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AN EXAMINATION OF THE RELATIONSHIP BETWEEN TEAMING PRACTICES IN MULTI-TIERED SYSTEMS OF SUPPORT AND OVERALL IMPLEMENTATION FIDELITY OF ELEMENTARY SCHOOL-WIDE READING MODELS

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ABSTRACT

AN EXAMINATION OF THE RELATIONSHIP BETWEEN TEAMING PRACTICES IN MULTI-TIERED SYSTEMS OF SUPPORT AND OVERALL IMPLEMENTATION FIDELITY OF ELEMENTARY SCHOOL-WIDE READING MODELS

Stephney Gonzalez

Multi-tiered systems of support (MTSS) have been increasingly implemented in schools since the re-authorization of the Individuals with Disabilities Act of 2004 and the Every Student Succeeds Act (ESSA) of 2015. Despite researchers' efforts to identify elements of MTSS— including evidence-based practices, leadership and communication systems and structures to address learning needs— it has been challenging to identify what makes MTSS work in schools. In fact, researchers have found that schools who implement MTSS on their own tend to stray from the intended practices when the external support of coaches or research teams fades from the school (Balu, Zhu, Doolittle, Schiller, Jenkins, & Gersten, 2015). The school-based leadership team is often the vehicle for developing, installing, implementing, and sustaining new initiatives, including efforts toward building MTSS (Coyne, Oldham, Leonard, Burns, & Gage, 2016). This study seeks to examine 33 elementary school leadership teams as they develop and implement their school wide reading model with MTSS framework as part of a state-wide reading improvement initiative. School leadership teams engaged the Reading Tiered Fidelity Inventory to self-assess resources, implementation, evaluation, and teaming practices in

their school-wide reading model with MTSS framework. The present study seeks to examine the correlation between teaming practices and systems and overall fidelity of implementation of the school-wide reading model across elementary schools implementing an MTSS framework for reading.

DEDICATION

This dissertation is dedicated to my children, Skyelar and Sawyer, and to all my former kindergarten and first grade students. You are my "why". You are the reason I am committed to supporting elementary schools to build more effective and efficient systems for high quality literacy instruction. Everyone has the right to learn to read.

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I would like to acknowledge the Initiative leaders who were my first teachers and mentors of early literacy instruction and MTSS: Dr. Darci Burns, Dr. Mike Coyne, and Dr. Margie Gillis. Thank you for your support of my coaching work and for your advice in developing this study.

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Finally, I would like to acknowledge the endless support and encouragement of my family. Dave: thank you for listening and talking on our morning walks and for waking me from stats-induced naps. Lindsay: thank you for being my first student as we played school as kids and for always being there for me. Mom and Dad: you are my biggest cheerleaders and my first teachers. You taught me all the things one can't learn in school, and I am forever grateful.

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CHAPTER 1
Introduction

Multi-tiered systems of support (MTSS), such as those in a response to intervention (RTI) model or school-wide reading models, have been increasingly implemented in myriad schools across the United States as districts respond to the re-authorization of Individuals with Disabilities Act of 2004 and the Every Student Succeeds Act (ESSA) of 2015 (American Institutes for Research, 2018). MTSS are a prevention framework of structures and systems that provide the foundation for a school-wide academic or behavior support model with the goal of improving outcomes for all students. MTSS include research-informed practices, data-driven decision making and analysis, and leadership, teaming, professional development, and communication systems and structures.

Despite researchers' efforts to identify these significant elements of MTSS, they have found it challenging to identify what makes MTSS work in schools although the fidelity of implementation of MTSS can be monitored and measured for implementation support and sustainability. Researchers have found that schools who implement MTSS on their own tend to stray from the intended practices when the external support of a research team fades (Balu, Zhu, Doolittle, Schiller, Jenkins, & Gersten, 2015). This study seeks to examine the problem of why schools struggle to sustain MTSS and seeks to do so by examining school-based leadership teaming practices and structures. School-based leadership teams, in which instructional leadership is distributed among staff, can be the internal structure with the capacity to continue and support the MTSS work in their schools. Researchers have found that team-based approaches to implementation are more

likely to achieve adequate fidelity of implementation (Fixen, Blase, Duda, Naoom, & Van Dyke, 2010). School leadership teams are embedded in the culture and practice of their schools and may be positioned to support and sustain the work of initiatives such as those aiming to develop and implement a school-wide reading model with MTSS framework. Using 69 administrations of the Reading Tiered Fidelity Inventory across 30 schools from 2016-2019, this study aims to identify the relationship between specific school leadership teaming practices and systems, such as meeting and communication structures, (independent variable) and overall fidelity of implementation of the MTSS school-wide reading model (dependent variable).

Statement of the Problem

When schools implement MTSS for academics or behavior effectively, students are better supported for academic and behavioral success. Researchers have identified effective practices of school-based leadership teams but have also identified that schools struggle to sustain MTSS when external support fades (Balu et.al., 2015). External support from research teams or systems coaches naturally fades as the research project or initiative ends and researchers have found that schools struggle to sustain the systems and structures of the MTSS framework without the external support of the research team or coaches. Researchers have found that team-based approaches to implementation are more likely to achieve adequate fidelity of implementation (Fixen et al., 2010) which supports sustainability of an initiative such as building MTSS. This study hypothesizes that school leadership teams could maximize their school's reading model with MTSS framework for efficiency and effectiveness by focusing their efforts on practices that significantly predict higher overall fidelity of implementation of MTSS.

Background

The present study considered teaming practices (independent variable) of school-wide reading models with an MTSS framework as they relate to overall fidelity of implementation of the reading model (dependent variable). Teaming practices included the establishment and coordination of teams in the schools as well as meeting and communication systems and structures. Elementary school-based leadership teams recruited for this study developed and implemented their school-wide MTSS reading model with support from the State Department of Education and external coaches over four years (2016-2019). This study is situated within the specific context of a northeastern state's K-3 Literacy Initiative and Literacy Model. This Initiative has supported over 80 schools across 14 districts during the past 8 years. Central to this work has been the development of school-based leadership teams to develop and implement their school-wide reading model with MTSS framework. As this state-funded Literacy Initiative continues, it will be of increasing importance to understand how schools might be supported to gradually assume more responsibility for the oversight and sustainability of their literacy model framework as the external support of the research team and external coaches are gradually removed from the initiative. Findings from this study have implications for policy and practice as state legislators work to allocate funding for school supports and the state department of education makes decisions about allocation of supports.

Significance of the Study

Extant literature documents the issue of the efficacy of school leadership teams to sustain MTSS reading models (Fixen, Naoom, Blasé, Friedman, & Wallace, 2005;

McIntosh, Predy, Upreti, Hume, Turri, & Mathews, 2014; Waldron, & McLeskey, 2010). Sustainability of school-wide reading models with MTSS frameworks is important to state legislators, departments of education, district administrators and teachers, students and families, as well as the educators and external coaches who support these schools. Stakeholders should understand how schools can implement school-wide MTSS reading models effectively and efficiently toward the goal of increased student success.

External reading and systems coaches in the K-3 Literacy Initiative have worked with schools to build and implement MTSS reading models under the state's Literacy Model consisting of five broad goals: Leadership, Tiered Instruction, Professional Development, Assessment, and Family Engagement. Organization, dedication, and continuous evaluation is necessary to build effective MTSS reading models and when these external supports cease, schools struggle to sustain the work. To evaluate their school-wide MTSS reading model, the leadership teams in the Initiative collaboratively completed the Reading Tiered Fidelity Inventory (R-TFI) Elementary Level, a standardized assessment tool that provides an efficient and valid index of the extent to which core features of an MTSS framework, such as Teaming, Implementation, Resources, and Evaluation (Michigan's MTSS Technical Assistance Center, n.d.) are implemented in an elementary school's reading model.

Without systemic support, such as that in an MTSS reading model, teachers may struggle to implement effective practices in their own classrooms (Fixen et al., 2005). Teachers may be placed in the middle of competing initiatives, are unsure of district requirements, and are left to make their own decisions about what is best for students. Student success need not be dependent on individual teacher choices. Students experience

greater success when instruction is aligned and coordinated across tiers and grade levels, such as in an MTSS framework (Harn, Chard, Biancarosa & Kame'enui, 2011).

Extant literature has identified effective practices of school-based leadership teams as they implement multi-tiered systems of support for behavior and academics. Findings from the literature review were organized to orient readers toward the purpose of the present study by first explaining *MTSS* and *sustainability*, then a review of *systems coaching* is provided as it relates to the gradual release of responsibility for *MTSS practices* to the *school leadership teams*. Narrowing the teaming focus further, *effective teaming practices* and the *use of data* are reviewed. These final topics situate the present study which aims to fill a gap in the literature by investigating teaming practices in elementary schools installing and implementing school-wide MTSS reading models.

Theoretical Framework

Systems theory provides the theoretical framework for this study. It was developed by Ludwig von Bertalanffy (Von Bertalanffy, 1968) to explain how properties of a whole system are greater than just the sum of its parts. Thinking about a school system as a whole- rather than its constituent parts- is fundamental to a school leadership teams' (SLT) approach when implementing and sustaining a reading model with MTSS framework in their school. Analyzing, synthesizing, and understanding the interconnections between the SLT's teaming activities and the overall fidelity of implementation of the reading model with MTSS framework is supported by systems thinking theory as it emphasizes the interdependence of a model's individual parts. Individual teaming practices and structures will be examined for their correlation, or

interdependence, on the implementation of the whole system—the school-wide reading model.

Systems theory evolved over time to provide a theoretical framework to contrast reductionism which is centered on the belief that we can best explain something by breaking it down into its individual parts. By prioritizing the system as a whole, rather than just the sum of its parts, systems theory suggests that a system must be explained by considering the interconnections between the parts as well as their relation to the whole. Systems theory further suggests that a system, such as a school, interacts with its environments. An elementary school's reading model is more than just a collection of individual parts like programs, schedules, and staff. A school-wide reading model with MTSS framework is built deliberately in consideration of multiple instructional tiers and their interconnectedness to support student learning outcomes. Furthermore, systems such as schools can acquire qualitatively new properties which results in continual evolution. Educators know anecdotally that schools and the education provided within them are continually evolving. Systems theory provides an explanation for why this phenomenon may occur.

