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The Impact of Implementation Drivers on Teacher Efficacy Beliefs Within a Multi-Tier System of Support Framework

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THE IMPACT OF IMPLEMENTATION DRIVERS ON TEACHER EFFICACY
BELIEFS WITHIN A MULTI-TIER SYSTEM OF SUPPORT FRAMEWORK

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This dissertation was submitted by Heather Jennings under the direction of the persons listed below. It was submitted to the Gardner-Webb University School of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Gardner-Webb University.

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Abstract

THE IMPACT OF IMPLEMENTATION DRIVERS ON TEACHER EFFICACY

BELIEFS WITHIN A MULTI-TIER SYSTEM OF SUPPORT FRAMEWORK.

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Schools are implementing a Multi-Tier System of Support (MTSS) to address being met

with increased pressures to ensure every student has an equal opportunity to reach

proficiency standards and close the achievement gap. An MTSS is characterized as a

systematic approach to identifying and problem-solving barriers to learning. In

implementing an MTSS, teachers have experienced added responsibilities and have had

to increase or refine their skill set in data analysis, data-based decision-making,

implementing interventions, and managing academic and behavioral interventions.

Through a case study, qualitative and quantitative in nature, the study identifies

implementation drivers in the areas of leadership, competency, and organization that

impact teacher self-efficacy beliefs in the implementation and practice of an MTSS.

Teacher self-efficacy has been identified as a key determinant in student achievement.

Highly efficacious teachers display more motivation to tackle difficult tasks, are more

resilient in the face of obstacles, hold a high belief that they can influence student

learning, and seek out instructional coaching. The findings of the study indicate

significant differences in self-reported efficacy beliefs for MTSS, with no pattern

implementation level or other descriptive statistics found. A thematic analysis of focus

group responses indicates transformational leadership, a culture of trust, problem-solving,

collaboration, and ongoing coaching to support teacher efficacy in the implementation

and practice of an MTSS. Findings of this study provide implications for schools and

states implementing MTSS in how they measure MTSS effectiveness and support

teachers in the MTSS process.

Keywords: multi-tiered system of support, teacher efficacy, implementation

drivers

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Chapter 1: Introduction

The Research Problem

  Recent educational policies, including No Child Left Behind (2001), reauthorization of Individuals with Disabilities Act (2004), Race to the Top (2011), and Every Student Succeeds Act (2015), have required schools to ensure that all students have access to high-quality education and reach minimum proficiency standards on state assessments (Klein, 2016). Schools are held accountable in utilizing evidence-based teaching practices and collaborating to improve *ALL* students' academic outcomes. This has placed increased pressure on educators to meet the needs of all students regardless of race, ethnicity, or socioeconomic background and to overcome barriers to education. "Responsibility has shifted from special educators to all educators" (Isbell & Szabo, 2015, p. 11). Despite the shift, many regular education teachers continue to hold the belief that special educators are responsible for the movement (Prasse et al., 2012).

  The inclusive education movement, beginning approximately 4 decades ago, has suggested "that services and supports for any students, with a few exceptions, should be implemented within a general education classroom, and that effective instruction and high quality intervention be present in every classroom" (Schoolwide Integrated Framework for Transformation [SWIFT], 2017, p. 1). This requires teaming of general and special educators as well as specialists and interventionists to meet the needs in a dynamic and flexible learning environment that "benefits all students" (SWIFT, 2017, p. 2).

  These policies are based on the presumption that staff have the skills and time to collaborate and problem solve to meet diverse needs (Meyers & Behar-Horenstein,

2015). Prior to the implementation of systems to address policy, educators have primarily worked in isolation (Meyers & Behar-Horenstein, 2015). The new systems of data analysis and problem-solving require educators to work collaboratively to identify student needs and plan instruction as well as encompass the ability to perform data analysis and match needs to instruction.

In public education, universal screening, progress monitoring, and research-based instruction have been present in classrooms over the past decade for the purposes of accountability and early intervention or prevention. Additionally, prevention efforts have also been present prior to the introduction of tiered systems of support, including instructional and mental health prevention (Kratochwill et al., 2007). Response to Intervention (RTI) systematized and extended these processes into a tiered framework (O'Connor & Freeman, 2012). RTI provided a framework of screening and early intervention of at-risk students as well as a means for identifying learning disabilities (Regan et al., 2015). RTI is typically organized into three tiers. The first tier is commonly identified as core instruction representing primary instruction, whereas Tiers 2 and 3 represent varied levels of intensified instruction (Regan et al., 2015). If a student fails to respond to the intensified layers of instruction, a referral to special education may be initiated (Regan et al., 2015). Prior to the intervention response model, identification of students with specific learning disabilities was determined using a discrepancy model indicating a discrepancy between a student's cognitive intellect and their academic performance. This resulted in higher identification rates of students of low socioeconomic status (SES) and diverse backgrounds. As of 2012, states began prohibiting the use of the discrepancy model for eligibility of special education (Prasse et al., 2012).

Despite the use of intervention systems and more progressive models of inclusion and special education practices, schools have not experienced the expected positive student outcomes (O'Connor & Freeman, 2012). States' levels of implementation and guidance have varied significantly; and as a result, schools are confused about roles, assessment, data-based decision-making rules, and research-based practices (Regan et al., 2015). O'Connor and Freeman (2012) explained that though schools are on the "highway toward RTI not all are on track toward the destination of improving student outcomes, and cite that some schools feel lost, others are waiting for an out, and others are having difficulty initiating or sustaining momentum" (p. 297). In a study of the first year of implementation of RTI in an elementary school, researchers found teachers to accurately identify when changes to instruction were necessary to meet student needs, but they were unable to identify the correct strategies or level of intervention (Stuart et al., 2011). RTI "requires significant and complex decision making of level and intensity of intervention, targets, and progress monitoring practices" (Meyers & Behar-Horenstein, 2015, p. 384). Teachers have experienced challenges of inadequate training, time needed for collaboration, and lack of support (Regan et al., 2015).

Research has examined the barriers that exist in the implementation of an RTI model and have found whole system factors to be critical in the effectiveness of RTI. It is critical that schools take a systems approach to change and take steps to organize resources, training, staff, and structures to support the implementation of a tiered system and problem-solving model throughout their district. Continuous school improvement and systematic problem-solving characterize the RTI framework (O'Connor & Freeman, 2012).

Purpose

The most recent variation of the tiered system of support is a Multi-Tier System of Support (MTSS) designed to support schools in systematically identifying barriers to academic growth, followed by the implementation of evidenced-based strategies matched to student needs. MTSS is recognized as a whole school improvement effort. States have implemented, or are in the process of implementing, the continuum of supports to address student needs in the areas of academic, behavioral, social-emotional, and environmental needs with the intended outcome to increase achievement for all students. As of 2011, 68% of reporting schools nationwide indicated to be in full implementation or in the process, with an increase of 28% from 2 years prior (Prasse et al., 2012). MTSS offers "purposeful, timed interventions for each student based on their individual needs" (SWIFT, 2017, p. 3).

The North Carolina Department of Public Instruction (NCDPI, n.d.) defined MTSS as "a multi-tiered framework which promotes school improvement through engaging, research-based academic and behavioral practices" (Introduction to MTSS, first paragraph). MTSS is further defined as a "systems approach using data-driven problem solving to maximize growth for all students" (NCDPI, n.d., Introduction to MTSS, first paragraph). Teachers are central to the implementation process and the practice of an MTSS. NCDPI identified six critical components of MTSS including leadership, building capacity of infrastructure for implementation, communication and collaboration, data-based problem-solving, three-tiered instruction and intervention, and data evaluation. For the purposes of this study, the focus was primarily on those related to the teacher role. Teachers are tasked with data-based problem-solving for student

outcomes, planning and implementing intervention, utilizing data to make educational decisions, and engaging in ongoing professional development and coaching related to these skills. "The national goal of improving learning outcomes for all students and reducing, if not eliminating the achievement gap, requires teachers that bring a knowledge base and professional competency that will have a positive impact on diverse learners" (Prasse et al., 2012, p. 75). To effectively practice these critical components of MTSS with fidelity, staff require support, resources, communication, and time to implement.

SWIFT (2017) identified the four key domains that are central to implementing and sustaining an MTSS: leadership that is committed to and engaged in the process, removal of a siloed approach to education, family partnerships, and district-level support to remove barriers to practice. The reframing of school structures and beliefs has been seen for several decades as schools move toward more inclusive approaches and designing practices to meet all learners. This reframing requires general educators to identify practices that offer benefits to all students and meet the needs of regular education students, students receiving intervention or extension, and special education students (SWIFT, 2017).

The implementation and practice of an MTSS requires a shift in how schools have met the needs of all learners, placing an increased need for highly trained teachers and a shift in educator belief systems. Research identifies key educator beliefs central to MTSS implementation. These beliefs are summarized as all students can learn regardless of disability, SES, or background; students with disabilities are capable of meeting academic benchmarks; data-informed decision-making to guide instruction is more

effective than teacher judgement; and graphing of data enables educators to make more accurate and efficient decisions (Prasse et al., 2012). Additionally, Prasse et al. (2012) pointed out that teachers do not generally rate themselves high on skills required for MTSS, with reports of 76% of interviewed teachers indicating needing support in data-driven decision-making and 60% to 75% indicating support to access evidenced-based interventions.

A review of MTSS literature indicates minimal research exists examining teacher reports of how best to support them in the implementation of an MTSS model. Teacher beliefs and perceptions, specifically their self-efficacy beliefs, have a potential to impact the level of implementation fidelity, success of implementation, and sustainability. Often, school initiatives do not consider the perceptions and readiness of those who will be implementing, which is central to any implementation effort (Regan et al., 2015). Failure to do so could be detrimental to the cause (Regan et al., 2015). This study sought to understand what makes MTSS work from the lens of a teacher. The function of the study was to identify specific factors or drivers that may influence teacher self-efficacy, perceptions, and experiences in the implementation and practice of an MTSS. The data gained from this study provide schools with meaningful information on how to support teachers in the implementation and practice of MTSS, in turn increasing their self-efficacy, positive perceptions, and positive experiences within the process, with the overall goal of increasing positive student responses and outcomes. The study answers the following research questions.

Research Questions

1. What drivers exist that impact teacher self-efficacy beliefs in the

implementation and practice of an MTSS?

2. What identifiable themes exist in teacher beliefs, perceptions, and experiences surrounding the implementation and practice of an MTSS?

Significance of Study

Teacher efficacy is identified as the most influential factor impacting student achievement (Goddard et al., 2004). Highly efficacious teachers are more willing to engage in new practices, continue efforts in the face of obstacles, engage in problem-solving, implement innovative instructional practices, and solicit the assistance of and collaborate with instructional coaches. Each of these behaviors are central to the role of the teacher within an MTSS framework. Understanding teacher perceptions and beliefs regarding MTSS will support schools in developing teachers who are more willing and able to practice within an MTSS.

Educator beliefs about their ability to impact student performance are central to MTSS. These beliefs can either enhance or inhibit change and implementation efforts. Educators who feel powerless in their ability to make an impact or effect change will not engage at the appropriate level in order to initiate, implement, and sustain systematic change (Sparks, 1996). Educator buy-in in an initiative is dependent on their perception of the feasibility, importance, and future success of the initiative (Makowski, 2016). An understanding of how teachers experience MTSS firsthand is invaluable in order to support a successful implementation of MTSS. Despite the value in this, Makowski (2016) stated that research on educator perceptions of MTSS implementation appears to be "sparse" (p. 41). Stuart et al. (2011) suggested that educators are no longer at the center of educational reform but are on the peripheral. While educators may have roles in

the implementation, seldom are their perspectives considered in research literature driving reforms (Stuart et al., 2011).

As a result of policy, the most recent being ESSA, North Carolina schools are expected to fully implement an MTSS model by 2021. With this comes increased responsibility of teachers to meet the needs of all students through a systematic framework and evidenced-based practices. The central role of teachers in this process will be a determining factor for the success of MTSS implementation. Rather than approaching implementation as an event that occurs to teachers, the study provides guidance on how to support and include teachers in the process. Nunn and Jantz (2009) proposed that the perceived ability of teachers to practice skills associated with a tiered system of support is influenced by their level of training in these skills as well as their direct involvement in the implementation process.

Setting of Study

The study took place in Western North Carolina with four elementary schools of neighboring districts. The districts chosen to participate in the study have been enrolled in the NCDPI MTSS training cohorts and have completed the self-assessment of MTSS (SAM), which indicates their self-reported levels of MTSS implementation.

Definition of Terms

Self-Efficacy

The belief in one's ability to complete a task(s) successfully, which in turn positively affects their success rate.

Teacher Efficacy

An educator's belief to perform a task(s) successfully, such as, but not limited to,

instructing in a certain subject, implementing behavioral interventions, and/or analyzing student performance data. Teacher efficacy can be calculated at the individual educator level or collectively, as in a group of educators.

MTSS

A framework utilized by school systems for total school improvement, generally including three tiers or levels of instruction and support, characterized by data-based decision-making, researched-based instructional practices, and supports or interventions in the areas of academic, behavior, and social-emotional.

Data-Based Problem-Solving

Educator use of student outcome data, including but not limited to academic performance data, behavior data, attendance data, and social-emotional data, to guide approaches to educating students, implementing supports, and overcoming barriers to learning.

Mastery Experiences

Performing a task with success; in turn, increasing one's chances for future success.

Vicarious Experiences

Observing a person performing a task with success; in turn, increasing one's perceived ability to perform that same or similar task.

Social Persuasion

Policy or rules for implementation and practice; may also include the majority performing a task increasing the expectation that others also engage in the action as well as talk among a group on a specific topic that has an impact on the social norms or

expectations.

Physiological and Emotional States

How one feels when performing a task and how that feeling impacts their perception of how the task will go in the future.

Collective Efficacy

The belief of a group's ability to perform a task successfully.

Organizational Factors

Characteristics of a system that either inhibit or support action and progress.

RTI

A framework of three levels of support to address student academic, social-emotional, and/or behavioral needs; key characteristics include data-based decision-making, progress monitoring, and increased intensity of supports.

Overview of Methodology

Through the collection of survey data and focus groups, the study determined whether specific factors exist within the school system that enhance teacher efficacy beliefs regarding the implementation and practice of an MTSS. The research noted MTSS implementation levels as a descriptive statistic of each participating school, as indicated by the Facilitated Assessment of MTSS-School Level (FAM-S). FAM data were utilized in the context of this study to determine whether relationships exist among implementation levels and teacher self-reported efficacy beliefs. A previously developed and validated self-report survey was utilized to examine self-efficacy beliefs regarding tiered systems of support practices. Following administration of the survey, focus groups were conducted to examine what drivers exist in impacting teacher efficacy levels and

how these drivers have impacted efficacy levels.

A thematic analysis was performed to determine whether common themes arise that align with the theoretical framework of factors affecting teacher efficacy and examine the role of *drivers* in the teacher experience of MTSS. The research resulted in recommendations and guidance for schools in the MTSS implementation process on how to best support teachers to increase teacher efficacy beliefs regarding MTSS and, in turn, increase the success of MTSS practices and overall student outcomes. The importance of examining the correlates of teacher efficacy and the educational environment has implications for teacher and student success (Tschannen-Moran et al., 1998).

Over the past several decades, schools have experienced increased pressures of accountability in exhibiting student achievement on grade-level standards. Schools have developed various models for early identification of student needs, research-based instruction, and data-driven decision-making; all of which have placed increased expectations on teachers and introduced new roles for teachers. Through qualitative and quantitative data collection, this study sought to identify drivers that impact teacher efficacy within one of these models, an MTSS. Chapter 2 examines the underlying framework of an MTSS, implementation drivers, and teacher efficacy and how these factors influence one another.

Chapter 2: Literature Review

Overview

The purpose of this study was to identify specific factors or drivers that may influence teacher self-efficacy, perceptions, and experiences in the implementation and practice of an MTSS. This information was utilized to develop recommendations for schools implementing and practicing an MTSS on how to best support teachers in the process. The following literature review provides a framework for the study and examines the theoretical underpinnings.

The literature review is organized into several sections. The first section defines and operationalizes an MTSS, including the practices, structures, policy, and outcomes associated with an MTSS. In addition, the state of MTSS within North Carolina is reviewed. The following section defines self-efficacy and its role in teacher practices, specifically calling attention to those practices common to an MTSS. The next several sections identify factors or drivers that impact teacher efficacy beliefs and, in turn, their ability to implement and practice an MTSS. These factors are identified as drivers in implementation science and include organizational drivers, competency drivers, and leadership drivers. These drivers are discussed in terms of school structures that support teachers in implementing new initiatives, such as a tiered system of support.

