative data. The primary investigator's administrative role was a limitation. The primary investigator did not have supervisory responsibilities for the participating teachers; however, the primary investigator carefully considered and addressed this limitation in the research design.

In the participating district, the use of progress monitoring tools to monitor individual student reading progress began as an initiative through the Title 1 Reading program, piloted with at-risk third grade students in the 2005-2006 school year. With each subsequent year, elementary teachers have increased the scope of their implementation of progress monitoring. To date, progress monitoring has become a staple component of the school district's instructional model for reading with students in grades kindergarten through fifth grade.

The district curriculum provides specific reading instruction through the end of sixth grade. However, in the 2009-2010 school year, the district began addressing the need for continued reading instruction for struggling students, using a systematic approach. Administrators decided to offer specific reading instruction through targeted intervention classes for students in grades six through ten. With the implementation of this new instruction, it became evident that data would be required to systematically identify struggling students in need of reading interventions at both the middle and high school level.

In August 2009, the middle school began preparing for the incoming class of sixth graders by reviewing student reading folders that included individual reading data from the elementary school. The administrators, counselors, and teachers considered the multiple types of progress monitoring data provided through the use of curriculum-based measures at the elementary level. Additionally, they received professional development from the district reading coordinator regarding the data system used at the elementary

level. This led to an interest in the possibility of continuing the use of these assessment tools in the middle school setting.

Through a more in-depth review of the elementary progress monitoring system, coupled with stagnant or declining student achievement scores on the 2009 Missouri Assessment Program (MAP) test (Appendix D), administrators were prompted to make the decision to implement universal screening in all grade levels at the targeted middle school during the 2009-2010 school year. Furthermore, this review prompted added consideration of and work toward the adoption of a tiered-model of intervention. As the middle school administrators worked with their elementary peers and attended professional development activities related to RtI, the need to establish a systematic method for progress monitoring became evident. Administrators in collaboration with teachers viewed progress monitoring as a starting point for classroom teachers to determine which students were struggling. The intent of this important step was to provide teachers a method for identifying students that could benefit from the implementation of intervention strategies in the general education setting, prior to referring for more targeted interventions in Tier 2 or Tier 3.

With these considerations in mind, the sixth grade reading teachers were selected to pilot a systematic progress monitoring program. The program focused on the utilization of the Maze to progress monitor all sixth graders, on a regular basis, during the second semester of the 2009-2010 school year. As the primary investigator collaborated with building-level administrators, the two-fold purpose for this pilot program, and subsequent research study, was established.

First, administrators were interested in determining if there was a statistical difference in the rates of reading growth for students participating in the progress monitoring program compared to the same student population prior to the participation in the progress monitoring program. Secondly, the purpose of the pilot program was to determine how effective, manageable, and meaningful the data gained through the progress monitoring program would be to the teachers. The administrators wanted to know how the data influenced instructional decisions in the classrooms, whether the data affected the learning environment of individual classrooms, and whether teachers felt the data were reasonable measures of student achievement.

It was important for administrators to respect teachers' time. Through the pilot program, the administrators measured whether the additional responsibilities placed on teachers would be worthy of the added effort, as instructional and planning time are precious commodities. The overarching goal was to implement the program and evaluate the effectiveness on a small scale, in an effort to engage staff in the process of developing a quality RtI model that would positively affect the achievement of district middle school students.

Quantitative Sample

The sample consisted of sixth grade students enrolled in a general education reading course in a rural middle school. As reported by the MO DESE in November 2009, the enrollment for the participating district was 3001 students; 710 of those students attended the middle school and 220 were in the sixth grade. The student population at the middle school consisted of 92.4% Caucasian, 3.2% Hispanic, 3.1%

African American, 1.1% Indian, and .1% Asian students. The Free and Reduced Lunch status for the school population was 40.7% and the Special Education subgroup at the middle school was 11%. This demographic information provides an overview of the school population from the participating district and may be beneficial to other school leaders investigating this study.

A limitation of the study was the sample (n = 50) because it was specific and isolated to one grade level in a middle school setting. Mellard and Layland (2009) noted that "no research studies regarding screening at the secondary level" (p. 3) existed. Their review further noted that there had been three studies of CBM. The first study looked at the use of CBM in written expression with tenth graders, while the second study examined the benefits of peer-assisted learning strategies coupled with CBM in high school mathematics. The third study was more closely related because it investigated the use of a concept maze task to evaluate students' content learning (Mellard & Layland, 2008). The use of the Maze was unique because the primary focus was on evaluating and identifying at-risk readers in a middle school setting.

Qualitative Sample

According to Creswell (2008), homogeneous sampling requires the primary investigator to sample "individuals or sites based on membership in a subgroup that has defining characteristics" (p. 216). The primary investigator employed homogeneous sampling to select participants for the qualitative sample of this study, based on teacher participation in the progress monitoring pilot program at the studied middle school. The sample group (n = 4) consisted of female teachers who taught two or more reading

classes in addition to other content classes throughout the school day. As a group, they represented 36 years of teaching experience with an average tenure of 7 years in the district of study. Only one of the participating teachers had teaching experience in another district. One teacher had a reading specialist certification, all had their elementary education certification up to sixth grade and one to eighth grade, two had additional certifications to teach early childhood students (birth to third grade), and two had certification in some area of special education. The information provides an understanding of the qualifications of educators who participated in the study.

Quantitative Procedures

Instrumentation. There were two distinct motives for the selection of the AIMSweb Maze as the progress monitoring tool for this study. The first was the availability of the tool as a district resource purchased in 2006 for use by elementary teachers. The second rationale related to the 2008 review of progress monitoring tools by the National Center on Student Progress Monitoring. This review found the Maze to be a tool that met the seven scientific standards of a proven progress monitoring practice (AIMSweb, 2008d). Table 3 outlines the seven criteria from the Standards for Educational and Psychological Testing. The development of these standards came from the "Joint Committee appointed by the American Educational Research Association (AERA), the American Psychological Association (APA), and the National Council on Measurement Used in Education (NCMUE), and the Individuals with Disabilities Education Act (IDEA)" (AIMSweb, 2008d, p. 1).

Table 3

The Seven Scientific Standards of Proven Progress Monitoring Practices

Criteria	AIMSweb Score
Sufficient number of alternate forms with evidence of equal difficulty	Met
Rates of improvement specified	Met
Benchmarks specified	Met
Evidence of improved student learning or teacher planning	Met
Sensitivity to student improvement	Met
Reliability	Met
Validity	Met

Note. Adapted from *AIMSweb CBM Tools Meet Scientific Standards for Use in Frequent Progress Monitoring.* Retrieved February 14, 2009, from http://www.aimsweb.com/index.php?mact=News,cntnt01,print,0&cntnt01articleid=27&cntnt01showtemplate=false&cntnt01returnid=74

Universal screening. As part of the initiative to use universal screening in the middle school, the administration adopted a screening process that utilized the school-wide assessment team (SWAT) approach similar to the model employed at the elementary level. The primary investigator, in collaboration with the reading coordinator, identified a team of individuals with prior knowledge of student assessment protocol and experience. The district reading coordinator trained the team to ensure assessment results from the universal screening would be reliable and valid.

The middle school SWAT was composed of seven members from the special education department (teachers, coordinators, and an administrator). This team assessed

all sixth through eighth grade students during the week of September 28, 2009 through individual and class-wide assessment sessions employing three AIMSweb curriculum-based measurement tools: the oral reading fluency (R-CBM), the Maze and the CBM-Math. Subsequent universal screening during the weeks of January18, and May 10, 2010, utilized the initial SWAT approach to conduct the individual R-CBM assessments only. To enhance test validity and increase consistency and efficiency, the district reading coordinator, with support from two SWAT members, conducted one large-group assessment session to administer the Maze and CBM-Math assessments in the building's common area. Students from each grade level were assessed during the single testing sessions, respectively. All students building-wide, except for those identified to participate in the alternate state assessment, per their Individual Education Plan, participated in this battery of CBM assessments.

The sixth grade students took the same Maze passage during each of the three universal screening assessments. The decision to administer the same Maze passage for screening allowed the primary investigator to make a direct comparison of student scores on the same passage, thus providing the ability to more accurately determine the degree of reading growth for each individual student (Deno et al., 2009). The basis for this decision was the result of consultation with a national researcher in the area of reading and curriculum-based measurement (E. Lembke, personal communication, July 29, 2009). The design of the AIMSweb product instructs educators to utilize three separate benchmark passages.

Class-wide progress monitoring. As part of the sixth grade pilot progress monitoring program, the reading teachers were required to administer, grade, and enter individual assessment scores into a prepared Excel spreadsheet designed to manage the reading data for their classes. This took place five times over the course of the spring 2010 semester (February 23, March 16, March 30, April13, April 27). These data provided each teacher with individual student graphs that charted the student's progress and trend line (Appendix E). These data sheets were due to the building administrator for review five days following each assessment. The primary investigator observed the teachers three times during the progress monitoring assessment periods as they administered the class wide Maze to verify the validity of implementation (Appendix F). Additionally, the primary investigator verified the grading of assessments for the randomly selected students (n = 50), at the conclusion of the pilot program, including the universal screening materials and the progress monitoring packets. To further verify accuracy, the primary investigator reviewed the district reading database to ensure that data entry from student booklets was correct.

Qualitative Procedures

One week prior to the implementation of the pilot program, the participating teachers received specific professional development regarding the administration, scoring, and utilization of the Maze. Following the administration of specific Maze assessments, teachers responded to four reflection questions (Appendix G). The purpose of incorporating reflection questions was to capture the teachers' thoughts regarding the program throughout the study. Each teacher received an electronic Word document with

the four specific reflection questions to allow each teacher to type or hand write her responses based on her level of comfort. Teachers had the option of sending the primary investigator their responses via intercampus mail to protect their confidentiality.

Approximately four weeks following the initiation of the program, the teachers participated in a collaborative meeting with the district reading coordinator. The meeting format was an informal question and answer session to further support their efforts through this initiative. In response to the questions and needs of participating teachers, each received specific literature and research information (Appendix H) regarding the use of the Maze, following the subsequent question and answer session with the reading coordinator. The teachers were encouraged to contact the coordinator directly at any point throughout the trial for further support.

In May 2010, following the final universal screening by the SWAT team, each reading teacher participated in a one-on-one interview with the district reading coordinator. The interview consisted of 14 open-ended questions (Appendix I). The reading coordinator conducted all interviews to provide the teachers with an opportunity to respond candidly without limitation due to the primary investigator's role as a district administrator. The primary investigator considered the use of an interviewer independent of the district to provide further anonymity for staff. However, there was concern that further discussion and opportunity to clarify details critical to the further development of an RtI model for the middle school would be lost. Through discussion and feedback with the participants, it was determined that the reading coordinator was more appropriate for this task. The professional transcriber received copies of each digitally recorded interview

and subsequently provided the primary investigator with the typed transcripts (Appendix J). The reading coordinator has secured the interview recordings for retrieval and analysis, if a need would arise.

To develop reflection questions and interview questions that were meaningful and appropriate, the primary investigator collaborated with three knowledgeable individuals respected for their contributions to the growth of RtI in their respective areas. Of the three experts, one was a nationally recognized researcher and presenter on RtI related topics. The other two experts were experienced school administrators and both worked as consultants to support the development, implementation, and growth of RtI models in both the elementary and secondary settings in their geographic area.

Three critical criteria to consider in the development and evaluation of a progress monitoring tool include the sensitivity of the measurement tool to student growth, the meaningfulness of the data to instructional decisions, and the time required to administer the instrument (Stecker, Lembke, & Foegen, 2008). With these criteria in mind, the primary investigator developed specific reflection questions to gain the perspective of teachers regarding the manageability of the program and their utilization of the data to inform instructional decisions.

Similarly, the primary investigator aligned interview questions with the major themes found in the literature. Specifically targeted themes included the impact of progress monitoring data on student achievement, the ability to make meaningful changes to instruction, the development of specific intervention tasks, and inquiries regarding changes to the classroom environment and routines as they related to the overall

instructional plan (Stecker, Lembke, & Foegen, 2008; Stecker & Fuchs, 2000). Additionally, for administrative purposes and further development of in-district support to expand this pilot program, questions related to collaboration among colleagues and professional development needs were included.

Data Analysis Procedures

At the conclusion of the data collection period, May 2010, all quantitative reading data were gathered. The primary investigator accessed the Research Randomizer website (http://www.randomizer.org/form.htm) for assistance in the selection of the final sample (n=50 students). Only students who fully participated in the study were eligible to be included in the final sample population. To ensure student confidentiality, the primary investigator employed a coding system, assigning a number 1 through 50 to each student record, prior to further analysis (Appendix K). The primary investigator conducted a statistical analysis of the student data through the application of a *z*-test for difference in means on student growth rates in reading. This analysis was applied to the null hypothesis: Sixth grade students will not increase their rate of reading growth after participation in a progress monitoring program.