As applied to this study, systems theory would expect individual practices and structures (independent variable) to influence the overall fidelity of implementation of the school-wide MTSS reading model (dependent variable). Individual practices and structures are interdependent on one another and stronger individual practices and structures could predict stronger overall fidelity of implementation of the school-wide reading MTSS model. The whole model is greater than the sum of the individual activities and practices within it. This study seeks to understand the relationship between

the individual MTSS teaming practices and structures and overall implementation of the school-wide reading MTSS model.

Systems theory also provides the framework for this study's methodology as this study was developed through a postpositivisitic lens, including its major tenets of theory verification, empirical measurement, and the use of data to shape knowledge (Creswell & Creswell, 2018). Using correlation analysis, systems theory suggests that individual teaming practices may be positively correlated with overall stronger implementation of the whole model. Similarly, systems theory supports the bidirectional nature of these correlations. As the individual teaming practices and activities are implemented with greater fidelity, the reading MTSS model will be implemented with greater fidelity. This study seeks to understand if there are individual teaming practices and activities that are more strongly correlated with overall fidelity of MTSS implementation.

Purpose of the Study

The purpose of the present study was to examine the correlation between teaming practices and systems and overall fidelity of implementation of the school-wide reading model across elementary schools implementing an MTSS framework for reading.

Research Questions and Hypotheses

The research questions and corresponding hypotheses were:

1. What MTSS practices and systems do elementary schools implement in their school-wide reading model with MTSS framework with the highest degree of fidelity? *Hypothesis:* n/a- descriptive question

2. What MTSS practices and systems do elementary schools implement in their school-wide reading model with MTSS framework with the lowest degree of fidelity? *Hypothesis:* n/a- descriptive question
3. To what degree do the elementary school's teaming practices predict overall fidelity of implementation of the school-wide reading model with MTSS framework? *Hypothesis:* Of the 11 practices measured by the R-TFI, 4 are more closely associated with school-level teaming (as contrasted with grade-level teaming, for example) and with overall implementation of the school-wide reading model. It is predicted that the following individual practices will be statistically significantly correlated to overall scores of fidelity of implementation on the R-TFI:
    a. A School Leadership Team (SLT) is established to support the implementation of a Tier 1 reading system;
    b. The SLT uses an effective team meeting process;
    c. The SLT's work is coordinated with other school teams.
    d. The SLT defines a process to be used by Grade-Level Teams for supporting students with reading skill deficits.
4. Is there a significant difference between teaming practices in schools the first year of data collection and project support (2016) and the last year of data collection and project support (2019)?

    Hypothesis: Schools participating in this Initiative received systems coaching from external experts each year in the project. It is predicted that teaming

practices in 2019 would be implemented with greater fidelity than teaming practices in 2016.

Definitions of Terms

To understand how elementary schools develop, implement, and eventually sustain school-wide reading MTSS models, it is important to operationally define *school leadership team, multi-tiered systems of support, school wide reading model, Response to Intervention (RTI), Positive Behavior Interventions and Supports (PBIS), teaming practices, fidelity of implementation,* and *sustainability.*

A school-based *leadership team* shares distributed leadership for supporting the implementation of a multi-tiered system of support framework for reading in the school. The team is comprised of administrators, coaches, teacher representation from each grade level, interventionists, school psychologist or counselor, English Language Learner and Special Education teachers and others. Leadership teams with a broad team base are better suited to manage the workload, which supports morale and motivation (Taylor, Nelson, & Adelman, 1999).

Multi-tiered systems of support (MTSS) are a comprehensive prevention framework for improving the outcomes of all students, including students with or at-risk for disabilities. MTSS frameworks include a comprehensive screening and assessment system; continuous data-based decision making; selection and implementation of evidence-based instruction, interventions, and supports; implementation of increasingly intensive tiers of instructional support, often referred to as tier 1, tier 2, and tier 3; and team-based leadership (MTSS Research Network, 2019). Implementing systems-level practices, such as MTSS, requires a considerable amount of resources (McIntosh, Mercer,

Hume, Frank, Turri, & Matthews, 2013; Coyne et al., 2016). While people- and time-resource intensive, MTSS frameworks can support schools in ensuring equity of access to high quality instruction for all students.

School wide reading models are designed to improve reading achievement through a preventative, integrated system of evidence-based instruction and delivery, screening and progress monitoring assessments, and curricula to improve reading achievement (Kame'enui, Simmons & Coyne, 2000). These models can be integrated into an MTSS framework.

Response to Intervention (RTI) is a multi-tier approach to the early identification and support of students with learning and behavior needs (Gorski, n.d.). RTI approaches can be embedded in an MTSS framework.

Positive Behavior Interventions and Supports (PBIS) is an evidence-based three-tiered framework to improve and integrate all of the data, systems, and practices affecting student outcomes every day (OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports, 2021).

Teaming practices include the establishment and coordination of teams in the schools, meeting systems and structures and communication systems and structures.

Fidelity of implementation refers to the degree to which an intervention or program is delivered as intended. By understanding and measuring whether an intervention has been implemented with fidelity, researchers and practitioners can gain a better understanding of how and why an intervention works, and the extent to which outcomes can be improved (Carroll, Patterson, Wood, et al, 2007).

Sustainability is the potential for maintaining fidelity through inevitable changes so that the practice continues to be effective in the long term (McIntosh et al., 2013).

Chapter 2
Review of Literature

The present study seeks to inform a gap in the literature that would specifically examine the role of elementary school leadership teams' in developing, implementing, and sustaining a school-wide reading MTSS model. While Positive Behavior Interventions and Supports (PBIS) has researched the efficacy of school-based leadership teams in multi-tiered systems of support (MTSS) for behavior, the field of reading education has not. Along with a review of school-based leadership teams, teaming structures, and systems-level coaching to support these teams, this body of MTSS literature from the PBIS field, with particular regard to fidelity of implementation and sustainability, shaped the background for the present study.

Modern school-based leadership teams are often comprised of administrators, coaches, teacher representation from each grade level, interventionists, school psychologist or counselor, English Language Learner and Special Education teachers and others (Greenwood, Kratochwill, & Clements, 2008). Traditionally, secondary schools are more likely to have developed leadership teams, often consisting of subject-area department chairs, but school leadership teams, especially at the elementary level, have evolved into a form of shared leadership—distributing decision making power and responsibility among a greater number of people in the school. In response to five decades of education reform efforts, leadership teams have been established in many elementary schools as the field recognized that principal cannot lead alone (Chrispeels, Burke, Johnson, & Daly, 2008).

In the 1960s and 1970s, researchers began to discover school-wide variables that can contribute to overall school effectiveness. Emphasizing the criticality of these individual school factors, the federal government bypassed district central offices to directly fund individual schools who worked with high needs students, known as Title I schools. Building upon these critical features of effective schools, the 1980s brought about education reform at the whole-school level which emphasized organizational structures and operating norms. This necessitated the development of a leadership team to implement these reform efforts (Chrispeels et al., 2008). In the early 2000s, the United States Department of Education's directory of Comprehensive School Reform Models emphasized the inclusion of teachers in school leadership and the current Every Student Succeeds Act (ESSA) supports funding for professional development to strengthen school leadership (U.S. Department of Education, 2016) such as that of school leadership teams.

School leadership teams were an integral component of a competition from the U.S. Department of Education's Office of Special Education Programs (OSEP) in 2001 which funded six research centers to formally test schoolwide prevention models utilizing a multi-tiered systems of support model for academics and behavior. The collective findings from the six centers investigating schoolwide prevention models (Greenwood et. al., 2008) found that "building leadership teams should be given high status in the coordination or governing structures of the school" (p. 44). This high level of coordination involved schoolwide leadership, establishment of school improvement and professional development priorities and policies, and priority in resource allocations. School leadership teams within the schoolwide prevention model network received

systematic professional development focused on data-based decision making and program usage, as well as methods for increasing coordination of instructional supports. This network identified four outcomes of coordination and monitoring the MTSS model including preventing ineffective practices from wasting resources, improving the efficiency and effectiveness of current procedures, eliminating elements of the system that are ineffective or inefficient, and making modifications before students' difficulties before too severe or difficult to change (Greenwood et. al., 2008).

Building on the findings of the schoolwide prevention models advanced by Greenwood et. al. (2008), the following review of literature is organized to orient readers first to MTSS and sustainability, then to systems coaching as it relates to the gradual release of responsibility for MTSS practices to the school-based leadership teams. Narrowing the teaming focus further, effective practices and the use of data are reviewed. These final topics situate the present study which aims to fill a gap in the literature by investigating the relationship between individual teaming practices and systems and overall fidelity of implementation of the school-wide reading MTSS model.

Multi-tiered Systems of Support

Multi-tiered systems of support (MTSS) are a comprehensive prevention framework for improving the outcomes of all students, including students with or at-risk for disabilities. MTSS frameworks include a comprehensive screening and assessment system; continuous data-based decision making; selection and implementation of evidence-based instruction, interventions, and supports; implementation of increasingly intensive tiers of instructional support; and team-based leadership (MTSS Research Network, 2020). MTSS has been found to be an effective framework and is associated

with collecting and analyzing fidelity of implementation data and higher student achievement (Berkeley, Bender, Peaster, & Saunders, 2009; Pas & Bradshaw, 2012; McIntosh, Kim, Mercer, Stickland-Cohen, & Horner, 2015). Similarly, *school wide reading models* are designed to improve reading achievement through a preventative, integrated system of evidence-based instruction and delivery, screening and progress monitoring assessments, and curricula to improve reading achievement (Kame'enui, Simmons, & Coyne, 2000). These models can be integrated into an MTSS framework.

