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A Mixed Methods Comparative Analysis of the Implementation of the Multi-Tiered Systems of Support in Missouri Elementary Public Schools

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by

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Dr. Lynda Leavitt, Dissertation Chair — Date: 6/29/2018

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Declaration of Originality

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

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Abstract

This study consisted of a mixed-methods comparative analysis of the implementation of the Multi-Tiered Systems of Support (MTSS) in public school districts in the state of Missouri. The researcher surveyed nine public school districts similar in demographics of socio-economic representation, free and reduced lunch percentage, and average daily fund expended to educate students. One district administrator responsible for the implementation of MTSS represented each school district. In the qualitative component of the study, the researcher utilized an original electronic survey to gather insights into the unique implementation path each district employed. Coding and analysis resulted in identification of themes, similarities, and differences. The researcher interviewed 2 state-level leaders integral in the design and implementation recommendations from a state-level perspective. Coding and analysis of interview responses resulted in identification of similarities and differences in state and district-level implementation of MTSS. The quantitative component of study included collection and analysis of secondary data obtained from the Missouri Department of Elementary and Secondary Education via the Missouri Comprehensive Data System. The researcher obtained and analyzed elementary achievement and student attendance data to determine a difference within districts with full and partial implementation of MTSS. Through analysis of the qualitative surveys and interviews, the researcher found unique implementation paths among the study districts. All nine study districts implemented differently and none utilized a recommended path or blueprint. District implementations varied from perceptions held among the state-level leaders interviewed. Through analysis of the quantitative component of the study, the researcher identified no

difference in achievement and student attendance in districts deemed full implementation in comparison to partial implementation. The researcher recommended continued attention to successful implementation of MTSS at state and district levels. Future attention with focus on increased technical support and funding at the state level held the promise of prompt, appropriate supports to students who struggle in the academic, behavioral, and social skill areas.

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Chapter One: Introduction

Introduction

The researcher completed a mixed-methods comparative analysis to explore the implementation of the Multi-Tiered System of Support (MTSS) initiated and maintained in Missouri suburban elementary public schools. At the time of this writing, public school districts spanning the state of Missouri and across the nation grappled with the appropriate identification and implementation within a school and district-wide structure, which successfully supported the academic achievement and social growth of all learners (Arden, Gandhi, Edmonds, & Danielson, 2017). The school-wide reform framework was selected by many based on the promise of benefits for all students (Sailor & McCart, 2014).

The responsibility of public schools changed over time. Historically, public schools primarily focused on educating the masses and utilized similar teaching strategies with all students (Tomlinson & Allan, 2000). Those students who did not achieve over time or were perceived as discipline issues were addressed through retention, social promotion, suspension, or dropped out. Until the passing of PL 94-42, students with disabilities found public schools unprepared for instructing students with a unique set of needs (US Department of Education, 2007). In years recent to this writing, teachers, parents, and students experienced a more inclusive education policy, which mandated schools to meet the needs of all learners (Klein, 2017). Federal and state laws defined identification of specific learning disabilities (SLD). Missouri's Department of Elementary and Secondary Education (MODESE) provided Special Education Compliance Standards and Indicators which identified two methods in the identification

process. The first method included a significant discrepancy between intelligence and achievement (MODESE, 2017). Over a period of time, the procedures became known as a wait-to-fail process. In the experience of the researcher, a dissatisfaction with the model occurred specifically when the formative years of learning passed while the knowledge gap widened among students with and without an educational disability. The second method was titled Response to Scientific Research-Based Intervention Method, where schools in Missouri found a student eligible for SLD when the student did not display sufficient progress based on the individual's response to "scientific, research-based interventions" (MODESE, 2017, p. 28).

Many variations of multi-tiered systems existed throughout the nation; the most widely known included Response to Intervention (RtI) and School Wide Positive Behavioral Intervention System (SW-PBIS). The structure of RtI, generally referred to a three-tiered framework designed to address academic shortfalls, while SW-PBIS consisted of three tiers of intervention with a goal of improved behavior and social emotional skills. The concept of the MTSS blended three tiers of increasingly intense interventions targeted at academic and behavioral/social deficits (Lane, Menzies, Ennis, & Bezdec, 2013). Educators who implemented the model found complexity and inconsistency; while many individuals questioned the model's success rate. National research painted a picture of a model without positive student outcomes (Sparks, 2015). Results of the study, should be considered relative to the limited context in which the study occurred.

Rationale of the Study

Many learners struggled throughout the United States in public schools. In the experience of the researcher (as a special education teacher and administrator) academic and behavioral supports and interventions were inconsistently provided if the student was not identified with an educational disability under the Individuals with Disabilities Education Act (IDEA) or Section 504/Title II. Public school districts across the nation were called upon to meet the needs of students at all ability levels. President Obama's administration stated, "We must ensure that every student graduates from high school well prepared for college and a career" (US Department of Education, 2010, p. 1). The Missouri Council of Administrators of Special Education (MO-CASE, 2013, 2014) advocated for the inclusion of the MTSS in Missouri schools. Lewis and Mitchell (2014) presented to educators at the MO-CASE Winter Institute, in support of the incorporation of RtI and SW-PBIS through the newer framework of MTSS. Hayes and Lillenstein (2015) presented MTSS as an approach to meeting the academic and behavioral needs of students through a framework for educational reform in the United States.

MTSS was one of the three recommended components in Hayes and Lillenstein's Framework for Coherence, supported by the American Institutes for Research (2015). Extensive research in the development and implementation of RtI and SW-PBIS existed. The recent emergence of MTSS limited the availability of then-current literature specifically in the implementation of MTSS in Missouri public schools.

The complexity of reform initiatives often caused failure in the early implementation phases. Turnbull et al. (2002) identified predictors of teacher buy-in and noted administrative support as important factors when implementing an initiative. All

stakeholders involved in school reform initiatives held a unique perspective based on training and the perceived role of the implementation. The researched district level administration possessed an understanding of new initiatives. The study closed the gap in the already existing body of literature on academic and behavioral supports through data collection on the implementation of the MTSS framework in Missouri public schools.

The researcher developed this study after 25 years as a teacher and administrator in Missouri public schools. Students who struggled to meet curricular and behavioral expectations and not found eligible as a student with an educational disability required interventions. While serving learners in the capacity of a special education teacher, first at the elementary level and later at secondary, the researcher witnessed first-hand, within the class-within-a-class setting, the wide variety of needs learners presented. Some learners in need qualified for supports and specialized instruction under the IDEA, while the researcher found many struggling learners, academic and behavioral, did not. The researcher believed when students experienced an intervention and progress monitoring, higher achievement and increased attendance followed. The researcher focused on the potential difference made through the implementation level of MTSS, student achievement, and attendance. Qualitative data included the perceptions of district administrators on the process of MTSS. The researched population included staff and students in the elementary setting in K-12 public school districts in the state of Missouri and publicly-available secondary data provided from MODESE. The study was doctoral worthy because of the potential contribution to Missouri public schools striving to meet the challenge of educating and supporting all students in preparation to be college and career ready.

Purpose of Study

The purpose of this mixed-methods comparative analysis was to explore the implementation of the MTSS in 15 school districts with similar criteria of student enrollment, free and reduced lunch demographic, and expenditure per Average Daily Attendance (ADA). Through surveys and interviews, the researcher gathered and analyzed each district's implementation level as full or partial. The researcher also used the Missouri Comprehensive Data System compiled by MODESE (n.d.) to gather secondary data to analyze student achievement and attendance rates of students in school districts with MTSS implementation. The information from the study may provide staff and administration in Missouri public school districts with insights into the implementation of the MTSS.

Questions and Hypotheses

The researcher investigated the following research questions and hypotheses:

RQ1: How do school districts implement the MTSS?

RQ2: How do administrators perceive assessment components of the MTSS?

RQ3: How do administrators perceive intervention components of the MTSS?

RQ4: How do administrators perceive decision making components of the MTSS?

RQ5: How do administrators perceive fidelity components of the MTSS?

Hypothesis 1: There is a difference in the percentages of elementary students scoring Proficient or Advanced in English Language Arts among districts with full and partial MTSS implementation.

Hypothesis 2: There is a difference in the percentages of elementary students scoring Proficient or Advanced in Mathematics among districts with full and partial MTSS implementation.

Hypothesis 3: There is a difference in the attendance rates among districts with full and partial MTSS implementation.

Study Limitations

One limitation of this study was the small sample size. The research design focused on MTSS implementation in 15 of Missouri's 567 public school districts. The sample was limited to like school districts regarding student enrollment, free and reduced lunch count demographic and expenditure per pupil. Only district-level administration completed the survey. The data collected examined achievement and attendance at individual elementary buildings within each study district. District level administration may have lacked building-level specific implementation information. The research design included the assignment of the level of implementation; full or partial. The designation applied to the implementation of each component and did not evaluate or measure the quality, variance, and fidelity of implementation.

Definition of Terms

Average daily attendance –

> [t]he quotient or the sum of the quotients obtained by dividing the total number of hours attended in a term by resident pupils between the ages of five and twenty-one by the actual number of hours school was in session in that term. (MO Revised Statutes, 2015, para. 2)

Educational disability –

> The Individuals with Disabilities Education Act (IDEA) defines students with disabilities as those children, ages three (3) to twenty-one (21), who have been properly evaluated as having Intellectual Disability, Hearing Impairments and Deafness, Speech or Language Impairments, Visual Impairments including Blindness, Emotional Disturbance, Orthopedic Impairments, Autism, Traumatic Brain Injury, Other Health Impaired, a Specific Learning Disability, Deaf Blindness, or Multiple Disabilities and, who because of that disability, require special education and related services. As allowed under 34 CFR 300.8 implementing IDEA, the State of Missouri also defines a child with a disability to include children ages three (3) through five (5) who have been properly identified as a young child with a developmental delay. (MODESE, 2016, para. 11)

Intervention - Data-based explicit instruction, targeted to individuals, and monitored through on-going assessment (Prasse et al., 2012).

Missouri Assessment Program (MAP) - encompassed several statewide assessments that met state and federal statutory requirements. Students were scored using the following achievement levels:

Advanced - Students who consistently demonstrate a thorough command of the skills and processes identified in the Missouri Learning Standards.

Proficient - Students who demonstrate an adequate command of the skills and processes identified in the Missouri Learning Standards.

Basic - Students who demonstrate a partial or uneven command of the skills and processes identified in the Missouri Learning Standards.

Below Basic - Students who demonstrate a minimal command of the skills and processes identified in the Missouri Learning Standards (Missouri Department of Elementary and Secondary Education. [MODESE], 2016, p. 4)

Multi-Tiered system of support (MTSS) - A framework "designed to meet the academic and behavioral needs of all students through the use of a continuum of instructional supports and targeted intervention of increasing intensity matched to student need" (Morrison, Russell, Dyer, Metcalf, & Rahschulte, 2014, p. 130). For the purpose of this study the researcher will study both full and partial implementation of MTSS.

Full Implementation: Refers to implementation of all components of a multi-tiered system of support: identification, evidence-based instruction, close monitoring of student progress, and decision making for all levels within the system, including administration, teachers, and parents and implementation fidelity. (Fuchs, Fuchs, & Compton, 2012, pp. 263-264)

Partial Implementation: For the purpose of the study, the researcher defined partial implementation as anything less than the four components described in the definition for full implementation.

Progress monitoring –

A component of Tier 1 services . . . encompasses a system of brief assessments that are given frequently, at least monthly, to determine whether students are progressing through the curriculum in desired fashion and are likely to meet long-term goals. (Stecker, Fuchs, & Fuchs, 2008, p. 11)

Response to intervention (RtI) - A framework in which a "multi-Tiered, prevention-intervention system, successive levels of instructional support are provided

when a student's response to the academic program is sufficiently poor, particularly as compared to his or her peers' responses" (Stecker et al., 2008, p. 10). The term, RtI, has been utilized in many variations to include academics, behavior, and the two combined. In some circumstances RtI and MTSS were synonymous; therefore, attention must be focused on the components included.

Universal screener - A procedural tool, "a basic skills test (any standardized test that yields a standard score) administered to all students within two weeks after the beginning of the school year" (Owen, 2012, p. 96).

Universal supports - Teachers provide, "evidence-based (generally effective) instruction," to all students in the general education setting (Fuchs, Fuchs, & Stecker, 2010, p. 302).

Summary

Results from this study may prove useful in assisting public school districts in the implementation of the MTSS framework within a variety of settings. Students who struggled to meet grade level objectives, in either the academic or social/emotional/ behavioral realm benefited from practitioners and administrators' deeper understanding of the importance of universal screening, identification of areas of struggle prior to failure, provision of explicit instruction, closely monitored progress, adjustment of instruction, and continual data-informed movement through tiered instruction. Chapter One introduces the study in terms of background, details the purpose and rationale, presents the research questions and hypotheses, outlines terms specific to the study, and discusses limitations. Chapter Two reviews literature on the MTSS; specifically the components, implementation, variations, and outcomes. Chapter Three details the

methodology for the study. Chapter Four outlines survey results and secondary data analysis. Chapter Five discusses results of the study, analysis, and implications for schools and students, at the time of this writing.

Chapter Two: Review of Literature

President Barack Obama called upon public school teachers in the United States to close the achievement gap that existed in student achievement. In the 2015 signing of the Every Student Succeeds Act (ESSA), President Obama proclaimed, "With this bill, we reaffirm that fundamentally American ideal - that every child, regardless of race, income, background, the zip code where they live - deserves the chance to make of their lives what they will" (as cited in Davis, 2015, para. 3). President Donald Trump's Secretary of Education, Betsy DeVos supported the state-level empowerment ESSA represented (Green, 2017, para. 7). Prior to the enactment of ESSA, Hunter et al. (2015) noted, "Federal Mandates (IDEA: Individuals with Disabilities Education Improvement Act, 2004; US Department of Education, 2001) required teachers to accommodate students with more diverse academic and behavioral needs in inclusive general education settings" (p. 345). Leko, Brownell, Sindelar, and Kiely (2015) discussed the challenge of assisting all students in rising to the challenge of increased academic rigor throughout the country while, "implementing MTSS for preventing academic and behavioral difficulties through high quality, research-based core instruction provided to all students and increasingly intensive, personalized tiers of intervention that incorporated evidence-based interventions when students are unable to respond successfully" (p. 26). Hayes and Lillenstein (2015) presented an approach to meeting the academic and behavioral needs of students through a framework for educational reform in the United States. MTSS was one of the three recommended components in Hayes and Lillenstein's (2015) Framework for Coherence, supported by the American Institutes for Research. Hayes and Lillenstein (2015) explained MTSS placed, "emphasis on high-quality core instruction for all

learners as the primary level of prevention. Students requiring additional supports may receive a secondary level of prevention with supplemental, evidence based instruction or a tertiary level with intensive, highly individualized interventions" (p. 13). The Missouri Council of Administrators of Special Education (MO-CASE) introduced "Unifying General and Special Education - MO-CASE Reinvent Initiative" to the membership in 2013 (Missouri Council of Administrators of Special Education [MO-CASE], 2013, p. 1). The transformation of the two separate branches of general and special education united around increased collaboration, implementation of a MTSS, embedded evidence-based practices, utilization of eligibility of specific learning disabilities (SLDs) through RtI models, and student proficiency on Missouri Learning Standards (MO-CASE, 2013, p. 11). Initiatives, such as All Ed in Missouri, challenged educators and systems to develop and adopt frameworks, "A single, unified educational system where all educators demonstrate the commitment, confidence, expertise, and call to action to teach all learners within a community of professional support" (MO-CASE, 2014, p. 2). The American School Counselor Association, the National Association of School Psychologists, the School of Social Work Association of America, the National Association of School Resource Officers, the National Association of Elementary School Principals, and the National Association of Secondary School Principals joined forces to author, *A Framework for Safe and Successful Schools*. The framework urged policy leaders to "Support multi-tiered systems of support (MTSS)" (National Association of School Psychologists [NASP], 2013, p. 1). The team set forth best practices for school implementation to create increased student safety and success; "Implement multi-tiered systems of support (MTSS) that encompass prevention, wellness promotion, and

interventions that increase with intensity based on student need, and that promote close school-community collaboration" (NASP, 2013, p. 1). Education leaders identified the MTSS framework as integral to the charge to change the face of public education in the state of Missouri. "It is fortunate that many districts have recognized that supporting all students is a shared responsibility. As a result, they have instituted multi-Tiered systems of support" (Lane, Oakes, & Menzies, 2014a, p. 122). Toste et al. (2014) discussed school-district implemented multi-tiered systems in a variety of ways (p. 192). Lane et al. (2014a) further described MTSS as a preventative framework which identified and addressed all students' academic and behavioral concerns. "To assist general educators in meeting this instructional challenge, Multi-Tiered Systems of Support (MTSS), such as RtI and Positive Behavior Intervention Systems (PBIS) were established in schools nationwide" (Hunter et al., 2015, p. 345). Sailor (2015) defined tiers, "Tier refers to intensity of instruction, which can be delineated in many ways" (p. 95). Algozzine et al. (2012) described the framework, "A Tier refers to intervention provided in response to increasing needs of students" (p. 46). Lane, Oakes, Jenkins, Menzies, & Kalberg (2014b) explained, "The goal of multi-tiered models is to construct systems to enable the educational community to work more efficiently and avoid addressing these domains [academic, behavioral, social] separately. It minimizes a silo approach and maximizes a collaborative ethos" (p. 131).