MTSS

An MTSS is in the implementation and/or practice phase in many states throughout the country to improve outcomes for all students. The implementation of an MTSS has led to system-level change and total school improvement efforts. MTSS is the overarching umbrella under which RTI and Positive Behavior Interventions and Supports

(PBIS) reside, both of which are public school systems' answers to policies, including No Child Left Behind (2001), Race to the Top (2011), and Every Student Succeeds Act (2015). These policies have required states to monitor student outcomes; implement a system of accountability; and develop plans to improve equity, tackle barriers to education, and close the achievement gap. Additionally, the Individuals with Disabilities Education Act (2004) has required school teams to provide systematic and research-based instruction and intervention as well as a process to rule out environmental factors prior to determining eligibility for special education. MTSS also marked the shift from RTI as a process for some to a system that "maximizes growth for all " (NCDPI, n.d., MTSS Overview for School Teams, slide 3).

Key characteristics of an MTSS include whole school improvement through systematic structures and practices that support a continuum of evidenced-based academic, behavioral, and social-emotional practices; data-based decision-making; and targeted and intensive interventions. Many models of systematic problem-solving and layered supports exist; most are organized into three levels of support, increasing in intensity and specificity. Tier 1 is defined as the core with identified core instructional practices and universal screenings for all students. Eighty percent of the total student population is expected to have their needs met at the Tier 1 level, as indicated by the percent of students meeting proficiency standards. Tier 2 includes supplemental instruction or intervention, which occurs in addition to core. Supplemental instruction is intended to be provided within small groups to address similar skill deficits among the students within the group. Those students receiving Tier 2 supports are progress monitored more frequently in order to determine effectiveness or response to the

intervention. A student's rate of improvement is compared to other students receiving the same level of intervention to determine whether the student is making progress at a rate that will close the achievement gap in a predetermined amount of time. Tier 3 is characterized by the most intensive level of intervention. These interventions are the most individualized of the tiers and are progress monitored the most frequently (NCDPI, n.d.).

The tiered system of instruction is intended to address student needs in all areas, including but not limited to academic, behavior, and social-emotional needs. A lack of RTI, which is generally defined by the local education agency, may warrant the recommendation for more intensive intervention or a change in intervention. Typically, the student's rate of RTI through the analysis of progress monitoring data will aid teams in determining the effectiveness of the intervention (NCDPI, n.d.).

Various problem-solving models exist to guide schools in utilizing an MTSS framework. The majority include a variation of the following steps: identification of the need; analysis of the need, including review of data, input from teachers and/or parents, observation, and testing of hypothesized need; identification of a target skill/area; intervention design and implementation; and monitoring of RTI (NCDPI, n.d.). Intervention planning is completed as part of a team approach consisting of individuals with knowledge of the student or specialization in academic, behavioral, and/or social-emotional instruction and intervention. Results of the problem-solving process can include the continuation of current intervention; modification of the intervention by means of changing the intensity with more time, smaller group size, and/or more opportunities for explicit feedback; decrease in intensity of the intervention; or consideration for a referral to special education (Makowski, 2016).

Teachers play a central role in the implementation and practice of an MTSS. Prasse et al. (2012) identified seven essential domains of teacher practice within an MTSS; the first being a tiered model in which teachers must recognize the importance of core instruction as well as be prepared to provide supplemental and intensive interventions. The second domain is data-based decision-making for which teachers are required to understand the purpose of assessments and how to utilize those assessments to guide instruction, including grouping students and determining the appropriate level of support. Problem-solving processes of identifying appropriate goals and the monitoring of those goals to drive practices at the school, class, group, and individual levels represent the third area of teacher practices as identified by Prasse et al.

Additionally, teachers require knowledge of evidenced-based curriculum and instruction, state standards, and application of these at the appropriate level or intensity. This also requires teachers to utilize instruction that is "systematic, direct, explicit, scaffolded, and appropriately paced, and includes modeling, guided practices, and opportunities for critical thinking" (Prasse et al., 2012, p. 82). Prasse et al. (2012) identified opportunities for collaboration as central to teacher roles in an MTSS. This includes collaboration with colleagues as well as parents, families, and the community. Last, professional attitudes and beliefs are identified as required characteristics of teachers practicing within an MTSS. Teachers should "demonstrate through words and actions their belief that all students can learn" (Prasse et al., 2012, p. 83).

State of MTSS in North Carolina

NCDPI (n.d.) defined MTSS as "a multi-tiered framework, which promotes school improvement through engaging, research-based academic and behavioral practices

through a systems approach using data-driven problem solving to maximize growth for all students" (MTSS Overview for School Team, slide 3). The vision of the NCDPI MTSS initiative is identified as "every NC Pre-K through 12th public education system implementing and sustaining all components of an MTSS to ensure college and career readiness for all students" (Introduction to MTSS, paragraph 1).

NCDPI (n.d.) identified six critical components of MTSS: leadership, three-tiered instruction/intervention model, communication and collaboration, data evaluation, data-based problem-solving, and building capacity/infrastructure for implementation. The critical components represent overarching themes that must be present for effective implementation and ability to sustain an MTSS framework. The key areas schools must demonstrate include high expectations for all staff and students, curriculum and instructional alignment, data analysis and instructional planning, student support services, strategic planning, a mission and vision, distributed leadership and collaboration, monitoring instruction in school, teacher quality and experience, quality professional development, talent recruitment and retention, resource allocation, facilities and technology, and family engagement (NCDPI, n.d.).

These key practices include those specific to teachers. The essential teacher behaviors as identified by NCDPI are in alignment with current research findings that identify teacher behaviors essential to the implementation, practice, and sustainability of an MTSS. These actions include collecting, analyzing, and applying student data; delivering research-based instruction matched to student need; and engaging in the problem-solving processes (Prasse et al., 2012). Teachers are expected to engage in these roles within larger problem-solving groups or teaming structures, such as grade levels,

departments, professional learning communities (PLCs), school MTSS leadership teams, and/or the individual problem-solving teams.

NCDPI provides districts with the North Carolina SAM to assess alignment with behaviors, practices, and structures identified as necessary for successful implementation of an MTSS. The tool can be administered at the district and/or school level. Each district is to administer the SAM instrument annually to identify opportunities for improvement and monitor progress and sustainability of their MTSS efforts. The tool includes 39 items within the six critical component areas of leadership, three-tiered instruction/intervention model, communication and collaboration, data evaluation, data-based problem-solving, and building capacity/infrastructure for implementation. Schools rate themselves as "not implementing," "emerging/developing," "operationalizing," or "optimizing" for each item. The school or district is then provided an overall implementation rating. The tool originated in Florida as part of a study with various pilot sites prior to the adoption in North Carolina (NCDPI, n.d.). Educators, experienced and skilled in MTSS implementation, developed the SAM criteria. An expert panel of individuals experienced in tiered structures of support then reviewed each item to determine accuracy and validity.

The SAM instrument includes components which are considered non-negotiables. These components represent those behaviors or characteristics that are absolute in implementing MTSS at some level. If these are not met, the district is defaulted to a level of "not implementing." The non-negotiables include professional development and coaching for staff; schedules conducive to a multi-tier system of supports/interventions; established procedures for data-based problem-solving; family and community

engagement; integrated problem-solving for academics, behavior, and social emotional outcomes; specified intervention plans with progress monitoring and goals; Tier 1 practices that establish learning standards, assessments, and expectations; Tier 2 strategies addressing integrated common needs; Tier 3 strategies based on student needs; staff access to and understanding of academic, behavior, and social-emotional data sources for the purposes of identifying at-risk students, determining needs, monitoring progress, planning intervention, and determining outcomes; data tools used appropriately and independently by staff; and data sources that are monitored for consistency and accuracy (NCDPI, n.d.).

Additionally, NCDPI has developed the FAM instrument to measure school-level implementation. This is a revised version of the SAM released in February 2019. It focuses on the depth of academic, behavioral, and social-emotional support that is reflected in the NC MTSS professional development and PBIS. The purpose of the instrument is to assist schools in planning and prioritizing implementation steps as well as planning for professional development. The instrument is recommended for annual use, ideally between the months of April to June, and administration to be facilitated by district-level personnel, such as an MTSS/PBIS coordinator or another member of the district MTSS implementation team.

The FAM contains 41 items categorized under each of the six critical components of leadership, three-tiered instruction/intervention model, communication and collaboration, data evaluation, data-based problem-solving, and building capacity/ infrastructure for implementation (NCDPI, n.d.). The instrument underwent the same validation process as the SAM and contains many of the same items. The assessment

scale follows the same structure as that of the SAM instrument. The tool contains

example notes and evidence for schools in meeting the critical components.

It is the vision of NCDPI that all schools within the state will have fully

implemented an MTSS by 2021. NCDPI (n.d.) stated that "as with any implementation of

an innovative school improvement framework the process can expect to take two to four

years" (Establishing Readiness and Sustainability for Implementation, para. 1). To

support districts in implementation, the state has developed cohorts of professional

development. Cohort 1 was the first to begin the professional development and process

toward implementation, followed by Cohort 2 and so on. The cohorts worked with their

district MTSS team to complete training modules and participate in regional meetings.

NCDPI recommends and provides schools in the initial stages of implementation

with a beliefs survey to aid in determining the school's readiness levels or acceptance of

the primary underpinnings of a tier system of support, including items such as all

subgroups can meet proficiency, core instruction should meet 80% of student needs,

behavioral expectations and social skills are the responsibility of public schools, students

with disabilities can meet grade-level benchmarks, and problem-solving teams should use

data to understand the root cause of non-RTI of students. The tool is suggested for use

prior to implementation, after the first year, and periodically through implementation to

gauge growth and professional development. The tool is completed anonymously and is

intended for completion by all staff. NCDPI provides ongoing professional development

and support including coaching, technical assistance, research and evaluation, and a

cohort support liaison from NCDPI. Belief survey, SAM, and FAM data are utilized to

guide how schools can best be supported.

National Outcomes of an MTSS

Batsche et al. (2005) claimed that the utilization of assessment data to evaluate student academic and behavioral progress and identify at-risk students through early intervention and a tiered model of support is the framework by which MTSS intends to improve outcomes for all students. Batsche et al. cited that MTSS requires 4-6 years for full implementation; therefore, data collection prior to full implementation may not represent accurately the impact to its entirety. The use of multiple methods of measuring implementation progress is necessary for a thorough understanding of MTSS and its relationship to outcomes (Castillo, March, Yin Tan et al., 2016). The outcomes and effects of MTSS have been evaluated in multiple states. These studies have examined student growth and proficiency levels, behavior incidences, and special education referrals in relation to an MTSS within the past decade.

Marston et al. (2003) examined the effects of a large-scale implementation of an MTSS on special education outcomes in Minneapolis Public Schools. Data were collected during a pre- and post-problem-solving model to identify the effects of the model on special education trends. The data analysis revealed a decrease from pre to post of special education eligibility rates in the areas of mild mental impairment from 1% to approximately .5% and specific learning disability from 6.5% to approximately 3%. The findings also indicated a positive impact of an MTSS implementation on the disproportionality of special education identification for the subgroups of African American and Native American. Marston et al. concluded that the problem-solving model of an MTSS increased the efficiency of the special education decision-making processes, allowing for a quicker response to meeting student needs.

In a meta-analytic review, Burns et al. (2005) examined the effectiveness of MTSS service delivery models on student outcomes. The review consisted of a large-scale field-based implementation as well as models implemented specifically for research purposes. Burns et al. utilized effect size to determine the impact of MTSS implementation on student and system outcomes. Findings suggested a large effect size of 1.02 for student outcomes, including skill acquisition, academic growth, academic achievement, time on task, and task completion. Additionally, a large effect size of 1.54 was indicated for system outcomes, including a decrease in number of referrals, time in special education services, and grade retention rates and a higher rate of students returning to lower levels of intensity. Based on the effect sizes, MTSS implementation and practice were indicated to significantly improve; based on the effect size, student and system outcomes as the difference between those schools that did not have a tiered system of support and those that did were significantly different.

Burns et al. (2005) found a rate less than 2% of the student population to be identified as having a learning disability, as compared to the estimated national incidence rate of 5%. Burns et al. attributed this to early intervention, the ability of the students to receive support when needed as opposed to having to be eligible for special education, and more efficient problem-solving processes to identify student needs.

In a longitudinal study, O'Connor et al. (2005) examined the effects of tiered intervention structures and practices on literacy skills and special education decisions. The study included two elementary schools, one of low to mid-SES and another of higher SES, with a total of 400 kindergarten through third-grade students between the two schools, 92 of whom were receiving Tier 2 and/or Tier 3 interventions. Results indicated

students receiving Tier 2 and/or Tier 3 intervention to have shown improvement, as evidenced by the following effect sizes in word identification (.4), word attack (1.8), comprehension (1.4), and fluency (1.4) as compared to the control group. Students receiving interventions or supplemental support displayed an increase in overall reading performance as compared to the control group. Additionally, the study found students who received intervention through an MTSS demonstrated a decrease in special education referrals and eligibility decisions at 8% as compared to the control group at 15%. Overall, positive effects were indicated for reading achievement and special education decisions.

Torgesen (2009) examined the effects of implementing the Reading First multi-tier system of delivery for early reading difficulties. From 2003 to 2004, 314 schools in Florida implementing the Reading First service delivery model experienced a decrease of 81% of kindergarten students identified as learning disabled, a decrease of 67% of first-grade students identified as learning disabled, a decrease of 53% of second-grade students identified as having a learning disability, and a decrease of 42% of third-grade students identified as having a learning disability. Torgesen concluded that the multi-tier service delivery system led to early identification of reading problems and thus early implementation of intervention. Torgesen qualified this statement by stating that this benefit would be experienced only when the interventions are provided at the appropriate level of intensity.

Hughes and Dexter (2011) reviewed 13 studies of MTSS effectiveness as indicated by student and systematic outcomes. The review included studies of schools that had at least two tiers of an MTSS as well as a quantitative outcome measure of

student academic and behavior outcomes, or a systematic outcome measure. The settings of the studies included in the review were solely within elementary schools. Outcome measures included reading achievement, math achievement, behavior data such as time on task and discipline referrals, standardized test results, and special education referrals and placement. All reviewed studies reported improvements in academic achievement and support for early reading skill improvement. Some evidence was found for improved early math outcomes. Special education rates were noted to be constant across studies, yet researchers indicated a lack of decision rules for eligibility which may have confounded the results. Overall, Hughes and Dexter concluded positive effects for MTSS at the student and system levels, with the strongest results in early reading.

Mellard et al. (2012) examined the effects of a tiered system of support model on student reading achievement as measured by DIBELS and standardized testing in five elementary schools across the United States. The schools were chosen by an expert panel based on how well they had implemented a tiered structure of support, including a progress monitoring schedule and data decision rules. Effect sizes were utilized to quantify the academic gains within a school year among the students attending the study schools and a normative sample. Findings indicated one school to have closed the performance gap, while three of the four remaining schools continued to show an increase in performance at a rate higher than what was previously experienced or expected. Overall, the results indicated a positive effect on reading achievement as a result of a tiered model of support.

Recent studies corroborate previous support for positive student and system outcomes as a result of an MTSS or a tiered system of support. An evaluation brief of

MTSS practices in Kansas in 2014 indicated more students to be scoring at benchmark on universal screeners, improvements in behaviors, student engagement and motivation, and fewer special education referrals (Reedy & Lacireno-Paquet, 2015). The study utilized the Kansas MTSS School Survey of Effective Instructional Practices with 553 schools. Data were organized into frequency charts to identify the percentage of responses in each area as well as themes in response types. Respondents indicated to "some extent" or "to a great extent" implementation of an MTSS to have had a positive impact on students, with 89.5% of students scoring at proficiency on state assessments, as compared to the state average of 70.3%. The school also experienced a 77.1% decrease in office discipline referrals and a 63.4% decrease in special education referrals (Reedy & Lacireno-Paquet, 2015).

Additionally, interviews and focus groups were held with core team members of the schools' MTSS teams to elicit feedback on the positive effects of MTSS on the students, staff, and school. Focus group data revealed that school staff and teachers experienced a shift in beliefs and practices regarding openness to collaboration, shared responsibility for all students, development of a common language, and utilization of data to inform instructional decisions. Overall, feedback revealed MTSS to have supported schools in strengthening core instruction as well as supplemental and intensive interventions. The Kansas State Department of Education provided support of a core MTSS team, MTSS facilitations, annual synopsis meeting, accessible research, resources, and tools, and ongoing dissemination of the implementation plan to the schools involved in the study. These supports were critical in the fidelity of implementation and sustainability of an MTSS.