Implementing systems-level practices, such as MTSS, requires a considerable amount of resources (McIntosh et al., 2013; Coyne et al., 2016), however these resources can be maximized with distributed leadership (Jones, Burns, & Pirri, 2010). In the context and support of other teachers on the school-based leadership team (Burns, Egan, Kunkel, McComas, Peterson, Rahn, & Wilson, 2013), systems level practices can be supported school wide. Researchers have found that PBIS, an MTSS framework for behavior, supports the organizational health of a school including promotion of collegial leadership (Bradshaw, Koth, Thornton, & Leaf, 2009) as well as team effectiveness, staff ownership, administrator involvement, use of a community of practice, and the use of data (Andreou, McIntosh, Ross, & Kahn, 2015). These factors were also found to support sustainability of PBIS (Andreou et al., 2015). In fact, "training educators on various teaming strategies may be one the most important considerations for sustainability" (Burns et al., 2013). One of the methods used to train educators on teaming strategies is with professional development, including stand-alone sessions and school-embedded systems coaching.

Systems Coaching: Releasing Responsibility to the School Leadership Team

Researchers have shown that professional development alone is insufficient in supporting systems reform (Freeman, Sugai, Simonsen & Everett, 2016; March, Castillo, Batsche & Kincaid, 2016; Bastable, Massar & McIntosh, 2020). Decades of professional development research have demonstrated that coaching is more effective when contextualized in professional development and school-wide improvement and implementation efforts. Stand-alone professional development is less effective than professional development through job-embedded coaching that is directly aligned to school-wide improvement and implementation efforts (Joyce & Showers, 2002; Hammond & Moore, 2018; Showers & Joyce, 1996). MTSS can provide the school improvement and implementation framework for professional development and coaching activities (Freeman et al., 2016). "MTSS are frameworks that provide multiple levels of support through coordinated, evidence-based practices, strategies, and structures to meet the academic, social, emotional, and behavioral needs of all learners" (IES, 2019). These frameworks provide the necessary structure for effective instructional coaching, such as in specific domains like reading, but also require systems coaching, such as in the development of teaming and meeting structures, assessment and instructional frameworks, and curricular alignment, for schools to implement the framework successfully (Freeman et al., 2016). Systems coaching can both facilitate the MTSS framework and prepare the school leadership team to assume responsibility for the framework and sustain the work after the coaching support is gradually released to the school leadership team.

The study of systems coaching, including MTSS coaching, is relatively new to the field but is pointing toward the effectiveness of coaching for improving implementation

and sustainability (Freeman et al., 2016; March et al., 2016; Bastable et al., 2020, McIntosh et al., 2015). MTSS systems coaching can include facilitation of team meetings, promotion and monitoring fidelity of implementation, facilitation of the development of action plans, provision of technical support, and problem solving and communication support (Freeman et al., 2016). Bastable et al. (2020) found that assisting with team action planning, assisting with data collection, and sharing knowledge (e.g. content expertise) were perceived as important to sustaining the systems work, while running data reports and modeling the systems implementation were statistically significant and positively correlated with the fidelity of implementation across the schools.

Researchers investigating the relationship between systems coaching and problem-solving implementation fidelity in Response to Intervention systems, a predecessor of MTSS, found that coach continuity predicted higher levels of problem-solving fidelity and hypothesized that relationships and time are critical components in systems coaching (March et al., 2016). This finding can be generalized to the school leadership team who is a continuous resource in the school and often assumes responsibility for MTSS implementation from the systems coach. While coaching quality and time were not found to be predictive in this study, the researchers note that this is inconsistent with the literature which has identified both quality and time as predictive factors in fidelity of implementation (March et al., 2016). The present study will investigate teaming practices and systems such as school leadership teams' quality and time as variables that might predict overall implementation of the school-wide reading MTSS model. This body of research around implementation of MTSS with coaching

support is an important foundation for the present study seeking to understand the individual practices and systems that school leadership teams might prioritize toward sustaining a MTSS reading model in their schools.

Sustainability, Fidelity of Implementation, and Teaming

Sustainability is the potential for maintaining fidelity through inevitable changes so that the practice continues to be effective in the long term (Fixen et al., 2005; McIntosh et al., 2013). The idea of sustainability is critical to educational reform because it represents the "capacity within schools to engage in the complexities of continuous improvement" (Fullan, 2005, p.ix). Commitment to sustaining continuous improvement increases when practices are aligned with school and district level policies that ensure resources and training are provided (Fixen et al., 2005).

Teachers are more committed to the goals of the school when leadership is distributed (Devos, Tuytens, & Hulpia, 2014). When a team is established, a more robust implementation is possible because teachers have been given a voice in designing the efforts (Edwards & Gammell, 2016). Fidelity of implementation is more likely because teachers are involved in the implementation efforts and when fidelity of practice implementation is measured and analyzed, sustainability is supported (Fixen et al., 2005). Team relationships reduce isolation and teams begin to experience a sense of coherence about their work as they realize common purposes and goals (Uline & Berkowitz, 2000). The collective wisdom and energy of the staff can help move a school forward and sustain a reform effort when a distributed leadership model, such as a school leadership team, is utilized. By distributing leadership among staff, the shared knowledge of the team can better solve problems and implement reform initiatives than a single individual.

School-based Leadership Teams

Teams provide a context for collective learning (Uline, & Berkowitz, 2000; Scribner, Sawyer, Watson, & Myers, 2007; Morgan & Clonts, 2008; Muijs and Harris, 2007). A *school leadership team (SLT)* is a school-based team who shares leadership for initiatives and practices. When launching an initiative with a MTSS framework, the SLT can support the development, installation, and implementation of the MTSS framework in the school. Importantly, it is the concept of distributed leadership that defines the SLT. Scribner et al. (2007) found that in schools with a collaborative culture, "decisions are not made by a single individual; rather decisions emerge from collaborative dialogues between many individuals, engaged in mutually dependent activities'' (p. 70). The SLT is comprised of administrators, coaches, teacher representation from each grade level, interventionists, school psychologist or counselor, English Language Learner and Special Education teachers and others. Leadership teams with a broad team base are better suited to manage the workload, which supports morale and motivation (Taylor, Nelson, & Adelman, 1999).

School leadership teams can be effective change agents in a school because "no one understands the context of a particular school better than its faculty" (Morgan & Clonts, 2008, p. 352). Prominent teaming researchers, Muijs and Harris (2007) found that in order for teacher leadership to be successful it has to be a carefully orchestrated and deliberate process where structures and culture are changed in strategic ways. These researchers further explain that teacher leadership should be embedded in the culture of the school through constant interaction to help build trust throughout the school. These interactions may include formal collaboration across teams and informal communication

during the school day. This culture is evidenced in school leadership teams' goals such as improving student learning, communicating as a component of setting direction; facilitating grade level teams; modeling best practices and coordinating professional development; and supporting collaborative processes, evidenced in a review of interviews and surveys of school leadership team members by Chrispeels, Burke, Johnson and Daly (2008).

Evidence for the efficacy of SLTs consistently demonstrates positive outcomes for initiative development and sustainability, as well as student outcomes. High performing leadership teams are characterized by internal coherence and unity, a clear focus on high standards, two-way communication with internal and external stakeholders, and a commitment to distributed leadership (Bush & Glover, 2012). Increments in organizational outcomes are associated with the extent to which leadership teams share information, collaborate, and make decisions together (Devos et al., 2014). Andreou, McIntosh, Ross and Kahn (2015) corroborated these findings using the critical incident technique to measure the lived experiences of SLT members and found 88% of SLTs discussed the importance of Team Effectiveness. Effective teams met consistently, had broad representation of staff members, and mechanisms or systems in place for communication to rest of school faculty (Andreou et al., 2015).

Communication occurs formally and informally in the SLT with the experiences overlapping and reinforcing each other (Uline & Berkowitz, 2000). Discussions in formal SLT meetings as well as conversations in the hallway or faculty lounge promote the goals of the SLT and constitute much of the communication work of the team as it pertains to their relationship to the rest of the school faculty. These relationships require constant

negotiation as staff members work toward a more collective, rather than individual, approach to educating students. For example, staff members must negotiate their relationships with one another, school administrators, as well as the additional resources and responsibilities that accompany this leadership work. The team must also sustain examination of implicit cultural assumptions in their schools in order to advance the work of the team and support all teachers in the school (Uline & Berkowitz, 2000). A recursive and iterative process of evaluation, implementation, and progress monitoring toward school goals can support the team in examining implicit assumptions and working toward the school's goals. A school leadership team can be optimized for efficiency and effectiveness to implement and sustain initiatives and reforms.

In their study of perceptions of contextual features related to implementation and sustainability in PBIS models, McIntosh, Predy, Upreti, Turri, and Mathews (2014) found that when school administrators actively support the initiative, regularly attend and participate in team meetings, and teams regularly schedule time to meet, implementation in other domains is increased. The present study seeks to replicate these findings in school-wide MTSS reading models using the Reading Tiered Fidelity Inventory to measure individual teaming practices and systems such as administrator support and participation.

Teaming Practices in Reform Initiatives

Within the literature focused on school-based leadership teams, the subtopic of teaming practices in reform initiatives was researched and further narrows the background and focus for the present study. Morgan and Clonts (2008) explain the role of the school leadership team in reform initiatives: "School based change is nonlinear and

messy- so much so that the notion of looking to a single leader is decidedly limiting, given what we understand about large-scale systematic change" (p. 352). Waldron and McLeskey (2010) suggested that school reform that seeks to improves teacher practice and student outcomes may benefit from the formation of a team to lead the change process. These authors identified successful school change as being dependent on a high level of collaboration among professionals, such as that of a school leadership team. A collaborative culture distributes leadership, ensures coherence, and builds school capacity (Waldron & McLeskey, 2010) such as through a school based leadership team.

Chrispeels and Martin (2002) note "a challenge confronting leadership teams is that the reform initiatives establishing them do not start with schools as blank slates, but rather the new team must define and negotiate their role and responsibilities within existing school structures" (p. 328). Working with teams to identify the culture and structures already in place could support both the team and the reform effort. Benoliel and Berkovish (2016) found reciprocal effects of teams and change and suggested that teams can serve as key change agents in school restructuring processes. Leadership teams can assist in developing goals, curricula, instructional strategies, and budgets, since they create a network with a capacity for developing a collective mind (Benoliel & Berkovish, 2016). At the heart of the school leadership team is the collective wisdom of the team members who can serve as an important bridge between the reform efforts and their school.