School leaders realized traditional public school instructional practices needed to change. Schools focused on how to include targeted instruction for all struggling students. Benner, Kutash, Nelson, and Fischer (2013) spoke to the need for tiered interventions, "While researchers have examined the achievement gap that widens over

time, perhaps the more salient concern is the gap in opportunity to access primary prevention and the supplemental explicit instruction offered within secondary and tertiary prevention system[s]" (Benner, Kutash, Nelson, & Fischer, 2013, p.16). Lane, Menzies, Ennis, & Bezdek (2013) referred to such change in schools as a "[s]hift in the way that they address students' academic and behavioral difficulties. Rather than viewing student performance as the province of individual teachers, students, and parents, there is now a focus on using a systems approach to student success" (p. 6). "Teaching is complex work often performed under challenging conditions. Teachers are responsible for ensuring that their students learn the prescribed curriculum at a predetermined level of proficiency in a limited amount of time" (Lane et al., 2014a, p. 121). The MTSS such as RtI, PBIS, and Comprehensive Integrated Three-Tiered Model of Intervention (CI3T) provided the frameworks to attempt to address the varied needs of all students. "In the view of many, one of the more promising initiatives has been to intervene early when students show signs of English Language Arts difficulties, with a tiered approach known as RTI or multi-tier system of support" (Gersten, Jayanthi, & Dimino, 2017). Terrell (2017) stated, "Multi-Tier strategies have become the standard for identifying and assisting struggling students" (p. 41).

Response to Intervention

"One of the most significant transformations in early identification and intervention for students at risk of academic failure has been the RTI initiative" (Hudson & McKenzie, 2016, p. 31). "RtI [Response to Intervention] is the systematic use of assessment data to most efficiently allocate resources in order to enhance learning for all children" (Burns & Vanderheyden, 2006, p. 3). In its inception, RtI was formulated as an

alternative to the wait-to-fail or discrepancy model. RtI had become far more utilized as a preventative model utilized when students first begin to struggle instead of waiting for failure (McDaniel, Albritton, & Roach, 2013, Fuchs & Fuchs, 2006a, 2006b). Buffum, Mattos, and Weber (2010) discussed the foundation of RtI,

> Schools should not wait until students fall far enough behind to qualify for special education to provide them with the help they need. Instead, schools should provide targeted and systematic interventions to all students as soon as they demonstrate the need. (p. 10)

"The overarching expectation of a successful RtI framework is to offer the necessary support for the majority of the students to meet both academic and behavioral expectations" (Hunter et al., 2015, p. 347). Hunter et al. (2015) further discussed, "Within a classroom, more intensive levels of support are offered to smaller populations of students who do not respond to initial levels of treatment" (p. 347).

"ESSA encourages the expansion of the RTI approach beyond SLD [specific learning disability] identification under the rubric of MTSS to the extent of identifying it as a use of its major funding in general education" (Zirkel, 2017, p. 171). Hudson and McKenzie (2016) discussed the Individuals with Disabilities Improvement Act (IDEIA) endorsement of RtI: "The longstanding method of establishing and intelligence-achievement discrepancy to identify SLD could no longer be required. IDEIA also granted states the independence in determining whether to require or allow districts to use RTI in identifying SLD" (p. 32).

"RtI can be structured with as many tiers as a district warrants, but most models currently involve three tiers" (Averill & Rinaldi, 2011, p. 83). Zirkel (2017) denoted,

"[the] majority of states do not provide specific requirements, such as specifying the number and length of tiers, the decision points from Tier to Tier, and the frequency of progress monitoring" (p. 171). Ehren (2013) described RtI, "Students get what they need, when they need it for as long as they need it. Any practice that thwarts this goal should be reexamined by the school" (p. 451). "Now with more than 70 percent of school districts across the country incorporating RTI in at least some classrooms, it has become more of a general education approach, with all of the trade-offs it entails" (Sparks, 2015, p. 1). Gersten, Jayanthi, & Dimino (2017) stated, "Virtually every state actively encourages schools to use a preventative/RTI approach, particularly for beginning English Language Arts in the primary grades" (p. 245). Thorius, Maxcy, Macey, and Cox (2014) discussed the two formats of RtI; standard protocol and problem-solving model. In the standard protocol model, practitioners implemented research-based strategies and monitored student success. Student progress informed movement to a more or less intensive tier or strategy. "In problem solving models, educator teams select interventions based on interpretations of student progress" (Thorius, Maxcy, Macey, & Cox, 2014, p. 287).

Response to Intervention and School-Wide Positive Behavior Intervention and Supports

RtI and SW-PBIS were the first multi-tiered frameworks to be implemented in schools. Toste et al. (2014) discussed, "Over the past decade, RTI has been adopted as a school service delivery model in many school districts across the country" (p. 193). Averill and Rinaldi (2011) summarized the multi-tiered frameworks, "The Rti and PBIS approaches involve targeting specific areas in which students are struggling and then

applying increasingly research-based interventions until the barriers to learning are addressed" (p. 91). Lane et al. (2014a) discussed students' needs in the then-current public school classrooms, "Students pose considerable challenges in that they have an array of needs that are not solely academic; yet, these needs have the potential to significantly affect academic achievement and must be managed daily by teachers" (p. 122). Benner et al. (2013) described SW-PBIS as, "An MTSS framework for behavior, establishing the social culture and behavioral supports needed for schools to be effective learning environments for all youth" (p. 19). Discussing the frameworks of RtI and SW-PBIS, Hunter et al. (2015) noted foundational commonalities including, "Applied behavior analysis, curriculum-based assessment, pre-referral intervention, data-based decision making, and team-based problem solving" (p. 348). Discussing the frameworks of RtI and PBIS, Hunter et al. (2015) also noted commonalities including, "Universal screenings, a continuum of evidence-based practices, data-based decision making, and measures of intervention fidelity" (p. 348). Averill and Rinaldi (2011) suggested, "Integrating both models directly addresses the academic, social, emotional, and behavioral development of children from early childhood through adolescence" (p. 91). Saeki et al. (2011) discussed the more proactive approach of addressing emerging behavioral concerns in students compared to the traditional reactive school response to problem behavior: suspension and other punitive measures. Evidence-based practices were crucial at every tier of intervention to prevent the progression of development of more intense behavioral issues (Saeki et al., 2011, p. 43-44). Maras, Thompson, Lewis, Thornburg and Hawks (2015) shared, "Educators and researchers alike advocate that, in addition to tiered models of behavioral and academic support, the missing piece of a

comprehensive systems change model is to integrate the elements of social-emotional learning" (p. 198). As Saeki et al. (2011) stated, "A three-tiered, RtI framework for social, emotional, and behavioral issues affords an opportunity to provide additional, meaningful supports for students who are at-risk but may not qualify for special education services" (p. 49).

Comprehensive, Integrated, Three-Tiered Model of Prevention

RtI typically referred to tiered interventions, which addressed academic deficiencies while PBIS employed tiered intervention, which addressed behavioral deficiencies. Lane et al. (2014a) discussed an additional structure to address academic, behavioral, and social deficiencies. "Comprehensive, Integrated, Three-Tiered (CI3T) model of prevention blends the academic (RtI) and behavioral (PBIS) models and incorporate[s] validated programs to address social skills" (p. 122). CI3T originated within the nine years previous to this writing as, "a partnership between University of Kansas, Arizona State University, and Lawrence Public Schools" (CI3T Partners, 2016). Due to the then-recent small-scale development of the frame work, limited published work was available. A five-article series predominately authored by a couple of researchers provided the basis of explanation of CI3T for the study (Lane et al., 2014a; Lane et al., 2014b; Lane, Oakes, Ennis, & Hirsch, 2014e; Lane, Oakes, & Magill, 2014c). The researcher anticipated increased awareness and utilization in future development of school programs. Lane et al. (2014b) explained, "This model is developed to (a) establish primary prevention efforts to prevent learning, behavioral, and social problems from occurring and (b) respond swiftly to students with existing concerns using Tier 2 and 3 supports when such challenges occur" (Lane, Kalberg, & Menzies, 2009; p. 129).

"This model recognizes students' multifaceted needs and offers a structure of school site leadership teams to consider students' multiple needs simultaneously in an integrated fashion" (Lane et al., 2014b, p. 123). As seen in Figure 1, "CI3T are data-informed, graduated systems of support constructed to address academic, behavioral, and social domains, with an overarching goal of supporting all learners in inclusive environments by maximizing available expertise through professional collaborations among school personnel (Lane et al., 2014b, p. 123).

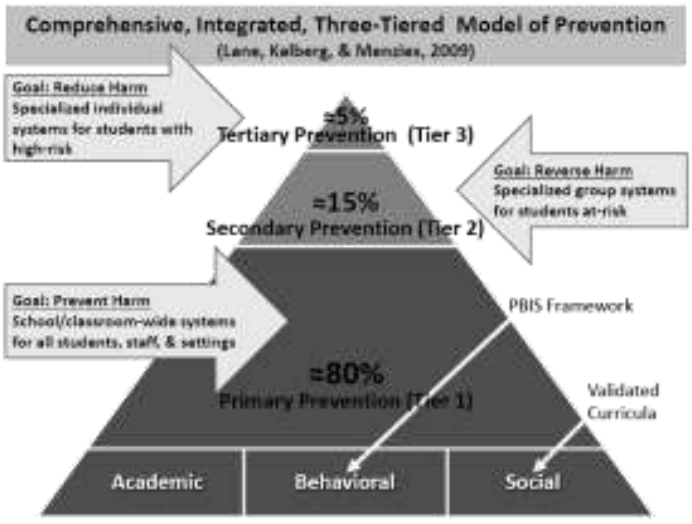

Figure 1. Comprehensive, Integrated, Three-Tiered Model of Prevention (Lane et al., 2009).

Lane et al. (2014b) shared a process for implementing districts to follow in implementation. The focus of each plan differed based on the feedback and input gathered from stakeholders at each district and site. Though established uniquely, each

design process included; commitment garnered from district leadership and determination of an implementation plan, gathered support from school staff prepared for staff inclusion in the design plan, and determined staff which comprised the site's CI3T Team. The CI3T Team held responsibility of the unique multi-year design plan for professional development and implementation, based on input from staff and stakeholders. Within the implementation plan, each team conducted training and periodic reinforcement of all stakeholders to ensure understanding of the components and practices adopted (Lane et al., 2014c). In the interest of fidelity of implementation and sustainability, the CI3T Team included planning for and monitoring of treatment integrity (Lane et al., 2014c).

Within Tier One, Primary Prevention consisted of instruction in core academic curriculum, explicit instruction within an adopted social emotional curriculum, and a school-wide structure of positive support (Lane, 2014a). Lane et al. (2014a) discussed, in addition to academics, the importance of supporting the social and emotional learning needs of all students especially those found eligible under IDEA, specifically Emotional Disturbance (EBD). "In addition to the poor school outcomes, students with EBD also tend to experience poor post-school outcomes such as increased rates of underemployment, incarceration, and dysfunctional relationships" (Lane et al., 2014b, p. 122). CI3T addressed this concern through direct social skills instruction for all students to benefit them in relationship establishment and maintenance in life with peers, professional colleagues, and within the community (Lane et al., 2014b). Oakes, Lane, Jenkins, and Booker (2013) explained, "Primary prevention for behavior includes creating positive, proactive school environments through school-wide behavioral programming where expectations are established, taught, rehearsed, and reinforced

through common practices among all adults at the school site" (p. 97). Teachers at Tier One monitored students' successes. "When students do not progress as expected in response to primary prevention efforts, CI3T models have mechanisms to address these needs such as through existing Tier 2 and 3 supports" (Lane et al., 2014c, p. 144).

"An important component of any CI3T model of prevention is accurate detection of which students may require supports beyond primary prevention efforts" (Lane et al., 2014e, p. 171). "With the highest quality instructional programs and practices and rigorous tools for assessing student performance and progress, school professionals can collaborate to identify and meet the needs of the majority of students in the general education context" (Oakes, Lane, Cox, & Messenger, 2014, p. 159). Lane et al. (2013) explained meeting the needs of most students within Tier One allowed for the most significant struggles addressed through intervention provided by expert staff (Oakes et al., 2014; Lane, Menzies, Ennis, & Bezdek, 2013). Within CI3T, teams studied data at the school, classroom, and individual levels in academics, behavioral, and social skills. Buildings and districts utilized data from "systematic screening tools" (Lane et al., 2014e, p. 171) to measure success of prevention measures at tier one and establish success of at least 80% of students. Teams implemented school and class-wide intervention when this success rate lacked. "Tier 2 and 3 supports are supplementary strategies, practices, and intervention programs designed to provide assistance to those students for whom primary prevention efforts are insufficient" (Lane et al., 2014e, p. 171). "Progress has been made in developing academic and behavior screeners and benchmarks; although academic screeners have more widespread use in schools" (Oakes et al., 2014, p. 160). Teams collaboratively designed a blueprint addressing Tiers Two and Three, which outlined

selected screening tools, pertinent data collected and studied, assessment timelines, training for implementation and interpretation, collection, and analysis (Lane et al., 2014e). The CI3T leadership team gathered and evaluated likely outcomes based on evidence and identified additional interventions. Similarly, the team analyzed staff available and areas of expertise. The leadership team determined entry and exit criteria and the type of data to be collected. Lane, Oakes, Ennis, & Hirsch (2014e) recommended,

> When considering how to provide students appropriate Tier 2 and 3 supports, we offer the following suggestions. First, screening tools and data collected as part of regular school practices are a starting point . . . Second, we emphasize decisions regarding Tier 2 and 3 supports are a team-based process and family engagement is critical . . . Third we recommend this process be as transparent as possible, with the intervention grids readily accessible by all site-personnel as well as parents and students. (p. 179)

Oakes et al. (2013) explained, "Secondary preventions are implemented in addition to continued participation in primary prevention; and often focus on specialized skill instruction and may be offered in small group format" (p. 97). Tertiary preventions targeted identified skill deficits with increased intensity and individualization (Oakes et al., 2013).

In summary, CI3T encompassed an integrated approach for all students in the areas of academics, behavior, and social skills, Tier Two and Three intervention for struggling students in addition to high quality Tier One instruction, and supports for all students regardless of level of ability advanced through delayed. Each site-based

implementation contained, “a clear plan for developing the CI3T models across the district to provide consistency for administrators, teachers, parents, and students- all stakeholders” (Lane, 2014b, 132). The CI3T leadership team at each site founded the plan on the unique strengths, weaknesses, and goals. CI3T prevented academic, behavioral, and social struggles and responded effectively when presented. “The CI3T model offers detailed procedures for designing, implementing, and evaluating school-wide systems” (Oakes et al., 2013, p. 96).

Multi-Tiered Systems of Support

“In MTSS, data-based decision making includes universal screening of all students, implementation of evidence-based interventions at multiple Tiers, and ongoing progress monitoring to inform the decisions at each Tier” (Eagle, Dowd-Eagle, Snyder, & Holtzman, 2015, p. 164). Sailor and McCart (2014) advocated for the implementation of MTSS, “Through a MTSS framework each student is given, based on their measured educational need, what they instructionally need to succeed when they need it, rendering irrelevant the physical location of supports and services” (p. 58). Individuals within the PBIS site described MTSS as, “A process of systematically documenting the performance of students as evidence of the need for additional services after making changes in classroom instruction” (Office of Special Education Programs [OSEP], 2016, para. 1). Leko et al. (2015) described commonalities among most district implementations of MTSS, “a minimum of three tiers of instruction and support, with general education teachers holding the majority of responsibility for core instruction at Tier One and SETs [special education teachers] delivering intensive, personalized instruction at Tier 3” (p. 26). Averill and Rinaldi (2011) discussed the nature of multi-tiered instruction, “MTSS

rooted in data-informed practices of RtI and PBIS, explicitly offers a multi-Tier approach" (p. 91). The systems of RtI, PBIS, and CI3T were in place in schools as forms of multi-tiered systems. "MTSS promises to change the way schools support students with learning and behavior problems by systematically delivering a range of interventions based on demonstrated levels of need" (OSEP, 2016, para. 1).

Benefits of the Multi-Tiered Systems of Support

The implementation of multi-tiered systems provided numerous benefits. Lane et al. (2014a) presented benefits of multi-tiered systems like CI3T, "Providing a context for addressing students' multiple needs, addressing instructional barriers of time and collaboration, fostering an opportunity for equal access to supports, and establishing a formal structure for legally required search and serve processes" (p. 125). In Missouri, these processes were known as a district's Child Find Obligation under IDEA and Section 504/Title II. Ehren (2013) spoke of the advantages of RtI and like systems, "Often noted is the fact that, if done well, it leads educators away from operating within the 'silos' of general education, special education, and compensatory education and toward a more integrated system of meeting all students' needs" (p. 452). "Multi-Tiered prevention systems of academic support are effective for closing the achievement gap experienced by youth with E/BD" (Benner et al., 2013, p. 16). Lane et al. (2014a) discussed CI3T, "This model harnesses the collective power of all school and community personnel to improve student outcomes for all students. It also supports teachers by providing structure, time, and resources for planning and implementing the model" (p.125). Sailor and McCart (2014) discussed the MTSS framework highlighting the benefits to all students, including those students with identified disabilities. MTSS,

"[e]xtends the application of the evidence base beyond eligibility determination for special education due to a specific learning disability, to all students including those at risk for school failure due to circumstances other than, or in addition to disabilities" (Sailor & McCart, 2014, p. 58). Boyd and Anderson (2013) discussed the benefit of utilization of evidence based practices within the frameworks, "Multi-tiered intervention systems can assist schools in allocating resources proportionally to student need" (p. 361). Instead of the haphazard application of random programs, students received explicit instruction tailored to the identified needs.