Weisenburgh-Snyder et al. (2015) utilized a case study to examine learning outcomes in mathematics of students that ranged from 6 months to 3 years behind peer performance when receiving systematic intervention within a tiered system of support. Data decision rules were utilized to place students into the appropriate instructional level as well as to monitor progress and make instructional decisions in terms of intervention intensity. Classroom teachers deployed the interventions after receiving 120 hours of professional development related to MTSS practices as well as an additional 15 hours specific to the intervention program. Based on pre- and post-assessment data utilizing the Iowa Test of Basic Skills, students grew 40.8 standard points and experienced a grade equivalent growth of 2.7 years from September to June. Weisenburgh-Snyder et al. concluded that the significant skill improvement was a result of the implementation of targeted instruction and data-based decision-making processes within a larger MTSS framework.

Coyne et al. (2018) evaluated the effects of supplemental reading instruction through an MTSS framework on student performance outcomes. Coyne et al. examined the outcome data of four elementary schools, Grades 1-3, participating in an MTSS. The schools engaged in implementing an MTSS, including data teams, school-wide reading plan, universal screeners, progress monitoring, and a tiered system of support (Coyne et al., 2018). Overall, results indicated significant effects of student outcomes in the area of reading skills with systematic increases in instructional intensity. The student outcomes were measured utilizing DIBELS, which examined phonemic segmentation, nonsense word fluency, and oral reading fluency. Students participating in the intervention were selected utilizing data decision rules of cutoff scores on benchmarks. The interventions

were carried out by reading interventionists and included a research-based program targeting comprehensive reading strategies. Results indicate that students experienced an 18 percentile point increase in phonemic awareness and a 14 percentile point increase in decoding beyond what they would have experienced receiving only core or Tier 1 instruction. Overall, Coyne et al. concluded that providing supplemental reading instruction within the context of a larger MTSS framework and practices has a positive impact on students at risk for reading difficulties.

In addition to academic outcomes, an MTSS with school-wide PBIS has been linked to positive increases in attendance and behavior outcomes. Freeman (2016) explored the links between MTSS practices and attendance and behavior outcomes in high schools from 37 states. Their results indicated a positive relationship between the implementation and practice of an MTSS and behavior and attendance outcomes. The MTSS framework was categorized as defining, teaching, and reinforcing school-wide behavior expectations; utilizing data to guide decision-making processes; providing differentiated levels of support; and monitoring student RTI. Results indicated that schools implementing practices to fidelity experienced a decrease in office discipline referrals and an increase in attendance rates, especially for the student population categorized as receiving free and reduced lunch.

Despite positive outcomes tied to MTSS, integrity of implementation and student outcomes continue to be areas of concern (Makowski, 2016). Implementation integrity is defined as the "degree to which a change initiative is implemented in the manner in which it was intended" (Noell & Gansel, 2006, p. 29). Noell and Gansel (2006) identified implementation integrity as the foundation to any tiered system of support. Without

implementation integrity, the tiered system of support is merely a "process in which meetings are had, student data are collected, predetermined decision rules are applied, and time passes until a decision is made to refer a student for special education" (Noell & Gansel, 2006, p. 37). As discussed in Chapter 1, despite the positive outcomes associated with a tiered framework and school improvement efforts, how to effectively implement with integrity and sustain efforts requires examining the beliefs, readiness, and experiences of those implementing them. Teacher perceptions and beliefs are likely to play a significant role in the success and sustainability of an implementation effort. In addition, organizational factors or drivers may mediate the effects of teacher beliefs on the integrity and sustainability of MTSS.

Teacher Perceptions of and Efficacy Within a Tiered System of Support

Research demonstrates support for an MTSS in enhancing student and system outcomes. An MTSS has come as the answer for many schools in meeting the needs of all students. Within an MTSS framework, teachers play a central role. Educators have experienced an increase in demands and a need for more support in building their skill set. Research has examined teacher perceptions of a tiered system of support and how they have been affected by the movement.

Stuart et al. (2011) conducted interviews and follow-up focus groups with 26 educators from a large urban elementary school to examine educator perceptions of the tiered model within the second year of implementation. The qualitative data were collected and analyzed for themes of responses. Teachers shared concerns with enough planning time, responsibility of supplying various instructional levels at various tiers, assessment, and tracking of intervention effectiveness. Collectively, teachers spoke to the

desire of a model that fit their school culture and community, rather than a one-size-fits-all plan.

Results suggested that teacher perceptions grew more positive during the second year of implementation. Teachers felt that the system improved the special education referral process, progress monitoring practices, data-based decision-making, and collaborative planning structures. Teachers noted a shift in perception in holding higher expectations for all students and felt student needs were being met more efficiently. Additionally, educator perceptions of their abilities to meet student needs contributed to their views of student achievement. Teachers benefited from greater autonomy and empowerment in the process. In the second year, this became evident as they expressed feeling more in control of and confidence in the process. The study identified a limitation of a small sample size and suggested future studies expand this work with additional samples and various models of training (Stuart et al., 2011).

Makowski (2016) examined the relationship between level of MTSS implementation and educator beliefs and perceptions regarding MTSS and student growth within an MTSS model. Data were gathered during the Florida Problem Solving/ Response to Intervention Project. The study was completed during the 2009-2010 school year with 34 pilot schools within seven school districts. The schools participated in intensive coaching, professional development, and technical assistance on an MTSS framework and practices over 3 years. The Beliefs Survey and Perceptions of Practices Survey, self-report measures devised by the Florida Problem Solving/Response to Intervention Project, were used to assess educator beliefs about MTSS practices. The Belief Survey contained 27 items using a 5-point Likert scale. The Perceptions of

Practices Survey assessed the extent to which the problem-solving process was implemented using 17 items with a 5-point Likert response scale. The Florida Comprehensive Assessment Test was utilized to assess student performance, specifically in the area of reading.

Multiple-regression analyses and Pearson Product Moment Correlations were performed to determine the relationship between the level of MTSS implementation and school variables, including staff perceptions, educator beliefs, and student growth. Mean scores and standard deviations were calculated from the self-report measure as well as student growth scores as measured by changes between Year 2 and Year 3.

Results indicated that an infrastructure conducive to implementation and high implementation level to be predictive of educator positive beliefs regarding data-based decision-making. Implementation level alone was predictive of educator beliefs regarding the academic ability and performance of students with disabilities, as the higher the level of implementation the more accepting teachers were of the belief that all students could achieve. However, these relationships were not significant, and no other dependent variables were predictive of the level of implementation. Researchers posed that "if an educator believes students with the greatest needs can grow and achieve one may be more inclined to believe in data-based decision making to improve student outcomes, and these beliefs will likely translate to greater implementation practices" (Makowski, 2016, p. 67).

Heavner (2015) utilized a case study with four elementary schools to examine MTSS implementation and its impact on school culture and leadership as well as to identify factors that lead some schools to successful implementation. The participating schools were chosen through a purposeful sampling of those schools that were

implementing the critical components of an MTSS. The Impact of an MTSS on School Culture Instrument, containing Likert scale survey items, was administered to 84 faculty members. Additionally, follow-up focus groups were held with faculty and administration. Chi-square analyses were performed on the quantitative survey data to determine the significance of the relationship between MTSS and school culture. The qualitative focus group data were analyzed for frequency of response and thematic patterns to examine the effect of specific leadership behaviors on the implementation and sustainability of MTSS.

Heavner (2015) identified four mindset shifts that occur in the implementation of an MTSS, including shared ownership, success for all students, data-informed decisions, and collaboration. The most noted mindset shift was the belief of shared ownership with a focus on student success and "all teachers for all students" (Heavner, 2015, p. 74). The leadership style of transformational leadership was found to play a central role in cultivating and supporting the shifts in mindset. Transformational leadership was characterized as encouraging and motivating staff towards innovation and change. Additionally, teacher buy-in was found to be a critical component in the implementation of an MTSS. Teacher involvement and readiness to become involved in the problem-solving process and respond to the needs of students were crucial; though it was found that for many teachers, this was the most difficult part of an MTSS implementation. Heavner concluded that at the core of an MTSS, it is necessary for teachers to hold the belief that all students can learn and expand the focus to the needs of the whole child. Ultimately, data indicated the implementation of an MTSS to result in the establishment of a positive school culture with shifts in beliefs moderated by leadership style.

Leadership style as a moderating factor for a positive school culture and teacher beliefs within an MTSS model provides support for the role of leadership as a driver supporting successful implementation of an MTSS.

Cook et al. (2015) examined school-level beliefs and attitudes toward the implementation of an MTSS for student social, emotional, and behavioral needs with the purpose of understanding the relationship between educator beliefs and degree of MTSS implementation. Cook et al. conducted pre and posttests of an intervention to enhance educator beliefs surrounding an MTSS. Data were collected from 62 elementary schools participating in a collaborative partnership to assist with MTSS implementation. The collaborative consultative partnership included work with implementation coaches. The implementation coaches were existing positions within the schools with responsibilities of providing performance feedback, modeling practices, and engaging in problem-solving processes with the school-based implementation teams. Additionally, schools engaged in professional development sessions consisting of reviewing school-level beliefs, developing action items to establish readiness and scale up practice, and review of the fidelity and monitoring of practices.

Teachers participating in the collaborative partnership completed a 35 Likert scale item survey on their beliefs towards MTSS evidence-based behavior practices. Site-based teams completed a global measure of level of MTSS implementation, and coaches completed a school-wide observation tool to capture the fidelity of practices. Additionally, coaches completed a questionnaire to capture their beliefs regarding the importance of teacher beliefs in the implementation process of an MTSS. Correlational analyses, *t* tests, and regression analyses were performed to examine the association

between educator beliefs and implementation fidelity. The results provided support for the importance of educator beliefs in the implementation of MTSS behavioral practices. Coaches indicated teacher beliefs to be critical to implementation and in facilitating coaching with teachers. Educator beliefs were found to be predictive of initial implementation fidelity, and the belief intervention was associated with significant changes in educator beliefs, in turn improving implementation. A major implication of the research was the establishment of the importance in measuring and targeting educator beliefs to reduce gaps in implementation. Cook et al. (2015) suggested future studies examine the role educator beliefs and organizational factors play in enhancing implementation fidelity as well as enhancing the implementation climate.

Nunn and Jantz (2009) administered the Teacher Efficacy Beliefs and Behavior Scale to 429 educators at the conclusion of school yearlong MTSS training to examine the relationship between educator beliefs regarding implementation of an MTSS and level of engagement in training and practices of an MTSS. A two-way ANOVA was completed to measure the relationship between the variables. Results indicated a significant positive relationship between engagement in MTSS practices and educator beliefs in the areas of intervention skill efficacy and motivational skills efficacy. The study was expanded to examine the relationship between educator beliefs and their perceptions of intervention outcomes. Using effect sizes, Nunn and Jantz found increases in educator efficacy beliefs to be significantly related to satisfaction with intervention results (.49), data-based decision-making (.31), perceptions of improved outcomes of intervention (.15), and collaborative team processes (.39). Nunn and Jantz highlighted the importance of educator beliefs in the implementation process.

Isbell and Szabo (2014) completed a diagnostic assessment of 10 secondary education teacher attitudes toward a tiered system of support and the implementation of those practices in their general education classrooms in the fourth year of implementation. Isbell and Szabo utilized the Concerns-Based Adoption Model instruments and exit interviews to examine teacher perceptions in the areas of self-identified concerns of adequacy, concerns about teaching methods and performance, and concerns about impact on student learning needs. Data were collected at three intervals over a 5-month time frame.

Results indicated that teacher use of tiered systems of support practices only increased slightly over the three intervals, indicating that the change and implementation was a difficult process for teachers to adopt. Further examination of teacher responses indicated a lack of consistent meetings and training to be a primary obstacle for teachers holding concerns about their roles, collaboration, documentation, and time. Teachers also expressed concerns about conflicts in scheduling that hindered their ability to engage in the planning and training required. Additionally, inconsistent communication from administration and specialists resulted in teachers being unclear of their roles within the system of supports. The authors concluded that district leaders should use teacher self-reflection plans to develop targeted professional development in order to support implementation and sustain practices, while addressing teacher concerns through purposeful communication. The study supports the importance of effective administrators who communicate purposefully about change, plan appropriate training, set aside time for and develop collaboration through learning communities, and provide teachers with the appropriate resources (Isbell & Szabo, 2014).

Meyers and Behar-Horenstein (2015) described a first-grade teacher team's experience during their second year implementing a tiered system of support through the collection of qualitative data including focus groups, principal interviews, participant observations, a review of artifacts, and field notes and memos. Data were coded and organized by and assessed for themes.

Teachers reported having prior knowledge of data-based decision-making as applied to their classroom data yet indicated a lack of knowledge on how collaborative data-based decision-making is applied to a grade-level group. Focus group interview data revealed frustration with the lack of professional development, leadership support, and resources as well as uncertainty of their role, how to manage intervention, and how to utilize data to make decisions. One major frustration was the lack of time for collaboration.

Additionally, teachers indicated they wanted more professional development opportunities in the areas of gathering and analyzing data collaboratively; interpreting and using progress-monitoring data, data display, and management; identifying research-based interventions for targeted students; grouping students based on data; and accelerating student learning. While initial professional development was appropriate, teachers expressed concerns with the lack of follow-up training. Based on the principal interview, there was a lack of administration awareness of teacher concerns and the level of uncertainty they were feeling during the implementation process. The principal identified competing demands between departments led to inconsistencies in implementation and fragmentation. The principal identified the need for universal language and processes and district-level guidance.

Teachers identified "coping" strategies to deal with their frustration and to continue to engage in learning and implementation. The four strategies identified included collaboration with their team, bringing questions to the team, observing other teachers, and initiating professional development. While teachers identified the obstacles to implementation, they also reported the MTSS model to have motivated them toward professional improvement and the belief that a tiered system of support would lead to better student outcomes. Teachers were observed to work more collaboratively and to be willing to share information. They were also observed and reported to engage in a cycle of learning and inquiry. Meyers and Behar-Horenstein (2015) synthesized the data to conclude the importance of adequate professional development, strong administrative leadership, and explicit training in collaborative date-based decision-making.

In a mixed methods study, Regan et al. (2015) explored elementary and secondary teacher perceptions of a tiered system of support. Survey data were utilized to better understand the perceived feasibility and effectiveness of RTI, perceived knowledge of basic RTI concepts, and perceived preparedness to implement RTI.

Respondents indicated both feasibility and effectiveness of the model but identified a need for greater guidance on how to implement. The need for more guidance was particularly true at the secondary level. Despite the support of an RTI coordinator, there lacked systematic professional development. Researchers concluded with the need for more professional development for implementation of RTI as well as suggested exploring the implications for practice, specifically at the secondary levels (Regan et al., 2015).

Swanson et al. (2012) utilized focus groups with special education teachers to

examine the teacher perceived benefits of a tiered system of support. Through a thematic analysis and frequency of responses, teachers identified the opportunity for students to receive intensive interventions without having to be eligible for special education, increased opportunities for colleagues to engage in problem-solving and data analysis, and the increased belief that all students belong to all teachers to be the greatest positive outcomes of a tiered system of support. Teachers, on the other hand, cited schedules, paperwork, number of students, and the need for additional staff as the top challenges in the practice of a tiered system of support.

Castillo, March, Stockslager et al. (2016) examined the relationship between educator perceptions of their skills and implementation fidelity of the problem-solving model. The Perceptions of RTI Skills Survey, a self-report measure, was utilized to gain educator perceptions of their skills. Participants were administered the tool in two waves, with 68 schools participating in 2008 and 60 schools participating in 2010. Participants included administrators, teachers, and student support staff. Additionally, the Critical Components Checklist, a 3-point scoring rubric to evaluate implementation of critical RTI components, was completed by district-based RTI coaches to examine implementation level and fidelity.

Correlations were calculated to investigate the association between educator perceptions of skill and the fidelity of the problem-solving model. Participants were found to perceive the highest skill level in the area of RTI skills applied to academic content, followed by RTI skills applied to behavior content, which was followed by the final area of data manipulation and technology use skills (Castillo, March, Stockslager et al., 2016). Small to moderate positive correlations were found between total level of

implementation and perception of RTI skills applied to academic and behavior content. High implementation levels correlated with high perceived RTI skills in the academic and behavioral areas. In 2008, a nonsignificant correlation was found between implementation and perceived data display skills; yet in 2010, the correlation increased to the small to moderate level, with higher level of implementation correlating with higher perceived data display skills. The findings indicated a positive correlation between perceived RTI skills and fidelity of data-based problem-solving. Castillo, March, Stockslager et al. (2016) drew the conclusion that the lower perceptions of data display skills as compared to application of RTI skills to academic and behavior content indicate a need for more targeted training of educators in the management of data to build educator beliefs in their data management skills.