This statistical analysis utilized the universal screening data from the Maze to determine the rate of growth for individual students during first and second semester. The aim was to determine if there was a statistical difference in the rate of growth during second semester, compared to first semester, based on the new variable, the systematic progress monitoring program.

Following a review of the *z*-test data and the qualitative data from teacher participants, the primary investigator identified a need to conduct a secondary statistical test. The analysis of variance (ANOVA) was applied to compare the average of each of the five progress monitoring assessment scores earned by students in the sample group.

Secondary null hypothesis: There will be no difference in the student progress monitoring score means.

With regard to the classroom observations, teacher responses to reflection questions, and interview transcriptions, it was necessary for the primary investigator to read and re-read each set of observation protocols, submitted responses to reflection questions, and the four interview transcripts multiple times. Creswell (2008) noted that qualitative research is interpretative in nature, thus requiring the primary investigator to "make a personal assessment as to a description that fits the situation or themes that capture the major categories of information" (p. 245). Due to the methodology framework for this study, specifically the effort to promote full disclosure from staff regarding their opinions and beliefs about the progress monitoring program, the primary investigator was dependent on the written and transcribed responses of the participants when analyzing the data and identifying major themes. Chapter 4 contains a review of these themes.

Summary

During the 2009-2010 school year, the researched middle school identified a need to provide reading instruction to struggling readers. This led to the determination that a small pilot program to implement a systematic progress monitoring program might

provide teachers information regarding needed intervention in the general education setting, as well the data needed to place students in targeted intervention classes. All of these actions were part of the school's efforts to begin the development and implementation of the RtI model to aid teachers in addressing the learning needs of all students in this middle school. To maintain consistency with practices at the elementary level within the district, the administration team decided to implement the AIMSweb Maze.

Through the primary investigator's experience as an administrator within the district, and with guidance from Lindenwood professors, the design of this study emerged. This embedded mixed method study was developed to enrich the program and provide the school administrators with additional input from staff, regarding the effectiveness of the systematic progress monitor program. Chapter 4 reports the quantitative and qualitative results. The study discussion, conclusions, and recommendations follow in chapter 5.

Chapter 4: Presentation of Research Findings

This research study implemented a systematic progress monitoring program on a small scale to engage staff in the development of a quality RtI model that could positively affect the achievement of sixth grade reading students in a middle school setting. Administratively there was a need to determine the statistical difference in the measurable rates of reading growth for students' progress monitored regularly, rather than measured growth for the same population of students prior to progress monitoring with the Maze. Secondly, there was a need for data to understand how teachers utilized the data to drive instructional decisions in their classrooms, whether the data affected the learning environment of participating classrooms, and whether teachers deemed the data to be a reasonable measure of student achievement. To examine the efficacy of the progress monitoring program and determine the suitability of expanding the initiative to other Language Arts classes, the primary investigator developed hypotheses and a research question.

This embedded, mixed methods study consisted of quantitative and qualitative components. The quantitative component focused on the measured reading growth of sixth grade middle school students, following the implementation of a specific progress monitoring program utilizing the Maze assessment. Two separate statistical analyses of data obtained through the implementation of RtI components in the middle school setting provided evidence of student reading growth. A *z*-test analysis was employed to measure the change in mean growth in student reading scores on the universal screening tool, the Maze, administered in the fall, winter, and spring. The second quantitative data source

came from an ANOVA test of students' progress monitoring scores earned during the sixth grade pilot program implemented during second semester of the 2009-2010 school year.

The qualitative component of the study had three separate data sources. The first qualitative source of data came from classroom observations conducted by the primary investigator in each of the four sixth grade reading classrooms during the Maze assessments on three separate occasions. The second source of data was the analysis of teachers' responses to four reflection questions. The teachers were required to administer the progress monitoring tool, the Maze, on five specific dates. Following the last three assessments, the teachers responded to four static reflection questions. Finally, following the conclusion of the progress monitoring program and the final universal screening assessment, each sixth grade reading teacher participated in a one-on-one interview with the district reading coordinator.

Hypotheses and Research Question

The hypotheses, research question, and sub-questions for this research study are as follows:

Null hypothesis. Sixth grade students will not increase their rate of reading growth after participation in a progress monitoring program.

Research question (RQ). What are reading teachers' perceptions regarding the impact of a progress monitoring program at the middle school level for the sample of sixth grade students?

RQ (a): What are the teachers' perceptions regarding the impact of a progress monitoring program on student achievement?

RQ (b): What are the teachers' perceptions regarding the impact of a progress monitoring program on instructional decision-making for their classes and individual students?

RQ (c): What are the teachers' perceptions regarding the impact of a progress monitoring program on their classroom learning environments?

Quantitative Data Analysis

The quantitative data were a critical component of this study in determining whether there was valid benefit and subsequent reason to require teachers in a middle school setting to take class time to employ aspects of an RtI model, such as universal screening assessments and ongoing progress monitoring. The administrators for the studied middle school, in collaboration with other district staff members, identified a potential need to move toward the adoption of an RtI model, similar to that utilized in the district's elementary schools. The administrative decision to move forward with the program was due to continued concerns that some student subgroups were not making adequate yearly progress in the area of reading, as noted by the 2009 MAP scores, coupled with the development of new intervention classes. School leaders were in need of a systematic way to identify the most appropriate students to participate in the Tier 3 interventions and continuously monitor their growth. For these reasons, universal screening was incorporated into the building-wide assessment schedule effective October 2009, and in January 2010, the sixth grade reading teachers were asked to pilot a

systematic progress monitoring program. From the data generated through the universal screening and progress monitoring program, the primary investigator ran two statistical analyses on two independent data sources, the Maze data from the school-wide universal screening and class-wide progress monitoring data.

School-wide universal screening. A *z*-test for the difference between two sample means was conducted to compare the mean reading growth of students during second semester, to first semester, based on the new variable, the systematic progress monitoring program. The difference between scores for each student's universal screening passages was calculated. These figures were utilized to conduct the *z*-test to compare the means prior to and following the implementation of the systematic progress monitoring program.

Null hypothesis. Sixth grade students will not increase their rate of reading growth after participation in a progress monitoring program.

As depicted in Table 4, the data noted a *z*-value of 4.102 as compared to a critical value of 1.96, with an alpha value of .05, which supports a decision to reject the null hypothesis. The data indicate there is enough evidence to support the claim that the means between the two groups are not equal. There is a statistically significant difference in the rate of reading growth measured following first semester, compared to the growth measured following second semester. The results support the alternate hypothesis that the utilization of a systematic progress monitoring program did statistically increase the measurable reading growth of the sample.

Table 4

Z-Test: Two Sample for Means

	Prior to Progress Monitoring	*Following Progress Monitoring*
Mean	3.34	6.72
Known Variance	14.344	19.602
Observations	50	50
Hypothesized Mean Difference	0	
z	4.102110916	
z Critical two-tail	1.959963985	

Note: Alpha value of .05

Secondary Quantitative Analysis

The purpose of the secondary analysis was to address concerns with fluctuating scores on the progress monitoring data and to examine the impact of students' prior knowledge for an individual passage. To make this determination, it was necessary to establish if one progress monitoring Maze assessment score was statistically different from the other scores.

Secondary null hypothesis: There will be no difference in the student progress monitoring score means.

Class-wide progress monitoring. The primary investigator conducted an analysis of variance (ANOVA) to compare the average of all five progress monitoring test scores earned by the students during the pilot program. This secondary analysis confirmed the results of the *z*-test applied to the rate of growth in reading.

As depicted in Table 5, a comparison of the F-value of 1.0556 to the F-critical value of 2.4102, indicates that the null hypothesis was not rejected. Hence, there was not a statistically significant difference between the average of one or more of the five progress monitoring assessments. This data indicate that student scores did not fluctuate significantly between assessments. The data addressed concerns from staff that scores may have been influenced by a student's prior knowledge of specific topics. Data from the ANOVA support the reliability of the results generated by the *z*-test.

Table 5

ANOVA: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Feb. 23	46	1654	35.957	61.687
Mar. 16	49	1670	34.083	82.243
Mar. 30	50	1824	36.48	111.561
Apr. 13	50	1657	33.14	76.939
Apr. 27	44	1536	34.909	97.806

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	363.8670817	4	90.967	1.0556	0.3793	2.4102
Within Groups	20165.72288	234	86.178			
Total	20529.58996	238				

Qualitative Data Analysis

The qualitative data for this study were an equally important component in determining the effects of the systematic progress monitoring program on the perceptions of the sixth grade reading teachers who participated in the pilot program. The purpose of the research question was to determine the level of buy-in the participating teachers had in the systematic progress monitoring program. Howerton (2006) discussed the need for content teachers to see that instructional practices are interwoven with their perceived best practices in order to adopt and accept change. The primary investigator developed the research question with three sub-questions designed to target specific areas of the instructional process, to link instructional practices with the research study components.

Research question (RQ). What are reading teachers' perceptions regarding the impact of a progress monitoring program at the middle school level for the sample of sixth grade students?

RQ (a): What are the teachers' perceptions regarding the impact of a progress monitoring program on student achievement?

RQ (b): What are the teachers' perceptions regarding the impact of a progress monitoring program on instructional decision-making for their classes and individual students?

RQ (c): What are the teachers' perceptions regarding the impact of a progress monitoring program on their classroom learning environments?

With regard to the research question, the primary investigator incorporated one specific reflection question designed to address the teachers' general perception of the

program. The reflection question asked, “How manageable are the progress monitoring expectations?” The teachers had the opportunity to respond and provide input regarding their perceptions of the program’s manageability three times throughout the study.

The participants each indicated that the program was reasonable. One teacher’s reflection response stated, “The progress monitoring takes a minimal amount of time to administer, grade, and record.” The primary issue for one teacher was “too many tests in a short period” of time. To conclude participation in the study, interview question 13 asked each teacher, “On a scale of 1-10, please rate your opinion of continued use of the progress monitoring program. A [1] means – ‘I have absolutely no desire to participate again!’ and a [10] means –‘This was GREAT and I’d love to participate again in the future!’” Each of the four teachers rated the program an eight or higher on the ten-point Likert scale, as shown in Table 6. One teacher commented, “I think it’s a great thing.” The other commenter agreed, noting she would like “strategies to follow up” and to “start at the beginning of the year.” The responses to both the reflection question and interview question indicate that the participating teachers’ perceptions of the progress monitoring program were positive.

Table 6

Responses to Interview Question 13
Questions 13: On a scale of 1-10, please rate your opinion of continued use of the progress monitoring program. A [1] means – 'I have absolutely no desire to participate again!' and a [10] means –'This was GREAT and I'd love to participate again in the future!

Teacher Interviewed	Scale Score Likert Score 1-10
A	8
B	8
C	8
D	10

Note. 1 represents the lowest possible rating, and10 represents the highest.

A review of participant responses to the reflection questions and interview questions in conjunction with the primary investigator's observations provided further evidence of support and valuable information for school leaders regarding program modifications that may improve the progress monitoring program. These results were synthesized and reported based on the type of data source: classroom observation, responses to reflection questions, and responses to interview questions.

Classroom observations. Fidelity of implementation is a concern noted in RtI literature that generally addresses the implementation of instructional strategies to mitigate deficit skills (Mellard & McKnight, 2006). However, there is discussion within the literature regarding the need for technically sound systems for assessing students, which requires a systematic process with a few specific steps (Deno et al., 2009). In order to make consistent and specific observations in each of the reading classrooms to ensure

the fidelity of the Maze administration, the primary investigator developed an observation form with five general areas: classroom environment, administration routines/procedures, student engagement, teacher involvement, and other noteworthy observations. These areas enabled the primary investigator to look for specific similarities and differences between classrooms, teachers, or testing sessions. These areas were developed based on a review of implementation checklists and guidance in research, as well as a consideration of best practices for administrative walk-through observations utilized within the studied district (Johnson, Mellard, Fuchs, & McKnight, 2006; Mellard & McKnight, 2006).

With regard to classroom environment, the March observations noted similar posters and other visual supports on the walls and within the classroom environment across all four settings. These typically included a poster outlining the parts of speech and three reading posters focused on decoding, predicting, and summarizing. The availability of these resources changed during the April progress monitoring sessions due to the state assessment testing window and state requirements that these visual supports be covered or removed. Teachers did not return these supports to their classroom walls following the state MAP assessment.