Structure of the Multi-Tiered Systems of Support

Although many different configurations were implemented, most commonly districts implemented three-tiered structures. "Multi-tiered intervention models are designed to enhance students' learning rates and skill development across the full continuum of student ability levels, from those with the weakest skills to those with the strongest skills" (Kupzyk, Daly, Ihlo, & Young, 2012, p. 219). Kupzyk, Daly, Ihlo, and Young (2012) discussed the primary function of multi-tiered interventions; "Create a fluid and flexible continuum of services. Each Tier must provide the highest quality instruction for the resources that are devoted to it, with intensity of instruction increasing as a student is moved to higher Tiers" (p. 219). Ridgeway, Price, Simpson, and Rose (2012) explained, "Although the comprehensive instruction and targeted interventions included within the framework may encompass many different levels of intensity and individualization, interventions are generally situated into three broad classes or tiers" (p. 84).

Lane et al. (2013) described the three-tiered model:

> Typically, these multi-tiered systems of support include three levels. Primary intervention, also referred to as Tier 1, supports all students. Secondary intervention, or Tier 2, is appropriate for students (10-15%) not responding to primary prevention efforts; this is often provided to students in small groups or featuring low-intensity research-based practices. The final, tertiary or Tier 3, is reserved for those with the greatest needs: students (5%) with multiple risk factors requiring more intensive supports. (p. 7)

Nelson, Oliver, Hebert, and Bohaty (2015) discussed the origination of tiered levels of support. Nelson et al. (2015) described three levels of intervention, "Primary including approximately 80% of a population, secondary addressing approximately 5-15% of a population, and tertiary serving approximately 1-5% of a population" (p. 14).

Assessment

Student assessment played a crucial role in the implementation of MTSS. Crawford (2014) discussed the use of assessment within a multi-tiered system. Although assessment was only one component of the framework, Crawford (2014) considered decisions made without a reliable assessment system to be "untrustworthy" (p. 230). Benner et al. (2013) discussed the importance of quality assessment, "Closing the achievement gap using multi-tiered academic supports requires best practices for universal screening and diagnostic assessment to understand youth academic needs" (p. 15). "Regular assessment ensures that those students who are not making adequate progress receive interventions in a targeted and then individualized manner" (Sanetti & Collier-Meek, 2015, p. 815).

"Universal screening data provide an understanding of what areas of mathematics, reading, written language, and behavior need improvement and the risk status of each youth" (Benner et al., 2013, p. 22). "In a multi-tiered intervention system, screening and progress-monitoring data are used to make decisions about student placement across tiers of instructional intensity" (Kupzyk et al., 2012, p. 219). "If screening tools are not reliable, valid, and accurate some students may be overlooked, whereas others may simply not need the intervention that they are receiving" (Turse & Albrecht, 2015, p. 86). Donahue, Goodman-Scott, and Betters-Bubon (2015) stated, "Screeners should be psychometrically sound, normed/standardized for a population similar to the school/district, and aligned with the school/district's budget and time constraints for administering and scoring" (p. 135). Ridgeway et al. (2012) described universal screening assessment, "A type of measurement that is characterized by the administration of quick, low-cost, repeatable assessment of age-appropriate skills, which are used to establish the effectiveness of a specific curricula, classroom instruction, and to determine a pupil's level of proficiency" (p. 87). Benner et al. (2013) designated accurate identification of need as central to MTSS.

Crawford (2014) recommended three commonly accepted and important components of assessment, described as screening measures administered to all students with established scoring ranges which delineated between students meeting standards and those not meeting standards, identified students who scored below expectancy were assessed monthly, and students placed in intense interventions assessed weekly (p. 231). Filderman and Toste (2018) suggested the use of curriculum-based measurement (CBM), "Using curriculum-based measurement (CBM) or other brief assessments for progress

monitoring, teachers can decide whether to continue with current methods of instruction, adapt instruction, or increase a goal" (p. 132). "All movement between phases is data-informed - a core feature of multi-tiered systems of support" (Lane, 2014a, p. 125). Fuchs, Fuchs, and Compton (2012) reported the results of investigation into the implementation of a double phase universal screening process; Smart RTI. The second phase of screening was intended to review students with concerns. "Recent studies show that a two-stage screening process can improve the accuracy with which students are identified for secondary prevention" (Fuchs et al., 2012, p. 266).

Benner et al. (2013) discussed the utilization of data-gathering methods prior to implementing intervention provided a learning environment where, "[r]ather than blame the youth for being unmotivated to complete grade level work that requires grade level reading comprehension, staff can support the youth in content courses and provide supplemental reading intervention" (p. 22). Saeki et al. (2011) discussed the challenges of assessment in the social emotional realm, "Pre- and post-assessments are administered to detect changes in students' attitudes, knowledge, and behavior, and can be used as a tool to demonstrate the effectiveness of an intervention" (p. 50). In addition to the recommendation, Saeki et al. (2011) advocated for gathering and the utilization of qualitative data in the forms of observation, interviews, and questionnaires. Donahue et al. (2015) expanded the importance of universal screening beyond academics into the behavioral realm. Donahue et al. (2015) stated, "Screening student's mental health may create a more comprehensive portrait of students. This proactive, preventative, and systematic approach to identifying students' needs can yield essential data to inform both individual intervention and school-wide decisions" (p. 141). Benner et al. (2013)

described strategies utilized to determine the difference between student ability and student willingness. Without assessment data such as this, implementation was guesswork, undermined relationship, and weakened the learning environment and learner outcomes.

Professional Development

Successful implementation of tiered supports relied on dedication on behalf of the school and district administration, as well as high quality professional development. Ehren (2013) presented most teachers, "have heard about the concepts at the heart of RtI. They may know about multiple tiers of instruction and intervention, rooted in high-quality core instruction with sound assessment and data-based decision making that informs instruction" (p. 449). Ehren (2013) suggested teacher practice was most likely based on best intentions and implementation of best known strategies. Ehren (2013) stated, "However, this may only result in pockets of excellence that do not amount to the kind of systematic reform envisioned in RTI initiatives" (p. 449).

Varied school personnel played key roles in the implementation of tiered frameworks. Swindlehurst, Shepard, Salembier, and Hurley (2015) stated, "It will be important for schools and districts to have access to resources, such as professional development that supports school personnel in understanding the framework and how it is operationalized" (p. 15). O'Connor and Freeman (2012) discussed the role of the school psychologist in the facilitation of professional development in multi-tiered supports, "It is our observation that many of the schools and districts that have made substantial progress in establishing RtI initiative have done so because of the support and direct system-level actions taken by school psychologists in those settings" (p. 298). "Due to their

knowledge base, expertise, and educational background, school psychologists often serve as providers of professional development content to school staff" (Eagle et al., 2015, p. 165).

The importance of administrators and school psychologists was undeniable. Arguably, most important roles involved professional development plans and implementation. Freeman, Miller and Newcomer (2015) stated, "An overall goal for the district is to align all professional development systems with MTSS using a layered approach that reflects the need for different types and intensity levels of training" (p. 62). "Despite the focus on professional development in the RtI literature, little is known regarding how to evaluate RtI skill development," (Castillo, March, Stockslager, & Hines, 2016, p. 96). "Systematic investigations of the psychometric properties of survey tools measuring educators' self-reported RtI skills appear to be limited. Moreover, measures that are available do not appear to emphasize the critical elements of data-based problem-solving" (p. 40), Castillo, March, Stockslager, and Hines (2016) explained. Morrison, Russell, Dyer, Metcalf, and Rahschulte (2014) expressed the importance of capacity building through professional development, "School districts, and states/regions, professional development must encompass individuals who can serve capably in the roles of district coordinators, trainers, and technical assistance providers that are both internal and external to the school building" (p. 130). Ridgeway et al. (2012) emphasized, "The reliability and validity with which an RtI model is employed will be determined to a great extent by the quality of professional development and educational support offered to these educators" (p. 88).

Changed Thinking

School leadership teams and administrators involved in the reform worked toward changing teacher mind-sets. "MTSS/RtI helps practitioners shift their focus from locating learning problems strictly within the individual to a broader concept of examining the measured needs for extra support in the context of particular environments" (Sailor, 2015, p. 95). Buffum et al. (2010) urged schools to engage in the process for the right reason; to help all children learn. "We observe that RtI implementation requires a significant educational reform, including changes in the way we think and act at all levels of the system" (O'Connor & Freeman, 2012, p. 298). Terrell (2017) expressed the changed thinking in schools, "Multi-tier strategies have become the standard for identifying and assisting struggling students" (p. 41). Averill and Rinaldi (2011) stated, "MTSS acknowledges that instruction and/or contextual issues, not student inability, could be the reason why students are not learning" (p. 92). "Prior to multi-tiered systems of supports, few educators within schools were trained to use evidence-based academic and/or behavior practices in an integrative fashion to improve outcomes for all students, especially those for whom typical instruction is not effective" (Nelson, Oliver, Hebert, & Bohaty, 2015, p. 14). Evidence-based practices were more typically employed with students with more profound difficulties. Benner et al. (2013) discussed teacher-thought processes prior to tiered intervention, "The assumption is that instruction cannot occur unless youth behavior is under control. The end result is much adult attention is devoted to managing disruptive behavior with instruction not afforded much time or careful attention" (p. 18). "It is necessary that educators use materials, methods, and tools that are validated by research to ensure that what they are using with

students is appropriate for that student's issues" (Turse & Albrecht, 2015, p. 86). Benner et al. (2013) discussed the emphasis on utilization of best practice regarding instructional strategies and explicit instruction. All three tiers of intervention were to utilize explicit, direct instruction. Leko et al. (2015) urged changes in philosophy of teacher preparation considering the changed role of special educators, "Special education teachers will need well-developed collaboration skills to communicate and work with various service providers in the ways required to design cohesive and precise instruction" (Leko, Brownell, Sindelar, and Kiely, 2015, p. 26). Changed level of collaboration included data collection and analysis, intervention design, progress monitoring, and intervention modification based on data. Buffum and Mattos (2015) authored two guiding books based on the need for schools to find time within daily schedules, "Creating a systematic process to provide students with additional support, offered in addition to grade-level core instruction, will undoubtedly require significant revisions to a school's schedule" (p. 6).

Decision Making

Data-based decision making (DBDM) was a core component of MTSS. Filderman and Toste (2018) explained, "DBDM refers to the process of gathering and interpreting student-level data to make instructional adjustments" (p. 131). Collier-Meek, Fallon, Sanetti, and Maggin (2013) discussed the role of collaborative teams, "Utilize ongoing data collection to evaluate students' response to evidence-based interventions and make decisions about instructional need and intensity of supports" (p. 52). Ridgeway et al. (2012) discussed, "Together, this multi-disciplinary team should utilize the data collected to determine the most appropriate method of meeting the diverse needs of a

student who has not demonstrated measurable academic gains at the primary Tier" (p. 84). "The goal of MTSS is to gather information and bring it to all faculty to ensure consensus-driven action planning occurs for academic and behavioral implementation" (Freeman, Miller, & Newcomer, 2015, p. 62). Eagle, Dowd-Eagle, Snyder, and Holtzman (2015) stated, "In MTSS, data-based decision making includes universal screening of all students, implementation of evidence-based interventions at multiple tiers, and ongoing progress monitoring to inform the decisions at each tier" (p. 165). Lane et al. (2014a) described the various roles of a school leadership team. The team selected an "evidenced-based social skills curriculum to address the school or district's identified area for growth" (Lane et al., 2014a, p. 124). The team "defines roles and responsibilities for all stakeholders in implementing, supporting, and evaluating the program" (Lane et al., 2014a, p. 124). Lane et al. (2014a) recommended the team designed blueprint to outline the supports available in each Tier so all involved were aware and knowledgeable. "Educators must simultaneously evaluate the extent to which an intervention has been implemented as well as the student's response to determine the appropriate level of support for a student" (Sanetti & Collier-Meek, 2015, p. 815). Practitioners reported lacking training in the analysis and interpretation of data (Datnow & Hubbard, 2016; Filderman & Toste, 2018). Lane et al. (2014a) stated data-based decision-making processes in multi-tiered systems, "remove pressure from teachers who are often asked to rely on professional experience and intuition to decide who needs more" (p. 125). Filderman and Toste (2018) described four steps in the DBDM process: selection of a tool to be utilized to monitor progress, identify the frequency of monitoring

checks, determine an individual student goal, and utilize visual representation of data to inform decisions.

School Personnel

Implementation of MTSS, like many school initiatives, involved a variety of school personnel. Freeman et al. (2015) discussed practices districts utilized to enlist the support and involvement of the local Boards of Education. "Communication with the education board is coordinated by the district team with regular school presentations, data summaries, and information shared with board members throughout the year" (Freeman et al., 2015, p. 61). Lane et al. (2014a) stated, "We recommend school-site leadership teams to establish a blueprint of all available secondary supports to facilitate communication among faculty, staff, parents, and students, making the availability of extra supports as transparent as possible" (p. 124). Freeman et al. (2015) recommended, "Forming a district leadership team is an important step in MTSS" (p. 61). The district and building administrations were integral to the establishment of the leadership teams. Eagle et al. (2015) stated, "It is widely regarded that the actions of a building principal play a key role in effective systemic change within schools (p. 165). Rodriguez, Campbell, Falcon, and Borgmeier (2015) emphasized, "Administrative leadership is essential to long-term systems change process, and the importance of strong leadership when developing systems cannot be understated" (p. 243).

Licensed school counselors and school psychologists played an important role in implementation of multi-tiered frameworks. Maras et al. (2015) explained, "Beyond offering universal supports through school-wide and classroom-based curricula, school counselors may work with small groups of students or individual students who need

additional academic, career, or personal/social-emotional support" (p. 202). The service was provided to all students through universal supports in the general education setting. Donahue et al. (2015) noted the role of school counselors in leadership roles in MTSS. Counselors served on leadership teams assisting in selection, administration and scoring of screening tools along with involvement in data analysis, application, and monitoring of interventions. O'Connor and Freeman (2012) discussed the role of the school psychologist in the implementation of multi-tiered supports, "It is our observation that many of the schools and districts that have made substantial progress in establishing RtI initiative have done so because of the support and direct system-level actions taken by school psychologists in those settings" (p. 298). Eagle et al. (2015) noted, "School psychologists provide content expertise in the core components of MTSS, including data-based decision making, curricular and instructional methodology, evidence-based interventions, and systematic problem-solving procedures" (p. 163). Rodriguez et al. (2015) discussed the role of the school psychologist in the implementation of tier based interventions. The authors highlighted usefulness in areas, such as "expertise in assessment and intervention practices, data management and evaluation, and systems support to work with administrators, teachers and specialists" (p. 243). Maras et al. (2015) expressed, "School psychologists are trained in psychoeducational assessment, evaluation, and consultation models to assist educators, families, and other professionals to create a safe and supportive learning environment" (p. 201). Morningstar et al. (2016) discussed the roles of general and special educators in increasing inclusive education at the national level through the implementation of MTSS. Morningstar et al. (2016) discussed focus on educators' increased capacity through utilization of evidence-based

practices to meet the needs of all learners (p. 211). Björn, Aro, Tuire, Fuchs, and Fuchs (2016) described the reservation of specialists for Tier Three intervention, "Special education teachers are only minimally involved in the education of children with disabilities in Tiers 1 and 2" (p. 62). Leko et al. (2015) described the need for increased skills of special education teachers; ability to collaborate, communicate, data collection and analysis, plan targeted instruction, assess student progress and adjust intervention when needed, possess extensive knowledge of curriculum and technology. Ehren (2013) suggested the empowerment of any staff to leadership roles, "A person need not be in a position of authority to be a leader; every educator can assume a leadership role in RTI" (p. 450).

Tier One

Algozzine et al. (2012) explained the needs of most students in RtI schools were met in the general education classroom, Tier One. "Children must be receiving effective academic and behavior instruction to achieve important outcomes in school" (Algozzine et al., 2012, p. 46). Averill and Rinaldi (2011) explained Tier One as, "The core curriculum delivered to all students that has a high likelihood of bringing the majority of students to acceptable levels of proficiency" (p. 92). Gilbert et al. (2013) explained, "The role of primary intervention is to reduce the number of new cases of an identified condition of problem in the population, such as ensuring that all students are exposed to high-quality instruction in the general education classroom" (p.136). Williams, Billingsley, and Banks (2018) explained Tier One of SW-PBIS, "Students are first taught positive behaviors (Tier 1) and these expectations are enforced by all in the school" (p. 47). At Tier One, Benner et al. (2013) described, "Universal screening data provide an

understanding of what areas of mathematics, English Language Arts, written language, and behavior need improvement and the risk status of each youth" (p. 22). Additionally, Benner et al. (2013) designated accurate identification of student needs to be central to research based interventions. The researchers urged, "Spending minimal time screening would provide staff with an understanding of youth academic and behavioral needs and prerequisite skills" (p. 22). Turse and Albrecht (2015) described, "Tier 1 features the use of high-quality teaching in the general education classroom using evidence-base instructional strategies" (p. 85). While Toste et al. (2014) stated, "There is substantial evidence to suggest that early identification of students who are at-risk of English Language Arts difficulties and subsequent intervention can enhance the likelihood of positive learning outcomes" (p. 192). Benner et al. (2013) described components of primary, or Tier One, intervention to include, "clear expectations and consequences" and "interdependent group contingency systems" (p. 19). Benner et al. (2013) stated, "PBIS holds particular promise for students with or at-risk for E/BD as a unified structure to (a) prevent the development of E/BD and (b) address existing instances" (p. 20). Additionally, Benner et al. (2013) discussed the positive outcome on the classroom would undoubtedly benefit all learners and increase teacher ability to plan and implement increased quality instruction. Terrell (2017) noted, "Schools can take a proactive approach by adding social-emotional learning as a 'Tier One' support within their RtI of PBIS framework- that means it's provided to all students" (p. 42). Gilbert et al. (2013) described Tier One services; all students were assessed utilizing universal screeners to identify those at risk. All students participated in quality instruction, and progress was routinely monitored. Students who performed below expectations on the universal

screeners and/or displayed inadequate progress on learning objectives were moved to Tier Two.