In a follow-up study, Castillo, March, Yin Tan et al. (2016) examined the relationship between large-scale professional development in an RTI model and the perceived RTI skills of educators in the areas of academic content, behavior content, and data display skills (e.g. graphing aim lines and trendlines, and various data displays). Leadership teams from 34 pilot RTI elementary schools participated in a 13-day training over a 3-year time span. The training included four key elements of (a) presenting, understanding, and socializing the purpose of implementation; (b) modeling of required skills; (c) opportunities to practice skills; and (d) facilitated collaborative reflection on skill development (Castillo, March, Yin Tan et al., 2016). Additionally, teachers in these schools participated in job-embedded coaching. The Perceptions of RTI Skills Survey was administered to educators of the pilot school as well as 27 comparison schools at the end of Years 1, 2, and 3 to measure their perceived skill levels.

A multi-level, longitudinal model was utilized to investigate the interaction between participating in professional development and perceived skill. Results indicated working in the pilot school and time spent in professional development (i.e., trainings for school-based leadership teams and job-embedded coaching) to significantly predict increases in perceptions of RTI skills applied to academic content and data display as contrasted by the comparison schools when controlling for time, skill level, years of experience, educational attainment, and technical assistance (Castillo, March, Yin Tan et al., 2016). Participation on leadership teams and engagement in the 13-day training led to an increase in perceived RTI skills applied to academics and data display skills, whereas job-embedded coaching led solely to increases in perceptions of RTI skills applied to academics. Researchers hypothesized that the lack of increase in perceived skills in behavior content may have been attributed to the lesser focus of this area within the experiment schools as compared to the control schools. Additionally, the increase in data display skills in only the leadership training group as compared to the job-embedded coaching group was likely due to the focus and time spent within this area during the professional development.

Castillo, March, Yin Tan et al. (2016) concluded that the training likely supported teachers in building efficacy in the practice of RTI skills. Castillo, March, Yin Tan et al. recommended future studies to include observation and skill assessment along with the self-report measures and to specifically examine the effects of coaching practices on RTI skill development. Castillo, March, Yin Tan et al. suggested investigating how specific aspects of professional development, such as approach and quality, affect educator beliefs regarding implementation and the overall level of RTI implementation.

Drivers of Implementation

Several studies have examined the conditions, structures, and supports needed to implement an MTSS with integrity as well as how to best measure and improve implementation fidelity. Charlton et al. (2018) identified factors that aid in facilitating and sustaining an MTSS framework at the state education agency and local education agency levels. Charlton et al. interviewed 27 MTSS project leaders, such as state directors or coordinators for MTSS, from 27 different states. Charlton et al. identified "critical incidents associated with changes in practice" (p. 191) and organized these incidences into three categories: helping, hindering, and wish list.

Helping incidences included cross-disciplinary leadership; access to professional development; consistent language and practice; consultation with external partners; access to funding; connections to existing policies and projects, plans, and evaluations driven by student outcomes; and an efficient data system (Charlton et al., 2018). Cross-disciplinary leadership was endorsed by the highest percentage of leaders at 59% reporting, followed by access to professional development and consistent language and practices at 48% reporting. The areas of competing priorities, philosophies, or practices; ineffective professional development models; personnel turnover; varying levels of readiness; limited funding; inadequate data systems; and inadequate support from state leaders were identified as hindering incidences (Charlton et al., 2018). Competing priorities, philosophies, or practices was the most reported with 63% identifying this as a hindering factor. Wish list factors included better trained personnel and more effective practices (Charlton et al., 2018).

Cross-disciplinary leadership was categorized as teams of individuals from

various backgrounds, such as general education, school administration, and special education, and those from diverse professional affiliations who supported a variety of philosophical positions but were also well-versed in MTSS. Those reporting access to professional development as a helping incident referred to the need for accessible live training, coaching, consultation, and modeling. Consistency in language was referenced as "using the same definitions of common practices, labels for specific procedures, and common language in evaluation for implementation practices, as well as student outcomes" (Charlton et al., 2018, p. 196). Participants identified a common vision and consistent foundational aspects of an MTSS as key. In terms of hindering factors, competing priorities, philosophies, and practices were characterized as departments or organizations competing for resources. Differing philosophies and priorities of those on the MTSS implementation team undermined the progress and was the largest obstacle to implementation (Charlton et al., 2018).

To better understand the implementation process and to support the implementers, the work of Fixsen et al. (2013) and their examination of the science of implementation have been applied to school reform efforts and specifically MTSS. The implementation science of Fixsen et al. stemmed from the investigation of the implementation of evidenced-based programs in education and human services. Fixsen et al. identified drivers of implementation or those factors that are essential in the implementation process and ultimately affect or determine the level of implementation fidelity. Additionally, drivers "promote competence and confidence of those engaged in implementing the initiative" (Bertram et al., 2011, p. 24). The drivers as identified by Fixsen et al. are categorized into three areas: competency drivers, organization drivers, and leadership

drivers.

Competency Drivers

Competency drivers are defined as the resources and mechanisms which are intended to improve the knowledge and skills of those involved in implementation (Fixsen et al., 2013). Competency drivers include performance assessment (i.e., self-assessment tools, observations to monitor performance, and formal evaluations), selection (i.e., selection of staff and roles, readiness tools, and resources), and training and coaching.

MTSS requires multi-disciplinary teams with the selection of a variety of individuals with a wide range of skills and experiences (Freeman et al., 2015). Selection also refers to identifying the readiness, buy-in, and commitment levels of staff to best guide their role in MTSS, whether they are suited for coaching roles or those who require more professional development and strategic targeting (Freeman et al., 2015). Effective training and professional development, including modeling, practice, and specific and direct feedback, are central to the success of an MTSS and the capacity of teachers to implement with integrity (Prasse et al., 2012). Training for implementation and practice of an MTSS generally consist of introductory training, team-based training, coaching, mentoring, and expert training, such as those provided to behavioral specialists, reading specialists, etc. (Freeman et al., 2015). Coaching can consist of the application of knowledge and the ongoing dialogue as schools implement and practice MTSS and continue to build their skills (Freeman et al., 2015). Performance assessment "is used to evaluate the fidelity of implementation utilizing a variety of tools" (Freeman et al., 2015, p. 67).

Kratochwill et al. (2007) provided an overview of the role of professional development in sustaining a tiered system of support and argued that teacher skill is the most essential factor affecting student outcomes. Kratochwill et al. identified a lack of teacher training in implementation of evidenced-based practices and suggested that schools examine previous models to determine what makes professional development effective when implementing a tiered system of support. Kratochwill et al. recommended ongoing support and training, clear expectations with standardized training protocols, and consideration of staff readiness. The authors stressed that professional development should be looked at within the context of schedules, structures for collaboration, curriculum, and instructional leadership in order to most effectively impact student learning outcomes.

Noell et al. (2002) examined the effects of a consultative model for supporting teachers on the integrity of behavioral interventions. The participants included four elementary school teachers working within a tiered system of supports to address disruptive and challenging behaviors. Intervention integrity was assessed through the collection of intervention products, including behavior-monitoring records and the percent of correctly completed intervention steps within 1 day. As implementation became unstable or waivered from the intended implementation, consultative meetings were scheduled to jointly determine how to more effectively implement the intervention.

The study indicated consultative meetings with teachers to result in an improved intervention integrity for one teacher, some improvements in intervention integrity for two teachers, and no improvement in intervention integrity for another teacher (Noell et al., 2002). When a review of data was added to the consultation meetings, an increase in

implementation integrity was observed and remained stable over time for all participants. As consultation meetings faded, implementation integrity became less stable yet continued to remain high. Researchers concluded that integrity of implementation varies by the teacher and it is important to examine the factors contributing to levels of implementation integrity when planning to support teachers. Fidelity of a tiered approach to intervention and the implementation of an MTSS framework is highly influenced by observation feedback, review of products of intervention, and self-assessment (Noell & Gansel, 2006).

Noell et al. (2002) further examined the effect of specific treatment plans in consulting with teachers on intervention integrity. Participants included six elementary schools with 45 teachers participating in the tiered system of support process. The consultation strategies included (a) weekly plan evaluation interviews characterized by brief follow-up meetings between the teacher and the consultant, (b) commitment emphasis characterized by an evaluation of teacher willingness to implement the interventions, and (c) performance feedback characterized by a meeting with the teacher to review products of the intervention and to graph the intervention data. The consultation strategies were implemented over a 3-week period.

Performance feedback was found to increase the implementation integrity above that of the other two strategies, weekly plan evaluation interview and commitment emphasis. Additionally, results supported the effectiveness of performance feedback by establishing a relationship between this strategy and student RTI (Noell et al., 2002).

While observation feedback sessions were found to be the best method for examining fidelity and supporting teachers in intervention integrity, this method can be

highly demanding of resources, including time and personnel, whereas a review of products of intervention tend to be more efficient and readily available (Castillo, March, Yin Tan et al., 2016). Noelle and Gansle (2006) indicated that self-report, though offering insight on the perceptions and the level of understanding, can be biased.

Organizational Drivers

"Organization drivers are the core building blocks for infrastructure and are utilized to monitor, provide feedback, increase transparency, and share information" (Freeman et al., 2015, p. 67). Organizational drivers include systems interventions (i.e., internal and external partnerships, resources, organizational systems, and alignment with external factors), facilitative administration (i.e., resource allocation, infrastructure development, and addressing barriers for implementation), and data systems for problem-solving (i.e., universal screeners, progress monitoring, and diagnostics, and school improvement data). Facilitative administration serves the role of organizing and focusing efforts toward the desired outcome (Freeman et al., 2015). Facilitative administrators play a central role in providing the structures necessary to make meaningful changes in order to implement and practice an MTSS, whereas the application of outcome data within a problem-solving model is the foundation to a tiered system of support (O'Connor & Freeman, 2012).

In Makowski's (2016) research examining the relationship of MTSS implementation levels, infrastructure, and teacher beliefs regarding an MTSS, the researcher found that ensuring the accessibility of data, data systems, and resources to support teams in making data-based decisions facilitates the implementation of MTSS. "Schools rely on data management systems to collect and summarize data for data-

decision making" (Freeman et al, 2015, p. 67). O'Connor and Freeman (2012) found that districts that were successful in implementing a tiered system of support have effectively aligned their staff development and data management, analysis, and problem-solving. O'Connor and Freeman provided a suggested Assessment Framework Matrix, which outlines the purpose and use for various types of assessments and assessment data to guide teams in identifying what type of assessments to utilize based on the type of data they wish to gather and for what purpose.

Leadership Drivers

Leadership drivers include technical (i.e., traditional management and accountability skills, integrated academic/behavior reviews for problem-solving, and formative evaluation with action planning) and adaptive (i.e., navigating complex situations that are not easily identified or solved, resolving conflicting views and opinions, and building consensus). McCook (2006) identified building leadership as critical to the success of an MTSS. The building leader's involvement should include leading and participating in all levels of MTSS implementation and practice (McCook, 2006). The building leader also has a role in supporting ongoing communication; promoting a vision and mission; allocating resources, specifically time for planning and collaboration; and ensuring accessibility of data for problem-solving.

O'Connor and Freeman (2012) identified three main factors associated with district-level leadership that promote a tiered system of support, including the leader's knowledge of the system principles and practices, leadership structures, and organizational frameworks. The authors advise districts to "educate and engage leaders to maximize implementation and sustainability" (O'Connor & Freeman, 2012, p. 300).

Focus of leader development should include a conceptual framework of the tiered system of support; an understanding of basic principles; and a rationale for the systematic, data-based processes and decisions. This knowledge should allow leaders to make decisions in line with the framework. Leadership structures are identified as "routines and processes that exist to guide district decisions" (O'Connor & Freeman, 2012, p. 301). O'Connor and Freeman suggested that districts develop consistent and systematic decision-making routines, including communication pathways and established outcome targets. The organization framework provides descriptions of processes and decision-making structures. Leader roles are to define the system and framework or develop the "roadmap."

Frigmanski (2014) investigated leadership practices in the implementation of a tiered system of support. The first objective of the study was to identify administrator beliefs of a tiered system of support and the associated outcomes within the implementation process. The second objective of the study was to identify challenges experienced by administrators in the tiered system of support implementation process with the goal of identifying the administrator skill set necessary for successful implementation. A mixed methods research design was utilized to gather feedback from administrators through a survey of open- and close-ended questions. Participants included 79 administrators, including principals, curriculum directors, deans of students, and assistant principals of schools in the state of Michigan.

Results indicated that most administrators, with 72.9% strongly in agreeance and 27.1% in agreeance, reported the tiered system of support to improve student outcomes. Administrators identified the following factors as necessary to successfully implement a

tiered system of support: training and staff development in instructional delivery, differentiated instruction, classroom management, core curriculum, data analysis, data-informed instruction, a vision for the initiative, funding, and staffing. Through a thematic analysis, it was found that administrators emphasized the areas of communication, vision, high expectations, data-informed decisions, changing the culture of school, and administrators taking a leadership role in the process as most crucial for successful implementation. Administrators were identified as central to the process in modeling and supporting others to engage in the factors necessary for implementation (Frigmanski, 2014).

In reviewing the research on teacher beliefs, perceptions, and experiences within the implementation and practice of an MTSS, there is further evidence to support the role of competency, organizational, and leadership drivers in the success and sustainability of an MTSS. Freeman et al. (2015) drew attention to the fact that though each of these drivers are critical to MTSS implementation, they cannot work in isolation of one another. Efforts of MTSS should be integrated, which requires ongoing assessment and communication during implementation and practice.

Theoretical Framework of Self-Efficacy and Its Role in Teacher Practices

Bandura (1994) defined self-efficacy as a "cognitive process in which people construct beliefs about their capacity to perform at a given level of attainment" (p. 71). These beliefs impact the future efforts of the individual as well as their persistence and resilience when faced with obstacles (Bandura, 1994). Bandura identified four sources of efficacy: mastery experiences, physiological and emotional states, vicarious experiences, and social persuasion.

Mastery experience is identified as the most powerful influencer of efficacy and is described as the perception that performance has been successful in the past which in turn raises the expectation that it will be successful in the future; however, if success is attributed to happenstance or due to the intervening of another, efficacy may not increase (Goddard et al., 2004). Physiological and emotional states refer to how the individual feels when performing the act, which in turn affects their interpretation of the act and propensity for returning to the act. Vicarious experiences are modeled behaviors; observations of others' skills, actions, and successes; and the degree to which the observer identifies with the model (Goddard et al., 2004). Social persuasion is a motivational talk, performance feedback, and/or general influence from social conversations. Social persuasion has limited power alone but can contribute to positive effects when in combination with one or more of the other three sources (Goddard et al., 2004).

The theory of self-efficacy and sources of efficacy have been applied to teacher performance. When applied to teachers, self-efficacy is represented as a teacher's perception of their ability to impact student outcomes. Research has identified a positive correlation between teacher efficacy and their openness to innovation, enthusiasm for teaching, commitment to teaching, time spent engaging in interactive instruction, providing positive feedback, and overall effort in teaching (Tschannen-Moran & Woolfolk Hoy, 2001). Historically, highly efficacious teachers display a greater desire to discover effective methods of teaching, engage in problem-solving behaviors, and implement a range of instructional techniques and tools (Guskey, 1988). These teachers rate intervention by consultants as more acceptable and are more likely to seek out

instructional tools and feedback and make use of instructional coaches (Guskey, 1988).

Highly efficacious teachers engage in greater positive interactions with students, such that they are less likely to criticize and more likely to provide positive feedback; in turn, increasing student efficacy in academics (Gibson & Dembo, 1984). Additionally, highly efficacious teachers have been found to be more willing to work with students experiencing difficulties, persist in working with these students, and be less likely to refer students to special education (Guskey, 1988).

Dixon et al. (2014) investigated teacher efficacy as a moderator in teacher willingness to differentiate instruction. Dixon et al. defined differentiation as "a teacher responding to learner needs in the way the content is presented, the way the content is learned, and the way students respond to the content with the intention to meet the individual characteristics of learners" (p. 113). Dixon et al. hypothesized that though teachers engage in professional development in differentiation, they may not apply it to practice as a result of a lack of comfort in their own knowledge as well as the fact that the effort required to differentiate may cause educators to feel overwhelmed.