The primary investigator noted several environmental differences related to student workspace. Only one of the four classrooms utilized individual student desks. With these individual desks, students sat in a table-style format with four to six desks facing each other to make a tabletop setting. Two classrooms were eMINTS classrooms with computer table/desk stations lining the perimeter of each room. One eMINTS classroom had student computer stations in the middle of the room as well. The second

eMINTS classroom had tables for students to use during non-technology based lessons and assignments. Each narrow table accommodated five students. During any kind of testing situation, students dispersed throughout the room, utilizing the perimeter table space between computers in addition to the regularly used tables in the center of the room. The final classroom utilized science lab tables for student desks. Each lab table seated two students. Around the perimeter of the room, students sat in groups of four, two students per table, with two tables facing each other. In the center of these groups of four, there were two individual tables for students to utilize as well, allowing four more students to sit in the middle of the other groups.

With regard to administration routines and procedures, few differences were significant or noteworthy. Through the progression of observations, which spanned from late March to late April, individual teachers minimally altered their routines and procedures with regard to the administration of the Maze. On designated assessment dates, three of the four teachers began each class period by administering the Maze immediately following the bell to begin class. One teacher protected her sustained silent reading time and chose to administer the Maze on assessment days as the first agenda item following this daily routine. Beginning during the second observation in April, one classroom teacher changed directions during the collection of student packets. Following each Maze assessment, she requested that students leave their test booklets open to the completed passage. She continued the practice of gathering all test booklets open to the passage that needed scoring.

The level of student engagement observed during the Maze assessments demonstrated their level of comfort with this task. This group of students has been participating in universal screening and some degree of progress monitoring for the past 4 years. The students asked minimal questions and illustrated no observable stress during their participation in the universal screening with the SWAT examiners or during their in-class progress monitoring with their reading teachers during second semester. In general, during all observations, the primary investigator observed students engaged in the expected activity. The most important component of student involvement was having a sharpened pencil.

Some noteworthy strategies that were consistent between classrooms included a "drop your pencil, hands up" rule when the timer sounded, as well as an incentive for students to raise their hand if they were able to complete the entire passage before time expired. This consistency demonstrates collaboration between the teachers, as the program training in February did not include discussion regarding these strategies. When a student raised his/her hand, the teacher would note the time so that these students could challenge themselves to complete the next passage more quickly. One specific strategy observed in one classroom involved providing students with a copy of their individual student data graph. Prior to passing out the Maze assessment packets, the teacher provided each student with a copy of a line graph that illustrated their growth or decline on previous Maze tests. Figure 2 is a sample of the graphs provided to individual students.

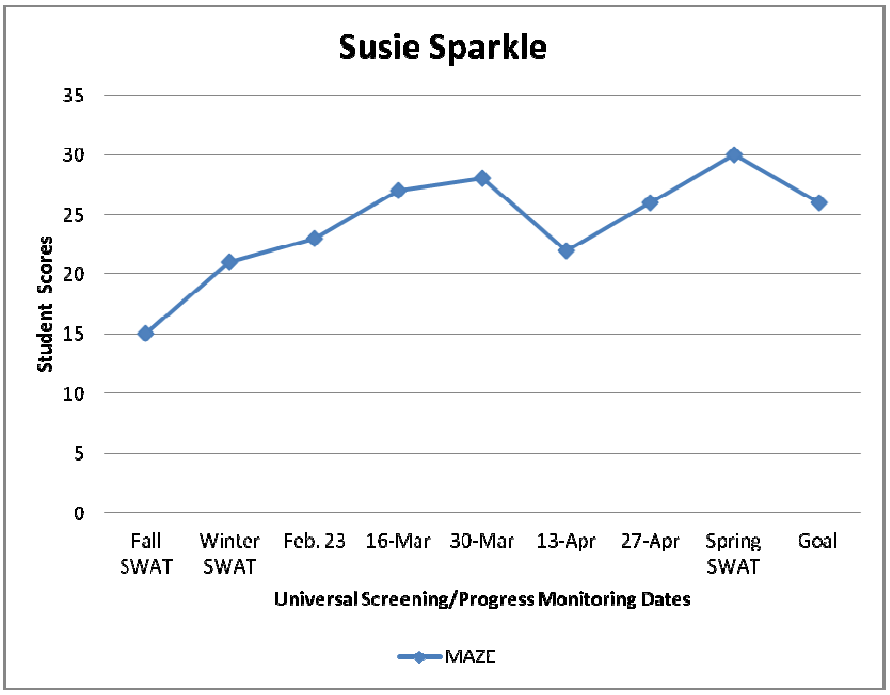

Figure 4. Student score sample

Teacher involvement across each classroom was again similar and within the primary investigator's expectations. Teachers worked in each class to ensure that students had clear workspace, proper distance from one another to create a comfortable and appropriate testing situation, and, most importantly, a writing utensil. The primary investigator observed teachers actively monitoring their students during the 3-minute testing window.

The final area of the observation outline allowed for "other noteworthy observations" to account for unforeseen events or behavior. While there were minimal findings in this area, the primary investigator did note that two of the reading classes had

additional adult support for students with special education needs or limited English proficiency. The presence of these individuals did not appear to have a remarkable impact on the testing environment of these classes in comparison to others observed during the study. These staff members did not provide assistance with the assessment. One student was observed receiving support during the preparation time for the assessment, such as verbal encouragement to participate and to find his pencil.

Responses to reflection questions. In late March when the study began, teachers had been implementing the progress monitoring program for approximately one month. Teachers received a copy of the reflection questions following the March 16, 2010, progress monitoring assessment. The primary investigator asked each teacher to respond to the reflection questions following the administration of the three subsequent assessments in March and April. The primary investigator provided staff with one to two reminders during the testing week; unfortunately, despite the verbal and electronic reminders, although all four teacher provided input in March, only three responses were received for the April testing dates.

While the submitted responses were fewer than anticipated, the responses received did provide some insight regarding the perspective of the teachers as they advanced through the program. The anonymity of participants during this process precluded the primary investigator from receiving specific feedback regarding the reason for the lack of submitted materials. The participants were highly involved in daily teaching duties such as the state MAP assessments, and extracurricular duties such as coaching, tutoring, and serving on committees. Another factor to consider may be that the

responses to questions either did not change or changed minimally throughout the three responses.

Reflection question 1 asked, “How manageable are the progress monitoring expectations?” and asked about the time required for administration, scoring, and data entry for two of the CBM assessments. This question was an attempt to measure how manageable each teacher felt the expectations and components of the systematic progress monitoring program were to implement within their daily classroom routines and in addition to their regular professional duties. The consensus was that the assessment itself did not present an unmanageable component, as it took approximately 5 to 7 minutes to dispense, administer, and collect from students. The time-consuming aspect of the program was the grading and data entry expectation.

One teacher noted that “The first scoring and data entry was lengthy,” while another later stated, “Each time, I seem to increase my speed on the scoring and data entry for the progress monitoring.” Initially all teachers agreed that grading and data entry were added burdens taking approximately 60 minutes to complete, depending on the class size. However, with each assessment, the collective group agreed that the time spent grading and entering data continued to decrease. One teacher noted that the task was manageable but that the frequency of the expectations posed the biggest obstacle. “I feel like I get the tests graded and scores entered and then we turn around and do it again. Giving the tests every two weeks and MAP testing time have not allowed much time to really analyze the data.” These responses confirm that the perception of these teachers is

that the progress monitoring program is manageable; however, the teachers did indicate a need to review the frequency of this kind of program.

The second reflection question, "How are you utilizing the data you gained from the progress monitoring to inform your instructional decisions?" targeted teachers' use of the data to directly impact decisions made regarding instructional strategies implemented with students. While all agreed that they made minimal changes due to the time of year and the state assessment window, the instructional changes made by all participants increased the use of reading fluency and vocabulary activities with their classes. In one classroom, the teacher "used the data to form literature circle groups." Another teacher noted, "I keep students informed of their progress . . . identifying those few that need additional help motivated me to seek and implement strategies that will improve their reading."

Reflection question 3 asked teachers to "Describe how you are collaborating with colleagues as it relates to the progress monitoring program, beyond the two district collaboration meetings." This question yielded the most varied responses between the ten individual responses. Two of the four responses to reflection questions submitted in March indicated there had been no collaboration or very limited and informal collaboration. Conversely, two other March entries discussed collaboration. One teacher shared, "We frequently have informal discussions about results and concerns." Another response from mid-April noted discussions between staff members regarding "students who are not meeting the goal" in the areas of fluency and rate. One specific response noted, "I was sharing the strategy, with the Social Studies teacher," the cloze passage

technique “of taking out every seventh word and having the students replace or choose a word.” In May, three teachers submitted responses to reflection questions. One response was simply, “daily,” while the other two responses indicated that collaboration regarding the progress monitoring program has ceased, as there were other concerns such as grade level expectations related to curriculum development to be discussed.

The final reflection question specifically asked the teachers to “Please note the number of instructional changes you made for an individual or class of students since the last progress monitoring assessment was given.” The same fluency and vocabulary themes were evident. Of the responses submitted in late March, three of the four teachers noted an increase in fluency activities or modeling. Following the mid-April testing session, the three responses noted paired reading and modeling of fluency, and one teacher specifically “read two novels that [were] written in the form of poetry to model fluency.” The final responses to the reflection questions, submitted in late April/May, noted fewer changes, but those changes incorporated focus on having “students listen to reading selections on CD to model reading fluency.”

Teacher interview responses. The individual teacher interview was the final component of the study for the participating teachers. There were 13 questions for each sixth grade reading teacher to respond to during his/her final interview with the district reading coordinator. The coordinator conducted the interviews during the last two weeks of May, following the submission of the last progress monitoring assessment as well as the spring universal screening assessment. While the universal screening was complete, the teachers did not have sufficient time to review the final set of student data prior to

their interviews. Therefore, teachers were unaware of the level of impact the progress monitoring program had on student achievement.

Table 7 reflects teachers' responses to the first interview question regarding their utilization of the Maze data. Question 1 asked teachers to "Explain how you utilized the Maze data to inform your instructional decisions for your classes" as a whole. The responses to the first question provided evidence of a widespread concern. The Maze data noticeably guided the reading teachers to identify fluent reading as a concern among the sixth grade class at large.

Table 7

Responses to Interview Question 1
Question 1: How did you utilize the Maze data to inform your instructional decisions for your classes?

Teacher	Strategies
A	(1) Read two poetry passages to model fluency (2) Implemented small group and partner fluency activities
B	(1) Students scoring below benchmark were grouped during a novel unit. (2) Students read aloud, taking turns reading during the unit.
C	(1) Identified students that needed extra help. (2) Implemented read aloud activities to work on fluency.
D	(1) Determined what needed to be modeled such as fluency.

The second interview question asked the teachers, "How did you utilize the Maze data to inform your instructional decisions for individual students?" Three of the four responded that they used the information at the class-level, not with individual students.

Teacher B stated, “Actually it was basically the same thing. We just did them (strategies) individually.” Teacher C noted concerns with time, “I just have not honestly had time to really take a look at that.”

Interview question 3 asked teachers, “How did the Maze data impact your development or approach to individual student supports/interventions in Tier1?” Teacher A felt that more individualized support could have been utilized if the program had begun at the start of the year. Due to MAP testing and the time of year, Teacher A used small groups to address struggling readers. Teacher B indicated that, while she had previously identified her at-risk readers, the data “justified working with them one-on-one.”

The fourth interview question asked, “Did the collaborative meeting with colleagues enhance your ability to utilize the Maze data to inform your instructional decisions for classes or individuals? Please explain.” One of the four teachers did not find the meetings to be helpful in providing additional support. This individual teacher works collaboratively with a special education teacher in several classes throughout her teaching schedule. As a team, they regularly collaborate regarding techniques to address students struggling to be successful. Other teachers found the meetings to be beneficial for discussing the data. Teacher D stated that the group “traded ideas of how to use” the information within their classrooms.

Table 8 drills down the responses for interview questions 5 and 6. Interview question 5 asked, “How do you think that the results from the Maze assessment compare to students’ overall reading ability?” Interview question 6 asked, “How did the progress monitoring program positively impact student achievement?”

Table 8

Responses to Interview Questions 5 and 6
Question 5: How do you think that the results from the Maze assessment compare to students' overall reading ability?
Question 6: How did the progress monitoring program positively impact student achievement?

Teacher	Responses
A	▪ Believed Maze results were "pretty comparable" to students' ability level ▪ Identified three groups: (a) super stars, (b) struggling readers, and (c) slower paced/great comprehension ▪ Saw an impact on achievement; knew "what they're really doing when they're reading"
B	▪ Felt Maze results were "very accurate" compared to SRI (Scholastic Reading Inventory) scores ▪ "We had big gains in students" that were below benchmark initially ▪ Shared the Maze scores with students and saw gains as "they tried to achieve" higher scores
C	▪ Could "definitely see comparisons to what they're doing and what they're capable" of ▪ "I gave them their scores each time. . . . encouraged them to make an improvement. They [are] competitive. . . . they definitely took that into consideration and did their best."
D	▪ Felt some scores "were accurate" but other students "just take their time. . . . read slower" ▪ Did not feel scores of slow readers reflected accurate achievement or fluency ▪ Believed there were passages that the students "weren't as comfortable reading" ▪ With comfort level scores decreased or increased, some were consistent

Table 9 outlines the teachers' responses for interview questions 7 and 8. Interview question 7 asked, "How was your classroom environment impacted by the progress

monitoring program?" Interview question 8 asked, "How were your classroom routines impacted by the progress monitoring program?"