Tier Two

Rodriguez et al. (2015) urged schools to have Tier Two interventions available and quickly accessed for identified at-risk students. The authors described these interventions to be general in nature, designed to address commonly found deficits, and delineated additional components of Tier Two to include systems for close monitoring of student response to the intervention. Practitioners measured students' responsiveness in comparison to predetermined expectations and procedures, which addressed actions to implement when a student met expected targets and when learning targets were not met (Rodriguez et al., 2015). Gilbert et al. (2013) described Tier Two, "Secondary prevention is concerned with reducing the number of existing cases (i.e., prevalence) of an identified condition or problem in the population by promoting skill acquisition known to promote typical skill development" (p. 136). Williams et al. (2018) explained Tier 2 of SW-PBIS, "Tiers 2 and 3 are intended to provide more intensive behavioral supports to those students who are not meeting the expectations of Tier 1" (p. 47). Gilbert et al. further explained Tier Two as "The extra effort . . . focused on students at high risk of developing difficulties but before any serious long-term deficit has emerged" (p. 136). Turse and Albrecht (2015) noted, "The purpose of Tier 2 is to provide more focused intervention or remediation while the child is in the general education classroom or in small, pull-aside groups" (p. 225). The authors described a system with data collection during the implementation of an intervention and analyzed to determine student outcomes, continued intervention at the then-current level, or progression to a more

intensive intervention. "Tier II interventions also consist of systems features such as access to initial and on-going coaching to facilitate high-fidelity implementation, team-based development and implementation, and use of a data system to monitor progress for all students on the intervention" (Boyd & Anderson, 2013, p. 350). Ridgeway et al. (2012) explained, "These small group interventions allow for more response opportunities and increased teacher-student interactions, which provide increased opportunities for immediate feedback" (p. 84). These authors advocated for assessment data to drive continued placement in Tier Two if the student was making progress but not yet meeting targets, discontinuation for students who had realized progress, and movement to Tier Three if several weeks of intervention did not result in measurable gains. Rodriguez et al. (2015) stressed, "Within MTSS Tier 2, interventions are intended to be cost-effective interventions that can be implemented with high efficiency for groups of students with moderate risk for social and learning failure" (p. 225). Gilbert et al. (2013) described student movement from Tier Two to Tier Three, "Failure to respond to Tier 2 instruction signals a need for Tier 3" (p. 136). Fuchs, Fuchs, and Malone (2017) summarized the common structure of Tier Two, "A program that is supplemental, evidence based, well-articulated (with a clear implementation manual that includes all materials), and delivered in small groups by a trained interventionist" (p. 36).

Tier Three

Averill and Rinaldi (2011) explained, "Tier 3 involves the application of intensive instructional interventions designed to increase the rate of student progress" (p. 92). Turse and Albrecht (2015) explained, "Tier 3 is the most intensive Tier in terms of instruction focused on an individual student" (p. 85). Ridgeway et al. (2012) described

the tailored instruction generally provided to individuals or pairs of students. “If measurable academic progress is achieved through tertiary instruction, the service provider, multi-disciplinary team, and parents should determine the best educational plan to promote and maintain student success” (Ridgeway et al., 2012, p. 85). Kearney and Graczyk (2014) discussed the most intense of interventions, “Tier 3 interventions are those directed toward students with complex or severe problems who require a concentrated approach and frequent progress monitoring” (p. 13). Thorius et.al (2014) explained, “Those not making expected progress move to Tier 3, which often results in the provision of special education” (p. 287). Gilbert et al. (2013) discussed students who did not make adequate progress, “Failure to respond adequately to Tier 3 prevention signals [a] possible disability and the need for special education evaluation so well-trained school personnel can provide instruction according to an individual education program” (p. 136).

Fidelity

Researchers cautioned data teams to always consider the level of implementation when making decisions based on school and student data points. Gersten et al. (2017) stated, “Schools need to spend more time monitoring fidelity of implementation and providing additional training or support to those providing reading interventions. Only with high fidelity of implementation will RTI work” (p. 252). Cook and Odom (2013) noted, “If practitioners do not implement EBPs [evidence-based practices] with fidelity, or as designed, the practices may not have the same positive effect demonstrated in research studies” (p. 141). Oakes et al. (2013) discussed the importance of treatment fidelity at every tier of intervention, “The teacher’s role in the success of prevention

models cannot be understated. Essential to examining the effects for student learning is the evaluation of the implementation of these practices, that is the teacher's behavior" (p. 98). Sanetti and Collier-Meek (2015) discussed the concept of treatment fidelity, "Educators must simultaneously evaluate the extent to which an intervention has been implemented as well as the student's response to determine the appropriate level of support for a student" (p. 815), while Collier-Meek et al. (2013) explained the importance of treatment fidelity or how closely implementation mirrored the practices implemented during trial phases. "Knowing the extent to which an intervention is implemented can help teams determine if a lack of change in student outcomes is due to an ineffective intervention or an intervention that was not fully implemented" (p. 52). Harn, Parisi, and Stoolmiller (2013) presented a different perspective of implementation fidelity; insistence on rigid implementation procedures was likely to decrease practitioner willingness to implement. Harn et al.'s (2013) recommendations provided identification of components which could be varied without variation of outcome. Erickson, Noonan, and Jenson (2012) presented, "To measure treatment integrity, many multi-tiered interventions include fidelity measures completed by school leadership teams. These measures identify perceptions of a small group of educators, but often fail to address school-wide implementation among all instructional staff" (p. 33). Sanetti and Collier- Meek (2015) stated, "Research suggests that most school personnel struggle to deliver interventions with treatment integrity, which negatively impacts the potential effectiveness of these interventions" (p. 815). Researchers stressed the importance of monitoring the implementation of all interventions with which students were engaged. "Quality and quantity measures consider the extent to which the model is implemented as intended

across the school environment. These fidelity of implementation measures often include interviews, observations, and self-assessments" (Erickson, Noonan, & Jenson, 2013, p. 35). Ridgeway et al. (2012) explained the importance of fidelity monitoring at Tier One, "For valid placement consideration purposes, a designated diagnostic team of intervention specialists should always be able to verify that a student in the primary tier has received appropriate and adequate instruction in the general education classroom" (p. 88). Collier-Meek et al. (2013) noted teachers struggled with implementing interventions with fidelity. Many factors contributed to varied implementation; however, increased attention to inclusion of all components resulted in increased student learning. Collier-Meek et al. (2013) recommended teacher collaboration focused on treatment fidelity improved teacher behavior and student learning outcomes. "Central to the effective use of multi-tiered system of supports by schools is not only achieving initial high levels of program fidelity but also maintaining it over time" (Nelson et al., 2015, p. 15). Eagle et al. (2015) discussed the support of school psychologists in fidelity, "Once trained, for implementation to be successful, ongoing support and coaching is necessary. School psychologists are well positioned to serve in the role of coach in areas of assessment and intervention" (p. 165). "Regularly delivering only some components of an intervention will not result in the same improvements in student outcomes as when the full intervention is implemented" (Collier-Meek et al., 2013, p. 52). Ridgeway et al. (2013) urged, "Furthermore, adequate, on-going professional development, focusing on the framework, essential components, and proper implementation, is crucial to the fidelity and effective implementation of RtI within an educational institution" (p. 88). Additionally, Sanetti and Collier-Meek (2015) indicated the importance of fidelity

monitoring, “Research suggests that most school personnel struggle to deliver interventions with treatment integrity, which negatively impacts the potential effectiveness of these interventions” (p. 815). “Central to the effective use of multi-tiered system of supports by schools is not only achieving initial high levels of program fidelity but also maintaining it over time” (Nelson et al., 2015, p. 15).

Implementation

Districts implemented the MTSS in a variety of ways. Terrell (2017) described intervention systems caused districts to think differently about student behavior, utilized pre-intervention strategies, avoided sending students out of the classroom, and identified and utilized improved technology. Freeman et al. (2015) discussed variations in the process of implementation of multi-tiered systems. Freeman et al. (2015) presented districts often chose whether to begin the implementation with a focus on student academics through RtI, behavioral issues through (PBIS), or to begin at the district or school level. Other districts implemented from a complete incorporation of multiple tiers of integrated intervention in academics and behaviors (Freeman et al., 2015). Swindlehurst et al. (2015) discussed the prevalence of implementation of tiered supports found more frequently at the elementary level. Fewer middle and high school administrators reported the intervention framework to be of high priority. The researchers attributed at least a portion of this to be due to the decreased accessibility of resources at higher levels. Erickson et al. (2012) explained, “Well defined RtI models provide multi-tiered supports to prevent academic and behavioral difficulties as well as to address existing academic and behavioral difficulties” (p. 43).

Technology

The use of technology eased the burden and increased accuracy of data collection within all tiers of MTSS. "Districts establish MTSS data collection systems in different ways" (Freeman et al., 2015, p. 63). Freeman et al. (2015) discussed data collection packages for research and purchase. "Districts with technology personnel and resources may decide to design an internal data collection system that will be used within the district for data-based decision making" (Freeman et al., 2015, p. 63). Whether purchased or district designed, the data collection system responsibility lies with the district decision making team (Freeman et al., 2015). Proper functioning of the problem-solving team hinged on the establishment of a quality system. Through the utilization of computer technology, districts increased the efficiency of assessment. Dynamic assessment and technology promised more efficient means of identification of students who may not respond to instruction (Zumeta, 2015). Unlikely interventions resulted in increased learning and were avoided or quickly replaced. "These assessment advances may enhance classification accuracy for intensive intervention, reduce the number of students receiving Tier II who are unlikely to profit, save resources, and provide students more timely access to appropriate levels of support" (Zumeta, 2015, p. 85). Fuchs et al. (2012) described this type of assessment, "Dynamic assessment may be used to predict responsiveness to classroom instruction by measuring the amount of assistance students require to learn novel content in a test situation" (p. 267).

Does it work?

Buffum et al. (2010) suggested various reasons why schools may struggle in RtI implementation; staff lacked commitment to the process and focused only on required

steps needed prior to referral for special education evaluation, practitioners implemented with focus on meeting required mandates and shortened the process, some had implemented in effort to improve test scores, and some lacked commitment to the amount of change required. Fuchs et al. (2017) explained, "Schools often have difficulty identifying how to further intensify intervention beyond available Tier 2 validated programs. This lack of clarity limits the capacity of schools to analyze intervention options and it diluted the effectiveness of intensive intervention" (p. 36). Balu et al. (2015) reported the results of a national study on RtI. Results documented negative outcomes for first-grade students involved in Tier Two and Three reading interventions. Sparks (2015) reported RTI

> Has become ubiquitous as a framework to teach students to read in elementary schools, but the most comprehensive federal evaluation of the approach to date finds that it may hold back some of the children it was originally designed to support." (p. 1)

Ridgeway et al. (2012) stated, "While each component has an empirical foundation, the multi-tier approach utilizes attempts to combine these components to meet the diverse needs of students. Therefore, within RtI, these components do not function independently" (p. 85). Ridgeway et al. (2012) explained there was need for continued evaluation and study on the individual student level of the measurable outcomes of RtI. Ridgeway (2012) et al. reviewed results of 11 studies on the "efficacy of a multi-tiered model" (p. 89) and found the results indicated increased achievement for identified students. Young readers demonstrated the most growth. The report also indicated a decrease in special education referrals, or at least no increase. Ridgeway et al. (2012)

predicted a continued increase of the implementation of multi-tiered systems in the United States, as well as internationally.

Lembke, Frye, Mason, Smith, and Walz (2017) discussed Johns, Kauffman, and Martin's white paper, "The Concept of RTI: Billion-Dollar Boondoggle." The white paper documented the authors' critical perception of RtI. Lembke et al. (2017) presented the on-line document, which prompted strong opposition. The Consortium for Evidence-Based Early Intervention (The Consortium) published a white paper response, "Alternate Facts are Alive in Education as Well: A Response to Johns, Kauffman, and Martin." The Consortium (2017) presented, "From its sensationalized title, the paper consists of pages of disconnected, incoherent topics that are characterized by distortions, half-truths, and just plain falsehoods" (p. 1).

Ridgeway et al. (2012) stated, "Despite limited empirical evidence, RtI is gaining acceptance in the educational sector because it is theoretically grounded in research-based practices" (p. 83). Swindlehurst et al. (2015) reported, "It appears schools implementing RtI have been more successful at reducing the percentage of students receiving special education services than schools not implementing RtI" in the 2015 study of rural schools implementing RtI (2015, p. 13). Algozzine et al. (2012) completed a study on the use of RtI on primary level reading and behavior outcomes. The research suggested, "As fidelity of implementation increased over time, positive system-level changes occurred" (Algozzine, 2012, p. 60). The researchers reported RtI implementation achieved, "Important improvements in multiple academic and behavioral outcomes" (p. 60). Arden, Gandhi, Edmonds, and Danielson (2017) discussed the difficulty in measuring the use of RTI, "One cannot truly measure the impact of RTI

without first ensuring adequate implementation" (p. 271). Morrison et al. (2014) discussed the importance of implementation fidelity and desired outcomes. Research indicated positive correlation between both partial and full implementation of MTSS. Customization of interventions, when accompanied by data-based decision making, led to positive student learning. Research presented by Morrison et al. (2014) supported local customization and individualization paired with decision-making rules and data (p. 135). Gersten et al. (2017) discussed the national evaluation of RTI, "With widespread adoption of RTI, a national evaluation seemed in order" (p. 245). At first glance, the report was widely interpreted to deem RTI as ineffective. Gersten et al. (2017) discussed the study and took a close look at multi-tiered system implementation and learning outcomes with implementation. The study focused on the academic growth of students just above and just below set cut scores with intervention provided only to those just below. Gersten et al. (2017) concluded the study relayed, "Whether the current combination of cut score and intervention programs used was helpful to the relatively small proportion of students slightly below the cut points used by the 146 schools in the evaluation sample" (p. 247). Arden et al. (2017) argued,

> The cumulative effect of increasing practitioners' focus on implementation, when paired with assessments of readiness, intentional professional development activities, job-embedded coaching, opportunities to practice, and summative and formative evaluation efforts, can help enhance the likelihood that RTI can be successful. (p. 270)

Forman and Crystal (2015) advised systems considering implementation to focus on intentional individual intervention selection, building support among all stakeholders,

increased practitioner competence, support for implementation throughout the school/district systemically, and technical support from external sources.

Then-Currently in Missouri

Allee and Deloach (2014) presented the concept of Re-Inventing Special Education to the Special Education Advisory Panel and discussed the concept among numerous education audiences since. The Re-Invent Initiative based recommendations on six premises; minimal change in special education over 30 years, education systems of special and regular education functioned as separate entities, increased numbers of students with eligibility under IDEA spend the majority of the day in the regular education setting, 70% of students with special education eligibility fell short of meeting grade level expectations upon graduation, and teachers reported lack of preparation for meeting student needs. Through the Re-Invent Initiative, MO-CASE looked to partner with other education organizations to build capacity of preservice and then-current educators to build capacity and implement MTSS.

The MO-CASE and the University of Missouri-Columbia partnered to establish an ECHO-MTSS to provide support to districts throughout the state in the implementation of MTSS. ECHO-MTSS conducted one-hour clinics for practitioners to access via technology. The partnership intended to further the joint goal, “a statewide unified system of education” (Allee, 2017, p. 2).

MODESE (2017a) implemented revisions to the State Plan for Special Education for ages 3 through 21, in January 2018. The State Plan defined a Specific Learning Disability as 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" (MODESE, 2017, p. 27). Beldin (2017), past President of MO-CASE, explained, "Missouri still allows use of the IQ/Achievement discrepancy approach (many states have eliminated this an as option or strongly discourage its use)" (p. 11). The discrepancy model engaged assessment professionals in administration of standardized measures to identify a difference of 1.5 or higher standard deviations between measured ability and achievement resulting in a designation of disability in one of the eight areas of reading, writing or mathematics delineated by the state (MODESE, 2017). The State Plan delineated, "[A]ny agency using a RtI model for the identification of Specific Learning Disability, must have written procedures for implementation that, at a minimum, incorporate guidelines developed by the SEA which are found on the Department website" (MODESE, 2017, p. 29). The State of Missouri RtI Guidelines (2008) provided detailed description for districts' decision-making in evaluation of students who had not demonstrated progress on the state-designated grade-level standards. The state allowed for districts to select discrepancy, or RtI, models of identification. MODESE (2017) required, among other documentation, RtI districts to submit a written plan inclusive of intervention selection processes, required amount of intervention, noted pre-referral interventions, evidence of treatment fidelity, details of intervention schedule, progress monitoring, criteria utilized in making decisions regarding responsiveness, and decision to refer for special education. Beldin (2017) expressed, while limited numbers of Missouri districts utilized RtI for SLD determination, many implemented interventions to assist struggling students. The intervention implementation without ability to identify disabilities presented frustration

for staff and denial of protections guaranteed to students with disabilities under the IDEA. Beldin (2017) urged districts to design implementation plans, set dates and submit an RtI plan, and implement in one area, if not all.