Participants of the study included 41 teachers from two different school districts. The teachers completed a series of questionnaires on efficacy and differentiation. Dixon et al.'s (2014) findings indicated that personal efficacy is positively associated with differentiation and that professional development was positively associated with increases in teacher sense of efficacy. Dixon et al. concluded that teacher efficacy and professional development are central to differentiation.

Poulou et al. (2019) investigated the link between teacher self-efficacy beliefs and their instructional and behavior management practices. Fifty-eight teachers completed the

Teachers' Sense of Efficacy Scale and were observed by independent observers during classroom instruction. The observations were completed utilizing the classroom strategy assessment system, including strategy counts, strategy ratings, and classroom checklists.

Findings indicated positive correlations between teacher self-efficacy levels and their actual instructional and behavior management practices. "Teachers with high efficacy levels utilized instructional practices associated with mastery-oriented approaches and implemented instructional practices that focused on creativity, understanding, and meaningfulness, whereas teachers with lower efficacy displayed performance-oriented approaches" (Poulou et al., 2019, p. 38). However, behavior management practices and efficacy reports did not show a correlation. Teachers reported high efficacy levels in behavior management, yet this was not reflective in their actual practice. Teachers may feel proficient in the classroom management strategies but are not applying them to actual situations (Poulou et al., 2019). This may be due to teachers responding spontaneously to behaviors. Poulou et al. (2019) noted that the participating teachers had not received any coaching or professional development on behavior management strategies. Poulou et al. concluded with recommendations for teacher training and professional development in reflective teaching practices and the application of theory to the classroom.

Additionally, there is support for teacher self-efficacy to be positively correlated to overall teacher effectiveness. Sehgal et al. (2016) collected data from 575 secondary school teachers on self-efficacy levels in the areas of student engagement, instructional strategies, and classroom management and gathered data from 6,020 students on teacher effectiveness. Results indicated teacher self-efficacy to be positively associated with

teacher effectiveness specifically in the domains of facilitating teacher/student interactions and teacher roles in regulating student learning (Sehgal et al., 2016). Sehgal et al. concluded that "if schools want to improve the effectiveness of their teachers, they need to focus on enhancing self-efficacy of their teachers" (p. 512).

Goddard et al. (2004) indicated that research has found few consistent relationships between characteristics of teachers and student achievement, apart from teacher efficacy. Research of teacher efficacy has found (a) student achievement to be significantly and positively correlated to teacher efficacy and (b) teacher efficacy to have a greater effect on student achievement than student SES (Goddard et al., 2004).

Ashton and Webb's (1986) case study identified a correlation among teacher efficacy and student achievement in math and language. Those teachers who scored high on teacher efficacy scales showed an increase in student math performance by 24% and an increase in student language performance by 46%. Additionally, research has shown that students of highly efficacious teachers exhibit high achievement on the Iowa Test of Basic Skills, Canadian Achievement Tests, and Ontario Assessment Instrument Pool, when accounting for race and SES (Ross, 1992).

Teacher efficacy has been cited to explain approximately one half to two thirds of the variation in student performance (Ross, 1992). Goddard et al. (2004), using their measure of teacher efficacy and a multi-level analysis, demonstrated that "a one unit increase in a school's collective teacher efficacy scale score was associated with an 8.62-point average gain in students' mathematics achievement, and an 8.49-point average gain in reading achievement" (p. 501). Collective efficacy was defined as an extension of individual teacher efficacy, inferring that high individual efficacy leads to high collective

efficacy due to the tight knit nature of an elementary school (Goddard et al., 2004). Collective efficacy in this case represents the entire staff's perceptions of their ability to influence student performance.

Teacher beliefs that they can significantly affect student outcomes are influenced by several factors. According to research on factors impacting efficacy, environmental and experiential factors are the highest positive correlates. Following is a discussion of the factors influencing teacher efficacy in terms of Bandura's (1994) four sources: mastery experience, physiological and emotional states, vicarious experiences, and social persuasion.

Mastery experiences come in the form of successfully performing tasks, such as instruction, and experiencing a desired outcome, such as student achievement or growth. Student achievement is attributed to the instruction, hence increasing teacher self-efficacy beliefs related to their instruction. This can be observed or experienced as reciprocal determinism (Bandura, 1994) in that there exists a pattern–teachers experience mastery and success, which in turn increases their efficacy and vice versa. Physiological and emotional states represent teacher experiences while engaging in a certain task. Did the experience result in feelings of anxiety, in turn decreasing efficacy; or did the experience result in gratification, in turn increasing efficacy? Vicarious experiences are those in which a teacher observes an individual with whom they closely associate engaging in an activity with success. The more strongly the teacher associates with the individual performing the task, the more likely this experience will affect their self-efficacy beliefs (Goddard et al., 2004). The effectiveness of mastery experience, physiological and emotional states, and vicarious experiences in influencing self-efficacy beliefs is

increased by role play activities, such as micro teaching experiences and specific, targeted feedback (Goddard et al., 2004).

Social persuasion, though limited in power when individually experienced, can be powerful in combination with one of the other three influencing factors. Social persuasion may take the form of professional development, policy, and leader attempts for buy-in, as well as "chatter" among teachers (Goddard et al., 2004). Professional development is most successful when ongoing, as opposed to one-time in-services; otherwise, results tend to be fleeting (Ross, 1992).

Wilcox and Lawson's (2018) case study of 143 educators found that teacher agency positively impacted efficacy beliefs. The study utilized focus groups within 18 schools. The focus group data were analyzed and coded for themes. The study sought to collect information regarding teacher beliefs surrounding Race to the Top policy innovations and the relationship among teacher agency, engagement, efficacy, and resilience when faced with the changes during implementation of innovation. Overall, findings indicated agency to be a determinant factor in how teachers experience and engage in innovation or change as well as their efficacy levels for engaging in the implementation of innovation. At the center of teacher agency was collaboration, trust in professional judgement, and voice and choice. Ultimately, educators commonly expressed the importance of how initiatives or change are approached with greater efficacy with those who allowed for input and collegiality.

Research has shown support for the effect of organizational factors on teacher efficacy levels. Positive school climate encompassing collaboration, shared decision-making, positive feedback, and open-mindedness with a safe space to experiment are

positively correlated with teacher efficacy levels, whereas the sense of community within the school has been identified as the single greatest predictor of teacher efficacy (Lee et al., 1991). Sehgal et al. (2016) indicated leadership and collaboration to play a central role in teacher efficacy and overall teacher effectiveness. The greater support from leadership and the more opportunities to collaborate with colleagues led to a greater sense of efficacy. Sehgal et al. hypothesized the relationship between collaboration and self-efficacy reports to be reflective of vicarious experiences and social persuasion as identified by Bandura (1994).

Additional factors influencing teacher efficacy include adequate resources, flexibility in instruction, and student conduct. The degree to which availability of resources affects teacher efficacy is somewhat questioned, as Chester and Beaudin (1996) found the accessibility of resources not to have a significant impact on teacher efficacy. Chester and Beaudin proposed that this finding was likely a reflection of "decision overload" (p. 252), as teachers struggle with how best to implement and utilize resources absent the appropriate training or support.

Gonzalez et al. (2017) utilized a mixed methods research design to examine factors impacting teacher efficacy with 145 teachers. Survey and focus group data were collected with educators at elementary, middle, and high school levels. Findings indicated lack of time, modifications to curriculum as a result of efforts to meet policy and increased pressures of accountability, and increased expectation to meet the needs of all students to be related to increases in job-related stress and school leadership and educational decision-making structures to act as moderators to self-efficacy. One teacher within the study indicated, "teachers need to have a feeling of self-worth and importance

and that starts with building leadership. The principal drives it by letting teachers know they are a valued team player" (Gonzalez et al., 2017, p. 525).

Leader practices of seeking input from teachers and validating effort enhance efficacy, while leaders who question the abilities of their teachers have the opposite effect. Overall, the variety of demands placed on teachers has caused increased stress levels which have impacted efficacy beliefs; however, sound structures to meet student needs and leadership support have moderated the effects of job-related stress on efficacy beliefs.

Administrators play a central role in supporting the development and enhancement of teacher efficacy. Leaders who model expectations, provide rewards contingent upon performance, and instill a common sense of purpose have seen an increase in teacher efficacy levels (Hipp, 1996). Additionally, administrators who value and encourage innovation and are responsive to teacher concerns tend to lead teachers with higher efficacy levels (Hoy & Sabo, 1998). Principal feedback has been shown to affect teacher efficacy, with the nature of delivery and focus of feedback playing an important role. The most constructive feedback are those focusing on the task requirements and factors under the teacher's control (Hoy & Sabo, 1998).

Mehdinezhad and Mansouri (2016) investigated the relationship between school principal leadership behaviors and teacher sense of self-efficacy. The Teachers' Sense of Efficacy Scale by Tschannen-Moran and Woolfolk Hoy as well as the Leadership Multifactor Questionnaire by Bass and Avolio were administered to 254 teachers. The correlations among the reports of efficacy and leadership indicated a significant positive relationship between principal leadership behaviors and teacher self-efficacy beliefs.

Additionally, specific leadership characteristics that increased teacher sense of efficacy were those related to transformational leadership (i.e., leaders who inspire others toward a common goal characterized as enthusiastic, committed, and passionate) as well as idealized influence (i.e., leaders who emphasize trust, respect, and role modeling).

Bellibas and Liu (2017) utilized surveys at the school and teacher levels to examine the relationship between principal instructional leadership and teacher efficacy in classroom management, instruction, and student engagement. Results provided additional support for a positive correlation between leadership practices and behavior and teacher efficacy within all three areas examined. Additionally, researchers found teacher factors, including gender, experience, tenure status, and engagement in professional development, to have a significant impact on teacher efficacy levels. Bellibas and Liu highlighted the importance of leaders practicing instructional leadership in strengthening the practices of their teachers. Instructional leadership is characterized as the ability to develop goals and a vision for the school and purposefully communicate the direction of the school; supervise, evaluate, and monitor curriculum and instruction; and build a positive school climate.

Research shows that teacher efficacy is a strong determinant for implementation fidelity and overall student outcomes, if not the strongest determinant. Multiple influencers of teacher efficacy have been identified. For schools to appropriately support teacher efficacy, they must understand the experience of the teacher and what factors teachers believe support them in implementation efforts.

Summary

Researchers have questioned the effectiveness of large-scale school-based

implementation of MTSS without the heavy involvement and guidance from researchers and expert groups, including the level of implementation fidelity. Without involvement of researchers and expert groups, schools must make efforts to provide the necessary support for educators to implement the model to fidelity (Makowski, 2016). Little evidence is available regarding the relationship between consultation efforts of supplying guidance documents and suggested activities, as many states do, and outcomes associated with educators, such as educator beliefs and experiences (Makowski, 2016). Barriers to implementation and sustainability have included generalizability (Forman & Crystal, 2015), insufficient consultation post-training, unsupportive leadership, and policies that are counterproductive to innovation.

Makowski (2016) suggested that mandates to follow certain procedures and the knowledge that efforts will be evaluated may impact teachers to minimally embrace the change process and affect their beliefs toward the process. Castillo, March, Yin Tan et al. (2016) found educators who are required to adapt to policy mandates engage in the minimum amount of change necessary to adhere to procedures, rather than the systems change required for effective implementation. Ultimately, these teachers may be disengaged from the problem-solving process resulting in more negative beliefs about data-based decision-making. Sugai and Horner (2009) suggested that the implementation of an MTSS problem-solving approach would be more supported and successful if additional data on the processes influencing change and teacher beliefs were collected and considered when attempting to improve education decision-making.

While previous research has identified structures for supporting teachers within an MTSS model, little research has been conducted to investigate teacher perceptions and

experiences within an MTSS and what supports have the greatest impact in the eyes of the teacher. While knowledge exists on the factors that schools and systems need to be successful in the implementation of an MTSS, there continues to be a need in understanding teacher experiences and how to best support them in the implementation and practice of an MTSS. This study identifies the role that implementation drivers play in supporting teacher efficacy in the implementation and practice of an MTSS.

Chapter 3: Methodology

Research Methodology

The purpose of this research was to identify drivers within a school that affect teacher efficacy levels in the implementation and practice of an MTSS. A mixed methods explanatory design was utilized to understand the relationship between teacher self-reported efficacy regarding the implementation and practice of an MTSS and factors or drivers within the school setting. Quantitative data were collected via surveys to measure teacher self-reported efficacy levels in the practice of an MTSS. Additionally, previously collected implementation level data via the FAM were gathered from each school. Following the collection of survey data, qualitative data were collected within focus groups to further elaborate on and explain the relationships between drivers and teacher efficacy levels and better understand the overall experience of teachers within an MTSS. A thematic analysis was performed of the qualitative data to determine common response patterns. The data sources were integrated to identify factors within the school system indicated to affect teacher efficacy beliefs in their ability to implement and practice an MTSS.

The following research questions were utilized to drive the type of data collection and methodology implemented. The study answers the following research questions:

1. What drivers exist that impact teacher self-efficacy beliefs in the implementation and practice of an MTSS?

2. What identifiable themes exist in teacher beliefs, perceptions, and experiences surrounding the implementation and practice of an MTSS?

Research Design

A case study design was utilized within a quantitative and qualitative framework to understand the experience of teachers within an MTSS and identify the role of implementation drivers and their impact on teacher efficacy beliefs in the implementation and practice of an MTSS. Implementation levels of each school were collected. Implementation levels were previously determined by school MTSS implementation teams using the FAM-S instrument (Appendix A) provided by the state. This information speaks to the level of implementation of each of the participating schools by providing an overall percentage based on the responses from 41 rubric formatted questions as well as percentage of implementation for each critical area.

The quantitative data collection was completed utilizing Barnes and Burchard's (2011) Multi-Tiered Instruction Self-Efficacy Scale (MTISES; Appendix B). The scale was sent to all teachers within the studied schools and provided a baseline understanding of teacher self-reported efficacy levels in the implementation and practice of an MTSS within the participating schools. The self-reported efficacy levels were examined in relation to the school's implementation level to comment on whether a relationship exists between the descriptive statistic of school implementation level and teacher efficacy levels.

To expand on the understanding of teacher self-report efficacy levels in relation to the implementation and practice of an MTSS, qualitative data were gathered via focus groups. Focus groups were provided a series of questions to stimulate discussion (Appendix C). The focus groups were recorded and transcribed using *Rev* transcription software. The transcriptions were then analyzed for themes in order to understand drivers

impacting teacher efficacy levels in the implementation and practice of an MTSS. The quantitative data and qualitative data were integrated to understand the relationship between drivers and teacher efficacy levels in the implementation and practice of an MTSS and to better understand the perceptions and experiences of teachers within an MTSS.

Research Instrumentation

Previously collected school implementation levels were gathered. The FAM-S data for each school indicates the percent of implementation of MTSS. The FAM-S was established by NCDPI to be utilized by schools to measure school-level progress towards full implementation of an MTSS. The purpose of the instrument is to assist school personnel in identifying and prioritizing steps of implementation. The instrument is a revision of the SAM, which was originally modeled after the validated SAM in Florida. In 2016, a diverse group of educational professionals validated the use in North Carolina. The instrument was revised in 2018 and again in 2019 by the NC MTSS consortium and content experts to include essential features of NC MTSS.

The FAM-S contains 41 items within a rubric format organized into the six critical components of leadership, building capacity/infrastructure for implementation, communication and collaboration, data-based problem-solving, three-tiered instruction/intervention model, and data evaluation. It is intended to be completed by the school-level MTSS team and facilitated by an outsider, typically a member of the district MTSS team. The facilitator guides the team through discussion around the items and answers questions that may be raised from the group. The ratings result in an overall percentage of implementation for the 41 items, percentage of implementation for each of

the critical components, and an item analysis. This information is summarized by the state on web-based spreadsheets and graphs for each school. The tool is recommended for annual completion between April and June. The school's most recent FAM-S data were collected. All FAM-S data were completed in the spring of 2019 for each of the participating schools.

Permission was gained to utilize Barnes and Burchard's (2011) MTISES. The survey was administered via a web-based survey site, Survey Monkey. The survey was distributed along with the invitation letter (Appendix D) and the informed consent (Appendix E). Building-level administrators were asked to forward the information to all instructional faculty. The survey was previously administered to 10 school faculty not part of the study for accessibility and understanding prior to administration to the test population.