Table 9

Responses to Interview Questions 7 and 8
Question 7: How was your classroom environment impacted by the progress monitoring program?
Question 8: How were your classroom routines impacted by the progress monitoring program

Teacher	Responses
A	▪ The environment was not impacted in a huge way. ▪ They developed a routine to administer at the beginning of class and in about 5 minutes, they would finish.
B	▪ Classroom routines were not impacted. Each class began with daily reading. When they took the test, it followed their reading time and then the class just moved on as usual. ▪ The environment was not really impacted. There was little impact on the students other than when they announced that most students had gained so much each time.
C	▪ The students learned quickly to settle down and took the test seriously. ▪ The routine was impacted slightly, but after the first assessment students responded more quickly to the "hiccup" in their daily routine. The process took about 5 minutes.
D	▪ The only environmental change noted was utilization of CDs provided with the district curriculum to provide a more fluent account of text for students. Students listened to stories that had challenging vocabulary from other countries to ensure that students heard the words spoken fluently and correctly. ▪ The testing took very little time and did not really affect the routine in her classroom.

Interview question 9 focused on professional development, and asked, "What components of the district professional development provided you with the information

necessary to effectively implement the progress monitoring program?" All teachers agreed that the professional development provided was sufficient to prepare them to implement the program. They felt discussing and going over the step-by-step directions to understand why to do specific steps was helpful. "I like to be given an explanation . . . . not to just say you need to do this." In interview questions 10 and 11, the responses provided guidance to school leaders concerning information to address in future professional development sessions. Question 10 asked, "In what areas do you need professional development in order to effectively implement a progress monitoring program?" Question 11 asked, "In what areas do you need continued professional development to enrich the outcomes of the progress monitoring program?" Table 10 outlines the responses to questions 10 and 11.

Table 10

Responses to Interview Questions 10 and 11
Question 10: In what areas do you need professional development in order to effectively implement a progress monitoring program?
Question 11: In what areas do you need continued professional development to enrich the outcomes of the progress monitoring program?

Teacher	Responses
A	▪ Would like more information about methods to help students identified through the data ▪ Is concerned that the progress monitoring assessments were given every two weeks ▪ The turn-around time was too short to review the data and the look for interventions that would be helpful to the students before it was time to administer the next assessment
B	▪ Felt that the collaborative teaching assignment assisted in implementing this program ▪ Without support, might feel the need to work with someone ▪ Thought that having one or two meetings to share and exchange ideas would be helpful
C	▪ Believed that professional development on different interventions and how RtI is implemented at this grade level is needed ▪ Is concerned about implementing within the timeframe of a middle school setting ▪ Would like the opportunity to go and observe other teachers as they implement interventions
D	▪ Would like to receive more strategies to use in conjunction with the student data ▪ Additional information needed includes how to use the data to inform instructional decisions and more specific information about types of strategies to help individual students

For interview question 12, teachers were asked, “Are there other strengths or weaknesses related to the progress monitoring program you would like to share?” One

teacher noted turnaround time as a weakness but noted that her ability to complete the expectations did increase throughout the study. Another teacher simply stated it "was easy to administer" and "it was easy to grade." A concern not previously mentioned in other interview responses was the time limit of the student assessment. This teacher felt "it was frustrating for some students who do not like being timed." However, this teacher further shared that this was a good program. A noted weakness, from Teacher C, was looking at one test score. She stated a teacher "can't look at one test" to determine if a child is a "terrible" reader. The response noted that at the middle school level students' hormones, or a student who is just having a "bad day" could really influence one test. The teacher further asserted that a strength of the program was that frequent assessing allowed teachers to "keep track" of student progress and view their progress over time.

Summary

The primary purpose of this mixed method study was to determine if there would be a statistical difference in the rate of reading growth following the introduction of the new variable, a systematic progress monitoring program. A secondary purpose was to determine the perception of participating teachers related to a systematic progress monitoring program. The analysis of the quantitative reading data as well as the analysis of the three qualitative data sources of classroom observations, teacher responses to reflection questions, and teacher interview responses provided adequate information to support the alternate hypothesis and draw conclusions for the research question and the three sub-questions.

The quantitative analysis of data through a *z*-test and ANOVA provided sufficient data to reject the null hypothesis and support the alternate hypothesis. Thus, the conclusion of the study is that sixth grade students will increase their rate of reading growth after participation in a progress monitoring program.

The qualitative analysis of data through the interpretation and synthesis of the data gathered provided evidence to conclude that the participating sixth grade reading teachers were positive in their perceptions of the program. The teachers felt that the progress monitoring benefitted student achievement through instructional changes implemented because of the data they gained from the program, while minimally influencing their classroom environment and routines. Chapter 5 provides further discussion and conclusions drawn from the study results. Recommendations for future considerations are provided for individuals considering the merits of progress monitoring as a component of an RtI model in a middle school setting.

Chapter 5: Discussion, Conclusion, and Recommendations

History provides sufficient evidence of the continued efforts of legislators and educators, alike, to provide a meaningful education for all students. The primary investigator's goal as an education leader is to provide students with a strong foundation as they enter some avenue of the adult world – the workforce, vocational school, or college. In the quest to improve the educational system, educators and lawmakers are preparing for the anticipated reauthorization of the *No Child Left Behind Act of 2002,* the reauthorization of the first educational reform act, *The Elementary and Secondary Education Act of 1965* (U. S. Department of Education, 2010). The purpose of this study was to examine a specific component of an RtI model, progress monitoring, at the middle school level. Through a review of research and practices related to RtI, there was support for the development of RtI models that take into account the systematic differences that exist between an elementary school and a middle or high school setting (Mellard & Layland, 2009). The significance of examining progress monitoring as an RtI tool is to support classroom teachers in the identification of effective methods for instructing their diverse population of learners; thus, providing each student with the building blocks needed to establish a strong foundation to successfully carry them into adulthood (Duffy, 2007).

Hypotheses and Research Question

The hypotheses, research question, and sub-questions for this research study were as follows:

Null hypothesis. Sixth grade students will not increase their rate of reading growth after participation in a progress monitoring program.

Alternate hypothesis. Sixth grade students will increase their rate of reading growth after participation in a progress monitoring program.

Research question (RQ). What are reading teachers' perceptions regarding the impact of a progress monitoring program at the middle school level for the sample of sixth grade students?

RQ (a): What are the teachers' perceptions regarding the impact of a progress monitoring program on student achievement?

RQ (b): What are the teachers' perceptions regarding the impact of a progress monitoring program on instructional decision-making for their classes and individual students?

RQ (c): What are the teachers' perceptions regarding the impact of a progress monitoring program on their classroom learning environments?

Discussion and Implications

The progress monitoring program provided teachers with student-specific data to better support the learning of all students in the general education setting. For the studied middle school, this was one-step in the consideration and plan to develop a comprehensive RtI model. The pilot program specifically measured the reading growth of

sixth grade middle school students following participation in the systematic progress monitoring program, by comparing the growth of the sample at the end of first semester with their growth at the end of second semester, following the implementation of the new program. There were two components to this portion of the study design. All middle school students participated in the universal screening in the fall, winter, and spring. The sixth grade reading students further participated in progress monitoring from mid-February through the end of May. The students took five Maze progress monitoring assessments during this time frame. The data from both components were utilized in the statistical analysis. Additionally, the study evaluated the perceptions of participating teachers regarding the impact of the program on student achievement, instructional decision-making, and the classroom learning environment, as their perceptions are critical for program fidelity and longevity. There were multiple tools implemented to address the question of teacher perception: classroom observations, teacher responses to reflection questions, and individual teacher interview responses.

Hypotheses. The alternate hypothesis stated that sixth grade students will increase their rate of reading growth after participation in a progress monitoring program.

Data from the *z*-test for two sample means led the primary investigator to support the alternate hypothesis. The results of the *z*-test illustrate a statistically significant difference in the growth rates following first semester. School officials can review this data and determine that the students' reading growth second semester was significantly over the growth made during first semester, as measured by the Maze.

Further data analysis by the primary investigator targeted staff concerns that some progress monitoring passages were easier for the sixth grade students, while other passages were more difficult. The results of the ANOVA indicated that there was no statistically significant difference between student scores on one or more of the progress monitoring passages. Sixth grade reading instructors had expressed concern based on their review of the raw data. The ANOVA results addressed these concerns and assured educators of the reliability of the Maze as a short 3-minute reading assessment appropriate for use in an RtI model that incorporates class-wide progress monitoring.

Based on these results, school district officials and educators, at large, would be terribly remiss to allow the supports in place for students at the elementary level to wane due to a transition into a middle school setting. These results indicate that a systematic progress monitoring program did provide data to classroom teachers that positively affected the overall learning experience for their sixth grade reading students. While the act of progress monitoring alone will not alter achievement outcomes (Stecker, Fuchs, & Fuchs, 2005), it is one aspect of a more comprehensive model that districts can implement in the battle to support the learning for all students within the diverse population of at-risk, average, and accelerated students.

Research question. The research question, "What are reading teachers' perceptions regarding the impact of a progress monitoring program at the middle school level for the sample of sixth grade students?" specifically targeted the overall perception of the teachers in relation to a systematic progress monitoring program. As detailed in chapter 4, the overall perception of the participating teachers was positive, as each

indicated a strong desire to continue to utilize the progress monitoring program. The three sub-questions focused on specific components of the instructional process to further analyze and understand teachers' perceptions of the program.

Sub-question RQ (a) asked, "What are the teachers' perceptions regarding the impact of a progress monitoring program on student achievement?" All four teachers responded that the Maze data was comparable to the students' reading levels. However, two teachers noted that slow readers had less accurate scores represented on the assessments, as these were timed-tests. Careful consideration of this factor is required when schools and individual teachers make data-driven decisions. With the standard-treatment protocol model, it is plausible that resources could be misappropriated for students not truly at-risk, if there are minimal data types and points considered in an RtI model. Support for this concern is evident through the encouragement of researchers to use universal screening with subsequent progress monitoring to avoid over-identification of at-risk learners and prevent schools from wasting resources (Jenkins, Hudson, & Johnson, 2007). One potential approach to avoid the misuse of resources might include administering more extensive, diagnostic assessments with students identified as at-risk readers, in order to identify more specific deficit areas.

Finally, a strategy employed by one classroom teacher that appeared to have a striking impact on student engagement and motivation was the distribution of individual student graphs prior to several progress monitoring assessments .While this step increased the time associated with the assessment, it led to heightened self-awareness and peer discussions regarding personal goals to improve, potentially impacting student

achievement.

Sub-question RQ (b) asked, "What are the teachers' perceptions regarding the impact of a progress monitoring program on instructional decision-making for their classes and individual students?" The study data indicated that each teacher implemented class-wide instructional changes; however, the data noted that individual interventions were not feasible during the pilot program timeframe. As the teachers reviewed the student outcomes on the reading passages, a specific area of concentrated concern, reading fluency, became apparent to all four teachers. There were a variety of fluency activities and strategies employed during the 15-week study. The participants did indicate that beginning the progress monitoring program at the start of the school year would allow more individualized interventions to be employed. School officials working to execute a similar program will need ample intervention resources and supports in place to facilitate action by classroom teachers. Additionally, the participants expressed a need for training related to differentiated instruction, plus specific and individualized types of strategies that would target the needs identified through more in-depth analysis of the student reading data. One final suggestion from a participant was to tour other middle schools implementing a similar progress monitoring program and other aspects of an RtI model. These kinds of activities, as noted in the literature review, may heighten teacher buy-in, creating a more positive climate of change that will allow staff to embrace new instructional practices and philosophies (Howerton, 2006).

The third sub-question RQ (c) asked, "What are the teachers' perceptions regarding the impact of a progress monitoring program on their classroom learning

environment?" The basic summary of these results signifies that the teachers did not feel that the progress monitoring program created undue stress or interruption within their classroom environment.