MO-CASE and MODESE continued to work collaboratively in provision on MTSS-focused professional development for educators in Missouri. In 2017 and 2018, MO-CASE implemented state-wide conference opportunities focused on MTSS twice each year. MODESE provided informational modules and facilitator resources through an interactive electronic platform for district and university utilization. MODESE also worked with applicant districts in the Missouri Model Districts to gain insights and practical application strategies.

Summary

"In a global economy where the most valuable skill you can sell is your knowledge, a good education is no longer just a pathway to opportunity- it is a prerequisite" (para. 59), stated former President Barack Obama (2009) in an address to a Joint Session of Congress in 2009. Internationally renowned advocate of multi-tiered supports, Mattos (2018) echoed the message in presentation to educators from across the United States in spring 2018. Mattos (2018) stated, "We must be bold. The current education system was not designed for students today." Mattos (2018) informed educators in the utilization of multi-tiered supports and urged, "It is possible for all students to learn at high levels on grade level standards or above, ready to take on post-secondary education" (p. 1). Chapter Two summarizes literature on the implementation of the components of MTSS; assessment, intervention, decision-making, and fidelity. Chapter Three details the methodology for the study. Chapter Four outlines survey

results and secondary data analysis. Chapter Five discusses results of the study, analysis, and implications for schools and students, at the time of this writing.

Chapter Three: Research Method and Design

Purpose

The purpose of this study was to utilize mixed methods to analyze the implementation of the MTSS in selected Missouri elementary schools. The study also considered the difference between full and partial implementation of the MTSS, along with student attendance and achievement. Maxwell (2013) explained the advantage of mixed-methods study, "This strategy reduces the risk that your conclusions will reflect only the biases of a specific method, and allows you to gain a more secure understanding of the issues you are investigating" (p. 102). Fraenkel, Wallen, and Hyun (2015) also explained the value of mixed-methods research, "The use of both methods [qualitative and quantitative] provides a more complete understanding of research problems than does the use of either approach alone" (p. 555). The benefits of mixed-methods research included, [mixed methods] "can help to clarify and explain relationships found to exist between variables," "allows us to explore relationships between variables in depth," and "can help confirm or cross-validate relationships discovered between variables" (Fraenkel, Wallen, & Hyun, 2015, p. 556). The methodology for the study included a qualitative component, which consisted of survey data collected via electronic and phone surveys. The researcher collected survey data, coded for themes, and aligned to each research question. Based on the data gathered via survey, the researcher assigned one of two categories to each study district: full implementation or partial implementation. The researcher conducted interviews with two state-level leaders: leadership from the MO-CASE and a director from MODESE in the Effective Practices division. The information gathered through survey and interview informed each research question posed. The

information gathered through the qualitative aspect of the study allowed the researcher to compare the individual and unique path each district navigated in the implementation of MTSS. Study of each district's experiences could serve as lessons learned for district administrators in the consideration of future implementation and development of a facilitation plan. The quantitative component entailed collection of MODESE secondary data maintained for public use on the Missouri Comprehensive Data System page of the MODESE website. The researcher obtained student achievement and attendance data for the elementary schools within each of the study districts. This quantitative data informed each hypothesis posed. Through comparison of results from districts deemed full and partial implementation, the researcher analyzed for potential differences measured by student achievement and attendance.

Methodology

The researcher obtained a list of Benchmark Districts utilized for analysis and comparison of implementation of practice in similar districts in Missouri public schools. The researcher located contact information for each District Administrator responsible for student special services for each researched school district. Once the Institutional Review Board (IRB) of the researcher's university of attendance granted approval, district administrators received a 25-question electronic survey (see Appendix A). The researcher designed the survey based on review of literature of the commonly implemented components of MTSS: assessment, intervention, decision making, and fidelity. The survey contained five questions in each area of the framework and five additional questions addressing implementation processes. The researcher utilized the *Qualtrics* online survey platform for facilitation of the confidential response gathering

and analysis. Utilizing *Qualtrics*, the researcher planned a reminder email to all survey participants four weeks from the initial send date to request completion of the survey as needed. The original design included a data collection window of six weeks from the initial send date. The researcher anticipated that a minimum of nine surveys be completed; however, at the 4-week mark, eight surveys had been started and only one of the identified 15 minimum were completed. At the 6-week mark, the researcher received three completed surveys. One recipient accidentally indicated completed, but had not responded to any prompts. An unintended technological glitch caused surveys to be deleted within seven days of recipient opening. Automatic deletion may have contributed to the low response rate. A second sending of all surveys occurred one month following the initial send. As a result of the second wave of surveys sent, four respondents' surveys were opened and two completed. In consultation with the researcher's Dissertation Committee Chair, the researcher submitted an amendment to the university IRB and received approval to conduct, record, and analyze data gathered from phone interviews of the remaining districts. The researcher contacted district administrators by phone, following IRB approval, in attempt to conduct phone surveys utilizing the electronic survey questions. Five administrators requested additional time to complete the electronic surveys following the phone contact. The five surveys were sent and all were completed. One district administrator requested completion of the survey via phone. The phone call was scheduled and the survey completed via phone as scheduled. Six district administrators did not respond to any contact, neither phone nor email. See Table 1 for summary of survey completion.

Table 1

Survey Completion

Attempted	Format	Started	Completed
16	Electronic	8	1
16	Electronic	4	2
12	Phone/electronic	6	5
1	Phone	1	1

The amended plan also included interviews of two state-level leaders involved in the implementation of MTSS in Missouri. Two state-level leaders agreed to phone interviews; the interviews were scheduled and completed according to schedule.

Unfortunately, district administrators' written responses to the survey questions included approximately one line of reported information from most of the subjects. Once nine participants completed the surveys, an alpha-numerical identifier was assigned to the respondents' comments to protect the identity of the district and administrator. The researcher analyzed responses from each district and assigned a level of implementation and numerical value for full implementation (1) or partial implementation (2). For the purpose of the study, full implementation referred to implementation of all components of the MTSS, which were identification procedures, evidence-based instruction, close monitoring of student progress, and decision making for all levels within the system, including administration, teachers, and implementation fidelity (Fuchs et al., 2012). Given the minimal amount of information provided, the researcher gathered limited information about each district's path of implementation and found applying a level of data collection to be a challenge. For the purpose of the study, the researcher defined partial implementation as anything less than inclusion of four integral components.

Analysis included coding of each interview for common themes and a comparison to data gained from the survey. The researcher interviewed two state-level leaders utilizing an original questionnaire format fashioned to reflect the electronic survey completed by district administrators (see Appendix B). Due to the limited district response rate, the researcher modified the initial proposal to conduct a random sample for quantitative analysis to identify a potential relationship from a public data base, which did not include individual student scores; the modification negated the ability to collect a stratified sample. Instead, the researcher utilized all data collected and conducted a *t*-test of two independent means on MODESE student achievement data, utilizing percent of students scoring proficient or advanced in English Language Arts (ELA) and Mathematics at the elementary level in each district for Null H1 and Null H2 to identify a potential difference. The researcher collected MODESE data on the percentage rate of student attendance at the elementary level at each district. The researcher conducted quantitative analysis of attendance rates utilizing a *t*-test of two independent means to inform Null H3.

Research Null Hypotheses

The initial hypotheses entailed identification of a relationship between full and partial MTSS implementation and student achievement and attendance. The researcher analyzed the following null hypotheses based on the data received.

Null Hypothesis 1: There is no difference in the percentages of elementary students scoring Proficient or Advanced in English Language Arts among districts with full and partial MTSS implementation.

Null Hypothesis 2: There is no difference in the percentages of elementary students scoring Proficient or Advanced in Mathematics among districts with full and partial MTSS implementation.

Null Hypothesis 3: There is no difference in the attendance rates among districts with full and partial MTSS implementation.

Research Questions

RQ 1*:* How do school districts implement MTSS?

RQ 2*:* How do administrators perceive assessment components of MTSS?

RQ 3*:* How do administrators perceive intervention components of MTSS?

RQ 4*:* How do administrators perceive decision making components of MTSS?

RQ 5*:* How do administrators perceive fidelity components of MTSS?

Data Collection and Analysis Procedures

The researcher utilized a purposive sample to "obtain a sample that is uniquely suited to the intent of the study" (Fraenkel et al., 2015, p. 428). Secondary data consisted of 2016 MAP scores in ELA and Mathematics and student attendance rates. The study sample consisted of 129 elementary schools.

The researcher anticipated a minimum of nine and a maximum of 15 district administrators to participate in the survey and interview component; 9 districts participated. The researcher utilized respondent information to gain insight into perceptions of the components of MTSS: assessment, intervention, decision making, and fidelity. Fraenkel et al. (2015) stated a survey could possibly allow significant information to be garnered. The researcher collected survey data using open-ended questions specifically aligned to the study research questions. Relative to qualitative

research, Fraenkel et al. (2015) considered interviews to be one of the most critical tools for data collection. The researcher gained insight and clarification of district administrator perceptions of the components of MTSS through analysis of interview data.

Participants

The researcher obtained a list of Benchmark Districts utilized for analysis and comparison of implementation of practice with like districts in Missouri public schools. Specific districts selected included similar student enrollment, the percentage of free and reduced lunch participants, expenditures per ADA, student demographics, and implemented MTSS. The researcher identified district administrators from the list of Missouri public school districts with the responsibility of facilitation of MTSS. The researcher identified secondary data from each elementary school within study the districts: 2016 ELA and Mathematics MAP achievement in third, fourth, and fifth grades and student attendance rates, obtained from the Missouri Comprehensive Data System.

Summary

At the time of this study, the MTSS was a recommended framework in the state of Missouri through which public school districts met the academic and behavioral/social needs of all struggling students. The researcher utilized an original electronic survey and phone interviews, along with publicly accessible school achievement data to investigate the relationship between the full and partial implementation of the framework and student achievement and attendance data. A mixed-methods design allowed the researcher to study the unique manner in which each public school district implemented the system, as well as investigated the relationship between implementation and increased student success in the measure of achievement and attendance. The researcher describes data

analysis results in Chapter Four and discusses the findings, with recommendations for future research in Chapter Five.

Chapter Four: Analysis

The researcher discusses in Chapter Four the results of the qualitative and quantitative analysis of the implementation of the MTSS in selected Missouri elementary schools. The researcher obtained qualitative data through the completion of an electronic, originally-designed survey of district level administrators in selected districts, an individual phone interview utilizing the electronic survey questions, and phone interviews of two state-level leaders on MTSS implementation. The researcher gathered quantitative data electronically through MODESE's (n.d.) Comprehensive Data System, designed for public access of school district accountability data.

Quantitative Analysis

The research design included a *t*-test of two independent means to analyze student achievement data represented by 2016 MAP data in ELA and Mathematics in districts designated full compared to partial implementation. The MAP scores represented third, fourth, and fifth grade achievement in ELA and Mathematics of each elementary school in the study districts. MODESE provided student attendance data reported to the public. The researcher utilized the school accountability reports for each elementary school to determine a potential difference in the percents of students in attendance in districts designated full compared to partial implementation, via a *t*-test of two independent means.

Research Null Hypotheses

Null Hypothesis 1: There is no difference in the percentages of elementary students scoring Proficient or Advanced in English Language Arts among districts with full and partial MTSS implementation.

The researcher conducted a *t*-test of two independent means to compare student achievement for third grade ELA scores in schools with full and partial implementation. The researcher found no statistical difference between the fully implemented achievement and the partially implemented achievement scores ($p = .952$); thus the researcher did not reject the null hypothesis. A *p*-value of less than .05 indicated a statistical difference in the mean scores (see Table 2).

The researcher conducted a *t*-test of two independent means to compare achievement figures for fourth grade ELA scores in schools with full and partial implementation. The researcher found no statistical difference between the fully implemented achievement and the partially implemented achievement scores ($p = .051$); thus the researcher did not reject the null hypothesis. A *p*-value of less than .05 indicated a statistical difference in the mean scores (see Table 2).

Table 2

Summary of ELA MAP Results

	Full Implementation		Partial Implementation				
	n	M (SD)	n	M (SD)	d.f.	*t*-score	p-Value
3rd Grade ELA	96	72.4 (12.53)	31	72.6 (8.78)	125	-0.06	0.952
4th Grade ELA	96	71.97(13.92)	31	81.32(39.88)	125	-1.97	0.051
5th Grade ELA	96	71.37(14.98)	31	76.31(8.21)	125	-1.76	0.082

Note: A p-value of less than .05 indicated a significant difference in the mean scores.

The researcher conducted a *t*-test of two independent means to compare student achievement for fifth grade ELA scores in schools with full and partial implementation. The researcher found no statistical difference between the fully implemented achievement and the partially implemented achievement scores ($p = .082$); thus the

researcher did not reject the null hypothesis. A *p*-value of less than .05 indicated a statistical difference in the mean scores (see Table 2).

Null Hypothesis 2: There is no difference in the percentages of elementary students scoring Proficient or Advanced in Mathematics among districts with full and partial MTSS implementation.

The researcher conducted a *t*-test of two independent means to compare student achievement for third grade Mathematics scores in schools with full and partial implementation. The researcher found no statistical difference between the fully implemented achievement and the partially implemented achievement scores ($p = .316$); thus the researcher did not reject the null hypothesis. A *p*-value of less than .05 indicated a statistical difference in the mean scores (see Table 3).

The researcher conducted a *t*-test of two independent means to compare student achievement for fourth grade Mathematics scores in schools with full and partial implementation. The researcher found no statistical difference between the fully implemented achievement and the partially implemented achievement scores ($p = .939$); thus the researcher did not reject the null hypothesis. A *p*-value of less than .05 indicated a statistical difference in the mean scores (see Table 3).

The researcher conducted a *t*-test of two independent means to compare student achievement for fifth grade Mathematics scores in schools with full and partial implementation. The researcher found no statistical difference between the fully implemented achievement and the partially implemented achievement scores ($p = .713$); thus the researcher did not reject the null hypothesis. A *p*-value of less than .05 indicated a significant difference in the mean scores (see Table 3).

Table 3

Summary of Mathematics MAP Results

	Full Implementation		Partial Implementation				
	n	M (SD)	n	M (SD)	d.f.	*t*-score	*p*-Value
3rd Grade Math	96	65.28(14.76)	31	62.17 (11.26)	125	0.889	0.316
4th Grade Math	96	66.80(25.30)	31	67.05(10.92)	125	-0.054	0.939
5th Grade Math	96	57.98(18.16)	31	59.29(13.84)	125	-0.37	0.713

Note: A *p*-value of less than .05 indicated a significant difference in the mean scores.

Null Hypothesis 3: There is no difference in the attendance rates among districts with full and partial MTSS implementation.

The researcher conducted a *t*-test of two independent means to compare attendance rates for all study schools with full and partial implementation. The researcher found no statistical difference between the fully implemented school attendance and the partially implemented school attendance ($p = .283$); thus the researcher did not reject the null hypothesis. A *p*-value of less than .05 indicated a significant difference in the mean scores (see Table 4).

Table 4

Summary of Attendance Rates

	Full Implementation		Partial Implementation				
	n	M (SD)	n	M (SD)	d.f.	*t*-score	*p*-Value
Attendance Rates	96	95.94 (.60)	31	96.07 (0.43)	125	-1.08	0.283

Note: A *p*-value of less than .05 indicated a significant difference in the mean scores.

Qualitative Analysis

The researcher collected qualitative data through electronic survey of selected public school districts in Missouri. The original 25-question survey informed research questions centered on implementation of four main components of MTSS: assessment, intervention, decision-making, and fidelity. One district administrator requested and

completed the survey via phone interview. The researcher analyzed responses for common themes and the respondents generally provided limited information in response to each question. All nine district administrators indicated implementation of at least some components of MTSS. The district administrators unanimously reported implementation of interventions in ELA and Mathematics. All respondents reported utilization of assessment data to inform decisions within the framework of MTSS.

Table 5 indicates the alignment of the survey questions given to administrators with the research question topics of implementation of MTSS, assessment components of MTSS, decision-making components of MTSS, and fidelity components of MTSS.

Table 5

District Administrator Survey Questions related to each Research Question

Research Question	Survey Questions
How do school districts implement the MTSS?	What components of the MTSS have your elementary schools included in their framework?
	Explain the process your district utilized to implement the MTSS.
	Describe the role each of the following staff are responsible for in your structure- General education teachers/Counselors/Administrators/Special Education teachers/Psychological examiners/School psychologists/Parents/Other.
	What areas of student needs are addressed in your framework?
	Describe any professional development provided to teachers and/or the administration on the implementation of MTSS.

Continued.

Table 5 continued

How do administrators perceive the assessment components of the MTSS?	How are assessments utilized in your implementation of MTSS? How is your assessment data managed, presented and analyzed? Who is involved in the assessment component of your framework? Besides standardized test results, what other information is considered in the student assessment process. Describe if any, of the utilization of cut points or scores were established for data analysis?
How do administrators perceive the intervention components of the MTSS?	Describe the Tiers of intervention within your framework. Explain the frequency and intensity component of each Tier. What components/universal supports are required to be in place in your Tier 1 intervention? How are interventions selected? In consideration of input received from faculty, how has teacher preparation coursework prepared staff for implementing interventions?
How do administrators perceive the decision-making components of the MTSS?	Who makes decisions to move students among Tiers? How are decisions made to move a student to a different Tier? Describe your problem-solving team process. Who are the members of your problem-solving team? Describe any possible connection(s) between your framework and individual student referral for special education evaluation.