The survey contains 28 scale items and takes approximately 10 minutes to complete. Participants are asked to rate needs for additional support within specific areas of MTSS practices with 1 being a high level of support needed and 5 being ready to assist others. The survey is intended to measure teacher self-reported efficacy levels in the practice of a multi-tiered instructional (MTI) system. The creators of the survey defined an MTI model as a system in which "educators design instruction with well-integrated content, goals, evidenced-based instructional practices and assessment practices for best benefit to most learners in the general education setting" (Barnes & Burchard, 2011, p. 23). The instrument was developed to identify areas of support needed for schools implementing RTI or MTI through the measure of teacher self-efficacy. The survey items load on six core constructs of MTI practices including collaborating with teams to use

universal design for teaching and assessing learners, engaging and assessing English-language learner students, using evidenced-based strategies, collaborating with other professionals, using data for decision-making, and implementing intervention.

In addition, participants were asked to participate in focus groups consisting of four to six teachers. Following the administration and collection of the MTISES, an email soliciting participation for the focus group was sent via the building administrator. The study had intended to follow the email soliciting participation with a demographic survey. The demographic survey would have assisted in purposeful sampling and, if needed, randomized sampling within that purposeful sampling Demographic targets included preferred years of experience of 4 or more to attempt to capture the responses of instructional staff who have witnessed MTSS from its origin and range in taught grade level to provide the opportunity to have a range of grades represented in the focus group to gain a variety of perspectives. However, due to the limited volunteers for participation, a demographic survey and randomization were not needed.

The focus group was presented with a set of five discussion prompts. The discussion was recorded and coded for key words and themes in relation to the research questions and theoretical framework. The recording and transcription were performed using the *Rev* application, a transcription service.

Content Validity

In the development of the MTISES, researchers followed DeVellis's (2003) 8-step scale development process of (a) decide what to measure, (b) generate an item pool, (c) format the measurement, (d) have item pool reviewed by experts, (e) consider validation items, (f) administer items to a developmental sample, (g) evaluate items and

scale quality, and (h) determine optimal scale length. The MTISES is an updated version of the Response to Intervention Self-Efficacy Scale.

The original scale was reviewed for relevance to MTI practices by three focus groups of area experts. The first two focus groups shared feedback at the item and whole scale level as well as feedback regarding the time required to complete the survey. The third focus group consisted of experts in psychometrics. This expert group mapped the items of constructs, evaluated wording and response options, critiqued validation, and required defense of items. Additionally, the survey was piloted with 184 educators using web-based survey software.

To measure internal consistency and reliability, Cronbach's alpha was utilized. Cronbach's alpha reliability coefficients range from 0 to 1, with higher values indicating greater internal consistency. Alpha values for the survey range from .789 to .925, indicating very good to excellent internal consistency.

The Lawshe content validity process was utilized to determine the validity of the focus group prompts. An expert panel of three professionals in the areas of MTSS specific to practices, integration of academic and behavior systems, and professional development were supplied a list of the focus group items. The focus group items intended to represent the theoretical constructs of implementation drivers as they related to teacher practices in an MTSS. Independent of one another, each of the experts were asked to rate each item as "essential," "useful," or "not necessary."

The ratings from each expert were pooled and the numbers indicating "essential," "useful," and "not necessary" were determined. Any item that is rated as "essential" by more than two of the experts was deemed as having some validity. Content validity ratio

(CVR) of CVR = (N$_e$ - N/2)/(N/2), where Ne is the number of experts identifying an item as "essential" and N is the total number of experts, was calculated for each item. When all experts agree an item to be "essential," the CVR is 1.00. A CVR of .78 or higher is considered evidence of good content validity. If an item did not meet .78, it was deleted from the focus group items or revised until it met .78. All items on the scale received a CVR of 1.0 as originally written or updated to meet the .78 threshold. The overall content validity index (CVI) was calculated by taking the mean of the CVR values of all items meeting .78. A CVI exceeding .80 is preferred. The CVI of all the focus group discussion items was calculated to be 1.0.

Research Participants

The study included teachers from four different elementary schools of neighboring districts in the state of North Carolina. The schools chosen were identified through purposeful sampling, as they were chosen based on location and participation in the NCDPI MTSS implementation initiative cohorts. Those schools included in a cohort have received training, support, and resources from the NCDPI MTSS initiative. This includes working with an MTSS regional consultant. The districts include medium to large districts with an approximate average student population of 320 to 530 and 25 to 35 teachers.

The participants for the focus groups were intended to be chosen through purposeful sampling, utilizing the criterion of (a) 4 or more years of experience and (b) teacher in one of the grade levels of 1 through 5. The first criterion was chosen to best reflect experience of implementation from start to full implementation as NCDPI began supporting implementation in 2016. The second criterion was chosen to have a group

with diverse perspectives given their varying grade level; however, due to the limited number of volunteers from each school, the focus groups were devised all on a voluntary basis.

Data Collection

Quantitative data were collected through an online survey. The survey was administered along with the invitation letter and consent to participate via a forwarded email from the building principal on my behalf. Participants were asked to respond within 1 week. After 1 week, those who had not returned the survey received a reminder email sent by the building administrator forwarded from me.

Following the collection of quantitative survey data, qualitative data were collected through five predetermined questions with focus groups from each elementary school. The focus groups were presented questions and asked to hold a discussion around the questions. The discussion was recorded for later analysis.

Data Analysis

The survey data were analyzed using a one-way ANOVA to determine whether any statistical differences exist between the total efficacy levels reported for each school as measured by the teacher self-report efficacy scale. The school represents the independent variable, and the mean total efficacy represents the dependent variable. Prior to the analysis, the assumption of homogeneity was checked using the Lavene test at $p = .118$. Assumption was assumed; therefore, the statistics were indicated to be valid. A Tukey post hoc analysis was then performed to determine where a statistical significance exists. The Tukey post hoc was set at a .05 significance level. Descriptive statistics of implementation level and teacher and student factors were utilized to discuss the

relationship or patterns between these descriptive factors and efficacy levels.

The focus group discussion was recorded in its entirety and coded for keywords, phrases, and themes. Themes were organized into frequency charts, and responses were examined in light of implementation drivers and teacher efficacy theoretical frameworks in a thematic analysis.

Summary

The purpose of the study was twofold in that it sought to better understand the experience of a teacher in the implementation and practice of an MTSS as well as identify drivers that may support or inhibit teacher perceived ability to implement and practice behaviors characteristic of an MTSS. Themes from prior research and the current research questions were utilized to guide research instrumentation and methodology. The data were collected in two stages: the collection of quantitative data through surveys measuring teacher efficacy of an MTSS, followed by the collection of qualitative data through focus groups to expand on the experience of teachers in an MTSS and understand the role of implementation drivers on teacher efficacy levels. The data then were integrated to provide recommendations to schools implementing an MTSS on how to best support teachers in an MTSS.

Chapter 4: Results

Introduction

This study identified implementation drivers that impact teacher beliefs in their

ability to implement practices associated with an MTSS. MTSS has come as the answer

to increased pressures on schools to close achievement gaps and provide an equal

opportunity for all students to reach proficiency standards. MTSS is characterized by a

whole school improvement model that utilizes a problem-solving methodology to identify

barriers to learning through data analysis at the school, group, and individual levels. This

model has required teachers to practice skills of data analysis, matching of needs to

interventions, intervention implementation and monitoring, and collaboration with

various stakeholders and specialists.

The study utilized four elementary schools to examine the relationship between

implementation levels and teacher efficacy levels, followed by further examination of

factors impacting teacher efficacy beliefs and experience within an MTSS through a

thematic analysis of focus group interviews. Teacher efficacy has been shown to be the

highest determinant of student achievement and is associated with teacher willingness to

tackle difficult tasks, display resilience in the face of obstacles, hold the belief that they

can influence student learning, and seek out instructional coaching; all essential

characteristics of an effective MTSS model.

The study provides insight into the experiences of teachers within an MTSS to

inform schools on how to better support teachers in the implementation and practice of an

MTSS, within the framework of implementation drivers. Implementation drivers are

identified as factors that impact the success and sustainability of initiatives, such as an

MTSS.

Participant Demographics

The study included instructional staff from four elementary schools in neighboring districts within the state of North Carolina. All schools participating in the study have been a part of a state MTSS training cohort and have completed the 2019 NCDPI supplied assessment of MTSS. Table 1 outlines the demographics and descriptive data of each of the participating schools. The descriptive data includes MTSS implementation level, average class size, percent of free and reduced lunch among the student population, teacher experience, and teacher retention rates as indicated by teacher turnover at 1 year.

Table 1

Descriptive Statistics of Participating Schools

School	Data	Number	Percentage
A	Implementation level		82.1
	Free and reduced lunch		30.9
	Average class size	19	
	Teacher experience	0-3	12
		4-10	39
		10+	50
	Turnover rate	11	
B	Implementation level		90.92
	Free and reduced lunch		44.3
	Average class size	15	
	Teacher experience	0-3	5
		4-10	42
		10+	53
	Turnover rate	5	
C	Implementation level		34.96
	Free and reduced lunch		42.3
	Average class size	18	
	Teacher experience	0-3	3
		4-10	24
		10+	74
	Turnover rate	8	
D	Implementation level		73.98
	Free and reduced lunch		64.9
	Average class size	19	
	Teacher experience	0-3	6
		4-10	31
		10+	64
	Turnover rate	8	

School A had 15 staff complete the efficacy survey, School B six staff, School C

four staff, and School D 16 staff. Focus group participants included five from School A,

five from School B, one from School C, and six from School D.

Survey Data Analysis

MTSS efficacy scales were administered to teachers of the four participating

schools to examine how implementation levels and other descriptive factors relate to

teacher efficacy beliefs surrounding MTSS and to answer the research question of what

drivers exists that impact teacher self-efficacy beliefs in the implementation and practice

of an MTSS. A one-way ANOVA was completed with the school as the independent

variable and efficacy level as the dependent variable. The one-way ANOVA was run to

determine whether significant differences in efficacy levels were observed between the

schools. Table 2 summarizes the descriptive statistics of each school, including the

number, mean, and standard deviation on the measure of efficacy in MTSS.

Table 2

Means and Standard Deviations on the Measure of Efficacy in MTSS as a Function of the

School

		Self-efficacy with MTSS score	
School	*n*	*M*	*SD*
A	14	96.79	13.52
B	6	76.33	24.889
C	4	78.00	8.446
D	16	97.25	11.311

School D, with an implementation level of 73.98%, had the greatest mean

efficacy score (M = 97.25, SD = 11.311), followed by School A with an implementation

level of 82.1% (M = 96.79, SD = 13.52), School C with an implementation level of

34.96% (M = 78, SD = 8.446), and School B with an implementation level of 76.33%,

having the lowest mean efficacy score but greatest variation in scores (M = 76.33, SD =

24.889). Patterns in efficacy levels as it relates to school factors such as implementation
level, free and reduced lunch population, teacher retention, class size, and teacher
experience were not observed. These patterns will be discussed further within the
discussion section.

Table 3 examines whether a significant difference is present among school
efficacy levels with significance set at less than .05 (p < .05).

Table 3

One-Way ANOVA of Teacher Self-Efficacy Scores by School

Source	*df*	*SS*	*MS*	*F*	*p*
Between groups	3	3018.285	1006.095	4.762	.007
Within groups	36	7606.690	211.297		
Total	39	10624.975			

There was a significant effect of the schools on self-efficacy scores at the p < .05
level for the four schools [F (3, 36) = 4.762, p = .007]. Because a statistically significant
result was found for schools on self-efficacy scores, a post hoc test was completed. The
Tukey post hoc test was chosen as it is designed to compare each of the schools to one
another. Table 4 displays the multiple comparisons of the schools.

Table 4

Multiple Comparisons with Tukey Honestly Significant Difference

School	Comparison school	MD	p
D	B	20.917	.024
	A	.464	1.000
	C	19.25	.102
B	D	-20.917	.024
	A	-20.452	.032
	C	-1.667	.998
A	D	-.464	1.00
	B	20.452	.032
	C	18.786	.122
C	D	-19.250	.102
	B	1.667	.998
	A	-18.786	.122

Post hoc comparisons using the Tukey Honestly Significant Difference test

indicated that the mean score for School D (M = 97.25, SD = 11.311) was significantly

different from School B (M = 76.33, SD = 24.889). Additionally, School B (M = 76.33,

SD = 24.889) was significantly different from School A (M = 96.79, SD = 13.520). No

other significant differences between schools were found. School D and School A

efficacy ratings were significantly greater than School B.

Taken together, these results suggest that efficacy levels differ depending on the

school condition. However, descriptive factors of implementation level, teacher

experience levels, free and reduced lunch population, and student-to-teacher ratios do not

reveal any identifiable patterns in terms of their impact on teacher efficacy levels with an

MTSS. These factors are explored further in the discussion section. Focus groups were

developed to further investigate implementation drivers and their role in the experience of

instructional staff with an MTSS.

Thematic Analysis

Focus groups were held with each of the four schools. Focus group participants were asked a series five questions regarding their role within an MTSS, experience in implementing and practicing an MTSS, and factors impacting their ability to engage in an MTSS. The focus group questions sought to answer the research questions of "What drivers exist that impact teacher self-efficacy beliefs in the implementation and practice of an MTSS"; and "What identifiable themes exist in teacher beliefs, perceptions, and experiences surrounding the implementation and practice of an MTSS?"

Question 1 asked the focus group participants what their role is within an MTSS. Table 5 outlines the frequency of themes found in participant responses.

Table 5

Frequency Distribution Table of Themes for Focus Group Question 1: Roles

Themes	Number of responses	Percentage of responses
Teaming	19	28
Problem-solving	11	16
Programming	11	16
Data	6	9
Documentation	4	6
Instruction	4	6
Training	4	6
Communication	3	4
School and family	2	3
Resources	1	1
Advocate	1	1

Question 1 examined instructional staff perceived roles within an MTSS. The largest theme that emerged was that of teaming. Participants spoke of the various teams they participated in, such as student support teams, grade-level teams, and problem-solving teams. They highlighted how they worked with multi-disciplinary teams to

problem solve, analyze data, and program for student needs. Participants identified

working with counselors, instructional coaches, grade-level or content area teammates,

school psychologists, special educators, and administration; and as one participant

shared, "they call on lots of experts." One participant reported, "we work as a group to

help one another problem solve, come up with interventions, and determine next steps in

the process." Problem-solving and programming were identified as the second most

mentioned themes. Participants identified various processes they participated in, such as

planning interventions, determining student needs, and identifying resources. Typically,

these meetings mentioned were reported to be held approximately every 6 weeks

consistently among the focus group participants.

Outside of the activities that were connected to teaming, participants spoke of

individual activities they typically participate in within the MTSS framework, including

collecting data, instructing or intervening with students, documenting interventions,

participating in trainings, communicating with colleagues, acting as a liaison between

families and the school, identifying resources, and advocating for student needs.

Question 2 asked participants about factors they consider having impacted their

ability to fulfill their role(s) with an MTSS model. Table 6 outlines the common themes

found within the responses.

Table 6

Frequency Distribution Table of Themes for Focus Group Question 2: Factors Impacting

Fulfillment of Role

Themes	Number of responses	Percentage of responses
Mindset	9	15
Student factors	8	13
Documentation	8	13
Staffing	7	11
Time	7	11
Processes	5	8
Teaming	4	6
Data availability	2	3
Expert support	2	3
Successes	2	3
PLC	1	1
Training	1	1
Flexibility	1	1
Communication	1	1
Materials	1	1

Question 2 sought to understand what factors instructional staff viewed as

impacting their ability to fulfill said roles from Question 1. Both positive and negative

influencers were brought forward by the participants. The most mentioned influencer was

the idea of mindset shift. Participants recognized the ideas that for an MTSS to be

implemented and practiced, a mindset shift was required. The participants spoke of

having to move from the practice of intuition to data analysis. Participants in each focus

group identified the themes of a common vision and buy-in to first be established for an

MTSS to take off, be successful, and be sustainable. Commonly, participants spoke of

"doing what's best for kids" as the forefront of all their work within an MTSS. One

participant reported, "with change can come a lot of headaches but no one complained,

we just did what was best for kids and all decisions were made with that in mind."

The second most influencing factors were identified as student factors and documentation. Student factors, including student transiency, low exposure to preacademic skills prior to kindergarten, high and variable needs as identified as 2 or more years below grade level, and complicated needs, were indicated to impact instructional staff ability to meet diverse needs and make the progress they felt needed to be made. They indicated difficulty with juggling the variable needs in each class. Some reported finding it helpful to divide up ability groups among content or grade-level team members to make the needs more manageable.