The study data indicated that there were no true environmental changes made by the reading teachers. There were minimal alterations to classroom routines during the pilot program. Notes from the multiple classroom observations similarly yielded little to no evidence of significant alterations to the physical environment in any of the four classrooms. The primary change to the physical environment was a result of teachers' not returning the visual supports to their classroom walls following the state MAP assessment. This action appeared to be one-step toward the conclusion of the school year and the first step toward packing their rooms for summer cleaning. Another physical feature noted was the type and arrangement of student seating. While the arrangement seemed crowded in one of the two eMINTS classrooms, this was not an issue during the progress monitoring, as students spread out around the room. Based on the results of the ANOVA analysis and the observations, there is little indication that the seating arrangement or the utilization of the classroom posters as visual supports during the progress monitoring exercises impacted student scores.

The manageability of the program was considered from the teachers' perspective as they balance all of the responsibilities assigned to them. Chapter 4 reported that the consensus of the group was that the program was manageable; however, the responses clearly referenced a learning curve. All respondents noted that the time associated with grading the progress monitoring passages and entering the student data was significant at

first but decreased with each assessment period. The most noteworthy teacher concern regarding the frequency was assessing students with the Maze every 2 weeks. School leaders will need to consider this concern when developing a school-specific progress monitoring program.

One particular teacher behavior was noticed during the classroom observations that could aid in the manageability of this program. In early April, one classroom teacher began to instruct students to leave their testing packets open with the most recently completed reading passage face up. This small request prevented her from flipping through the pages of each individual student packets while grading, thus saving her time. Through collaboration, teachers can share this kind of simple strategy, expand on other ideas, and further discuss a wide assortment of topics related to execution and maintenance of a systematic progress monitoring program at any grade level.

Summary

The results of this mixed method study provide school leaders evidence to support the efficacy of a progress monitoring program in a middle school setting. The review of literature and results contribute to the scant research available for educators exploring the appropriateness of implementing components of an RtI or tiered-intervention model in a middle school setting. This research may serve as a resource for districts considering the merits of expanding an elementary RtI model into the middle school setting. Based on the literature reviewed, few studies have focused on any aspects of RtI in a secondary setting.

For the studied middle school, school leaders will maintain the fall, winter, and spring universal screening with the Maze and Math assessments from AIMSweb.

Additionally, all reading and language arts teachers will have the opportunity to implement periodic progress monitoring voluntarily. The recommendation to staff, based on discussions and a review of the results from the pilot program, will be to utilize the same packet format for assessing students in their individual classroom settings, monitoring student growth monthly, September through May.

Recommendations for Future Studies

One recommendation for future studies would be to replicate this study with a broader range of middle school students, thus exploring the efficacy and suitability of expanding a progress monitoring program from sixth grade reading classes into other language arts classes within a middle school setting. This would be pivotal research, as some educators may view this study as one that has some elementary-level components despite the fact that the study was conducted in a middle school. In many districts, sixth grade students and the curriculum format continue to have an elementary-level perspective, more so than the rigor and increased expectations evident as students move into seventh and eighth grade.

Additional areas of need include further research studies focused on the identification of effective intervention models at the secondary level. Brozo (2010) and Duffy (2008) noted there are no clear models to outline what a full RtI model would entail at the secondary level, be it the middle or high school level. Secondary educators would benefit from future studies of full RtI models or the components of RtI models actively implemented in secondary schools that are yielding measurable improvements in student achievement and higher graduation rates. This type of research would be

beneficial for secondary schools seeking new methods to improve student learning outcomes.

Finally, as a sub-component of effective intervention models for secondary schools, research that specifically investigates various types of content-specific intervention strategies that effectively move at-risk students toward reaching proficiency would be highly sought by classroom teachers and intervention support staff. A compilation of intervention tools disaggregated by areas of skill deficits could provide immense support to schools beginning their RtI journey at any grade level. As noted in this study, classroom teachers need further support in the area of identifying and implementing appropriate strategies to assist in addressing the needs of identified at-risk learners. This kind of research could be valuable for pre-service teachers to better prepare them for their duties as future classroom teachers who are expected to assist in the implementation to interventions in the various levels of a tiered-model of support.

Conclusion

The results of this study are encouraging and exciting to the staff at the studied middle school. The goal of the pilot program was to identify the feasibility and appropriateness of expanding the RtI model utilized in our elementary buildings to the middle school setting. Administratively, there were two primary questions in this consideration. First, would there be a significant gain in student reading growth, enough to merit the additional work and responsibility for teachers? Second, would teachers be receptive to and embrace a progress monitoring program as a useful tool to support their instructional efforts or simply perceive it as another initiative taking time away from their

focus on students? The study successfully affirmed that a systematic progress monitoring program improved student reading growth rates; additionally, the teachers were receptive to and embraced the program for future implementation.

As the new school year 2010-2011 began, it was exciting to see the sixth grade teachers seeking a status report for the launch of the progress monitoring program. This study explored one avenue of support for middle school teachers and provided evidence that the use of appropriate student data can affect the instructional decisions for classes and individual students in a positive way. It is imperative that educators find ways to meet the needs of all learners including those who do not meet a magic number to qualify for a particular special service, be it special or gifted education. All learners are unique and have an equal right to interventions that meet their educational needs to move toward becoming successful adults. Perhaps the promising findings of this study will continue to move other educators toward this ultimate goal.

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Appendix A-1

Eleven MISSOURI District Responses: District Size <3000

# of Districts Responding- 11 total responses	1	2	3	4	5
Does your middle school(s) universally screen students in the fall, winter and spring?	N	Y	N-NOT 3	N-NOT 3	N-NOT 3
How many years has universal screening been utilized?	N	2	Multiple	1ST YR	No info
What tools are used (AIMSWeb-ORF, MAZE, MATH, SRI, etc)?	N	GATES	SRI/STAR	STAR	SRI - 6/7th gr
Does your middle school(s) progress monitor students on a class level? Y/N How frequently?	N	N	N	N	N
Does your middle school(s) progress monitor students on an individual level?	N	Y/Plan	N	LIMITED	N
How often are Tier 2 students progress monitored?	N	Weekly	NA	NA	NA
How often are Tier 3 students progress monitored?	N	Weekly	NA	NA	NA
How many years has progress monitoring been utilized?	N	2	NA	Attempted 2	N
In what grade levels are the universal screening and progress monitoring utilized?	N	K-8	No info	No info	US: 6-7th
How frequently do teachers collaborate regarding the class/student data generated?	N	Depends on level- see plan	DAILY	No info	N
Has your district found a correlation to MAP scores?	N	No info	No info	No info	NA
How effective are these tools in guiding instructional decisions at the class/individual level?	N	No info	No info	AIMSweb K-4 some assistance	No info
How are you providing training to staff to implement the progress monitoring – teacher by teacher or school-wide?	N	No info	No info	No info	No info
Note: Key: Interpretation of Level of Implementation -		Little/None	Emerging	Established	

Appendix A-2

Eleven MISSOURI District Responses: District Size 3000-9000

# of Districts Responding- 11 total responses	6	7	8
Does your middle school(s) universally screen students in the fall, winter and spring?	Y	Y	Y
How many years has universal screening been utilized?	1	3yrs- 7th, 1st-6 & 8	1
What tools are used (AIMSWeb-ORF, MAZE, MATH, SRI, etc)?	AIMSWeb	SRI/ Scantron's Performance Series	AIMSWeb
Does your middle school(s) progress monitor students on a class level? Y/N How frequently?	Y	Y-each 2-3 weeks	Not yet
Does your middle school(s) progress monitor students on an individual level?	6TH GR	Y	Not yet
How often are Tier 2 students progress monitored?	N	6th-weekly/7-8 unset	NA
How often are Tier 3 students progress monitored?	N	6th-weekly/7-8 unset	NA
How many years has progress monitoring been utilized?	1	2nd yr 5-6/7-8 unset	NA
In what grade levels are the universal screening and progress monitoring utilized?	US: K-8 PM: K-6	US: Rdg K-10/Math 2-10 PM: K-4 established, 6-8 emerging	US-K-8/PM K-5
How frequently do teachers collaborate regarding the class/student data generated?	UNCLEAR	daily team plan/1PLC hr-weekly	Not yet
Has your district found a correlation to MAP scores?	NA	not specifically	Not yet
How effective are these tools in guiding instructional decisions at the class/individual level?	No info	teaming/collab planning-feel PM will strengthen these two practices	Elem-very helpful
How are you providing training to staff to implement the progress monitoring – teacher by teacher or school-wide?	Small Grps	sw for assessment understanding - PM is more 1-1/small grp based on job descrip	Tchr-by-Tchr
Note: Key: Interpretation of Level of Implementation -	Little/None	Emerging	Established

Appendix A-3

Eleven MISSOURI District Responses: District Size 10000+

# of Districts Responding- 11 total responses	9	10	11
Does your middle school(s) universally screen students in the fall, winter and spring?	Y	N	N - only 1/yr
How many years has universal screening been utilized?	2	NA	3 yrs
What tools are used (AIMSWeb-ORF, MAZE, MATH, SRI, etc)?	AIMSWeb	NA	GATES/SRI
Does your middle school(s) progress monitor students on a class level? Y/N How frequently?	Y-qtrly	N	Piloting Study Island
Does your middle school(s) progress monitor students on an individual level?	Y	No Universal format	Study Island
How often are Tier 2 students progress monitored?	after 6 data pts/intervention	N	Nothing consistent
How often are Tier 3 students progress monitored?	after 6 data pts/intervention	N	Nothing consistent
How many years has progress monitoring been utilized?	2	N	PM per specialty program
In what grade levels are the universal screening and progress monitoring utilized?	K-8	N	per program 3-8
How frequently do teachers collaborate regarding the class/student data generated?	Wkly	N	PLC-2/mo
Has your district found a correlation to MAP scores?	Will know after 2010 MAP	N	
How effective are these tools in guiding instructional decisions at the class/individual level?	basis for directing teaching	N	Read 180 guides individual practice
How are you providing training to staff to implement the progress monitoring – teacher by teacher or school-wide?	District Interventionist gives PD	N	Teacher Leaders
Note: Key: Interpretation of Level of Implementation -	Little/None	Emerging	Established

Appendix B

March 17, 2010

Dr. John Long, Superintendent
Warren County R-III Schools
302 Kuhl Avenue
Warrenton, MO 63383

Dear Dr. Long:

Your school district is invited to participate in a research study designed to examine the effectiveness of progress monitoring in a middle school setting. Additionally, this study will examine teachers' perceptions regarding the impact of a progress monitoring program on teachers' instructional decision-making, student achievement, and the classroom learning environment.

The district's participation in this study would provide meaningful data regarding the use of the curriculum-based measurement (CBM) tool, the Maze, as part of a systematic progress monitoring program at the middle school level that may positively student achievement. Information which may be useful for program evaluations or planning purposes will be shared with your district; additionally, this information may benefit other middle school educators interested in expanding or developing a tiered-model of interventions or incorporating the use of a progress monitoring system in their educational process.

I am hopeful that you will strongly consider participating in this educational research study and assist in the advancement of the educational research knowledge related to progress monitoring in a middle school setting. The study would involve the participation of the four sixth grade Reading teachers. Additional, the study design would require me to have access to the reading database for the sixth grade students receiving Reading instruction in the general education setting. The study would begin upon IRB approval from Lindenwood University, and conclude in May 2011. Please complete the enclosed form indicating the district's commitment to participate or to decline participation in this research study.

Sincerely,

Jamie A. Smith
Doctoral Student
Lindenwood University

Appendix C

March 17, 2010

Sixth Grade Reading Teacher
Black Hawk Middle School
Warren County R-III School District

Dear Teachers:

I would like to invite you to participate in a research study designed to examine the effectiveness of progress monitoring in a middle school setting. Additionally, this study will examine teachers' perceptions regarding the impact of a progress monitoring program on their instructional decision-making, student achievement, and the classroom learning environment.

This is a mixed methodology study through Lindenwood University. The quantitative component will examine the student data generated through the implementation of the RtI components of school-wide screening and progress monitoring. Additionally, I am seeking your participation in the following steps:

- Observation by the primary investigator, Jamie Smith, during the administration of one Maze assessment. The duration of observation time will be approximately ten minutes.
- One meeting with the primary investigator to review the accuracy of scored assessments and data entered into district database. This meeting will take approximately thirty minutes.

The qualitative component is designed to gather data regarding teacher perceptions of the impact of progress monitoring to their instructional decisions, student achievement, and on their classroom environments. Additional information will be gathered regarding the feasibility to implement and the supports needed to effectively maintain the progress monitoring program. This portion of the study has three components for participants:

- Completion of journal entries chronicling your thoughts regarding the implementation and usefulness of the progress monitoring activities will follow each assessment. This activity will take approximately ten minutes, every two weeks. The journals will be submitted via intercampus mail to the primary investigator, Jamie Smith, to protect your identity.
- Participation in an interview by May 30, 2010. This interview is anticipated to last approximately thirty minutes and will be conducted by a Lindenwood student, unaffiliated with the school district to allow for anonymity and honesty during this interview.