Continued.

Table 5 continued.

How do administrators perceive the fidelity components of the MTSS?	What steps are taken to ensure your MTSS framework is implemented as intended? What tools have been identified and utilized to monitor fidelity of implementation? What measures are in place to monitor faculty ability to implement intervention? Does your district utilize implementation coaches? If yes, please describe the role of the preparation and role of the coach. How do individuals within the framework monitor individual fidelity to implementation?

Research Question 1: How did school districts implement MTSS?

All districts involved in the study reported at least some variation of the components of MTSS in place in at least portions of the elementary schools. Five of the nine administrators reported implementing tiers of intervention. Surveyed districts indicated primarily implementing MTSS in a three-tiered structure. All districts addressed student academic deficits within the framework. In contrast, four reported addressing behavioral, social, and emotional deficits through the intervention model.

District administrators reported a variety of methods of implementation. AD5 indicated some components were in place; but, had not yet implemented MTSS, 'Working on 3 Tiers of support levels.' AD7 and AD8 explained building level administrators possessed the autonomy to initiate the framework within individual buildings as elected. AD9 began in such manner; however, increased district level involvement, and at the time of the study, focused on a district consistent framework. AD9 expressed, 'At first a building would hear about RtI and get it rolling at their school. Another school would hear about it and begin looking into it, too. It is in its infancy but

plans are emerging now at a district level.' AD1, AD2, and AD4 indicated the initial implementation at the elementary level. AD1 explained, 'About 12 years ago, we started requiring it for SLD referrals and using RtI data to determine eligibility. Since it was required to get referrals approved, buildings moved quickly to get things in place.' AD2 explained components implemented, 'Tiers of academic and behavioral interventions.' AD4 described, 'A small component of universal screening at the elementary level is in place.'

Staff utilization and responsibility varied within districts. One identified area of consistency among most respondents was general education responsibility for Tier One; classroom instruction. Each district reported holding general education teachers responsible for 'Delivering Tier 1 and screening,' noted by AD1, "Tier 1 and Tier 2 interventions,' expressed by AD2, and 'Best practice instruction,' stated by AD3. AD9 discussed the importance of gaining support from the teachers, 'Buy-in is tricky. Some disagree with breaking out the pieces instead of looking at the whole picture. Some got it immediately.' AD1 reported, 'Counselors often participate in behavior screening, AD2 stated counselors implemented behavioral intervention, and D8 noted counselors served on the intervention team. AD1, AD2, AD3, AD7, and AD8 reported counselors conducted behavioral supports, screening, and intervention. School psychologists played an important role in four of the nine surveyed. The administrator from District 1 reported the involvement of school psychologists who 'Lead the teams in reviewing data, making sure that the interventions are appropriate, etc.,' while AD2 expressed, 'School psychologists are involved in Tier 3 behavioral interventions,' while AD7 stated, 'Each building uses different individuals in their RtI/Problem-solving teams. Some include

their school psychologist.' AD9 reported school psychologists' role in implementation. 'Once the principal relayed interest in implementation, the school psych educated the staff.' AD9 stressed the importance of the dedication of the administration, 'They are not going to go anywhere without the principal.'

Building administrators played a variety of roles in implementation and ranged from 'Leading teams, making resources and times available, and holding all staff accountable,' as described by AD1, to 'Monitor fidelity of interventions,' noted by AD2. AD5 shared, 'Admin support the discussions and help facilitate the determinations of supports needed.' AD7 and AD8 stated the role of administration was to participate in building team decision making. AD3 described the administration as a facilitator role, 'Administration: develop the will and the skill of the staff, get obstacles out of the way, [and] provide resources.'

The role of special education teachers varied within districts, from implementing Tier Two and Three interventions, consultation on interventions, and reserved for services outside the tiers altogether. AD2 reported, 'Sped teachers do not come into the process until a referral is officially made after 3 Tiers of interventions.' Although the survey options included parents, only two districts commented on the role of the parent. AD1 reported, 'Parents may request interventions, and are informed of the process but don't participate much as it is now. Parents are notified when a student starts receiving Tier 2 interventions.'

MTSS structures accommodated the needs of all students in all areas of potential deficits; however, districts reported a variety of areas of implementation. AD1 reported provision of intervention in all four foundational areas, 'Reading, writing, math, [and]

behavior.' All others reported a variation of the four. Administrators within AD1, AD2, AD3, and AD8 shared implementation of behavioral intervention. Table 6 displays the districts' intervention focus in the most common areas of implementation: reading, mathematics, written expression, and behavioral/social/emotional learning.

Table 6

Areas Addressed

	Academics			Behavioral/Social/Emotional
Districts	Reading	Math	Writing	
D1	X	X	X	X
D2	X	X		X
D3	X	X	X	X
D4	X	X		
D5	X		X	
D6	X	X	X	
D7	X	X	X	X
D8	X			X
D9	X	X		

All nine surveyed district administrators discussed professional development initiatives. AD4 reported attending training from expert Mattos (2018), 'Administrators and teacher leaders attended a two-day workshop provided by Mike Mattos.' AD4 reported attendance at Mattos' workshop as well. Four other districts provided professional opportunities from unspecified sources. AD1 stated, 'Three or more times a year we have district-wide PD on MTSS, the buildings each send small teams to hear the training and bring it back to the building.' Reading specialists within AD2 and AD5 provided professional development for staff within the district. AD9 described, while the district is implementing MTSS, district wide professional development has not yet occurred, 'Once building level staff is ready, we will implement system wide PD. We

will provide refreshers in buildings where intervention is already ingrained. The Special Ed team and school psychs will lead the charge.'

Research Question 2: How did administrators perceive assessment components of MTSS?

Surveyed districts unanimously utilized screening assessments for identifying struggling students in the academic realm. Screening assessments within districts included designed and purchased standardized tools. AD1 reported, 'We screen fall, winter, and spring with various measures (F&P, AIMSweb, iReady) and then triangulate with other data sources like MAP, benchmarks, etc.' AD4 shared,

> Screeners and DRA are used to inform teacher instruction, instructional grouping, etc. All students take common pre-assessment and post-assessment. Data is used to guide PLC group discussions as well as to help teachers provide timely interventions during those designated blocks of time.

Administrators within the researched school districts reported utilization of the following standardized screening tools: AIMSweb, iReady, NWEA, DRA, and STARS. AD3 singly reported the utilization of a progress monitoring assessment, 'Universal screeners, and then progress assessments.' AD9 discussed district dedication to the establishment of procedures, 'The district is working with buildings to establish a data culture. We are looking at what data we have and what it is telling us. We have just formed a data services department which will be bringing data to teachers.' AD6 alone discussed measuring the behavioral realm through utilization of a standardized tool, 'Use AIMSweb as universal tool or academics, used [of] diagnostic tool to drill down for deficits, use of SAEBRS for behavioral screening,' while AD1 shared interest in the tool, 'We are

looking at school-wide screenings for behavior like the [sabers] but haven't done it yet. Behavior students are identified with existing data like office referrals and/or teacher recommendation.' District administrators reported utilization of many staff in the implementation of assessments; teachers, reading specialists and interventionists, administration, school psychologists, and curriculum department staff.

Administrators within the researched districts established data collection, analysis, and data based decision as the cornerstone of the MTSS framework. When asked how data were managed, analyzed, and presented, district administrators provided limited information with similar themes. AD8 responded with representation explanation, 'Assessment data is analyzed at the building level, with support from the district when necessary and analyzed by the appropriate building intervention team.' The main difference among respondents was staff responsibility for the data collection, analysis, and presentation; reading interventionist, school teams, reading specialist, PLC teams. AD9 and AD7 were the exception; data departments utilized electronic means to collect, analyze, and present site and district-based data. School teams utilized information for decision making.

When asked what other evidence districts considered, respondents provided a variety of valuable sources. AD2 reported, 'Classroom teachers, social worker, [and] interventionists provide subjective observational data within the process.' AD4 and AD6 reported use of district created common formative assessments. AD7 responded all student information was utilized. AD1 shared, 'Vision, hearing, speech screenings, attendance, ELL status, behavior records, [and] curriculum based measures.'

Cut scores or points informed decision making within tiers. Five respondent districts reported use of cut scores. AD6, AD7, AD8, and AD9 reported decision making processes determined by utilization of cut scores, either district or publisher determined. AD7 stated, 'There are district benchmark standards vs. MAP standards that buildings can review when analyzing student STAR data. There are cut points used to determine which students will receive supplemental (Title) English Language Arts instruction.' AD1 explained, '25th percentile for intervention, 10th percentile or lack of response to move to Tier 3, usually based on AIMSweb or fast bridge norms.' AD1 was the single respondent regarding behavioral thresholds for intervention, 'Behavior is less specific but we suggest that severe behaviors, like aggression, go straight to Tier 3.'

Research Question 3: How do administrators perceive intervention components of MTSS?

Researched District administrators discussed Tier One interventions with consistency. AD1 explained, 'Tier 1 - general classroom instruction and modifications.' AD8 stated, 'Schools have levels of support for reading, starting with tier one instruction and regular classroom teacher interventions.' The others simply referred to Tier One as general or regular education. District administrators described a broader variety of implementation of Tier Two. AD4 shared, 'Elementary schools have intervention blocks built into the day - this is time for all kids for enrichment or intervention, based upon assessment data.' AD1 detailed, 'Tier 2 - a little extra academics. It's defined as 15 minutes three times per week, behavior is usually check-in check-out or social skills group.' AD9 shared each building implemented differently and further explained general education teachers utilized treatment protocol to address identified areas of weakness.

'Ten to 15 students work on programs like PALS and Read 180.' AD9 described Tier Three interventions to be provided by veteran teachers and specialists, 'Tier 3 instruction occurs in small groups of 3 [to] 5 students, data identified skills needed, and in addition to core instruction.' AD1 shared a description of frequency for academics and 'an individualized behavior plan for behavior.' In D5, Tier Three was special education service. In D6, special education staff provided Tier Three. AD7 and AD4 shared a broad description of interventions, 'Each building has their own framework for tiers of intervention' and 'Elementary schools have intervention block built into the day - this is time for all kids for enrichment or intervention, based upon assessment data.'

Frequency and intensity of interventions varied within the MTSS framework in surveyed districts. AD9 described, 'Elementary schools have intervention daily at least 4 days a week. Intensity goes back to group size and the intervention selected.' Similarly, AD3 stated, 'Tier 2, 30 minutes a day in small group. Tier 3, 30 minutes per day one-on-one.' AD5 shared, 'Each level is different and depends on the student. Some students are daily with up to 45 minutes, while others might be weekly 30 minutes.' AD8 stated, 'Building level decision making included personalization in both frequency and intensity'.

Respondents focused on quality instruction when asked to describe required universal supports or components of Tier One. AD1 stated, 'We have universal academic and behavior plans that lay out the general expectations. For behavior, our schools use PBIS or similar principles.' AD9 shared, 'Most of our schools have PBS or similar universal expectations preparing student[s] to learn and warding off behaviors. We continually look at curriculum and implementing with fidelity. We expect 80% of

students to be meeting benchmarks on universal screeners.' AD8 discussed utilization of, 'PLC, CITW work, [and] adherence to district curriculum,' while AD3 required, 'Differentiated instruction, choice, and independent English Language Arts level texts.' AD6 shared, 'Expectation for DI, formative and summative assessments, quality instructional response, and universal screening.' Whereas, AD2, AD4, and AD5 reported the expectation of fidelity to universal curriculum for all students, core curriculum, and regular education curriculum.

When students did not master benchmarks following quality Tier One instruction, districts intervened. Districts described a variety of processes utilized to select interventions. AD4 and AD5 described types of individuals, classroom teachers and interventionists, teachers; individual student need, and the ELA specialist selected interventions. AD1 stated, 'We have a list of those that have a strong research base. We use intervention center, PBIS world, EBI, WWC, etc. to find studies to support their use before they are approved.' AD7 shared, 'Each building team is able to select interventions. There is not a systemic method, outside of Title middle school reading support through Read 180.' AD8 explained, 'District determines intervention programs and systems to support through curriculum leaders and reading coordinator.' AD9 described the progress of practice, 'It used to be less formal. It was basically by word of mouth when an intervention was needed. Now, we utilize evidence-based interventions, such as Wilson and PALS. School psychologists and administration work closely utilizing research in the selection.'

The responsibility of intervention implementation was placed upon teaching staff. Teacher preparation programs had only just begun to include the concept of intervention.

When asked how well teacher preparation equipped teachers for the responsibility, districts primarily agreed teachers were not well prepared to implement the components of MTSS after completion of degree programs. AD2 summarized the gap, 'Incoming teachers have a strong understanding of the general framework of RtI. Individual district implementation is something that has to be taught.' Similarly, AD9 reported observing,

> Newer, younger teachers know more than seasoned teachers from the perspective of looking at all kids on the bell curve. They come expecting to differentiate versus seasoned teachers who may say this is how I teach and there must be something wrong with the kids if they're not learning it.

Remaining districts reported similarly to AD1, 'Generally they have little knowledge of MTSS, RtI, or interventions.'

Research Question 4: How do administrators perceive decision making components of MTSS?

Decision-making processes, the problem-solving team, within the MTSS structure was of great importance. Staff determined who needed intervention, which intervention to apply, length of interventions, continuation, discontinuation, and movement within the tiers. District administrators described who was responsible for moving students among tiers. AD1 responded, 'School-based data teams, including school psychologists, administrators, teachers, English Language Arts teachers, etc.' AD5 shared, 'Problem solving team led by the English Language Arts specialist.' AD7 reported, 'Each building has the ability to create their own system to manage these decisions.' The remaining district responses included, teachers and data teams, grade-level, teacher, and building level teams.

The researched District administrators explained how decisions moved students among tiers. AD9 shared students moved 'through meeting goals and criteria set for each tier, 25th percentile, 10th percentile, etc.' AD1, D3, and D8 discussed the utilization of data. AD1, D2, D4, and D5 utilized teams to review data and progress. AD6 described movement based on 'defined rates of improvement and decision-making rules,' and AD7 noted individual building ability to 'create their own system to manage these decisions.'

The decision-making process within the problem-solving teams varied among the respondent districts. AD1, AD6, AD7, and AD8 expressed variation among the buildings within the district. AD7 shared, 'Each building has the ability to create their own system to manage these decisions.' AD9 discussed the utilization of data, data review, and cut score utilization.' AD1 and AD6 responded with processes centered around decision-making rules, rates of improvement and data study. District administrators described staff involved in the process. AD6 responded in representative form, 'Depends on the strengths of the individuals in the school. It is generally the principal, interventionist, school psychologist, reading/math specialists, [and] counselors.'

Research Question 5: How do administrators perceive fidelity components of MTSS?

Districts were asked to share steps taken to ensure the implementation of the MTSS framework as intended. AD1 explained, 'Constant coaching and feedback. And sending back referrals to Special Ed if they have not documented the process was followed correctly.' AD3, AD5, and AD8 reported a non-descript process, 'Monitoring;' 'English Language Arts specialist meet with admin to review;' 'Each building monitors implementation as they determine is needed/appropriate;' and 'District doesn't have

formal MTSS process. We do hold buildings accountable through improvement efforts and closely monitor student data.' Additionally, AD4 reported primarily building level oversight and building improvement plans with student data monitoring. While, AD9 shared a process involving attention to implementation:

> At one school, the administrators and school psychologist split Tier 2 and Tier 3. They utilize a general checklist to monitor the required components. The teachers are given feedback. If less than 80% implementation is noted, observation and feedback are increased.

Respondents shared little additional information about tools utilized for fidelity monitoring. AD4 and AD5 reported no tools utilized. The others reported utilization of a checklist, rubric, or on-line tool. AD8 stated, 'Walkthroughs, progress monitoring, and usage reports from online tools.' When asked about the utilization of implementation coaches, districts unanimously responded no such position within their sites. AD1 utilized coordinators for consultation. AD2 reported the utilization of instructional coaches shared between elementary schools, and AD9 responded, 'I wish! We would love an interventionist/coach in each building but we do not have the staff. This is a fatal flaw in a lot of ways. We do find the staff with the most knowledge and utilize them.'

The researched district administrators described the connection between the MTSS framework and individual student referral for special education evaluation. Three districts reported the processes working independently of one another. AD2 reported, 'They are two separate lanes until the referral for special education is made.' AD3 shared, 'Students get referred for evaluation when parents request it or a teacher notices

significant need. MTSS is not a pathway to IEP referral.' Four districts reported connection between the processes. AD1 stated,

> It completely intertwines with the special education referral. While we don't want buildings to just do MTSS to get to a referral, we have found that they are much more motivated when they know that not following procedures will mean they don't have the option to refer later.

AD7 responded, 'Our building-implemented frameworks may have a direct correlation with a high rate of referrals for evaluations that do not qualify for special education services.' AD4 stated, 'No formal connection but it can help guide or trigger a referral.' AD9 reported a connection between the two and utilized the framework for identification in the past. 'General education was nowhere near ready for us. The narrow view cannot work without the broad view in place.'