Student factors were reported to be confounded by other influencing factors of staffing, documentation, and time. Participants reported the need for more staff to meet the diverse needs. One participant reported, "I'm stretched thin to meet their needs with interventions. It is challenging when we don't have any assistance or help with 26 kids and to work with groups of kids." Interventionists and classroom aids were identified as being helpful in relieving the difficulties in managing student groups but that there are not enough of these individuals within the school to assist. Title I interventionists and special educators were identified as being helpful resources who often pushed into classrooms to support intervention.

Participants identified the need for consistent documentation but reported documentation to be cumbersome and to not always match what was happening in terms of intervention. A focus group identified a digital database for student paperwork to have been helpful in overcoming paperwork hurdles. When discussing time, participants spoke to the positives and identified the dedicated time to planning, PLCs, student study teams, and collaboration to be central in making an MTSS successful. Additionally, participants

spoke to time in terms of the master schedule and having protected intervention time to provide the instruction students need. A participant shared, "filling out paperwork, keeping up with interventions, and managing 25 students with variable needs can be overwhelming and takes a lot of time."

Processes were referred to by participants as how students are identified for intervention, what data are used, how teams are made and meeting schedules, documentation, and cycles of review. Well-outlined processes were positive influencers, whereas those that were rushed or "just for the sake of going through them" were identified as less effective. Some identified difficulty keeping up with all the processes within an MTSS. Within this, teaming was identified as a time to come together with others to problem solve and rely on one another to interpret data, develop plans, and review progress. Participants made references to the availability of experts on a multi-disciplinary team, such as instructional or behavioral coaches who supported them in executing intervention plans, providing resources, and interpreting data. The accessibility and ease of use and interpretation were reported by some to positively influence their ability to engage in an MTSS. Participants referenced online resources for graphing data and comparing students to themselves as well as other students within their group. A participant reported, "I love the graphs the digital pieces offer; I can compare progress and identify outliers."

Successes, in terms of experiencing and building upon success, were mentioned as positive influencers. "Success from the process itself has increased teacher buy-in and it has shown to be what is best for students," reported one participant, which was echoed by others. Participants reported that the more success they saw from others or with their

own participation in an MTSS, the more they bought into the system and continued to grow in their confidence and willingness to try new things.

Last, mention was made of PLCs, training, flexibility, communication, and resources. These themes did not take forefront in the focus groups but were mentioned by one participant or in one instance when the question was posed. PLCs were specifically called out as a dedicated time to meet with grade or content area teams. Training was mentioned in terms of formal, district-wide training and smaller staff meeting refreshers. Consistent and ongoing communication from district and building administration was identified as helpful in knowing the goals and direction. Resources were identified as a need in this instance with a need for greater access to digital resources or those that provide flexibility for variable needs, groups, and lengths of intervention. Finally, flexibility was identified as the ability for teachers to utilize professional judgement and make professional calls within the structure of an MTSS. A participant commented, "it is great to have the ability to say this one is doing great, let's move on to this tier or this screening, and could adjust our groups as needed."

Question 3 asked participants how leadership has impacted their ability to fulfill their role(s) with an MTSS model. Table 7 outlines the common themes found within the responses.

Table 7

Frequency Distribution Table of Themes for Focus Group Question 3: Leadership

Themes	Number of responses	Percentage of responses
Shared leadership	8	19
Clear expectations	6	16
Responsiveness	5	13
Accessibility	5	13
Cohesive vision	5	13
Safe environment	4	11
Training	2	5
Resources	2	5
Changes	2	5
Instructional coaching	1	2
Flexibility	1	2

When asked about the aspects of leadership that have impacted instructional staff abilities to fulfill roles in an MTSS, several factors were identified as influential across focus groups. Most themes revolved around the environment that administration has created. The most common theme was that of shared leadership. As in previous focus group questions, participants spoke to a multi-disciplinary team of experts, the concept of teaming, and shared responsibility in the process. This model of shared leadership was reported by a participant to "take the stress off of the individual," referencing everyone to be involved in the process in some capacity. Closely following was the idea of clear expectations from leadership, where everyone is "on the same page" and understands their responsibility within the process. Specific practices highlighted by participants to be included in clear expectations were standard treatment protocols and universal screenings.

Specific characteristics of administration that were highlighted included responsiveness and accessibility. Participants reported that administrators who were

available, present, part of the process, heard their needs, and advocated for needs were viewed as most supportive in instructional staff abilities to fulfill roles in an MTSS. One participant indicated, "they listen to what we need and make it happen."

Additional themes of common vision and safe environment emerged from the discussion. Participants across focus groups consistently referred to a common goal and belief of "making decisions that are best for students." This idea was strong throughout the conversation and was echoed by several participants. They spoke of every action and decision they make within an MTSS to be grounded in what is best for students. One participant was quoted stating, "we all aim and push for this, and our administrator is our shepherd and we are the flock all moving toward this common goal." Closely following in frequency was the theme of a safe environment. Participants highlighted how administration had created a place where they felt everyone was in it together; there was no "caught you"; it was okay to make mistakes, learn from them, and try again; and that mistakes at times were encouraged. The team would pull together and talk through obstacles or difficulties and pivot.

Of lesser frequency were the themes of training, resources, change, instructional coaching, and flexibility. These were not direct characteristics of administration but were referred to in terms of how administration had made these factors available, were responsible for implementing them, or were part of the factor. Availability of training and resources was highlighted by two participants who identified leadership who made time for and planned purposeful training to be beneficial to their ability to fulfill roles in an MTSS. Change was referenced as an inhibitor to instructional staff abilities, as participants identified frequent changes in administration to pose difficulty with building

a common vision and consistent expectations and processes. Instructional coaches were identified as another layer of building leadership who provided guidance and resources to teaching staff. Last, flexibility was referenced as building leadership providing the flexibility for teachers to use their judgment and act quickly in the best interest of students. Specifically referenced was teacher ability to move students in and out of intervention groupings.

Question 4 asked participants how competency factors, such as training, reflection, and coaching, have impacted their ability to fulfill their role(s) with an MTSS model. Table 8 outlines the common themes found within the responses.

Table 8

Frequency Distribution Table of Themes for Focus Group Question 4: Competency

Themes	Number of responses	Percentage of responses
Coaching	11	22
Multidisciplinary teaming	11	22
Formal professional development	11	22
Colleague conversation	8	16
PLC	5	10
Staff meetings	2	4

When asked about the influence of competency factors, participants identified coaching and multi-disciplinary themes with the highest frequency. Instructional coaches were reported to help teachers to "slow down and help reflect on the process," in turn improving their understanding of what to focus on, how to interpret and apply data, and determine appropriate interventions. Multi-disciplinary teams provided "expert advice" and a chance for teachers to collaborate with the "masters" of certain areas, such as behavioral coaches, school psychologists, or reading interventionists.

Formal professional development was identified as a positive driver, as were less

formal opportunities of colleague conversation, PLCs, and staff meetings. Formal

professional development included mention of onboarding training for new staff,

regularly scheduled professional development opportunities with sessions specific to an

MTSS. Participants made reference to how the district has made MTSS a priority and that

this is reflected in the training and onboarding that is provided. This training provided the

foundation for best practice, clear guidelines and expectations, and consistency. Two

participants commented on how in the beginning of implementation there was a heavier

focus on formal training and "being told what to do and how to do it"; but as time went

on, the model has shifted to less formal opportunities and "tweaking current practices

through coaching, trial and error, and conversations with colleagues."

Several participants referred to conversations with colleagues, such as informal

passing in the halls or connecting to problem solve on a daily basis, to be more influential

or as influential as formal structures. Asking questions, bouncing ideas back and forth,

and relying on the strengths of colleagues were highlighted to be practices that have

enabled them to grow their MTSS skills and to have supported them in the process. Staff

meetings were also mentioned and were identified as a place for regular updates on

processes and procedures. Teachers found these helpful ways to keep them up to date on

the most current information.

Question 5 asked participants how organizational factors such as processes and

structures have impacted their ability to fulfill their role(s) within an MTSS model. Table

9 outlines the common themes found within the responses.

Table 9

Frequency Distribution Table of Themes for Focus Group Question 5: Organization

Themes	Number of responses	Percentage of responses
Time	6	20
Standard protocols	6	20
Resources	5	17
School schedule	4	13
Documentation	4	13
Data systems	2	6
PLC	2	6

Time and standard protocols were the most frequently mentioned themes when participants were asked to identify organizational impactors. Time referred to the time for common planning, collaboration, and meetings. Protected meeting times were identified as "nonnegotiable" by two focus group participants. With lesser frequency but specifically highlighted by participants was the theme of PLCs. Participants identified the protected time for PLCs to meet and share ideas to be key to their continued growth with an MTSS.

Standard protocols was referred to as consistent responses to similar needs. Participants reported that having a clear idea of what to provide students based on needs or the appropriate response to student needs has saved time in problem-solving and trial and error. With the standard treatment protocol, participants have also found resources to be more available. A participant highlighted the need for protocols and intervention resources that "strike a balance of scripted and fluidity," indicating that scripted programs save time and energy but teachers also need flexibility to use their judgement in how they use these programs and what additional resources they may pull in. Participants consistently identified the idea of a balance of protocol and autonomy.

The school's master schedule was highlighted as key to the success of an MTSS. Participants identified that time carved out in the schedule for small groups and intervention has allowed them to meet more student needs and has increased the availability of specialists to push into intervention times. With specified times for Grades K-2 intervention and 3-5 intervention, staff were better able to utilize interventionists and take a team approach to meeting student needs.

Documentation procedures were highlighted as an area that has improved. While past practices of paper forms were identified as cumbersome and not always reflective of what was actually occurring, newer documentation procedures of digital databases have increased useability and access. One group shared that they now utilize Google Drive to organize and store all their MTSS documentation, including individual student plans. This has provided a central location and has enabled teachers easy access and the ability to keep up on documentation. Additionally, relevant data systems that are easy to use and interpret were identified as a supporter of instructional staff work. Several participants made reference to graphing and the ability to compare students within a group to determine the effectiveness of the intervention as well as student progress.

Summary

The quantitative and qualitative results of the study provide insight into the following research questions:

1. What drivers exist that impact teacher self-efficacy beliefs in the implementation and practice of an MTSS?

2. What identifiable themes exist in teacher beliefs, perceptions, and experiences surrounding the implementation and practice of an MTSS?

The results uncovered consistent themes and drivers. Participants spoke to the positives associated with an MTSS and how it has resulted in their growth as an instructor. Most spoke of how MTSS can cause a mindset shift of how teachers approach student needs and the increased culture of teaming, collaboration, and systematic practices in instruction. Common themes found in all questions asked of the focus groups included trust, accessibility and participation of administration within the process, multidisciplinary teaming, common vision, time, and the balance of protocol and autonomy. Drivers of leadership, competency, and organization were equally represented by the participants and seemed to be interwoven in how each impacted one another or lent itself to support the development of aspects of another.

The following chapter further frames the results in light of previous research and discusses the implications of this study.

Chapter 5: Discussion

Overview of the Study

The purpose of this study was to understand instructional staff experiences in the implementation and practice of an MTSS. Teacher efficacy levels and school descriptive factors were explored to determine whether any relationship or pattern in response exists as related to school factors. Additionally, instructional staff were interviewed in focus groups to better understand how implementation drivers in the categories of leadership, competency, and organization have impacted their perceived ability to carry out duties or roles associated with an MTSS. MTSS has come about in response to increased pressures from mandates requiring student growth and achievement regardless of student demographic factors. MTSS provides a systematic approach to identifying and addressing barriers to learning. NCDPI (n.d.) defined MTSS as " a multi-tiered framework which promotes school improvement through engaging, research-based academic and behavioral practices, using data-driven problem-solving to maximize growth for all students" (MTSS Overview for School Teams, slide 3). Under an MTSS, teacher responsibilities have expanded to include data analysis, data-based decision-making, implementation and management of interventions, and collaboration with multidisciplinary teams. This study sought to answer the following questions:

1. What drivers exist that impact teacher self-efficacy beliefs in the implementation and practice of an MTSS?

2. What identifiable themes exist in teacher beliefs, perceptions, and experiences surrounding the implementation and practice of an MTSS?

According to previous research, teachers have experienced challenges of

inadequate training, insufficient time, and lack of support (Regan et al., 2015). This study provides schools an opportunity to view an MTSS from the lens of instructional staff and produces recommendations for schools in supporting staff through the implementation and practice of an MTSS. Specific attention is given to implementation drivers as defined by previous implementation science to include leadership, competency, and organization and how these factors impact teacher efficacy. Teacher efficacy was the focus of the research as previous studies have found that teacher beliefs that they can successfully perform tasks increase their motivation and perceived ability to perform similar tasks in the future. Teachers with high efficacy are also more open to innovation and feedback and to persevere in the face of obstacles. Prior studies have collectively found teacher efficacy to be a key determinant of student success.

This study utilized a mixed methods explanatory design with four neighboring elementary schools in North Carolina. Each of the schools had previously participated in an NCDPI training cohort and had completed the FAM-S self-assessment of an MTSS instrument. The FAM-S measures six critical components of an MTSS, including leadership, three-tiered instruction/intervention model, communication and collaboration, data evaluation, data-based problem-solving, and building capacity/infrastructure for implementation. These factors are identified as necessary for effective implementation and sustainability. Quantitative data were collected through previously collected MTSS implementation utilizing the FAM-S tool and teacher efficacy ratings. A one-way ANOVA was performed to determine whether a significant difference exists between the participating schools' self-reported efficacy levels. Descriptive statistics of student population factors, teacher population factors, class size, and implementation level were

reviewed to determine whether any patterns exist in relation to reported efficacy levels.

Qualitative data were collected through focus group discussions. Focus group members were asked how implementation drivers of leadership, competency, and organization have impacted their ability to effectively implement and practice an MTSS. Leadership was representative of behaviors or practices that had influenced how MTSS was implemented and practiced. Competency included factors such as training, support, feedback, and coaching. Organizational drivers included factors such as time, protocols, teaming structures, and resources. The focus group discussions and responses were analyzed for themes to understand how these drivers have been perceived to impact their abilities within an MTSS as well as their overall perceptions and experiences within an MTSS framework.

Discussion Findings

Utilizing a one-way ANOVA, significant differences were found between the schools for efficacy levels. A post hoc Tukey Honestly Significant Difference test was performed revealing significant differences between two sets of schools. School A and School D experienced significantly higher reported efficacy levels than School B. No other significant differences of reported efficacy were found. School D experienced the highest reported efficacy levels, followed by School A, with School B experiencing the lowest reported efficacy levels. When examining the efficacy levels in light of descriptive statistics of each school, including implementation levels as indicated by the FAM-S, free and reduced lunch population, average class size, teacher experience by years, and teacher turnover rate, no pattern was observed between these factors and efficacy levels.

Although School B had the highest implementation level at 90.92%, it had the

lowest efficacy rating at 76.33. While this pattern was not expected, rather the opposite may have been expected, there may be several reasons that could account for this. The assumption that the higher the implementation level, the higher the efficacy level lies in the idea that schools that are more proficient in an MTSS would have greater confidence and belief in their skills. Makowski (2016) found implementation level to be predictive of educator efficacy beliefs, with higher implementation the more accepting teachers were of the belief that all students could achieve; yet this relationship was not significant and only focused on teacher efficacy in the area of student achievement beliefs. Another study, Castillo, March, Stockslager et al. (2016), found a positive correlation between implementation level and perceived RTI skills. However, the correlation was indicated to not be significant when measured in 2008 during early implementation. In 2010, during later implementation, a small to moderate correlation was found between implementation level and perceived RTI skills.

In the current study, a possible factor impacting the pattern of efficacy and implementation may be that schools with higher implementation have greater insight into areas of continued growth or need. Schools with lower implementation levels may not have the knowledge or experience base with an MTSS to identify additional areas for improvement. The implementation level of School B at 90.92% is higher than all other participating schools, with School A at 82.1%, School C at 34.96%, and School D at 73.98%. As in the Castillo, March, Stockslager et al. (2016) study, it is also possible that the more time spent practicing an MTSS, the greater a correlation between efficacy and implementation. Without further delving into the specifics of each school's FAM-S ratings and following up on how these factors have impacted efficacy, it is difficult to

hypothesize why a pattern of implementation level and efficacy was not clearly observed. This study directly worked with instructional staff. There is no specific information as to who completed the FAM-S instrument at each of the participating schools and whether teacher input or a teacher representative was part of that process.

A thematic analysis was performed on the focus group interviews. The responses were reviewed for themes in the areas of implementation drivers of leadership, competency, and organization and their impact on teacher perceived roles and responsibilities. Additionally, there was an opportunity for teachers to openly discuss their experiences in an MTSS, which was reviewed for common themes in experience.