Your confidentiality throughout this study, as well as the confidentiality of your students will be protected. Based on the submission guidelines for the journal entries and the interview design with a non-district affiliate, staff identity will be kept completely confidential from the primary investigator. Students will be coded with a number for identification and comparison purposes from first to second semester.

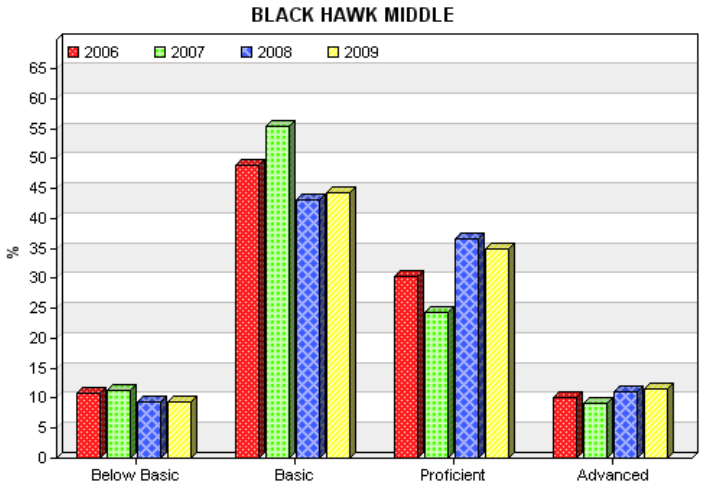
I am hopeful that you will consider participating in this educational research study and assist in the advancement of the educational research knowledge related to progress monitoring in a middle school setting. To finalize your participation in this study, please complete the attached Lindenwood Consent Form. Please contact me for further information.

Sincerely,
Jamie Smith

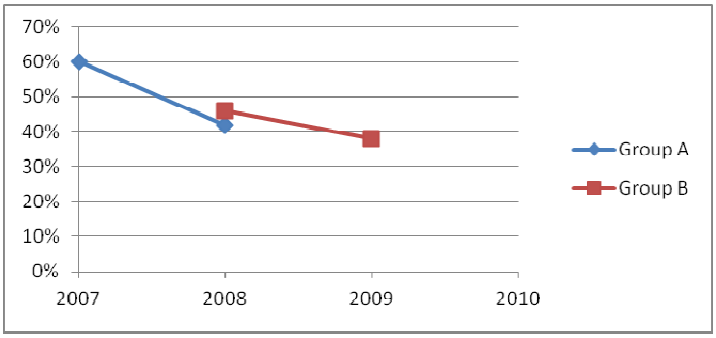
Appendix D

Sixth Grade MAP Data

Year	Students	LND	Below Basic	Basic	Proficient	Advanced	MAP Index
2009	226	0%	9.3%	44.2%	35%	11.5%	748.7
2008	227	0%	9.3%	43.2%	36.6%	11%	749.3
2007	231	0.4%	11.3%	55.4%	24.2%	9.1%	731.2
2006	201	0%	10.9%	48.8%	30.3%	10%	739.3



Comparison of MAP-Lexile Terra Nova Scores
Fifth Grade to Sixth Grade



*Note: Percentage represents the population of students with Lexile scores at or above grade level based on the Lexile-to-Grade correspondence, Typical "Stretch" Text Measures (Lexile, 2010).

Appendix E

Teacher Name: _____

Hour:_____

Date: _____

Classroom MAZE Observations

Classroom Environment:

Administration Routine/Procedures:

Student Engagement:

Teacher Involvement:

Other Noteworthy Observations:

Appendix F

Reflection Questions

1. How manageable are the progress monitoring expectations? (Additionally, please share the time required for administration, scoring and data entry for two of the CBM assessments)

2. How are you utilizing the data you gained from the progress monitoring to inform your instructional decisions?

3. Describe how you are collaborating with colleagues as it relates to the progress monitoring program, beyond the two district collaboration meetings.

4. Please note the number of instructional changes you have made for an individual or class of students since the last progress monitoring assessment was given.

Appendix G-1

RESOURCES FOR CBM INFORMATION AND EVIDENCE-BASED INTERVENTIONS

National Centers:

National Center on Student Progress Monitoring--http://www.studentprogress.org

- Web site that provides information and technical assistance on progress monitoring for elementary students.
- Watch for conference notices, as this technical assistance center funded by OSEP offers training in progress monitoring.

Research Institute on Progress Monitoring--http://www.progressmonitoring.org

- Web site that provides information regarding the OSEP-funded project to evaluate the effects of individualized instruction on access to and progress within the general education curriculum.
- Provides information on current and previous research in CBM, including a comprehensive literature review

Web-based software systems:

AIMSweb, from Edformation--www.aimsweb.com

- Provides an online progress monitoring and graphing program, including measures to download (fee based).

Dynamic Indicators of Basic Early Literacy Skills--http://dibels.uroregon.edu

- Research, benchmarks, administration directions, and probes for grades K-3; oral reading fluency passages also for grades 4-6 (free to download; fee per student for report access)

Edcheckup--www.edcheckup.com

- A Web site where teachers can access CBM probes in reading and writing; after student data are entered (or probes are scored electronically), class and individual student charts and graphs are provided, along with recommendations regarding the need for intervention (fee based)

Yearly Progress Pro from McGraw-Hill Digital Learning--www.mhdigitallearning.com

- Provides assessment tools, instructional feedback, and data reports and analysis in mathematics, reading, and language arts as well as instructional modules for students based on specific skills assessed (fee based).

Appendix G-2

Other CBM resources:

Monitoring Basic Skills Progress--
http://www.proedinc.com/store/index.php?mode=product_detail&id=0840

- Link to the Pro-Ed site where this Macintosh computer program can be purchased for CBM maze administration and scoring; also available for mathematics computation and concepts and applications (blackline masters available for mathematics CBM probes and can be purchased separately from the computer program)

Intervention Central--www.interventioncentral.org

- A Web site developed by Jim Wright, a school psychologist from Syracuse, NY. This site contains numerous tools for creation, administration, and graphing of CBM measures, and includes ideas for research-based interventions (free).

University of Minnesota--www.education.umn.edu/research/CBM.htm

- This site provides a brief background and summary of CBM research at the University of Minnesota.

University of South Florida-- http://sss.usf.edu/cbm/SiteMap.htm

- This site is maintained by the University of South Florida and provides resources and information regarding the use of CBM and DIBELS (Dynamic Indicators of Basic Early Literacy Skills).

Wireless Generation—www.wirelessgeneration.com

- Provides software for handheld computers that aids in monitoring student performance in reading (using the DIBELS, for example) and in math.

Hosp, M.K., Hosp, J.L., Howell, K. W. (2007). *The ABC's of CBM: A practical guide to curriculum-based measurement.* New York: The Guilford Press.

Resources for evidence-based reading interventions:

Consortium on Reading Excellence (CORE), www.corelearn.com

- Resources for evidence-based reading interventions

Intervention Central—www.interventioncentral.org
- See above for details

Appendix G-3

Division for Learning Disabilities (DLD) Research to Practice Web site:
http://www.teachingld.org/

- Includes details about DLD's annual conference to provide information and training to teachers about research-based strategies and how teachers can implement these strategies in their classrooms. Check the conference schedule for sessions on progress monitoring, as many of these sessions have been included in the past.

- Web-based tutorials on CBM reading and maze are also available to members on this Web site.

Oral Reading Fluency, 90 Years of Measurement. Behavioral Research and Teaching, Eugene, OR, 2005. http://brt.uoregon.edu/techreports/TR_33_NCORF_DescStats.pdf

- Recent oral reading fluency norms based on data for over 100,000 students

Put Reading First, http://www.nifl.gov/partnershipforreading/publications/reading_first1.html

- Describes findings from the National Reading Panel report in a practitioner-oriented document. Includes reading activities that are evidence-based for each of the five big areas of reading.

Peer-Assisted Learning Strategies (PALS), http://www.peerassistedlearningstrategies.net

- Web site includes information related to research support, obtaining materials, and/or training

Teaching Struggling and At-Risk Readers: A Direct Instruction Approach

- Carnine, D., Silbert, J, Kame'enui, E., Tarver, S., & Junghohann, K. (2006). Pearson: Upper Saddle River, NJ.

Resources for evidence-based mathematics interventions

- Articles and powerpoint shows available on centerforinstruction.org (click on mathematics)
  - Including…Lembke, E.S. & Stecker, P.M. (2007). Curriculum-based measurement in math: An evidence-based formative assessment procedure.

- Calhoon, M.B. & Fuchs, L.S. (2003). The effects of peer-assisted learning strategies and curriculum-based measurement on the mathematics performance of secondary students with disabilities. Remedial and Special Education, 24(4), 235-245.

- Council for Learning Disabilities mathematics series, Effective mathematics instruction for students with learning disabilities. Issues 21:2 and 21:3 of the LD forum.

Appendix G-4

- Fuchs, L.S., Fuchs, D., Yazdian, L., & Powell, S.R. (2002). Enhancing first-grade children's mathematical development with peer-assisted learning strategies. School Psychology Review, 31(4), 569-583.
- Gersten, R., Chard, D. Baker, S., & Lee, D.L. (in press). Experimental and quasi-experimental research on instructional approaches for teaching mathematics to students with learning disabilities: A research synthesis. Review of Educational Research.
- Hodge, J., Riccomini, P.J., Buford, R., & Herbst, M.H. (2006). A review of instructional interventions in mathematics for students with emotional and behavioral disorders. Behavioral Disorders, 31(3), 297-311.
- Hudson, P. & Miller, S.P. (2006). Designing and implementing mathematics instruction for students with diverse learning needs. Pearson.
- Interventioncentral.org
  - Evidence-based strategies summarized in 1-3 page documents
- John Hopkins Best Evidence Encylopedia (www.bestevidence.org)
- Kroesbergen, E.H. & Van Luit, J.E.H. (2003). Mathematics interventions for children with special educational needs: A meta-analysis. Remedial and Special Education, 24(2), 97-114.
- Montague, M. & Jitendra, A.K. (2006). Teaching mathematics to middle school students with learning difficulties. New York: Guilford Press.
- Montague, M. & van Garderen, D. (in press). Research-based practice for effective mathematics instruction.
- What works clearinghouse (http://www.w-w-c.org/)

Evidence-based strategies in general

- Beers, K. (2003). *When kids can't read: What teachers can do.* Heinemann: Portsmouth, NH.
- Case studies and STAR (Strategies and Resources) sheets from the IRIS center (http://iris.peabody.vanderbilt.edu/resources.html)
-
- Google Scholar--http://scholar.google.com/
  - Find relevant, research-based references for interventions you're considering
- Hall, S.L. (2006). *I've DIBEL'd, now what?* Longmont, CO: Sopris West.
- Honig, Diamond, & Gutlohn (2000). Center on Reading Excellence (CORE). Arena Press.

Appendix G-5

- Identifying and Implementing Educational Practices Supported By Rigorous Evidence: A User Friendly Guide (http://www.ed.gov/rschstat/research/pubs/rigorousevid/rigorousevid.pdf)

- Interventioncentral.org
  - Evidence-based strategies summarized in 1-3 page documents

- John Hopkins Best Evidence Encyclopedia (www.bestevidence.org)

- Lembke, E.S. & Stormont, M. (2005). Using research-based practices to support students with diverse learning needs in general education settings. *Psychology in the Schools, 42(8),* 761-763.