The school leadership team can support district reform efforts in ways that enhance their coordination, depth, spread, and commitment (Chrispeels, Burke, Johnson, & Daly, 2008). Institutionalizing a new practice or reform into written policy at the

school and district levels protects it from marginalization (Fixen et al., 2005) and supports its potential for sustainability. With new practices written into policy, school leadership teams are better positioned to implement the reform initiative. Practices within the team including administrator support and school team functioning were rated as the most important features for both initial implementation and sustainability of the reform initiative (McIntosh, et al., 2014). Muijs and Harris (2007) also found that school culture, school structures, and purposive action by the principal were key distinguishing factors in successful school leadership teams for reform. In addition to an effective school leadership team, another key tenet of an MTSS framework is data-based decision making. The use of data has also been found to be an effective practice for advancing educational reform efforts and is particularly supportive when used by school leadership teams (Muijs & Harris, 2007).

Leadership Teams' Use of Data

Both school leadership teams' collection and analysis of data has been consistently identified as a predictor of sustainability and increased student outcomes. McIntosh et al. (2013) found school priority and team use of data were significant independent predictors of future sustainability and "school team functioning, especially the use of data for decision making, had the strongest association with sustained implementation" (p. 307). In another of McIntosh's studies, the frequency of sharing data with the whole school staff was statistically significantly related to sustainability (McIntosh, Kim, Mercer, Strickland-Cohen, & Horner, 2015). It also appears that the relationship between school leadership teams and the use of data is reciprocal as Chrispeels, Brown and Castillo (2000) found having strong professional relations, such as

those amongst school leadership team members, significantly predicted positive district relations, a focus on teaching and learning and the use of data.

In their study of an integrated behavior and academic MTSS model, Chaparro, Smolkowski, Baker, Hanson and Ryan-Jackson (2012) found "both systems [PBIS and school wide reading model] encourage teachers, administrators and district leaders to collaborate and make decisions based on student performance data" (p.466). At the core of their model is the teaming framework which ensures effective and efficient communication loops and improvement cycles, especially focused on the use of data to make instructional and systemic changes. When implementing this integrated MTSS model, these researchers observed an increase in the number of teams examining and analyzing data as well as in student outcomes and implementation scores (Chaparro et al., 2012). Thus, an MTSS framework can support a school leadership team to use data to measure fidelity of implementation toward the goal of sustainability. Chaparro et al. (2012) used the School-Wide Evaluation Tool to measure implementation of effective behavior supports across the school. For this study, implementation fidelity will be measured with a similar tool, the Reading-Tiered Fidelity Inventory.

The present study utilized inventory data on teaming practices systems in elementary schools that participated in a reform effort to develop MTSS reading models. These data were initially collected by school-leadership teams with the goals of self-reflection and developing an action plan for the school-wide reading MTSS reading model. They were then aggregated over four years for secondary data analysis in the present study.

Reading-Tiered Fidelity Inventory

Extant literature provides insights into MTSS leadership teams for PBIS, particularly with regard to efficacy of teaming practices, fidelity of implementation of practices, and sustainability. The present study seeks to better understand the relationship between teaming practices and systems and the overall implementation of the school-wide reading MTSS model. Teaming practices and systems will be examined in relation to how they are able to predict overall fidelity of implementation of the school-wide reading MTSS model as measured by the Reading-Tiered Fidelity Inventory (St. Martin, Nantais, & Harms, 2015). The Reading-Tiered Fidelity Inventory (R-TFI) measures teaming, implementation, resources, and evaluation across instructional tiers I, II, and III. When a school leadership team works collaboratively to engage the R-TFI, they are encouraged to consider data sources for each claim they make of implementation fidelity to ensure their own beliefs do not influence scores on the inventory. For example, an activity timeline, professional development calendar, assessment framework, grade level curricular scope and sequence, or intervention frameworks are all examples of data sources that teams may use to support their claims of implementation fidelity on the R-TFI. Specific items are described further in the methods section of this paper.

Gaps in the Literature

The review of literature identified the problem that implementing systems-level practices such as MTSS requires considerable resources, but also identified a potential solution in one of a school's essential structures: the school leadership team. The school-based leadership team can be the vehicle for developing, installing, implementing, and sustaining new initiatives, including efforts toward building MTSS (Coyne et al., 2016). Furthermore, there can be a reciprocal relationship between SLTs and MTSS. The

systems and structures of a MTSS framework can support the team to design, implement, and evaluate other systems within the MTSS framework. Systems coaching is effective in supporting the initiation and implementation of the MTSS model and development of the SLT. Responsibility for implementation can then be released to the SLT over time. As the MTSS model is released to the SLT, the team should monitor sustainability. This can be accomplished through the measurement of fidelity of implementation, such as with the Reading-Tiered Fidelity Inventory. The SLT was found to support sustainability as teams can support better coherence across classrooms and grade levels in a school. Finally, the context of collective learning in which SLTs engage supports the implementation of a complex initiative such as the establishment of a MTSS model. An SLT is particularly well positioned to support change initiatives in a school because its members are the faculty of the school who know their school better than anyone else.

The present study identified and considered the relationship between teaming practices and overall fidelity of implementation of the school-wide reading MTSS model. School-based leadership teams developed and implemented their school-wide reading MTSS model and measured its implementation with the Reading Tiered Fidelity Inventory (R-TFI). Based on the review of literature, it is hypothesized that school leadership team's use of data and administrator support for the team will correlate strongly with overall fidelity of implementation of the school-wide reading MTSS model.

Chapter 3

Research Design

A correlational design was used to investigate the relationship between individual teaming practices (IVs) and overall fidelity of implementation (DV), both measured by the R-TFI for this secondary data analysis. This study was designed in collaboration with project level advisors who provided feedback on how the data was used in the statewide initiative, as well as suggestions for research questions and analyses. Relationships between individual teaming practices and overall fidelity of implementation was examined using Pearson's bivariate correlations. Additional analyses were used based on initial analysis of data and Cronbach's alpha was determined for sub-scale items. For each variable, missing data was checked for and reported. All statistical analyses were conducted using *IBM SPSS Statistics 26*.

Research Questions and Hypotheses

The research questions and corresponding hypotheses were:

1. What MTSS practices and systems do elementary schools implement in their school-wide reading model with MTSS framework with the highest degree of fidelity? *Hypothesis:* n/a- descriptive question
2. What MTSS practices and systems do elementary schools implement in their school-wide reading model with MTSS framework with the lowest degree of fidelity? *Hypothesis:* n/a- descriptive question
3. To what degree are the elementary school's teaming practices related to overall fidelity of implementation of the school-wide reading model with

MTSS framework? *Hypothesis:* I predicted that of the 11 teaming practices measured by the R-TFI, 4 would be more closely associated with school-level teaming (as contrasted with grade-level teaming, for example) and with overall implementation of the school-wide reading model. I predicted that the following individual teaming practices would be significantly correlated to overall scores of fidelity of implementation on the R-TFI:

a. A School Leadership Team (SLT) is established to support the implementation of a Tier 1 reading system.
b. The SLT uses an effective team meeting process.
c. The SLT's work is coordinated with other school teams.
d. The SLT defines a process to be used by Grade-Level Teams for supporting students with reading skill deficits.

4. Is there a significant difference between teaming practices in schools the first year of data collection and project support (2016) and the last year of data collection and project support (2019)?

   Hypothesis: Schools participating in this Initiative received systems coaching from external experts each year in the project. I predicted that teaming practices in 2019 would be implemented with greater fidelity than teaming practices in 2016.

Participants and Sampling

Participants were School Leadership Teams from a convenience sample of elementary schools across 8 districts in a northeastern state who are identified as in need of additional support based on low student performance. Schools ranged in size but share

similar student demographics including socioeconomic status. Results were considered at the school-based leadership team level. School-based leadership teams were comprised of administrators, coaches, teachers, and support staff and ranged in size. The sample was selected based on participation in the administration of the Reading-Tiered Fidelity Inventory as part of the northeastern state's K-3 Literacy Initiative and Literacy Model. Thirty school leadership teams voluntarily participated in the administration of the RTFI as part of their involvement with the Initiative and used the data at the school level to inform school improvement plans. Data was collected from 2016-2019 with administration occurring during May/June of 2016, 2017, 2018, and 2019. 23 of 30 schools participated multiple times across school years and 7 schools participated once (see Figure 1). Overall, 69 administrations of the RTFI across 30 schools were sampled for this study. As shown in Figure 2, 33 of the administrations were completed across the three instructional tiers while 36 did not include scores for tier 3 items in all four subscales: Teams, Implementation, Resources, and Evaluation. These 36 administrations occurred in 2016 and 2017 before the Initiative was supporting, and measuring, tier 3 supports in schools. This missing data is also reported in the Figure 2 below.

Figure 1

Number of RTFI administrations per school between 2016-2019

Number of Administrations	Number of Schools
1	7
2	13
3	4
4	6

Figure 2

Number of RTFI administrations each year and Instructional Tiers Assessed

Year	Tier 1	Tier 2	Tier 3	Number of Administrations
2016	X	X		18
2017	X	X		18
2018	X	X	X	21
2019	X	X	X	12

As part of the initiative, all schools in the sample received external instructional coaching and systems coaching and developed a school leadership team to support the initiative. Because of ongoing, voluntary enrollment in the Initiative, the dataset does not include matched data by school across years. For this reason, the data were unable to be analyzed comparatively across years at the school level. However, after preliminary analysis of the dataset, it was determined that the data could be examined for differences in means between years for tier 1 and tier 2 which led to the development of research question 4: Is there a significant difference between teaming practices in schools the first year of data collection (2016) and project support and the last year of data collection and project support (2019)?

Measures and Procedures

To measure school leadership teaming practices, an ordinal independent variable, this study conducted a secondary data analysis using existing data from the Reading Tiered Fidelity Inventory (R-TFI). The R-TFI is a validated measure of implementation fidelity of practices and systems features in a multi-tiered systems of support (MTSS) school-wide reading model (St. Martin et. al., 2015). It measures these MTSS features in

sub-topics: Teams, Implementation, Resources, and Evaluation, for each instructional level in the school: Tier 1, Tier 2, and Tier 3.