Table 7

Full and Partial Implementation Designation

Implementation score	District	Implementation	Assessment	Intervention	Decision Making	Fidelity monitoring
1	D1	1	1	1	1	1
1	D2	1	1	1	1	1
2	D3	2	2	2	2	2
2	D4	2	2	2	2	2
2	D5	1	1	2	2	2
1	D6	1	1	1	1	1
1	D7	1	1	1	1	1
1	D8	1	1	1	1	1
1	D9	1	1	1	1	1

Additionally, AD9 described at the time of the study, the district utilized MTSS to inform the special education process. 'When the team process is exhausted, a referral to special education can come out of that team.' AD5 reported no utilization of RtI for eligibility. Table 7 denotes the researcher designation of full or partial implementation determined by the responses provided by each district administrator.

Interviews of State-Level Leadership

The researcher interviewed two state-level leaders involved in the implementation of MTSS in Missouri. Table 8 contains the questions utilized to survey state-level leaders.

Table 8

State-Level Leadership Survey Questions related to each Research Question

Research Question	Survey Questions
How do school districts implement the MTSS?	What components of the MTSS have elementary schools included in their framework?
	Explain the process districts utilized to implement the MTSS.
	Describe the role each of the following staff are responsible for in MTSS structures- General education teachers/Counselors/Administrators/Special Education teachers/Psychological examiners/School psychologists/Parents/Other.
	What areas of student needs are addressed in Missouri framework?
	Describe any professional development provided to teachers and/or the administration on the implementation of MTSS.

Continued.

Table 8 continued.

How do administrators perceive the assessment components of the MTSS?	How are assessments utilized in the implementation of MTSS? How is assessment data managed, presented and analyzed? Who is involved in the assessment component? Besides standardized test results, what other information is considered in the student assessment process. Describe if any, of the utilization of cut points or scores were established for data analysis?
How do administrators perceive the intervention components of the MTSS?	Describe the Tiers of intervention within your framework. Explain the frequency and intensity component of each Tier. What components/universal supports are required to be in place in Tier 1 intervention? How are interventions selected? How has teacher preparation coursework prepared staff for implementing interventions?
How do administrators perceive the decision-making components of the MTSS?	Who makes decisions to move students among Tiers? How are decisions made to move a student to a different Tier? Describe the problem-solving team process. Who are the members of the problem-solving team? Describe any possible connection(s) between the MTSS framework and individual student referral for special education evaluation.

Continued.

Table 8 continued.

How do administrators perceive the fidelity components of the MTSS?	What steps are taken to ensure MTSS frameworks are implemented as intended?
	What tools have been identified and utilized to monitor fidelity of implementation?
	What measures are available to monitor faculty ability to implement intervention?
	Do districts utilize implementation coaches? If yes, please describe the role of the preparation and role of the coach.
	How do individuals within the framework monitor individual fidelity to implementation?

Interviews included the director at MODESE (SLL1) and the president of a state organization of special education administrators (SLL2). The researcher analyzed the phone interviews and coded for themes consistent within each, as well as in comparison to the implementation information received from surveyed districts.

When asked what components of MTSS had been implemented in districts in the state, the two leaders reported components of assessment. The remainder of responses differed. The focus from SLL1 perspective centered on four foundational components, 'Data-based decision making, assessment, collaborative teams, and effective teaching and learning.' SLL1 stated, 'Sometimes districts jump into intervention, but if Tier One is not in place, Tiers Two and Three are spinning their wheels.' SLL2 reported, 'Districts are implementing three and/or four tiers of intervention, fluid groups, reassessment to determine need for intervention, and district plans implemented in buildings including intervention for set numbers of weeks. Increasing numbers of districts are implementing, lots are not.' Both state-level leaders agreed there existed a great deal of variance from district to district.

District processes for implementation varied greatly. Neither state-level leader discussed standard protocols. SLL2 presented most districts who implemented:

> Started with intensive training of leadership-what it is, how it benefits all kids, struggling to enrichment. Then progress to bringing in staff to implement components, shifting mindsets, and people jump on board. It has to start at the top with district leadership. Buildings cannot sustain alone.

DESE recognized, 'All kinds of implementations. They are not consistent. That is why we are focusing on the four components at this time.'

The two leaders were asked to explain the role of staff members in the implementation. The SLL1 responded,

> There is no state-level expectation for specific roles. We recommend collaborative teams in all buildings in all districts. There are 20 district teams in the Missouri Model. These are focusing just on collaborative teams. It is just a small piece of the entire MTSS but very challenging. Districts need to resist the urge to jump ahead. That's what folks want to do and it doesn't work. (SLL1, personal communication, November 15, 2017)

SLL2 stressed the importance of staff involvement, 'The best most effective program involves all instructional and support staff.'

MTSS intended to meet the needs of struggling students at the onset of struggle. When asked what areas of student needs were addressed in Missouri, the leaders agreed; literacy, mathematics, and behaviors. SLL2 discussed further, 'Buildings often focus on academics first, then bring behavior on line, unless behavior struggles are bad. We recommend that both be addressed.'

Professional development was an area that both leaders agreed to be of paramount importance. Both organizations established professional learning opportunities, yet varied in approach. The SLL1 focused not on intervention but on core instructional quality first and shared, 'At this point the focus is on utilizing data to make decisions, collaborative structures in place, and utilization of common formative assessments. We are not yet ready for CBM, curriculum based measures.' Electronic resources were designed to support effective teaching and learning practices. SLL1 explained,

> We have learning modules that are content neutral that are based on Dr. John Hattie's work. These practices show a very high effect size. For example, assessment capable learners is one of the practices with the highest effect size. We have a module for that. (SLL1, personal communication, November 15, 2017)

SLL2 presented a focus on higher education and a state-level initiative to unify general and special education: Reinvent. The initiative began four-to-five years previous to this writing. SLL1 shared, 'Several organizations, DESE, IMPACT, MSTA, NEA, MSBA and MO-CASE joined together.' The organizations studied several initiatives over the period of a year and the conglomerate selected MTSS. The powerful group of organizations sought and earned the Center for Effective Educator Development, Accountability, and Reform (CEEDAR) grant. The grant spurred revisions to teacher coursework and the MTSS components were incorporated into teacher preparation in five universities in Missouri. SLL2 explained, 'The organization has provided a professional learning series to 50 district teams from five sites over the past two years. Participants focus on implementation planning which included professional development in the district, resources, and systems.'

The leaders shared an understanding utilization of assessments in district implementations of MTSS. The SLL1 reiterated the state's emphasis on common formative assessment, 'Ideally, assessment occurs within the continuum. Common formative assessments are utilized as part of the instructional routine throughout the year.' The organization supported the perspective, 'It is on-going, targeted. There has to be some sort of a common measure for all, district data, classroom performance, MAP, attendance, and behavioral data.' Further description included the data utilized, 'Look at the universal screener and draw the line, students who performed as expected, below expected. Does the data surprise you? Rescreen. Check for accuracy prior to intervention.'

Assessment and data management was a struggle for some school teams. The leaders presented similar, but varied, response. Each relied upon the input of experts to inform advice provided to districts. The department implemented the Missouri Model District Project; SLL1 explained, 'Twenty districts help to design a blue print to assist other districts to implement.' SLL2 shared, when designing professional development, use 'experts to present on successful strategies. They have knowledge of systems and a variety of methods.' When asked who was perceived to be involved in the assessment component, both responded, indicating variation among districts and buildings. The organization recommended universal screening be completed by 'teachers who know the kids.'

Quality assessment of student skills included more than one standardized score and compared all student data to cut scores or benchmark levels of mastery. When asked how districts utilized the components of individual student achievement or behavioral

data, the leaders responded differently. SLL1 stated, 'At this time, at the state level, we are recommending focus on the four foundational components mentioned earlier.' SLL2 spoke to the utilization of classroom performance data, anecdotal behavioral data, observation, grades, MAP scores, reading levels obtained through DIBELS and DRA. In regard to cut scores:

> You have to have them. It is where you start intervention. It drives the conversation. They can vary. They are used to compare students to the group. They are utilized in progress monitoring, comparing growth to the set target, and measuring progression.

Most districts implementing MTSS utilized a three-tiered system. When asked to describe recommendations provided for the organization of the framework, frequency and intensity of intervention, specifics of the tiers, and selection of interventions, the leaders' input varied. The SLL1 shared limited information due to MODESE recommendations focused on effective teaching and learning for all students through Tier One, at the time of study. MODESE, per federal requirements, allowed districts to utilize RtI for the eligibility process for specific learning disabilities. The department provided guidance for this purpose. The SLL2 spoke to the state of implementation:

> Districts have three tiers generally, sometimes four. Special education is not a tier. All students are served within the Tiers, special education comes after. Tier One serves students at the 25th percentile and higher, Tier Two serves those below the 25th percentile, and Tier Three serves kids who didn't progress in Tier Two. Districts start with kids in Tier One and Tier Two and start Tier Three when Tier One and Tier Two do not show progress. Frequency and duration were

> described in general terms, each lasted 10-14 weeks, progress was monitored after three weeks, if successful intervention continued, if unsuccessful, the intervention was changed. (SLL2, personal communication, November 2, 2017)

The leaders agreed in response to components required of Tier One instruction; effective teaching practices, universal supports, differentiation, systematic instruction in literacy, and strong core instruction. Responses regarding interventions and selection process varied. The SLL1 reported, 'We used to talk a little about that but people got so wound up in it they didn't focus on the universals. The focus needs to be on what is happening in general Ed and if that gets lost, that's a problem.' The SLL2 reported, 'Buildings and districts have a pool of interventions. They do not always match the right intervention to the weakness.' SLL2 provided an example, 'A student with a decoding deficit might be in an intervention group for ELA comprehension. Buildings need to have a full toolbox and a Problem-Solving Team to select intervention to meet the deficit.'

Teacher awareness of the framework and ability to facilitate the components was integral to successful implementation. Both leaders responded concerning observation of increased awareness in new graduates. SLL2 stated, 'Universities have focused on integrating more intervention for all students. It has not been happening long enough for impact. Cooperating teachers in practicum placements can make an impact in co-teaching with student teachers,' responded the organization leader. SLL1 referred to the MODESE website, Missouri Education Systems and Instruction for Learning (Mo EDU-SAIL). The site contained learning modules to increase effective teaching and learning practices. SLL1 explained the department encouraged higher education practitioners to utilize the modules in teacher preparation.

Decision-making within the MTSS framework was data-driven and team-based. Respondents were asked to describe how decisions were handled and who in the schools was responsible. SLL1referred to the decision-making module within the Mo EDU-SAIL materials and reiterated the direction, at the time of the study, centered on effective teaching and learning, not yet on intervention. The SLL2 presented a belief that teams utilized data and explicitly established decision-making rules to inform movement within tiers. 'The problem-solving teams focused on student data, discussed performance, matched data to intervention, and monitored progress,' the leader explained.

Program integrity mandated implementation fidelity. MTSS utilization for eligibility determination required fidelity in implementation of interventions. SLL1 spoke to the importance of fidelity; however, limited focus to date, at the time of the study. The director referred to the website resources and the ability to implement checklists for self-study. The SLL2 perspective presented that progress had not yet reached the fidelity component.

Student RtI within the MTSS structure could be utilized to determine eligibility for specific learning disabilities. The SLL1 and SLL2 agreed full implementation of MTSS with fidelity ensured districts of appropriate referrals. The director stated, 'We are taking a very intentional, deliberate and slow pace to building systems to ensure students have had high quality, appropriate instruction. Therefore, referred students hopefully would be most accurate for referral.' MODESE provided specific guidance and procedures for eligibility.

Summary

Districts throughout the United States and across Missouri implemented the MTSS. The researcher selected like public school districts in Missouri to investigate implementation of MTSS. The qualitative survey results demonstrated a variety of implementation processes, as well as unique site-based interpretation and implementation of the framework. Interviews of two state leaders in positions of authority on the framework demonstrated a vast difference in direction and support for Missouri schools. The researcher of this mixed-methods study investigated the difference in achievement and percent of student attendance in districts the researcher designated as those with full and partial implementation. The quantitative data denoted no difference of statistical significance in the districts designated as full implementation in comparison to partial. The Chapter Five provides a summary of findings, implications, and recommendations for further study.

Chapter Five: Discussion

Overview

To analyze the implementation of the Multi-Tiered System of Support in Missouri public elementary schools, the researcher investigated the process of implementation and frameworks in selected similar districts through electronic surveys and interviews of two state-level leaders involved in the implementation of MTSS throughout Missouri, and analyzed secondary data from the MODESE (n.d.) Comprehensive Data System. The researcher sought to determine whether full implementation of MTSS made a difference in student achievement and attendance.

The study examined how districts administered the Multi-Tiered Systems of Support in Missouri and administrator's perceptions of the frameworks regarding assessment, intervention, decision-making, and implementation fidelity. All nine of the participating districts reported implementation of the MTSS. As discussed in Chapter Two, districts recognized the importance of shared responsibility for all student achievement. Primarily, findings centered on themes of variation and individualization of the four main components of the frameworks. District administrators reported limited information via electronic survey, and based on analysis of responses via electronic survey, the researcher determined a status of full or partial implementation of the MTSS within the nine study districts. The researcher deemed six districts as full implementation and three districts as partial implementation. Two interviewed state-level leaders reported different perspectives on implementation levels in districts, as well as philosophy regarding district expectations and implementation. The researcher hoped to discover a positive relationship between full implementation and student achievement, as

well as full implementation and percent of student attendance. Through quantitative analysis of attendance and achievement data, the researcher determined no difference existed.

Questions and Hypotheses

Research Question 1: How do school districts implement the MTSS? District administrators provided individual and unique paths to implementation of the Multi-Tiered Systems of Support. None of the respondents reported following a blue print or implementation plan. Professional development in districts focused on the MTSS and varied, from in-house expertise, train-the-trainer models, and teams in attendance at a two-day conference provided by Mattos (2018). The interviewed state-level leaders expressed the importance of administrative support of the MTSS implementation. One district administrator discussed the inclusion of principals within the staff, who received training. As discussed in Chapter One, lack of faculty and administrative support commonly caused failed implementations (Turnbull et al., 2002). Such failure could be prevented with increased professional development to establish common understanding, recognition of benefits, and collective commitment to implementation. Each district administrator included some components of the frameworks within the description. As reported in Chapter Two, tiers delineated a level of support in terms of frequency and intensity and were established in many ways. Researchers agreed most districts implemented with three tiers (Averill & Rinaldi, 2011). Most respondents' program descriptions included three tiers of intervention, all of which addressed academic areas. Only three district's frameworks included ELA, written expression, mathematics, and social/emotional/behavioral skills. Remaining respondents addressed varied

combinations of the skill areas. State-level leaders agreed districts addressed literacy, numeracy, and behavioral deficits typically within a three-tiered intervention model. Researchers advocated for intervention to include academics, as well as social/emotional/behavioral components (Lane et al., 2014a). None of the district respondents mentioned the inclusion of explicit social skill instruction, as researchers described integral components of CI3T (Lane et al., 2014a). Experts on the MTSS agreed districts could not intervene a way out of a Tier One or core instructional weakness. Eighty percent of students should have needs met within the context of regular daily instruction (Lane et al., 2013). SLL1 urged school districts to maintain focus on the teaching and learning of all students. Quality instruction in Tier one must be in place prior to implementation of an intervention. In conflict with the recommendation, public schools in the state of Missouri were allowed, and in the eyes of many parents and special education advocates, advised to utilize RtI/MTSS for identification of students with specific learning disabilities. Both state-level leaders expressed common concern; districts and buildings often focused too soon on interventions in Tier Two and Three. In the researchers' experience, a flawed Tier One, along with lack of training, implementation, and fidelity in Tier Two and Three, erroneously identified students with specific learning disabilities.

School district personnel implemented the components of the MTSS in a variety of structures. General education teachers primarily implemented Tier One and special education teachers consulted on interventions in Tiers Two and Three and provided services beyond the three tiers. School counselors implemented behavior screening and implemented academic and behavioral interventions, while school psychologists led data

teams and facilitated Tier Three interventions. Researchers noted the importance of the role of school psychologists in resource selection and attainment, provision of professional development, facilitation of Tiers Two and Three interventions, data analysis, and knowledge base of best practice in assessment and interpretation matched to intervention.

Researchers noted the role of a coach or coordinator in professional development and provision of technical assistance (Morrison et al., 2014). Respondent districts reported no such position within the systems. Only two respondents discussed the role of parents in the process. Responses included parent ability to request intervention and notification to parents when students received intervention. In addition to staff involved in respondent districts, researchers noted the inclusion of the local Board of Education in implementation (Freeman et al., 2015, p. 61). The state-level leaders stressed the importance of involving all staff within the framework. District level respondents did not mention special area staff or support staff members. The state-level leaders discussed the importance of changing the preparation pre-service teachers received prior to degree completion. Specific results of the partnership were not yet evident or mentioned by school district administrators. Two district respondents shared observations of increased knowledge and skills pertinent to the MTSS in more recently-graduated teachers.

Research Question 2: How do administrators perceive assessment components of the MTSS? All district administrators perceived assessment as important to the implementation of the MTSS. All respondents reported the utilization of assessment to measure academic skills and growth. Variation in tools ranged from standardized purchased measures to assessments created within districts. Researchers

emphasized the importance of assessment within a successful MTSS structure (Crawford, 2014). Assessment served as the basis for decision-making and progress monitoring. Implementation of best practices in assessment was required for movement to be made in closing the gap. Researchers emphasized the importance of implementation of best practice in assessment and data analysis to appropriately identify students in need of intervention, determination of appropriate intervention, and movement to a different intervention or tier (Benner et al., 2013; Crawford, 2014; Sanetti & Collier-Meek, 2015). Accurate identification was central to success for students. Only one district utilized a standardized behavioral screening tool while another reported consideration of the tool yet to implement. Researchers acknowledged the challenges in assessment of the social emotional behavioral realm (Saeki et al., 2011). Recommendations involved collection and analysis of qualitative data, such as interviews or questionnaires.