- Program Summary tables from Florida Center on Research in Reading, Oregon Reading First
  - http://www.fcrr.org/FCRRReports/CReports.aspx, http://oregonreadingfirst.uoregon.edu/curriculum_review.php

- Put Reading First-- http://www.nifl.gov/partnershipforreading/publications/reading_first1.html

- Using Research and Reason in Education: How Teachers Can Use Scientifically Based Research to Make Curricular & Instructional Decisions (http://www.nifl.gov/partnershipforreading/publications/html/stanovich/)

- What works clearinghouse (http://www.w-w-c.org/)

RTI resources

- RTI wire—checklist for implementation—interventioncentral.org

- RTI implementation checklist, Mellard and McKnight, nerld.org

Appendix G-6

Your plan for implementation or support for implementation…

- Who will you work with? _____
  - 1 student, small group, whole class, grade level, school, district
- What materials will you use? _____
  - Website (DIBELS, Intervention Central, edcheckup, aimsweb); make my own
- When will you administer the probes and graph performance?_____
  - Day, time
- Who will you talk with about your data and interventions? _____
  - Colleague, principal, consultant, school psych, SLP
- How will you use the data?_____
- What will you do if you have questions? _____

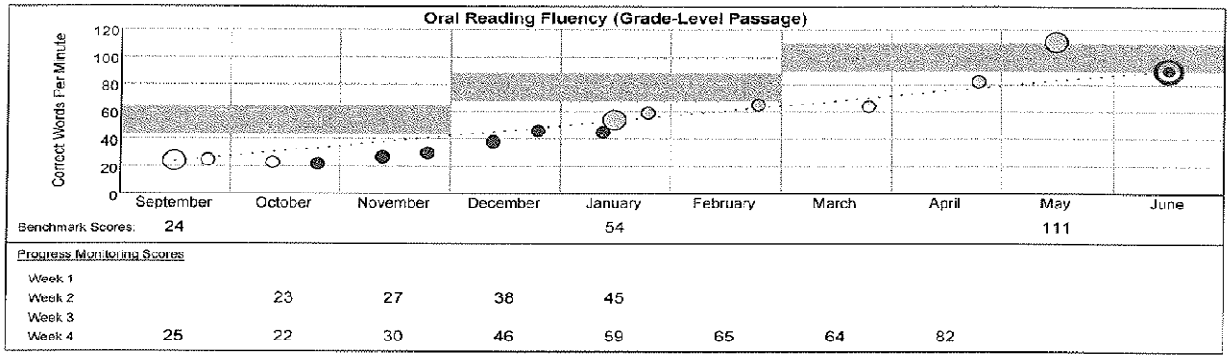
Appendix G-7

Name: Smith, Robert
ID:
Class: Sample 2nd
Grade: Second
Year: 2004-2005
School: A Test School
District: Somewhere, USA

Dynamic Indicators of Basic Early Literary Skills
Progress Monitoring Graphs

Smith, Robert Page 1 of 1

Legend
Target Bar
Target Goal
Benchmark Assessment
Progress Monitoring Assessment
Aimline
Score Above Graph Bounds
Score At or Above Aimline
Score Below Aimline
Consider Adjusting Intervention



Benchmark Scores:	24				54				111
Progress Monitoring Scores									
Week 1									
Week 2		23	27	38	45				
Week 3									
Week 4	25	22	30	46	59	65	64	82	

(Lembke, 2008)

Appendix H

Interview Questions

1. Explain how you utilized the Maze data to inform your instructional decisions for your classes.

2. Explain how you utilized the Maze data to inform your instructional decisions for individual students.

3. Explain how the Maze data impacted your development or approach to individual student supports/interventions in Tier 1.

4. Did the collaborative meeting with colleagues enhance your ability to utilize the Maze data to inform your instructional decisions for classes or individuals? Please explain.

5. How do you think that the results from the Maze assessments compare to students' overall reading ability? Please explain your response.

6. How did the progress monitoring program positively impact student achievement?

7. How was your classroom environment impacted by the progress monitoring program?

8. How were your classroom routines impacted by the progress monitoring program?

9. What components of the district professional development provided you with information necessary to effectively implement the progress monitoring program?

10. In what areas do you need professional development in order to effectively implement a progress monitoring program?

11. In what areas do you need continued professional development to enrich the outcomes of the progress monitoring program?

12. Are there other strengths or weaknesses related to the progress monitoring program you would like to share?

13. On a scale of 1-10, please rate your opinion of continued use of the progress monitoring program. A [1] means – "I have absolutely no desire to participate again!" and a [10] means – "This was GREAT and I'd love to participate again in the future!"

Appendix I -1

TEACHER A INTERVIEW

Interviewer: All right, explain how you utilize the Maze data to inform your instruction decisions for your classes.

Teacher A: Well, upon looking at the data, I noticed that many of my students were -- had trouble just getting through it so it was more of a fluency issue or a reading quickly. I mean I don't think they were reading fast enough. They're just slow-paced. It wasn't necessarily that they were missing things in the reading.

Interviewer: Okay so how did you use the data to inform your instruction for your class as a whole?

Teacher A: Well as I noticed that and that was the big -- that was kind of the common denominator that many people were struggling with that, then during our poetry unit I modeled more fluent reading. I typically read one aloud and I read two aloud this time. We did some small group fluency things where we were reading aloud to partners or I would listen to them read. So I did more of that than I have in the past years based on that.

Interviewer: Great, okay. Now explain how you utilize the Maze data to inform your instructional decisions for individual students.

Teacher A: Okay. I think I probably didn't utilize it as much for individual students as I did by looking at and kind of grouping together what do we need.

Interviewer: Were there limitations as to why?

Teacher A: Well I mean we're limited to the 50 minutes of our class time and reading is our focus, language we're focused on, writing, which I could bring that in, but I mean we have so many things we have to get done in that class as well. And I don't always see the same students. We have different students as well.

Interviewer: Good. Explain how the Maze data impacted your development or approach to individual student support, interventions in tier 1.

Teacher A: Okay, I think it's somewhat similar to what I said. But I could -- by having the data I could see whose obviously still struggling so I could see who needed to be pulled out in smaller groups. Now, if we would have began this at the beginning of the year it would've been more helpful. Now, as when we started it and we had MAP, I didn't utilize it as much. But I could have if I -- does that make sense?

Interviewer: Yes. Did the collaborative meetings with colleagues enhance your ability to utilize the Maze data to inform your instructional decisions for classes or individuals? And please explain.

Teacher A: Well I mean it always helps when more minds are put together than just one. So when we were discussing different things, it would bring up an idea. I don't think we probably discussed enough. We really only had probably one meeting where we talked and most of that was about, we were talking about the fluency piece and that was where our discussions stayed, I think.

Interviewer: Okay. How do you think that the results from the Maze assessment compare to students' overall reading ability?

Teacher A: How they did on the test compared to what I see?

Interviewer: To their overall reading ability, mm-hm.

Teacher A: I think it was pretty comparable. My strong --

Interviewer: So you see the correlation?

Teacher A: I do. There were a few who I was surprised by how -- because they don't necessarily show me that in their comprehension in class necessarily but they were getting through this a lot quicker than what I expected. There were of course the super stars who always got through and I knew they were my strong readers. They were my more struggling readers who were slower. There were also the slower paced readers who have great comprehension but they were just slower paced. So that did, you know, I noticed that as well. And I really honestly wasn't worried about them because

I know what they can do and I know their comprehension piece. I just think some people are a little slower in their reading.

Interviewer: Okay. How did the progress monitoring program positively impact student achievement?

Teacher A: Well it gives more -- I was able to see more specifically, like what I was saying, who may be the fast readers but aren't necessarily comprehending everything because I had a few of those, like I was just speaking of. Or my stronger comprehenders but maybe they're more methodical and they're going at a slower pace. It just kind of gave me more information to look at the student and what they're really doing when they're reading.

Interviewer: Okay. How was your classroom environment impacted by the progress monitoring program?

Teacher A: Honestly, I don't know that it was a huge impact. I mean like I said, I used from what I have said -- I don't know that it was a huge -- I don't know, am I answering that?

Interviewer: Well I think what her question is, is when we talk about environment, like routines, was it disruptive having to change the routine?

Teacher A: No, we came right in at the beginning of the hour, did it the first three minutes, took the test up and then moved on. It didn't, I mean it didn't affect what we were going to do. It didn't take very

much time once we went through it; they realized what we needed to do. They realized that they needed a pencil. They realized they had to, you know -- I mean it pretty much took five minutes.

Interviewer: Okay. How were your classroom routines impacted by the progress monitoring program?

Teacher A: Okay. The same thing basically. We, at the beginning of the hour, I would do it at the beginning of the hour. It would be five minutes. It would be done and we could move onto what we were doing that day.

Interviewer: Okay. What components of the district professional development provided you with information necessary to effectively implement the progress monitoring program?

Teacher A: Okay. Well, through -- we're talking about through PLC? Through our personal --

Interviewer: Through the training on how to do -- what components of the district professional development provided you with information necessary to effectively implement the progress monitoring program?

Teacher A: Well I think when we just going over it and discussing it and going over it step-by-step and why we're doing certain things. I mean I like to be given an explanation and why this is and what it's going to, you know, help us. Not to just say you need to do this.

Interviewer: Okay. In what areas do you need professional development in order to effectively implement a progress monitoring program?

Teacher A: Probably, I mean I think probably all going to say this that after we look at that data then specifically more things into how to help those students who are lower; what are specific things that we can do or specific things that are going to help them.

Interviewer: In what areas do you need continued professional development to enrich the outcomes of the progress monitoring program?

Teacher A: Well I mean I think that I have a lot of strategies and tools and how to help my readers. I think it's the time issue. You know, we were doing this every two weeks and I would do it, get it graded in a week and then the next week have to do it again. So I was having trouble really having time to take the time to look in my materials that I have to find things that would suit the students' needs, you know, before I had to do it again.

Interviewer: Okay. Are there other strengths or weaknesses related to the progress monitoring program you would like to share?

Teacher A: Well I think I probably just did that. Yeah, the turnaround time was a little difficult for me. I think I'm probably a slower grader and the group; they seem to get through them a little faster. I was a little slower, little slower in inputting the information in the computer. I got quicker as we went along, but I mean I was doing

this after school and like I said, I didn't have enough time then to, you know, to look and find things for what I could be -- you know, how could I help them and to analyze the data.

Interviewer: Okay so on a scale of 1 to 10, please rate your opinion of continued use of the progress monitoring program. A 1 means I have absolutely no desire to participate again and a 10 means this was great and I'd love to participate in the future.

Teacher A: 8.

Interviewer: Okay, thank you.

Teacher A: You're welcome.

END

Appendix I -2

TEACHER B INTERVIEW

Interviewer: Okay. Explain how you utilize the Maze data to inform your instructional decisions for your classes.

Teacher B: Okay, we read a novel and the ones that scored below the benchmark that we wanted, we pulled those aside in one group and then did different groups for the others and we worked especially with those just reading out loud, taking turns reading.

Interviewer: Okay. Explain how you utilized the Maze data to inform your instruction decisions for individual students.

Teacher B: Okay. Actually it was basically the same thing. We just did them individually, maybe worked on how they read out loud, worked a little bit with fluency.

Interviewer: Okay. Explain how the Maze data impacted your development or approach to individual student supports interventions in tier 1.

Teacher B: Okay. Actually the students that were struggling reaching the benchmark were the ones that I already knew so we'd been working all year long anyway. So it justified maybe making more working with them one-on-one.

Interviewer: Okay. Did the collaborative meetings with colleagues enhance your ability to utilize the Maze data to inform your instructional

decisions for classes or individuals and please explain your answers?

Teacher B: Actually it didn't make a difference. I co-teach with Rhonda Moss and she and I had already come up with different strategies to use in our CWC classes and I just put those into regular classroom.

Interviewer: Okay. How do you think that the results from the Maze assessments compare to your students' overall reading ability?

Teacher B: Actually compared to our SRI, I think it was very accurate. We had big gains in students that were reading lower so the ones that had not made the benchmark at the beginning were reaching it by the end.

Interviewer: Good. How did the progress monitoring program positively impact student achievement?

Teacher B: The fact that they -- I told them their score so they knew what point they were at and what point they had the next time. Therefore they saw the gain and they tried to achieve a higher one.

Interviewer: So you implemented the students' monitoring their own progress.

Teacher B: Absolutely.

Interviewer: Self-directed, very good. How was your classroom environment impacted by the progress monitoring program?

Teacher B: Not really at all. I don't think the kids one way or the other, other than the fact that they were very pleased when we announced that most people gained so much each time.

Interviewer: Good. And how were your classroom routines impacted by the progress monitoring program?

Teacher B: Actually it really didn't. We normally read at the beginning of our class. We would come in, settle down, read and then just take the test and move on as usual.

Interviewer: Okay. What components of the district professional development provided you with information necessary to effectively implement the progress monitoring program?

Teacher B: We actually were given an instructional by yourself and Ms. Smith and that was all that it took.

Interviewer: Good. In what areas do you need professional development in order to effectively implement a progress monitoring program?

Teacher B: I think I have the benefit of having Rhonda Moss with me so that we work on a CWC, which helps implement this and what I need to do with each student. If I didn't have maybe the work situation with Rhonda that it would probably need maybe just some special time working with someone else, seeing what was going on.

Interviewer: Okay. In what areas do you need continued professional development to enrich the outcomes of the progress monitoring program?

Teacher B: I would say maybe once or twice, maybe getting together and seeing if someone else is coming up with some ideas rather than what I have.

Interviewer: Okay. Are there other strengths or weaknesses related to the progress monitoring program you would like to share?

Teacher B: The only thing that I think it was frustrating for some students who do not like being timed and a little bit of anxiety. That would be the only thing. Otherwise I thought it was really good and the fact of what it proves as far as something to guideline by.

Interviewer: Okay. On a scale of 1 to 10, please rate your opinion of continued use of the progress monitoring program. A 1 means I have absolutely no desire to participate again and a 10 means this was great and I'd love to participate again in the future.