Schools can vary in their interpretation of these increasingly intensive instructional tiers however, tier 1 instruction typically (Coyne et al., 2016) refers to the core instruction all students receive; tier 2 instruction typically refers to additional, targeted small group instruction; and tier 3 typically refers to even more intensive, individualized instruction. Intensification can occur quantitatively by increasing time or duration of intervention or reducing the number of students in the group, for example. Intensification can also occur qualitatively with teachers prompting more opportunities to respond or engage, for example.

Levels of fidelity of implementation of Teams, Implementation, Resources, and Evaluation are measured on a scale 0-2. A score of 2 represents practices that are fully implemented; a score of 1 represents practices that are partially implemented; 0 represents practices that are not implemented. The R-TFI is administered to a school leadership team. SLTs are typically comprised of administrators, coaches, teacher representation from each grade level, interventionists, school psychologist or counselor, English Language Learner and Special Education teachers and others (Greenwood, et al., 2008) and can vary in size although they typically have about 4-8 members. SLTs for this study were comprised of these individuals and varied in size although actual membership and team size was not captured or reported. Team members worked through each item on the inventory and voted simultaneously on each item. Simultaneous voting is intended to help neutralize any potential power influences in the measure such as those that may occur between an administrator and teacher. In the event of voting discrepancies, brief

discussions were held and followed by a revote. If consensus was again not achieved, the majority vote was recorded, and the team agreed to revisit the discussion at a subsequent meeting (St. Martin et. al., 2015).

An example of items on the R-TFI *Tier 1 Teaming* subscale include: "A School Leadership Team is established to support the implementation of a Tier 1 reading system; The School Leadership Team uses an effective team meeting process; The School Leadership Team's work is coordinated with other school teams; Grade-Level Teams are established to support the implementation of Tier 1 reading instruction; and Grade-Level Teams use an effective team meeting process" (St. Martin et. al., 2015).

Tier 1 Implementation items on the R-TFI include: "The district uses a formal procedure for selecting curriculum, programs, and materials to provide Tier 1 reading instruction; The school allocates adequate time for core reading instruction; The school has a School-Wide Reading Plan; Grade-level Instructional Plans include an emphasis on Tier 1instruction; Class-wide expectations for student behavior are established and taught; and Procedures are implemented for common classroom activities" (St. Martin et. al., 2015).

Tier 1 Resource items on the R-TFI include: "Written guidelines are available for teaching the core reading program; The school has identified an individual(s) to assist in data coordination for school-wide reading assessments; A school-wide reading universal screening assessment schedule is available for the current school year; Professional learning is purposely selected for supporting the implementation of a School-Wide Reading Model; The School Leadership Team uses system-level coaching; and All staff have access to instructional coaching" (St. Martin et. al., 2015).

Tier 1 Evaluation items on the R-TFI include: "Universal screening assessments have been purposely selected; The school uses a data system that allows access to universal screening assessment reports; Staff collect reading universal screening data with fidelity; School Leadership Team collects Tier 1 system fidelity; The School Leadership Team uses data to monitor the health of the School-Wide Reading Model; The School Leadership Team uses a process for data-based decision-making; Grade-Level Teams use a process for data-based decision making; The School Leadership Team monitors implementation of the School-Wide Reading Plan; Grade-Level Teams monitor implementation of the grade-level Instructional Plans; and The School Leadership Team provides a status report or presentation on student reading performance to stakeholders" (St. Martin et. al., 2015).

Existing Excel databases hold the annual R-TFI data organized by district and school and are stored with University of Connecticut. All identifying information was removed and replaced with participant identification numbers per a data sharing agreement with University of Connecticut. A master Excel database was then developed to include data across years of administration, 2016-2019. This master database was transferred to SPSS for analysis.

Analytic Plan

To address research question 1 (What teaming, resources, implementation, and evaluation practices do elementary schools implement in their school-wide reading model with MTSS framework with the highest degree of fidelity?) descriptive statistics were calculated from the inventory results. The mean of each practice was rank ordered with the others in the inventory to determine which were implemented with greatest fidelity.

To address research question 2 (What teaming, resources, implementation, and evaluation practices do elementary schools implement in their school-wide reading model with MTSS framework with the lowest degree of fidelity?) descriptive statistics were calculated from the inventory results. The mean of each practice was rank ordered with the others in the inventory to determine which are implemented with least fidelity.

To address research question 3 (To what degree are the elementary school's teaming practices related to overall fidelity of implementation of the school-wide reading model with MTSS framework?) descriptive statistics were calculated from the inventory for the sub-category "teaming" across the three instructional tiers. Using bivariate Pearson correlations, the correlation between group means for individual teaming practices and overall fidelity of implementation of the school-wide reading model with MTSS framework was examined.

To address research question 4 (Is there a significant difference between Tier 1 and Tier 2 teaming practices in schools the first year of data collection (2016) and the last year of data collection (2019)?) an independent samples *t*-test was employed to determine statistical significance in the difference between means for teaming practices in 2016, the beginning of the Initiative, and 2019, the final year of data collection in the Initiative. Tier 3 was not included in this analysis as data was not collected for this instructional tier in 2016.

Chapter 4
Results

Descriptive Statistics

To begin this secondary data analysis, descriptive statistics were calculated on the data at the subscale level to glean a general sense of implementation fidelity across tiers and subscales. This analysis included the mean and standard deviation for each of 4 subscales, Teams, Implementation, Resources, and Evaluation, at the Tier 1, 2, and 3 levels. Each practice is scored on a scale of 0-2 with 0 representing not implemented, 1 representing partial implementation, and 2 representing full implementation. The means for each subscale represent the average implementation of the subscale's items.

Table 1

Implementation Fidelity across RTFI Subscales and Instructional Tiers Rank Ordered by Mean

	Descriptive Statistics		
Variable	N	*M*	*SD*
T3 Resources Subscale	33	0.73	0.67
T2 Teams Subscale	69	1.51	1.19
T2 Resources Subscale	69	2.03	1.08
T3 Teams Subscale	51	2.49	2.17
T3 Evaluation Subscale	33	2.82	2.15
T3 Implementation Subscale	33	2.82	1.48
T2 Implementation Subscale	69	4.38	1.70
T1 Teams Subscale	69	4.52	2.21
T1 Implementation Subscale	69	5.32	3.44
T2 Evaluation Subscale	69	5.46	2.85
T1 Resources Subscale	69	6.32	2.75
T1 Evaluation Subscale	69	9.09	4.50
N = 69			

Subscale results were rank ordered by mean showing lower to higher levels of implementation. Results indicate school leadership teams reported highest fidelity of implementation in tier 1 evaluation and resources, with tier 3 resources occurring with least fidelity of implementation (see Table 1). Overall, teaming practice subscales fell toward the middle and lower ends of implementation with Tier 1 Teaming practices occurring with moderate fidelity relative to other subscales (M = 4.52, SD = 2.21); Tier 3 Teaming practices occurring with lower fidelity relative to other subscales (M = 2.49, SD = 2.18); and Tier 2 Teaming practices occurring with low fidelity relative to other subscales (M = 1.51, SD = 1.19).

After analyzing descriptive statistics for each subscale across instructional tiers, an internal consistency estimate of reliability was computed for each subscale and expressed as alpha coefficients (see Table 2). The value of the Cronbach's alpha on each subscale ranged from .40 to .76. This estimate of reliability was not computed for Tier 3 Resources as this subscale include only one item.

Table 2

RTFI Subscale and Estimate of Internal Reliability

Variable	Cronbach's Alpha
T1 Teaming	.70
T1 Implementation	.76
T1 Resources	.65
T1 Evaluation	.78
T2 Teaming	.50
T2 Implementation	.41
T2 Resources	.41
T2 Evaluation	.73
T3 Teaming	.71
T3 Implementation	.73
T3 Resources	--

Variable	Cronbach's Alpha
T3 Evaluation	.64

The final step in this initial data analysis of the subscales included examination of their correlation to one another and to the overall score (see Table 3). Some subscales statistically correlated with each other, ranging from .32 to .78 ($p < 0.01$), indicating low-moderate to high relationships among them. Tier 1 Teaming practices and Tier 1 Evaluation practices were the most highly correlated among the subscales ($r = .78$, $p < 0.01$). Tier 1 Implementation and Tier 2 Implementation were the least correlated among the subscales ($r = .32$, $p < 0.01$).

Correlations were then examined between subscales and the score for Overall Fidelity of Implementation (see Table 3). Statistically significant correlations ranged from .66 to .84 ($p<0.01$) suggesting most subscales were significantly correlated with the overall fidelity of implementation. The Tier 3 Resources subscale ($r = 0.27$, $p > .05$) and Tier 2 Resources Subscale ($r = 0.29$, $p < .05$) were not highly correlated nor found to be statistically significant. The Tier 1 Evaluation subscale ($r =.84$, $p < .01$) and the Tier 1 Implementation subscale ($r =.81$, $p < .01$) were found to be most strongly correlated with overall fidelity of implementation.

Table 3

Correlation coefficients for RTFI Subscales and Overall Score for Fidelity of Implementation

		Correlations											
Variable	N	FOI	1	2	3	4	5	6	7	8	9	10	11
1. Tier 1 Teams	69	.76**											
2. Tier 1 Implementation	69	.81**	.52**										
3. Tier 1 Resources	69	.78**	.58**	.63**									
4. Tier 1 Evaluation	69	.84**	.78**	.57**	.62**								
5. Tier 2 Teams	69	.62**	.50**	.45**	.43**	.43**							
6. Tier 2 Implementation	69	.63**	.48**	.32**	.48**	.49**	.43**						
7. Tier 2 Resources	69	.29*	.08	.09	.21	.21	.18	.48**					
8. Tier 2 Evaluation	69	.66**	.43**	.38**	.43**	.56**	.53**	.54**	.44**				
9. Tier 3 Teams	51	.68**	.43**	.62**	.47**	.40**	.48**	.33*	.12	.23			
10. Tier 3 Implementation	33	.71**	.46**	.36*	.50**	.51**	.21	.69**	.41*	.48**	.42*		
11. Tier 3 Resources	33	.27	.22	-.12	.07	.16	.04	.16	-.08	.15	.33	.54**	
12. Tier 3 Evaluation	33	.66**	.36*	.36*	.44*	.41*	.36*	.46**	.30	.38*	.61**	.66**	.40*

FOI- Total score for Overall Fidelity of Implementation
*$p < .05$. **$p < .01$.