Both state-level leaders discussed the utilization of assessment in the form of common formative assessments. SLL2 added a variety of other assessment tools districts utilized as common measures. District administration provided limited, however varied, information on staff responsibility for assessment. Two respondents discussed the newly formed data department additions within districts. Funds allocated to data collection, analysis, and collaboration demonstrated commitment to data-based decision making. The state-level leader interview noted agency direction in supporting districts with assessment and data management. SLL1 referred to the Missouri Model Project, which informed a blue print to include lessons learned from district implementations. SLL2 referred to professional development opportunities, which provided districts opportunity to learn successful strategies from experts. Respondents expressed utilization of common

formative assessments, hearing and vision screening data, attendance, school records, and other data points, as information considered within decision-making in addition to formal assessment data. Most district administrators reported the utilization of cut scores or decision-making rules within implementation of academic intervention. Only one district shared utilization of thresholds for decision-making for social/emotional/behavioral intervention. The state-level leaders' responses varied on utilization of cut scores. SLL1 emphasized at the time of the study the focus remained on the implementation of best practice instructional strategies in Tier One. SLL2 supported the use of variety of data to inform decisions of intervention and measurement of success.

Research Question 3: How do administrators perceive intervention components of the MTSS? District administrators shared a common perception of Tier One components. Tier One components consisted of general education instruction with the inclusion of universal supports for all students. State-level leaders maintained focus on best practice instructional strategies; proven research-based teaching practices, universal supports, differentiation, systematic instruction in literacy, and strong core instruction. SLL2 more specifically described Tier One, including students who scored at the 25th percentile or higher on an administered universal screening assessment.

District respondents indicated increased variation of the implementation of Tier Two. Although the study focused on elementary implementation, two districts mentioned secondary school implementation of the MTSS. One respondent noted elementary schools implemented Tier Two and Three interventions within the daily schedule. The secondary schools offered supports beyond Tier One through additional opportunities outside of the daily schedule in the form of voluntary tutoring and remedial-type courses

within the schedule. The other described secondary supports, which occurred every second day within the scheduled day. One district respondent noted implementation of standard protocol intervention. Another district respondent discussed behavioral intervention in the form of evidence-based practices, such as Check In, Check Out. SLL1 again focused only on best practice instructional strategies within Tier One. SLL2 described, Tier Two served students who scored below the 25th percentile on an administered universal screening assessment.

Responding administrators provided limited description of Tier Three interventions within districts. One district administrator described small group instruction utilized evidence-based literacy intervention provided by highest qualified, experienced practitioners. Another respondent described intense intervention informed by individual student assessment data. Districts differed in the type of staff involved in Tier Three. One district administrator described Tier Three as special education services. Another described the third tier as intense individualized instruction provided by special educators, but not yet IEP-driven specialized instruction. SLL1 focused only on best-practice instructional strategies within Tier One. SLL2 described, Tier Three served students who did not respond to the interventions in Tiers One and Two. Seven district administrative respondents noted interventions selected by specific staff or district groups. Two respondents discussed selection of evidence-based practices through utilization of websites and publications devoted to reporting the outcomes of interventions. SLL1 focused only on research-based teaching and learning practices within Tier One. SLL2 discussed utilization of screening data to select class-wide intervention at Tier one. Districts and buildings often established banks of interventions

organized by student need and teacher selection. Researchers described that the MTSS included highest quality instruction and resources at each level, students moved through tiers and engaged in increasingly intense and frequent intervention, as measured progress failed to meet set benchmarks. Tier One served all students, Tier Two served approximately 10 to 15% of students, and Tier Three served approximately 5% of students.

Frequency and intensity of intervention in Tiers Two and Three varied among respondents and likely within the schools in surveyed districts. One administrator described intervention components, such as frequency and duration, were subject to building-level determination. One respondent noted within schools, the frequency and duration varied with each individual student. Staff responsibility for all components varied within district respondents. District respondents agreed many staff lacked overall awareness, beliefs, and skills necessary for implementation of intervention upon hire. While state-level leaders and districts agreed newly-hired staff reported for assignment with increased awareness and skills, at time of study, recently changed university focus on the MTSS had not yet had enough time to change instructional practices to a marked degree. State-level leaders agreed utilization of the state-sponsored website, MO EDU SAIL, aided districts in raising collective awareness and skill needed for then-current teaching staff.

Research Question 4: How do administrators perceive decision making components of the MTSS? Experts recommended decisions in the MTSS to be informed through analysis of standardized measures in addition to other evidence. Researchers explained data obtained in analysis of universal screeners and progress

monitoring measures were the basis for decision making through tiers. Respondent district administrators mainly described that decision making occurred within the context of teams; problem-solving, school-based data, grade-level, and building level teams. Researchers reflected the benefit to educators in use of the collaborative approach, who moved away from teaching as an individual to a more integrated team system, utilizing assessment data to make decisions for students who did not adequately respond to instruction and intervention. One district administrator reported building autonomy in the establishment of such processes. Team-based decisions were informed by data study, cut scores, and student progression in comparison to average growth. Two respondents supplied a process, which included utilization of a district-determined procedural manual. SLL1 again referred to state-level focus on Tier One best-practice instructional strategies. SLL2 described a process of an individual-student data study, which resulted in movement when academic progress lacked.

Research Question 5: How do administrators perceive fidelity components of the MTSS? Regardless of the level of implementation, for any circumstance which utilized interventions, experts recommended attention to fidelity. Arden et al. (2017) discussed the difficulty in measuring the difference observed through implementation of RTI, "One cannot truly measure the impact of RTI without first ensuring adequate implementation" (p. 271). One district level respondent provided detail in fidelity assurance practice. The building administrators conducted walk through observations resulting in a fidelity score. Evaluating administrators provided specific feedback on observed fidelity components. Administrators conducted additional observations and feedback of those scoring below set score thresholds. Other respondents provided less

detail; however, noted monitoring practices, such as accountability by achievement monitoring, coaching and feedback, student data monitoring, and monitoring through checklists and on-line tools. The researcher noted a lack of student progress could not be determined as a difficulty in learning without assurance of the selection of an appropriate intervention implemented with fidelity.

Implementation without fidelity monitoring was not advised. Both state-level leaders agreed on the importance of monitoring implementation fidelity. SLL1 noted potential for utilization of Effective Teaching Practices check lists, eventually as fidelity monitoring check lists; however, fidelity monitoring had not yet been addressed as focus had been maintained on effective teaching. SLL2 noted a similar position, training had not yet focused on fidelity beyond the utilization of check lists.

As discussed in Chapter Two, in the state of Missouri, districts may utilize RtI for determination of eligibility for specific learning disability under IDEA. MODESE (2008) advocated the MTSS to establish a formal structure to identify students. When asked to share how the MTSS frameworks and disability determination of specific learning disability under the IDEA were connected, district level respondents mainly noted the MTSS was not utilized for such identification. One district administrator noted utilization for eligibility in past practice; however, not at time of study. District respondents noted the implementation of the MTSS assisted in increased numbers of appropriate referrals for special education evaluation during which the discrepancy formula was utilized, increased data to be utilized in evaluation, and increased staff motivation for implementation to increase validity of referral for evaluation. State-level leaders responded similarly; implementation produced higher-quality referrals for

evaluation. At the time of the study, no respondents noted utilization of the MTSS for eligibility under IDEA.

Hypothesis 1: There is a difference in the percentages of elementary students scoring Proficient or Advanced in English Language Arts among districts with full and partial MTSS implementation.

Through analysis of grades three through five English and Language Arts MAP scores, the researcher found no difference between full implementation districts compared to partial implementation districts. Hypothesis 1 was not supported.

Hypothesis 2: There is a difference in the percentages of elementary students scoring Proficient or Advanced in Mathematics among districts with full and partial MTSS implementation.

Through analysis of grades three through five Mathematics MAP scores of students, the researcher found no difference between districts with full and partial implementation. Hypothesis 2 was not supported.

Hypothesis 3: There is a difference in the student attendance rates between full and partially implemented MTSS districts.

Through analysis of student percent of attendance data, the researcher found no difference between districts with full and partial implementation. Hypothesis 3 was not supported.

Implications

Educators strived to meet the needs of all learners within the public-school setting in Missouri. In the endeavor, many districts sought the structure of the Multi-Tiered Systems of Support, because of the promise of a framework to meet the needs of

struggling learners who failed to meet expectations, whether academic or social/emotional/behavioral. Beldin (2017), past President of MO-CASE, spoke at the 2nd Annual Collaborative Conference and urged special educators, administrators, and school psychologists to continue the efforts in the State in the Re-Invent Initiative goal to unify general and special education through implementation of MTSS to meet the needs of all learners in Missouri. National studies on the MTSS reported the framework did not work (Balu et al., 2015). Well respected researchers, critics of such studies, described that the national studies were ill-designed and short sided. Lembke et al. (2017) suggested, "It is better for districts to utilize a single evidence-based component of a school-wide model that might be an improvement over what they are currently doing than to continue with poor practices that are not research based" (p. 10).

The results of the study supported the reviewed literature on the implementation of MTSS in the United States. Public schools implemented in a variety of ways with initially confusing results. As educators persevered in the identification of students not meeting benchmarks on selected assessments, implemented tiers of interventions, studied data, and monitored implementation fidelity imperfections, student needs were met. The researcher, committed to the system and the benefits despite difficulty in implementation, advocated within the district of employment for continued effort in implementation. Individual elementary schools within the public school district implemented as schedule and staff permitted, each in a unique implementation with a variety of formats. At the time of the study, recommendation for the district entailed administrative study of the framework to achieve common understanding of the essential components of the framework, establishment of a district endorsed blue print in the form of a template, site-

based, self-assessment of alignment with the district-identified required components, design of a district and site-based, multi-year professional development plan, and a multi-year implementation plan.

Recommendations

Limited participation from the initial selected public school districts and the minimal data provided by the participating district administrators limited the study outcomes and usefulness for public school administrators considering implementation, except the professional practice of the researcher. The researcher recommends school administrators seeking direction in implementation to utilize the results of qualitative survey to assist in design or selection of a well-researched implementation plan. The qualitative results might serve as lessons learned from experienced implementers. The researcher recommends future studies of implementation of the MTSS to include similar pilot settings and implementation of action research of a specific blue print for implementation of the framework. Such studies would allow for measurement of the specified components applied within similar settings to analyze outcomes of protocol implemented with fidelity and the outcomes of intervention facilitated with fidelity. The primary flaw in the implementation of the study was the limited responsiveness of administration. The researcher identified two possible explanations; the profession of public school administration allowed limited time for completion of tasks outside of the role, districts made a best effort implementation of the framework; but, those responsible for facilitation were not confident in the implementation or the process utilized. Recommended changes to a future study entailed utilization of interviews in place of an

electronic survey. The interviews conducted produced more information and specific detail.

The Policy Maker

Legislation and policy focused on equity in access to education and all student success served as the foundation for passionate and dedicated educators in the United States. Children learning at the highest level possible was the mission of many successful and beloved teachers. Such policy without direction and funding to allow for supports and resources fell short of the intent and promise. The researcher urged focus on the individual components of the framework within the country and the state. The state education department began to provide training and supports in the format of electronic modules and initiatives involving a small number of districts. These resources surfaced years after the notion of tiered interventions became mainstream. The lack of direction at the state level paired with the expectation that the framework be implemented, placed districts in the unfortunate situation of implementing prematurely and with limited guidance. Future direction to districts from the state level would find increased success if communication from the department to districts were direct to district leadership outlining the required or recommended actions with supporting documents and technical support.

Tiered interventions became the framework through which many determined solutions to education and societal issues. MODESE directed districts to utilize MTSS to improve identification of students with specific learning disability, disproportionate representation of minority groups within IDEA eligibility areas, and the means through which districts implement newly legislated requirements for students with suspected and

identified dyslexia. Tiered interventions were cited in countless recommendations to improve attendance, behavioral concerns, learning struggles, school safety, and the mental health manifestations on learning. A structure for technical assistance and funding must occur for this promising structure to find successful implementation.

Previous researchers described the MTSS as a complicated combination of instruction, assessment, data collection and analysis, professional collaboration, professional development, and fidelity monitoring (Arden et al., 2017). The participants in the study found the MTSS difficult to implement and evaluate; the researcher found no difference, while a commitment to implementation persisted. Those who implemented MTSS underwent a necessary paradigm shift to embrace the underlying premise; individual student learning was the responsibility of all staff within an implementing school. Adoption of the belief supported the system foundation. Commitment to early identification of individuals who fell short of meeting benchmarks was a close second. Public school administrators perceived a dedication to filling the gaps resulting from little teacher training while the provision of quality professional development noted a collective raised awareness, confidence, and interest. Staff held a tremendous amount of responsibility and were reliant on support from district and building administration.

Conclusion

The MTSS held promise for all students. Implemented intentionally and with fidelity, students benefited and teachers found success and fulfillment in desire for all children to reach full potential. Twenty-six years of employment in public education informed the researcher. Results for the study further ignited the researcher's passion for all students to benefit from appropriate supports as deficits emerged. Public school

districts' abilities to implement could increase, as universities benefit from the admirable work allowed through the CEEDARS grant. The researcher looks forward to the continued focused support at the state level, continued focused legislation, and local funding support to allow the implementation of a MTSS.

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Appendix A

Electronic survey of District Administrators.

What components of MTSS have your elementary schools included in their framework? (RQ1)

Explain the process your district utilized to implement MTSS. (RQ1)

Describe the role each of the following staff are responsible for in your structure- General education teachers/Counselors/Administrators/Special Education teachers/Psychological examiners/School psychologists/Parents/Other. (RQ1)

What areas of student needs are addressed in your framework? (RQ1)

Describe any professional development provided to teachers and/or the administration on the implementation of MTSS. (RQ1)

How are assessments utilized in your implementation of MTSS? (RQ2)

How is your assessment data managed, presented and analyzed? (RQ2)

Who is involved in the assessment component of your framework? (RQ2)

Besides standardized test results, what other information is considered in the student assessment process. (RQ2)

Describe if any, of the utilization of cut points or scores established for data analysis? (RQ2)

Describe the Tiers of intervention within your framework. (RQ3)

Explain the frequency and intensity component of each Tier. (RQ3)

What components/universal supports are required to be in place in your Tier 1 intervention? (RQ3)

How are interventions selected? (RQ3)

In consideration of input received from faculty, how has teacher preparation coursework prepared staff for implementing interventions? (RQ3)

What steps are taken to ensure your MTSS framework is implemented as intended? (RQ4)

What tools have been identified and utilized to monitor fidelity of implementation? (RQ4)

What measures are in place to monitor faculty ability to implement intervention? (RQ4)

Does your district utilize implementation coaches? If yes, please describe the role of the preparation and role of the coach. (RQ4)

How do individuals within the framework monitor individual fidelity to implementation? (RQ4)

Who makes decisions to move students among Tiers? (RQ5)

How are decisions made to move a student to a different Tier? (RQ5)

Describe your problem-solving team process. (RQ5)

Who are the members of your problem-solving team? (RQ5)

Describe any possible connection(s) between your framework and individual student referral for special education evaluation. (RQ5)

Appendix B

Electronic survey of state-level leaders.

What components of MTSS have elementary schools included in their framework? (RQ1)

Explain the process districts utilized to implement MTSS. (RQ1)

Describe the role each of the following staff are responsible for in MTSS structures- General education teachers/Counselors/Administrators/Special Education teachers/Psychological examiners/School psychologists/Parents/Other. (RQ1)

What areas of student needs are addressed in Missouri frameworks? (RQ1)

Describe any professional development provided to teachers and/or the administration on the implementation of MTSS. (RQ1)

How are assessments utilized in the implementation of MTSS? (RQ2)

How is assessment data managed, presented and analyzed? (RQ2)

Who is involved in the assessment component? (RQ2)

Besides standardized test results, what other information is considered in the student assessment process. (RQ2)

Describe if any, of the utilization of cut points or scores for data analysis? (RQ2)

Describe the Tiers of intervention within the framework. (RQ3)

Explain the frequency and intensity component of each Tier. (RQ3)

What components/universal supports are to be in place in Tier 1 intervention? (RQ3)

How are interventions selected? (RQ3)

How has teacher preparation coursework prepared staff for implementing interventions? (RQ3)

What steps are taken to ensure MTSS frameworks are implemented as intended? (RQ4)

What tools have been identified and utilized to monitor fidelity of implementation? (RQ4)

What measures are available to monitor faculty ability to implement intervention? (RQ4)

Do districts utilize implementation coaches? If yes, please describe the role of the preparation and role of the coach. (RQ4)

How do individuals within the framework monitor individual fidelity to implementation? (RQ4)

Who makes decisions to move students among Tiers? (RQ5)

How are decisions made to move a student to a different Tier? (RQ5)

Describe the problem-solving team process. (RQ5)

Who are members of the problem-solving team? (RQ5)

Describe the connection(s) between MTSS frameworks and individual student referrals for special education evaluation. (RQ5)

Vitae

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Colleges and Universities

Bachelor of Science in Education: 1991: University of Missouri- St. Louis

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Teaching History

Special Education Teacher | Wentzville R-IV School District | July 1992-June 2002

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