Teacher B: I would say maybe an 8. I think it's a great thing. Hopefully as a teacher you would be able to pick out some of these beforehand, but it's a good way to know exactly who is reading at what level.

Interviewer: Okay, thank you.

END

Appendix I -3

TEACHER C INTERVIEW

Interviewer: Okay. Explain how you utilize the Maze data to inform your instructional decisions for your classes.

Teacher C: I looked at the data and identified the ones that needed the extra help and just -- if it's fluency, you know, I talked to you and I came up with some about reading out loud type of activities so they could improve on fluency. More of a whole class, not as an individual.

Interviewer: Okay. Explain how you utilized the Maze data to inform your instruction decisions for individual students.

Teacher C: Not really, not at this time. I'm -- it's to new for me and I haven't gone through all the data that you guys -- not the data but all the different -- what's the word I'm looking for?

Interviewer: Interventions?

Teacher C: Interventions. I just have not honestly had time to really take a look at that. Most of my students were not so low that I wasn't really terribly concerned about it.

Interviewer: Okay. Explain how the Maze data impacted your development or approach to individual student supports interventions in tier 1.

Teacher C: Just keeping a closer eye on them, it definitely helped me identify -- I kind of already knew who they were, this just verified what I

had already known and especially some of the kids that have like new dimensions or what's that called?

Interviewer: Horizons?

Teacher C: Well it's not Horizons. New Dimensions? Anyway, that just helped me keep track of them a little bit more carefully.

Interviewer: Okay. Did the collaborative meetings with colleagues enhance your ability to utilize the Maze data to inform your instructional decisions for classes or individuals?

Teacher C: Yes and we definitely talked about the data and within our team and then within the department and with me writing curriculum for next year, it will definitely impact how I write curriculum for communication arts next year.

Interviewer: Good, all right. How do you think that the results from the Maze assessments compare to your students' overall reading ability?

Teacher C: I think it's close. I mean you can definitely see comparisons to what they're doing and what they're capable, you know, just them on observation as well as on the test itself.

Interviewer: Okay, I'm going to have you --

Teacher C: Does that make sense?

Interviewer: Yes, but from my, you know, go ahead. So when you look at the Maze assessments and then you looked at their overall reading ability, did you find that they were close on their fluency, on their

comprehension, what they're decoding? I mean what, their word study? What --

Teacher C: You know in sixth grade it's so close. I just think all of the above. The one -- and I don't know if I'm off track here or if you're going to have a question here, but the ones that I'm concerned about is the ones that like in the language, speech and language class, they get a little service but they're going to miss services for an extra academic reading. I've got one student of mine I went and talked to the teacher and I said, you know keep an eye on him. He was by far my lowest tester.

Interviewer: Okay. How did the progress monitoring program positively impact student achievement?

Teacher C: Well, just -- I gave them their scores each time right beforehand and you know, encouraged them to make an improvement. And they all, they're so competitive and they want to learn at this age still so I felt like they definitely took that into consideration and did their best.

Interviewer: So you involved the students in goal setting and --

Teacher C: Yes, exactly, exactly.

Interviewer: Okay, good, good, good. How was your classroom environment impacted by the progress monitoring program?

Teacher C: They learned right away after like the first test and like settle down, get going, they knew what to expect and they definitely took it serious.

Interviewer: Okay. And how were your classroom routines impacted by the progress monitoring program?

Teacher C: A little -- you know, I mean it's just a little hiccup in the routine. After the first one then we got into a quicker routine. I got better at how to give directions and they already knew the directions so then we were -- it was over within five minutes.

Interviewer: Good. In what areas do you need professional development in order to effectively implement a progress monitoring program?

Teacher C: Just intervention, RTI intervention and how can we implement it at this grade level? You know, because our timeframe is so limited. How can we impact -- you know, how can we implement it because of the timeframe at this grade and then especially if we go up to seventh grade. They have less time than we do.

Interviewer: Okay. What components of the district professional development provided you with information necessary to effectively implement the progress monitoring program?

Teacher C: Just you guys coming in and meeting with our group during our half days professional --PDC days and just teaching us what we're supposed to be doing.

Interviewer: Okay. In what areas do you need continued professional development to enrich the outcomes of the progress monitoring program?

Teacher C: You know what I think what I would like to do is go observe somebody implementing the interventions. I would like to take some time, go over and see how they do it in another classroom, another grade.

Interviewer: Okay. Are there other strengths or weaknesses related to the progress monitoring program you would like to share?

Teacher C: The only weakness I see is, you know, there are just really a handful of students that we have to really work with. At our grade level -- maybe it's at every grade level, I've not taught any other grades, but you can tell if a kid had a bad day, they're going to do lousy on their test. And you can't look at the number and say, oh, terrible, terrible reader because at this grade level, their hormones and everything go crazy so to me that's a weakness because you cannot just say, you know, you can't look at one test. The strength is we're doing it constantly so maybe they go down one time but they'll go up the next time. So that's a strength, doing it often enough to keep track of it.

Interviewer: Okay. Good. On a scale of 1 to 10, please rate your opinion of continued use of the progress monitoring program. A 1 means I

have absolutely no desire to participate again and a 10 means this was great and I'd love to participate again in the future.

Teacher C: Probably an 8.

Interviewer: Okay. Anything else you want to add?

Teacher C: Oh, no.

Interviewer: Okay. END

Appendix I -4

TEACHER D INTERVIEW

Interviewer: Al right. Explain how you utilize the Maze data to inform your instructional decisions for your classes.

Teacher D: I used it so that I knew what to model like fluency. I used it so that I knew -- I took their scores and used those scores and used it to know that I needed to model fluency for the kids.

Interviewer: Okay. Explain how you utilized the Maze data to inform your instruction decisions for individual students.

Teacher D: I didn't do anything with the individual students. I did it as a class.

Interviewer: Okay. Explain how the Maze data impacted your development or approach to individual student supports interventions in tier 1.

Teacher D: Can you read it again?

Interviewer: Yes, explain how the Maze data impacted your development or approach to individual student supports interventions in tier 1.

Teacher D: Again I used it as a class instructional, not for individual students .

Interviewer: Okay. Did the collaborative meetings with colleagues enhance your ability to utilize the Maze data to inform your instructional decisions for classes or individuals?

Teacher D: Yes, the other reading teachers and I talked about it and traded ideas of how to use that information.

Interviewer: Okay. How do you think that the results from the Maze assessments compare to your students' overall reading ability?

Teacher D: I think some of them were accurate but then there were other students that I know just take their time and do their work. They're very -- they can read well. They just read slower and I don't think those scores matched up then as far as achievement and fluency.

Interviewer: Okay. How did the progress monitoring program positively impact student achievement?

Teacher D: Their scores fluctuated. I think some of the passages the kids weren't as comfortable reading. So their scores, some of their scores went down and they would go back up. Some of them stayed consistent. Some of them did go up.

Interviewer: So would you say that having prior knowledge, background knowledge on the topic made a difference in their scores?

Teacher D: Yes, yes.

Interviewer: Okay. How was your classroom environment impacted by the progress monitoring program?

Teacher D: Can you read that one again? Sorry.

Interviewer: How was your classroom environment impacted by the progress monitoring program?

Teacher D: I did more -- I used the CDs that went with our curriculum a little more so that the kids could hear that fluency and that way if it was text that I wasn't familiar with as far as words from other countries, the children heard those words spoken correctly rather than me struggling with those words that I wasn't familiar with.

Interviewer: Okay. And how were your classroom routines impacted by the progress monitoring program?

Teacher D: It took very little time. It didn't really affect the routine of my classroom at all.

Interviewer: Good. In what areas do you need professional development in order to effectively implement a progress monitoring program?

Teacher D: Can I read that one myself or can you read it again?

Interviewer: Okay, what components of the district professional development provided you with information necessary to effectively implement the progress monitoring program?

Teacher D: The instruction given by Glover & Smith was adequate for us to implement the instruction in our classroom.

Interviewer: Okay. In what areas do you need continued professional development to effectively implement progress monitoring program?

Teacher D: I think the -- as far as using the scores to use -- using the scores for instruction in my classroom --

Interviewer: In what areas do you need professional development in order to effectively implement a progress monitoring program?

Teacher D: I think I was able to implement the program with the instruction that I was already given. I just think it would be more beneficial for us to have some more strategies to use with those scores.

Interviewer: Okay. In what areas do you need continued professional development to enrich the outcomes of the progress monitoring program?

Teacher D: To enrich them, again just more strategies to help the individual students.

Interviewer: Okay. Are there other strengths or weaknesses related to the progress monitoring program you would like to share?

Teacher D: No, I think it was easy to administer, it was easy to grade. I don't think there were any problems in those areas at all. It wasn't very time-consuming at all.

Interviewer: Okay. Good. On a scale of 1 to 10, please rate your opinion of continued use of the progress monitoring program. A 1 means I have absolutely no desire to participate again and a 10 means this was great and I'd love to participate again in the future.

Teacher D: 10 as long as there were strategies to follow up and if we start at the beginning of the year I think it would be more beneficial rather than later on in the year.

Interviewer: Okay.

END

Appendix J

		Fall SWAT	Winter SWAT	Growth	Spring SWAT	Growth		Progress Monitoring				
		MAZE	MAZE	Win-Fall	MAZE	Spr-Win		2/23	3/16	3/30	4/13	4/27
A		24	29	5	39	10		28	31	35	30	38
A		23	25	2	34	9		36	38	42	40	34
B		22	36	14	36	0		44	43	48	40	44
A		28	29	1	42	13		38	33	39	31	41
C		12	18	6	24	6		32	24	30	26	28
C		24	29	5	38	9		42	32	29	27	33
D		47	47	0	47	0		44	50	53	44	48
D		19	21	2	28	7		27	19	27	26	24
A		32	31	-1	32	1		35	34	31	28	35
C	ESOL	11	14	3	22	8		29	29	32	24	27
C	OHI	23	28	5	44	16		44	46	51	33	42
A		30	33	3	35	2		42	43	44	46	44
A		12	17	5	25	8			23	23	22	36
D		22	26	4	34	8		39	31	31	26	36
D		22	26	4	34	8		30	27	31	32	28
C		11	23	12	28	5			26	30	30	28
D		11	14	3	15	1		23	21	22	21	16
A		27	30	3	37	7		43	39	44	41	41
D		15	14	-1	26	12		22	23	23	21	20
B	GIFTED	45	44	-1	47	3		44	46	53	44	
A		22	22	0	26	4		34	23	23	27	23
A		14	21	7	31	10		28	25	26	26	29
A	GIFTED	32	35	3	44	9		44	38	46	46	49
A		28	35	7	43	8		43	39	46	44	48
C		28	30	2	35	5		41	38	43	39	38
C		31	32	1	41	9		38	38	37	40	
C		22	18	-4	31	13		37	33	34	40	44
C		42	39	-3	42	3		44	49	53	44	48
A	LI	14	22	8	29	7		26	21	23	29	27
D		24	29	5	37	8		35	29	35	33	31
C		24	24	0	36	12		42	40	41	37	42
A		25	29	4	40	11		40	39	44	46	45
A		30	31	1	37	6		39	35	44	36	40
D	GIFTED	35	36	1	45	9		42	44	44	40	
A		27	27	0	46	19		44	50	53	43	48
B		22	19	-3	19	0		28		24	19	19
B		9	15	6	26	11			22	31	28	
D	GIFTED	40	45	5	46	1		44	48	53	44	
A		22	19	-3	22	3			32	33	26	32
C	ESOL	17	25	8	32	7		41	33	36	28	38
C		19	27	8	30	3		28	34	34	25	31
A	OHI	3	5	2	11	6		10	16	5	18	4
B		21	26	5	34	8		38	30	36	33	39
C	GIFTED	44	45	1	46	1		44	49	44	44	
C		31	34	3	42	8		42	40	50	43	48
A		31	40	9	42	2		38	44	45	46	44
A		23	22	-1	35	13		39	38	38	25	34
D		24	31	7	37	6		31	32	34	35	34
B		10	17	7	20	3		25	24	21	23	30
D		16	23	7	21	-2		27	29	30	18	28

Note: Shaded cells represent scores below the benchmark score of 26. Shaded cells with grid lines represent scores significantly below the benchmark score of 26.

Vitae

Jamie Smith was born and lived in the Kansas City area until moving to mid-Missouri in 1985 where she lived until attending college at Central Missouri State University in Warrensburg, Missouri. After earning her Bachelor of Science in Education with an emphasis in special and elementary education in 1998, she served as a special education teacher in the Kansas City area for six years. In 2002, she completed her Master of Educational Technology from the Mid-America Nazarene University in Olathe, Kansas. Currently, Mrs. Smith is serving as a Special Services Director in a rural Missouri district, while working to complete her Doctorate in Educational Administration from Lindenwood University by May 2011.