Research Questions 1 and 2

To address research question 1 (What teaming, resources, implementation, and evaluation practices do elementary schools implement in their school-wide reading model with MTSS framework with the highest degree of fidelity?) and research question 2 (What teaming, resources, implementation, and evaluation practices do elementary schools implement in their school-wide reading model with MTSS framework with the lowest degree of fidelity?) descriptive statistics were calculated from the inventory results at the item level by instructional tier. The mean of each practice was rank ordered with the others in the inventory to determine which were implemented with highest and lowest degrees of fidelity by instructional tier (see Table 4).

Table 4

Descriptive Statistics for the Tier 1 Sample Rank Ordered Fidelity of Implementation

Descriptive Statistics			
Variable	N	M	SD
1.25: School Leadership Team monitors implementation of the School-Wide Reading Plan.	61	0.38	0.64
1.3: School Leadership Team's work is coordinated with other school teams.	69	0.41	0.63
1.27: The School Leadership Team provides status report on student reading performance to stakeholders.	63	0.49	0.76
1.16: School Leadership Team uses system-level coaching.	67	0.52	0.66
1.23: The School Leadership Team uses process for data-based decision-making.	63	0.57	0.69
1.22: School Leadership Team uses data to monitor the health of School-Wide Reading Model.	67	0.63	0.78
1.2: School Leadership Team uses effective team meeting process.	69	0.65	0.61
1.6: District uses formal procedure for selecting curriculum, programs, and materials to provide T1 reading instruction.	69	0.72	0.70
1.12: Written guidelines available for teaching core reading program.	69	0.81	0.83

Descriptive Statistics			
1.21: School Leadership Team collects T1 system fidelity data.	67	0.85	0.89
1.17: All staff have access to instructional coaching.	67	0.91	0.81
1.8: The school has School-Wide Reading Plan.	47	0.94	0.76
1.26: Grade-Level Teams monitor implementation of grade-level Instructional Plans.	63	0.94	0.86
1.15: Professional learning purposely selected for supporting implementation of a School-Wide Reading Model.	69	0.99	0.61
1.4: School Leadership Team's work coordinated with other school teams.	69	1.04	0.67
1.9: Grade-level Instructional Plans include emphasis on T1 instruction.	45	1.04	0.74
1.5: Grade-Level Teams use effective team meeting process.	69	1.07	0.65
1.24: Grade-Level Teams use a process for data-based decision making.	61	1.20	0.68
1.11: Procedures implemented for common classroom activities.	45	1.24	0.43
1.1: School Leadership Team established to support implementation of a T1 reading system.	69	1.35	0.72
1.10: Class-wide expectations for student behavior established and taught.	45	1.36	0.74
1.20: Staff collect reading universal screening data with fidelity.	67	1.39	0.92
1.18: Universal screening assessments are purposely selected.	67	1.55	0.61
1.13: School has identified individual(s) to assist in data coordination for school-wide reading assessments.	69	1.57	0.63
1.14: School-wide reading universal screening assessment schedule available for the current school year.	69	1.57	0.78
1.7: The school allocates adequate time for core reading instruction.	69	1.58	0.55
1.19: School uses a data system that allows access to universal screening assessment reports.	67	1.63	0.52

The five most highly implemented practices in Tier 1 (see Table 4) were "Universal screening assessments are purposely selected." (M = 1.55, SD = 0.61*);*

"School has identified individual(s) to assist in data coordination for school-wide reading assessment." (*M* = 1.57*, SD* = *0.*63); "School-wide reading universal screening assessment schedule is available for the current school year." (*M* = 1.57*, SD* = 0.78); "The school allocates adequate time for core reading instruction." (*M* = 1.58, *SD* = 0.55); and "The school uses a data system that allows access to universal screening assessment reports." (*M* = 1.63, *SD* = 0.52).

The five least implemented practices in Tier 1 were: "The School Leadership Team uses a process for data-based decision-making." (*M* = 0.57*, SD* = 0.69); "The School Leadership Team uses data to monitor the health of School-Wide Reading Model." (*M* = 0.63*, SD* =0.78); "The School Leadership Team uses effective team meeting process" (*M* = 0.65*, SD* = 0.61); "The District uses formal procedure for selecting curriculum, programs and materials to provide T1 reading instruction." (*M* = 0.72*, SD* = 0.70); and "Written guidelines are available for teaching core reading program." (*M* = 0.81*, SD* = 0.83).

Table 5

Descriptive Statistics for the Tier 2 Sample Rank Ordered by Highest Fidelity of Implementation

Descriptive Statistics			
Variable	N	M	SD
2.12 The school monitors the fidelity of interventions.	69	0.65	0.70
2.1 The SLT defines a process to be used by Grade-Level Teams for supporting students with reading skill deficits.	51	0.78	0.70
2.3 The school uses a formal process for selecting evidence-based reading interventions.	69	0.80	0.78
2.14 Grade-Level Teams adjust reading intervention supports based on individual student progress.	69	0.81	0.71

Descriptive Statistics			
2.9 The school monitors data on student access to reading intervention supports.	67	0.88	0.64
2.13 Grade-Level Teams monitor the percent of students who are responding to Tier 2 supports.	69	0.91	0.94
2.2 Grade-Level Teams work to support students who are not making adequate progress in the Tier 1 core reading curriculum.	69	0.93	0.75
2.6 The school notifies parents/guardians of intervention plans for their child.	69	0.96	0.76
2.7 The scheduling of reading interventions is coordinated with Tier 1 reading instruction.	69	0.97	0.69
2.10 Staff collect progress-monitoring data with fidelity.	69	1.06	0.66
2.8 All staff providing reading interventions receive implementation supports.	68	1.07	0.70
2.4 The school uses a data-based process for matching student needs to specific reading interventions.	69	1.10	0.71
2.11 The school uses a data system to display student reading progress.	69	1.17	0.75
2.5 Intervention groups are appropriate for students receiving reading intervention.	69	1.52	0.58

The five most highly implemented practices in Tier 2 (see Table 5) were "Intervention groups are appropriate for students receiving reading intervention" (*M* = 1.52*, SD* = 0.58); "The school uses a data system to display student reading progress." (*M* = 1.17*, SD* = 0.75); "The school uses a data-based process for matching student needs to specific reading interventions." (*M* = 1.10*, SD* = 0.71); "All staff providing reading interventions receive implementation supports." (*M* = 1.07, *SD* = 0.70); and "Staff collect progress-monitoring data with fidelity." (*M* = 1.06, *SD* = 0.66).

The five least implemented practices in Tier 2 were: "The school monitors the fidelity of interventions." (*M* = 0.65*, SD* = 0.70); "The School Leadership Team defines a process to be used by Grade-Level Teams for supporting students with reading skill deficits." (*M* = 0.78*, SD* =0.70); "The school uses a formal process for selecting

evidence-based reading interventions." (*M* = 0.80*, SD* = 0.78); "Grade-Level Teams adjust reading intervention supports based on individual student progress." (*M* = 0.81*, SD* = 0.71); and "The school monitors data on student access to reading intervention supports." (*M* = 0.88*, SD* = 0.64).

Table 6

Descriptive Statistics for the Tier 3 Sample Rank Ordered by Highest Fidelity of Implementation

Descriptive Statistics			
Variable	N	M	SD
3.11: There is a protocol to monitor the fidelity of Tier 3 interventions.	33	0.42	0.61
3.4: Student Support Teams use an effective team meeting process.	33	0.45	0.62
3.7: The school invites parents/guardians to collaborate on intervention plans for their child.	33	0.52	0.67
3.12: Intensive reading intervention plans are adjusted based on decision rules.	33	0.58	0.66
3.2: Student Support Teams are established to improve students' reading performance	33	0.70	0.85
3.8: All staff supporting students with intensive reading intervention plan receive implementation supports.	33	0.73	0.67
3.10: The school monitors the percent of students who are responding to Tier 3 supports.	33	0.91	1.01
3.9: Staff collect diagnostic data with fidelity.	33	0.91	0.77
3.3: Teachers access the assistance of Student Support Teams.	33	0.97	0.73
3.5: The school uses a variety of data sources to design intensive reading intervention plans.	33	1.09	0.58
3.1: Grade-Level Teams support students with intensive reading needs.	51	1.12	0.68
3.6: The school alters intervention variables to intensify reading intervention supports.	33	1.21	0.60

The five most highly implemented practices in Tier 3 (see Table 6) were "The school alters intervention variables to intensify reading intervention supports." (*M* = 1.21*, SD* = 0.60*);* "Grade-Level Teams support students with intensive reading needs." (*M* =

1.12*, SD = 0*.68); “The school uses a variety of data sources to design intensive reading intervention plans.” (*M* = 1.09*, SD* = 0.58); “Teachers access the assistance of Student Support Teams.” (*M* = .97, *SD* = 0.73); and “Staff collect diagnostic data with fidelity.” (*M* = .91, *SD* = 0.77).

The five least implemented practices in Tier 3 were: “There is a protocol to monitor the fidelity of Tier 3 interventions.” (*M* = 0.42*, SD* = 0.61); “Student Support Teams use an effective team meeting process.” (*M* = 0.45*, SD* =0.62); “The school invites parents/guardians to collaborate on intervention plans for their child.” (*M* = 0.52*, SD* = 0.67); “Intensive reading intervention plans are adjusted based on decision rules.” (*M* = 0.58*, SD* = 0.66); and “Student Support Teams are established to improve students' reading performance.” (*M* = 0.70, *SD* = 0.85).

Research Question 3

To address research question 3 (To what degree are the elementary school’s teaming practices related to overall fidelity of implementation of the school-wide reading model with MTSS framework?) the relationship between group means for individual teaming practices across Tiers 1, 2, and 3 and overall fidelity of implementation was examined using bivariate Pearson correlation.

Table 7 presents the correlational analysis in which statistically significant correlations ranged from .38 to .58 ($p < .01$). “Grade-Level Teams use effective team meeting process.”) was most strongly correlated to overall fidelity of implementation (r =.58, $p < .01$). Results confirmed the hypothesis that the following teaming practices would be strongly correlated with overall fidelity of implementation include: “The SLT

uses an effective team meeting process." (r =.56, p < .01); "The SLT's work is coordinated with other school teams." (r =.53, p < .01); and "The SLT defines a process to be used by Grade-Level Teams for supporting students with reading skill deficits." (r =.47, p < .01). However, "School Leadership Team established to support implementation of a T1 reading system." was least correlated to overall fidelity of implementation (r =.38, p < .01) which does not support the hypothesis.

Correlations between teaming practices were also examined and ranged from 0.35 to 0.64 (p < .01). The strongest correlations were between Teaming Practice 1.3 (School Leadership Team's work is coordinated with other school teams and Teaming Practice 1.2 (The School Leadership Team uses an effective team meeting process) (r =.64, p < .01) and Teaming Practice 3.2 (Student Support Teams are established to improve students' reading performance) and Teaming Practice 3.3 (Teachers access the assistance of Student Support Teams) (r =.64, p < .01). The weakest correlation (r = .35, p < .01) was between Teaming Practice 1.4 (School Leadership Team's work coordinated with other school teams.) and Teaming Practice 2.2 (Grade-Level Teams work to support students who are not making adequate progress in the Tier 1 core reading curriculum.) These correlations show that individual teaming practices within a school are likely interdependent on one another, as systems theory posits.

Table 7

Correlation Coefficients among Teaming Items across Instructional Tiers and Overall Fidelity of Implementation

		Correlations										
Variable	N	FOI Total	1.1	1.2	1.3	1.4	1.5	2.1	2.2	3.1	3.2	3.3
1.1: School Leadership Team established to support implementation of a T1 reading system.	69	.38**										
1.2: School Leadership Team uses effective team meeting process.	69	.56**	.54**									
1.3: School Leadership Team's work is coordinated with other school teams.	69	.53**	.17	.64**								
1.4: School Leadership Team's work coordinated with other school teams.	69	.54**	.03	0.21	0.24							
1.5: Grade-Level Teams use effective team meeting process.	69	.58**	.23	.40**	.36**	.43**						
2.1 The School Leadership Team defines a process to be used by Grade-Level Teams for supporting students with reading skill deficits.	69	.47**	.02	.36**	.45**	.41**	.34*					
2.2 Grade-Level Teams work to support students who are not making adequate progress in the Tier 1 core reading curriculum.	69	.48**	.24	.14	.16	.35**	.40**	.33*				
3.1: Grade-Level Teams support students with intensive reading needs.	51	.52**	.15	.03	.14	.29*	.29*	.30	.20			
3.2: Student Support Teams are established to improve students' reading performance	33	.43*	-.09	.21	.28	.43*	.30	.27	-.12	.06		
3.3: Teachers access the assistance of Student Support Teams.	33	.45**	-.10	.26	.50**	.26	.32	.56**	-.10	.26	.64**	
3.4: Student Support Teams use an effective team meeting process.	33	.22	-.26	.14	.30	.12	.17	.29	-.14	.01	.57**	.59**

FOI – Overall Fidelity of Implementation Total Score

*$p < .05$. **$p < .01$.

Research Question 4

To address research question 4 (Is there a significant difference between teaming practices in schools the first year of data collection and Initiative support (2016) and project support and the last year of data collection and Initiative support (2019)?) the difference in means between teaming practices in 2016 and teaming practices in 2019 for tier 1 and tier 2 were examined for statistical significance using an independent t-test. Tier 3 data was not collected in 2016 so it was not included in this analysis.

An independent-samples t-test was conducted to compare implementation of teaming practices in 2016 and in 2019 for instructional Tiers 1 and 2 (see Table 8). Results indicate an increase in Tier 1 teaming practices between 2016 (M = 3.72, SD = 1.90) and 2019 (M = 5.17, SD =1.90), $t(28) = -2.04$, p = .05 and the difference between the means is approaching statistical significance to support the hypothesis. There was a significant difference in Tier 2 teaming practices in 2016 (M = 1.44, SD =1.20) and 2019 (M = 2.33, SD = 1.07), $t(28) = -2.07$, p = .04 which supports the hypothesis. This shows that teaming practices were implemented with increased fidelity between the first and last years of implementation and data collection.

Table 8

Results of Comparison of Implementation of Teaming Practices in 2016 and 2019

	2016			2019			$t(28)$	p	Cohen's d
	N	M	SD	N	M	SD			
Tier 1	18	3.72	1.90	12	5.17	1.90	-2.04	.05	1.90
Tier 2	18	1.44	1.20	12	2.33	1.08	-2.07	.04	1.15

A summary of these findings will be shared with the reform initiative's leadership team to inform systems' coaching work with school leadership teams.

Chapter 5
Discussion

Interpretation of Results

Researchers have found that school leadership teams (SLTs) are often the vehicle for developing, installing, implementing, and sustaining new initiatives, including efforts toward building MTSS for reading. It has been challenging for researchers to identify what makes MTSS work in schools so the present study investigated SLTs who support reading in schools as this was identified as a gap in the literature which historically focused on MTSS in PBIS. Using the Reading Tiered Fidelity Inventory (R-TFI) to identify correlations between individual teaming practices and overall fidelity of implementation of the MTSS framework for reading, the present study further informed the field's understanding of MTSS for reading as implemented and sustained by the school leadership team. The quantitative analysis of the RTFI data in this study revealed several findings.

First, teaming practices were strongly positively correlated to overall fidelity of implementation of the MTSS framework for reading. Specifically, "Grade-Level Teams use an effective team meeting process."; "The SLT uses an effective team meeting process."; "The SLT's work is coordinated with other school teams." and "The SLT defines a process to be used by Grade-Level Teams for supporting students with reading skill deficits." were all highly correlated with overall fidelity of implementation of the MTSS framework for reading. These findings suggest that SLTs are an important factor in implementing an MTSS framework for reading in elementary schools. Further, effective meeting processes for both grade level and school leadership teams appear to be important for overall fidelity of implementation of the MTSS framework for reading.

These findings supported the hypothesis that teaming practices would be strongly, positively correlated with overall fidelity of implementation, suggesting that school leadership teams play an important role in installing and implementing a school's MTSS model for reading.

Also, teaming practices were strongly correlated with one another, suggesting practices work in support of one another as systems theory posits. The strongest correlation was between "School Leadership Team's work is coordinated with other school teams." and "The School Leadership Team uses an effective team meeting process." which suggests strong SLTs may be important in coordinating other school teams and do so within their meeting process.

These findings also showed that Tier 1 and Tier 2 teaming practices were implemented with increased fidelity over time. This finding may suggest that external support from the Initiative or internal drivers of implementation, such as the SLT itself, can positively influence teaming practices over time. Combined with the first finding that teaming practices were strongly positively correlated with overall fidelity of implementation, these findings suggest that schools might consider prioritizing support for teaming practices, particularly for Tier 1 and Tier 2, as this could lead to increased overall fidelity of implementation of the MTSS model for reading.

Finally, results from the initial descriptive analysis indicated some teaming practices were more highly implemented than others by SLTs in the Initiative. These highly implemented teaming practices are outlined below, organized by instructional tier.

At Tier 1: “Universal screening assessments are purposely selected.”; “The school has identified individual(s) to assist in data coordination for school-wide reading assessment.”; “School-wide reading universal screening assessment schedule is available for the current school year.”; “The school allocates adequate time for core reading instruction.”; and “The school uses a data system that allows access to universal screening assessment reports.”

These results were expected and can be explained by considering some of the earliest activities in the state Initiative. For example, the installation of universal screening assessments, schedules, and data systems were all priorities of the Initiative and were found to be highly implemented by these SLTs. Also, the state had an earlier mandate regarding adequate time for core reading instruction and most schools had a designated reading coach who was the “identified individual to assist in data coordination”, both of which were reflected in these results.

At Tier 2: “Intervention groups are appropriate for students receiving reading intervention”; “The school uses a data system to display student reading progress.”; “The school uses a data-based process for matching student needs to specific reading interventions.”; “All staff providing reading interventions receive implementation supports.”; and “Staff collect progress-monitoring data with fidelity.”

As with Tier 1, these Tier 2 results were expected and can be explained by considering some of the earliest activities in the state Initiative. For example, an earlier state initiative supported schools to utilize DIBELS Next (Dynamic Indicators of Early Literacy Skills) with the Amplify data system which seems to be reflected in these

results. Similarly, schools learned to use both baseline and progress monitoring data to group students in differentiated reading instruction.

At Tier 3- “The school alters intervention variables to intensify reading intervention supports.”; “Grade-Level Teams support students with intensive reading needs.”; “The school uses a variety of data sources to design intensive reading intervention plans.”; “Teachers access the assistance of Student Support Teams.”; and “Staff collect diagnostic data with fidelity.”

As aforementioned, Tier 3 instruction and assessment was not prioritized in the Initiative until 2018 and 2019, which is reflected in these results. While these tier 3 practices were the most highly implemented by the SLTs in the Initiative, the average mean of Tier 3 items is .80 while the average mean of Tier 1 is 1.02 and Tier 2 is .97 demonstrating overall lower implementation fidelity of Tier 3 practices.

Interestingly, at both Tier 2 and Tier 3, practices around data collection were rated as highly implemented while practices around fidelity of intervention delivery were rated with low rates of implementation. This suggests that, while schools were collecting student data, they were not truly gauging students’ response to intervention. Without gauging the fidelity of implementation of the intervention, it is invalid to assume a student is or is not responding to the intervention.

These findings can be used to inform leadership teams’ practices or district policies around school leadership teams. Elementary school leadership teams may use these findings to inform the development of school wide improvement plans for subsequent school years. By focusing efforts on the teaming practices identified by this

study as being either strongly correlated to overall fidelity of implementation or highly implemented by other SLTs, new or developing SLTs may be supported to maximize their MTSS framework and work more efficiently and effectively.

During the implementation of this study, new state legislation was passed in support of hiring literacy coaches to implement the science of reading in schools (Dowell, 2021). The science of reading is "a vast, interdisciplinary body of scientifically-based research about reading and issues related to reading and writing" (Defining Movement, 2021). Findings from this study support the importance of legislative and budgetary decisions such as this as it was found that school leadership teaming practices are positively and significantly correlated with increased fidelity of implementation of MTSS for reading. As schools hire new literacy coaches, they may consider findings from this study which support the idea of distributed leadership: elementary schools could position these new literacy coaches to be supported by a team of colleagues in the school who are all working toward the goal of increased literacy for students and are engaging some of the evidence-based teaming practices illuminated by this study.

Relationship to Prior Research

Earlier studies have shown that the use of data and administrator support are statistically significant practices for effective SLTs. Specifically, the use of data by a school leadership team was found to be supportive of sustainability of the initiative and increased student outcomes (McIntosh et al., 2015; Muijs & Harris, 2007). Further, sharing these data with the whole school staff was also found to be supportive of sustainability (Chaparro et al., 2012). These results were confirmed by this study which found that "The school uses a data system that allows access to universal screening

assessment reports."; "The school uses a data-based process for matching student needs to specific reading outcomes." and "The school uses a data system to display student reading progress." were implemented with high fidelity among these SLTs.

Additionally, prior research demonstrated that administrator support was found to be important for both initial implementation and sustainability of a reform effort (Andreou et al., 2015; Chrispeels et al., 2008; McIntosh et al., 2015). School administrators may support SLTs with their regular attendance and participation on school leadership team meetings. While administrator attendance was not explicitly collected, RTFI Item 1.1 ("School Leadership Team is established to support implementation of a Tier 1 reading system.") includes the criteria that an administrator participates on the SLT for the team to rate themselves a full score of 2. Given the results which show that this item was highly implemented by SLTs in this study (M= 1.35, SD = 0.72), it can be reasoned that this result supports earlier findings that administrator support is important for implementation efforts in a school. Future studies should consider intentionally collected SLT member attendance data to further address this finding.

New and developing SLTs can use these findings to support their own team's practice as they intentionally use data and administrators provide support to the team.

Limitations of the Study

This study has several important limitations. First, this correlational study cannot suggest causation. The correlation merely suggests a relationship between two variables and does specify cause or effect. Further research with experimental design should be conducted to further explore the relationship between individual teaming practices and

overall fidelity of implementation of school-wide reading MTSS models. Further research with qualitative designs could also be conducted to further explain how school leadership teams function and collaborate.

Another limitation of this study was that correlations were drawn between individual items and the total sum of items on the same measure. Future studies might consider using a separate instrument to measure overall fidelity of implementation.

Also, only elementary schools who participated in the state-based reform effort were sampled for this study. Given the sample size limitations of this study, it is recommended that future research consider a larger sample size to support generalizability of findings. Teams in this study all came from schools with similar demographics, including socioeconomic status, and were all identified as in need of additional support by the State Department of Education using Smarter Balanced Assessment data. While specific demographic data was not collected as part of the dataset, most schools were in urban or suburban neighborhoods in one state and varied in size. Some schools were kindergarten through 5th grade, others were prekindergarten through 8th grade. In addition to the intentional collection of this demographic data, it is recommended that future studies consider a more intentional selection of diverse schools and school leadership teams. Diversity in school size, type, location, demographics, and state should be considered for future studies.

Also, not all schools in the reform effort were part of the sample because the use of the Reading-Tiered Fidelity Inventory was not required for the reform initiative. All school leadership teams sampled for this study participated in the reform effort and in the data collection efforts for this study between 2016-2019. 69 administrations of the RTFI

across 30 schools were used for this study. Some schools participated multiple years while others did not. Each administration of the RTFI was considered separately for this study. Relationships were considered for the aggregated sample of RTFI administrations between 2016-2019.

Finally, while the RTFI is intended to measure actual practice, not beliefs or perceptions of the participants, a testing threat to validity should also be considered as a limitation to this study. Teams could inflate or deflate scores on inventory items as a result of being prompted to consider their fidelity to the implementation of the practice. Inventories collected for this study were not accompanied by data sources to justify scores although administration rules for the R-TFI suggest teams have data sources for scoring accuracy. Because data sources were not provided as justification for scores, a testing threat to validity is further considered for this study. Finally, the schools in the sample were all of an underperforming status, relative to other schools in the state, and measured by performance on standardized state tests such as the Smarter Balanced Assessment. Given these limitations, future research might replicate this study with more diverse schools. Also, considering sustainability research, it would be important for future researchers to re-engage with the school leadership teams sampled for this study to investigate implementation fidelity years after external supports faded and how it compared to implementation fidelity during the years of the reform initiative.

Recommendations for Future Research

In consideration of the secondary data analysis research design for this study, it has been interesting to consider recommendations for future research. Specific recommendations are explained below and include: considerations for secondary schools,

sample size, expanded demographics, collection of demographic data, additional instruments, connections to student outcome data, and qualitative approaches to future studies.

First, this study focused solely on elementary schools. Future research might consider measuring fidelity of implementation of secondary school leadership teaming practices. Elementary and secondary schools are often organized differently, with department heads at the secondary level for example, and future studies might illuminate important differences between elementary and secondary teaming practices. The RTFI is available in a secondary-level edition and could be used similarly in future studies.

Because of ongoing, voluntary enrollment in the Initiative, the dataset was intended to support action planning in schools and was not considered for research purposes until this secondary analysis. A future experimental study might consider recruiting a larger sample size and providing systems-coaching as the intervention so that pretest scores could be compared to posttest scores after the intervention. This could extend the results of this correlational study, particularly research question 4, with possible explanations for causation.

Future studies conducted as primary research should also take care to collect demographic information on the schools and team members. This additional layer of information could be useful in both analyzing and generalizing findings. Additionally, it would be interesting to consider administrator attendance on the SLT, especially as it relates to earlier findings showing the importance of administrator participation on these teams.

If designing a future quantitative study using the RTFI, at either the elementary or secondary level, future researchers should consider using another instrument in addition to the RTFI in support of internal validity. Future studies might use another instrument, such as the Planning and Evaluation Tool- Revised (PET-R) to either measure individual practices or the school's overall fidelity of implementation of MTSS. Survey or interview data might also be considered by future researchers to further investigate what makes various MTSS systems and structures work in schools.

Future studies might also consider examining fidelity of implementation data using the RTFI as they relate to student outcome data. As the goal of MTSS is to support literacy instruction and assessment in support of student learning, it would be interesting to consider how levels of implementation of different MTSS practices relate to student outcomes in reading.

When collecting data using the RTFI, it was observed by the author and other members of the state-wide reading initiative, that SLTs often have robust, reflective, and planful conversations when engaging the inventory tool. Future researchers might design a qualitative study to investigate dimensions of these team discussions. Additionally, it would be interesting to examine the discussions in a mixed methods study that includes an experimental component using coaching support as the intervention. Future researchers could examine the discussions over time as they compare with one another before and after coaching support.

Recommendations for Future Practice

Researchers have found that team-based approaches to implementation are more likely to achieve adequate fidelity of implementation (Fixen et al., 2010). Elementary schools that are seeking to develop multi-tiered systems of support for reading may be overwhelmed by the scope of the work and can use the results of this study to inform their plans. Specifically, when developing a School Leadership Team to oversee a reform initiative, elementary schools might consider an initial focus on some of the teaming practices that were strongly correlated to overall fidelity of implementation of the MTSS framework for reading as outlined above. Further, narrowing their focus to Tier 1 and Tier 2 teaming practices, as the SLTs in this study did, may support implementation efforts. Current SLTs might also use earlier findings, which were confirmed by this study, to support their own team's practice as they intentionally use data and administrators provide support to the team.

School leadership teams are embedded in the culture and practice of their schools. Using evidence-based practices such as those highlighted in the findings of this study and earlier studies, SLTs can be positioned to maximize their efficiency and support and sustain the work of MTSS initiatives for reading in elementary schools.

APPENDIX A

Signed form of IRB approval to conduct the study within the involved institution(s).

Federal Wide Assurance: FWA00009066

Jun 2, 2021 9:52:24 AM EDT

PI: Stephney Gonzalez
CO-PI: Roger Bloom
Dept: Ed Dean Office, Education Specialties

Re: Initial - IRB-FY2021-430 *An Examination of the Relationship Between Teaming Practices in Multi-tiered Systems of Support and Overall Implementation Fidelity of Elementary School-wide Reading Models*

Dear Stephney Gonzalez:

The St John's University Institutional Review Board has rendered the decision below for *An Examination of the Relationship Between Teaming Practices in Multi-tiered Systems of Support and Overall Implementation Fidelity of Elementary School-wide Reading Models*.

Decision: Exempt

PLEASE NOTE: If you have collected any data prior to this approval date, the data must be discarded.

Selected Category: Category 4. Secondary research for which consent is not required: Secondary research uses of identifiable private information or identifiable biospecimens, if at least one of the following criteria is met:

(i) The identifiable private information or identifiable biospecimens are publicly available;

(ii) Information, which may include information about biospecimens, is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained directly or through identifiers linked to the subjects, the investigator does not contact the subjects, and the investigator will not re-identify subjects;

(iii) The research involves only information collection and analysis involving the investigator's use of identifiable health information when that use is regulated

under 45 CFR parts 160 and 164, subparts A and E, for the purposes of “health care operations” or “research” as those terms are defined at 45 CFR 164.501 or for “public health activities and purposes” as described under 45 CFR 164.512(b); or

(iv) The research is conducted by, or on behalf of, a Federal department or agency using government-generated or government-collected information obtained for nonresearch activities, if the research generates identifiable private information that is or will be maintained on information technology that is subject to and in compliance with section 208(b) of the E-Government Act of 2002, 44 U.S.C. 3501 note, if all of the identifiable private information collected, used, or generated as part of the activity will be maintained in systems of records subject to the Privacy Act of 1974, 5 U.S.C. 552a, and, if applicable, the information used in the research was collected subject to the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 et seq.

Sincerely,

Raymond DiGiuseppe, PhD, ABPP
Chair, Institutional Review Board
Professor of Psychology

Marie Nitopi, Ed.D.
IRB Coordinator

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