Leadership was identified as setting the foundation for all MTSS work. Effective leaders were those who developed a common, cohesive vision from the start of the initiative. The communication has clear expectations and is purposeful. O'Connor and Freeman's (2012) research on school implementation indicated that the leader's role is to develop the roadmap for implementation and practice.

Participants highlighted a pivotal moment of a mindset shift initiated by leadership and experienced by staff. The mindset that all students can learn is one identified by NCDPI as necessary to initiating MTSS implementation. Themes of leadership-driven mindset shift align with the research of Heavner (2015) highlighting the importance of transformational leadership in cultivating and supporting mindset shifts through encouragement and motivation. Leaders who are motivating and committed to the shift and vision were expressed as central to the movement toward an MTSS.

Leadership was intertwined in all other driver discussions and was communicated to be instrumental in setting the stage for other drivers to take place and be effective.

Participants highlighted an environment and culture created by leadership that communicates, "we are all in this together" and "always has students' best interests at the forefront of all decisions" to stimulate trust, collaboration, problem-solving, and safety. Mehdinezhad and Mansouri's (2016) study on factors impacting teacher efficacy found transformational leaders who inspire toward a common goal and are enthusiastic, committed, and passionate and emphasize trust, respect, and model expected behaviors are most successful in increasing efficacy.

Participants also expressed the most effective and supportive leader in an MTSS to be one who is part of the process or in the "trenches" with staff to problem solve, provide resources, and support needs. One participant was quoted describing leadership as "they listen and make it happen." Participants used responsiveness, accessible, available, and present to describe effective leaders in an MTSS. One participant shared the following statement that strongly represented the theme when discussing leadership and stated, " the administrator is our shepherd and we are the flock all moving toward a common goal." Within this idea, participants identified shared leadership as part of this practice with shared responsibility of all staff for all students and the responsibility falling on all rather than a few.

Following the importance of leadership were the implementation drivers of competency and organization. Coaching was referenced as an important aspect of practicing an MTSS within the area of competency and seemed an extension of leadership within an MTSS. Instructional staff across participating schools discussed the role and support of their instructional coach. Instructional coaches were identified to provide a place to reflect and process. Instructional staff continually highlighted the idea

of reflection, trial and error, and problem-solving as part of this coaching process that had supported them in their role within an MTSS. Cook et al. (2015), when examining coaching models to increase teacher efficacy, found performance feedback, modeling of practices, and engaging in the process to increase teacher confidence. Similarly, the ideas of teaming, expert advice, and a multidisciplinary team approach were key in how instructional staff felt about their ability to carry out an MTSS.

Formal professional development, such as onboarding; staff meetings; and dedicated, ongoing training were mentioned by participants as effective. Specifically highlighted when discussing formal professional development was the idea that leadership had prioritized MTSS in their training and put it at the forefront of all planned training. It spoke to the mission of the school and district that they are committed to an MTSS. This was a consistent theme across focus groups. It seemed as though the content was helpful but more importantly the message it conveyed from leadership. In discussion, participants identified less formal means of growth to be most effective; highlighted were colleague conversations, PLCs, and coaching. These were identified as more influential and again highlighted an aspect of culture in which problem-solving and teaming are primary.

Focus group participants focused on aspects of organizational drivers that increased efficiency and consistency. As most identified having varied roles and feeling stretched thin, organizational factors had relieved them of this feeling. These organizational factors included standard protocols, accessible documentation, staffing, and time. Time was consistently discussed in all focus groups. Participants tied time back to leadership, indicating leadership who prioritize an MTSS make time for collaboration

and professional learning and develop a master schedule that supports an MTSS. The master schedule was indicated to be a critical piece in supporting MTSS efforts. Instructional staff expressed that dedicated time for intervention and ability grouping within the master schedule allowed them to utilize resources of staff more effectively. Participants referenced the ability of support staff/classroom aides, interventionists, and special educators to support during these times allowed teachers to meet the needs of a larger number of students.

Standard protocols increased consistent responses and saved time in the problem-solving process. Teachers felt these standard protocols saved them time and energy in identifying needs, matching interventions to needs, and implementing effective interventions. Participants across schools also expressed the need for balance within the standard protocols, in that protocols increased efficiency and took out additional steps in the problem-solving process, yet they also desired flexibility within the protocols. Flexibility was described as the ability to shift students from various levels based on performance, adjust the level of intervention for groups, or pull in additional instructional pieces when using a scripted program. This is consistent with Wilcox and Lawson's (2018) findings that teacher agency is a determinant of how teachers experience change and implementation of innovation with collaboration, professional judgement, and voice and choice as central.

Documentation was an organizational factor brought up by each focus group and seems to have experienced an evolution. Groups spoke about prior documentation that was cumbersome and did not match what was actually happening. More recently, they have found digital databases and tools to be helpful in increasing accessibility. Digital

databases are more easily accessed and provide graphing tools that allow easy interpretation of intervention data. The documentation needs to feel relevant and useful to the teacher to increase their efficacy in the process. Overall, results of this study are consistent with others in identifying factors that impact efficacy with an MTSS, as Isbell and Szabo's (2014) study identified lack of consistency in practices to have been the greatest obstacle in implementing and practicing an MTSS.

Throughout the focus groups, participants indicated positive experiences with an MTSS. All groups shared that an MTSS has increased a culture of "all in this together" and increased problem-solving. They have been able to access and work with staff of all disciplines, where they share ideas and learn from one another. Overall, they felt an MTSS lessened pressures on individual teachers and created an environment that supported all staff for all students. It appears from their responses that the change in culture was both a prerequisite and a product of an MTSS. This finding is consistent with previous research findings of Prasse et al. (2012), Reedy and Lacireno-Paquet (2015), and Heavner (2015), indicating that mindset shifts of shared ownership, collaboration, and all staff for all students to be key in the implementation and sustainability of an MTSS. Leadership stimulated a mindset shift, followed by developing a vision where all decisions align with that vision.

As the MTSS continued to grow, teachers continued to buy in to the mindset shift and vision as a result of their experienced successes, observed successes, the way the process made them feel, and support from leadership. A participant stated, "successes from the process itself have increased buy-in and have shown us that it [MTSS] is what is best for students." Participants collectively shared that the more successes they

experienced, the more confidence they felt when trying new things. Teachers have experienced efficacy influencers of mastery in that their performance has been successful and, in turn, that becomes the expectation in the future. In addition, the effect of physiological and emotional states increased their willingness to engage in innovative practices.

Limitations

Several limitations are present within this study. The findings of this study lack generalizability, as only four schools within the state of North Carolina participated in the study. Additionally, the sample size was small, and participation was impacted by the COVID-19 pandemic. There were a total of 41 survey responses, and 17 focus group members participated in the study which represents a very small population in comparison to all schools in North Carolina or within the United States. During data collection, statewide school closures were issued due to the COVID-19 pandemic. Educators were in the midst of planning within a pandemic and for shutdown. The timing of the data collection was not ideal and certainly not a priority for participants.

Additionally, those who participated were identified through self-selection. The surveys were distributed to all instructional staff within the four participating schools, and all efforts were made to obtain as many participants as possible. The focus group participants were originally intended to be chosen through volunteers and random selection among those volunteers. However, given the low initial number of volunteers in the midst of a pandemic, random selection was not necessary. Those who self-selected may have been instructional staff with a greater interest or investment in MTSS, which may have impacted the results and not have been completely representative of all

instructional staff experiences within an MTSS.

The quantitative part of the study utilizes previously collected FAM-S data from each participating school. Information regarding who had completed the self-assessment instrument at each school was not identified. With that said, the group that completed the FAM-S instrument may have not included teachers. If teachers were not included, the self-rated implementation level may not reflect where teachers believe the school to be in implementation. The comparison between the descriptive statistic of implementation level, as indicated by the FAM-S, and the teacher efficacy rating for MTSS may have not represented the same group of participants. Generally, school MTSS teams complete the FAM-S instrument annually. The members of the MTSS team are those knowledgeable about MTSS characteristics and who have had ongoing participation in their school's MTSS process; these members may include administration, instructional coach, counselor, interventionist, school psychologist, and possibly teacher representatives.

Finally, I am an administrator in a middle school and oversee the MTSS within that school and had previously been an MTSS district facilitator. Despite all efforts to minimize any biases within the study, it is possible given my background and experiences that biases could have impacted the research.

Implications

This study expands the knowledge base of how to support teacher efficacy beliefs in the implementation and practice of an MTSS. Cook et al. (2015) and Nunn and Jantz (2009) highlighted the importance of teacher efficacy beliefs in a successful implementation of an MTSS. Efficacy beliefs are found to be central to the shifting of beliefs, fidelity of practices, and sustainability. In order for schools to increase their

success with an MTSS, it is important for schools to understand the factors that impact

teacher perceived abilities to implement and practice skills association with an MTSS.

This study provides school systems and administrators insight into the experience of

teachers within an MTSS and what factors they have found to be critical in their

successes in an MTSS. The findings of this study may be utilized by schools to evaluate

their systems to support an MTSS.

Schools should consider assessing their MTSS implementation and progress in

light of implementation drivers and the areas specifically identified by teachers as critical

to their successes in an MTSS. The drivers include leadership, competency, and

organization. Within each of the driver areas, specific factors were highlighted by all

focus groups as necessary to their perceived ability to effectively implement and sustain

an MTSS. Transformational leadership, categorized as motivating, involved in the

process, clear vision, accessible, purposeful communication, and decision-making that

reflects the prioritization of an MTSS, should be included under leadership. Coaching,

feedback, PLCs, professional development that prioritizes MTSS, and multidisciplinary

teaming should be included under competency. Data systems, allocation of time,

allocation of staff, and standard protocols should be included under organizational. These

areas should be assessed annually and include ratings from teachers to determine MTSS

growth.

Several areas were brought to the forefront by participants as most impactful in

their ability to implement and practice an MTSS. Transformational leadership and culture

were both identified as a prerequisite and an outcome of an MTSS that impacted their

ability to be successful and to continue to grow in an MTSS. Leaders should focus on

building capacity as a transformational leader and how that ultimately impacts culture and can build a culture of trust, innovation, and problem-solving that is necessary for supporting teacher efficacy in an MTSS. Transformational leadership was first defined as a "leadership approach, in which leaders inspire, energize, and intellectually stimulate their followers" (Bass, 1990, p. 19).

Characteristics of transformational leadership were reported to set the stage for staff to feel comfortable taking risks. Transformational leadership engages staff in change through increasing their motivation, performance, or morality. In this study, staff looked to the leader as a model for the vision, priorities, and actions and relied on the feedback and accessibility to guide them. They valued leader participation in the process and role on the problem-solving team. A number of participants referred to leaders "who were in the trenches" to be the most effective in gaining momentum with staff in an MTSS. "Transformational leaders are collaborative, goal-oriented, innovative, and committed to building leadership capacity" (Bell, 2015, p. 11). A recommendation from this study is that building leaders reflect on their role and participation in an MTSS. Additionally, as will be discussed, districts and the state should look for opportunities to build their leader capacities in transformational leadership and MTSS.

The findings may also prove useful to state implementation efforts in how they continue to assess MTSS progress within the state and examine the critical factors identified for MTSS in light of these findings. State assessments of an MTSS may want to consider evolving as schools move from the stage of implementation to practice. Updates to the FAM-S may include organization by drivers of leadership, competency, and organization. This could include the recategorization of the already present critical

components as well as some additions as recommended above for school-level assessment. If the success and sustainability of an MTSS hinge on teacher buy-in, efficacy, and experiences within an MTSS, it is important for tools measuring MTSS to reflect what teachers have identified as most influential to their success of an MTSS. This could also be viewed as a subset of the FAM-S instrument, in which a teacher rating tool is developed to gauge the continued impact and growth of MTSS practices. The state could utilize these ratings to provide support to schools based on strengths and needs as well as develop additional, ongoing training for schools.

Training should include support for leaders in building their capacity in MTSS. Leaders were identified as paramount in MTSS implementation and practice. They were most effective when an active part of the process and when demonstrating their commitment to MTSS through all decisions and structures. This requires that leaders be extremely knowledgeable in MTSS in order to know how to support teams, allocate resources, and develop structures to support the implementation and sustainability of an MTSS. I refer back to the strong statement of one participant that the "leader is the shepherd and the staff is the flock."

An additional area state efforts may want to focus on is the recruiting and sustaining of instructional coach positions. Teacher participants identified on-the-job training and coaching and less formal professional development of collegial conversations and collaboration with multidisciplinary teams to be most effective in developing and refining their MTSS skills. Instructional coaching was reported as an integral part of the informal training and experiences. Instructional coaches also act as change agents in inspiring, motivating, and providing feedback to staff. This is consistent

with findings of Kurz et al. (2017), indicating coaches to be dynamic and play multiple roles, including driving and sustaining reform. Overall, instructional coaches build the capacity of staff, increasing efficacy beliefs and expected successes. With the identification of instructional coaches as playing an important role in MTSS in the eyes of teachers, another modification to the FAM-S instrument may reflect the role of an instructional coach within an MTSS.

Recommendations for Future Research

There are many factors on the FAM-S that can be more deeply examined in how they relate to teacher efficacy. The current study only considered total implementation level. Future studies may want to examine how each of the six critical components of MTSS, leadership, three-tiered instruction/intervention model, communication and collaboration, data evaluation, data-based problem-solving, and building capacity/infrastructure for implementation as measured by the FAM-S have impacted the experience of teachers in an MTSS. Future research could focus on one specific area, such as leadership, as this area was most strongly highlighted as a key driver, and how that area has impacted the experience of teachers in an MTSS. Additionally, a study could utilize purposeful sampling to identify schools with low to high ratings on the six critical components to do a more thorough comparison. An additional component that could be explored is how efficacy ratings change over time. Previous research has shown efficacy to grow as implementation progresses and the correlation between implementation levels and efficacy to increase.

Additionally, a future study may consider examining how teachers rate individually and/or collectively on each item of the MTSS efficacy rating scales to

determine specific patterns in efficacy levels as related to certain behaviors. The patterns of efficacy could then be examined in relation to patterns of implementation as indicated on each of the FAM-S critical components.

This study highlighted the importance of transformational leadership and the required mindset shift to increase teacher efficacy in an MTSS. Future studies may consider examining how leaders have been successful in gaining momentum in a mindset shift, obstacles encountered, and strategies to gain buy-in toward an initiative.

Instructional coaches were consistently brought up among the focus groups within this study. Future research could specifically focus on the role of instructional coaches with an MTSS to examine whether additional or new skills are needed and utilized for instructional coaches while engaging in an MTSS. This may redefine or expand the definition of the instructional coach role and identify training opportunities.

Summary

This study identified how drivers of leadership, competency, and organization have impacted teacher perceived abilities to implement and practice an MTSS. Additionally, the study explored the experiences of teachers within an MTSS to provide schools feedback on how best to support staff in the implementation and practice of an MTSS. A key finding of this study was the role of leadership in setting the stage for an MTSS. Teachers expressed how they looked to the actions and decisions of building and district leadership to communicate the priorities and vision for the school. Leadership was indicated to set the stage for a critical part of MTSS implementation, a mindset shift. This mindset shift geared teachers up for implementation and for a culture of "all teachers for all students," collaboration, data-based decision-making, and problem-solving. The

mindset shift represents that all students can learn through the problem-solving and collaboration of all.

The culture of the school was highlighted and was both a prerequisite to implementation as well as a positive outcome. Leadership built practices and structures that supported the culture of collaboration and problem-solving. As teachers experienced successes with an MTSS, the culture that had increased successes of an MTSS continued to build. Leadership set the stage for trust and a safe environment to engage in the initiative and continued to support the culture of trial and error and growth. Leaders who actively participated in the process and were "in the trenches" with staff were most effective in supporting teachers. These leaders displayed commitment and investment in the process, where all decisions made were in light of an MTSS.

Teaming was also central to teacher experiences with MTSS. Teachers consistently reported teaming to take the pressure off of one individual in meeting the needs of many students and shifting responsibility to the whole team. Teaming stimulated the culture of "all in this together" and provided access to multi-disciplinary experts, coaching, and data-based problem-solving. Teachers found the teaming, collaboration, and conversations with colleagues to be more important to them in building their skills in an MTSS than formal professional development.

Decisions made by leadership that impacted organizational factors were highlighted as communicating leadership support for the initiative and MTSS as priority. Organizational factors that increased efficiency and took some of the more cumbersome processes off of the teacher were identified as supporting teacher practice in an MTSS. Organizational factors were not at the forefront when identifying the supporting drivers

but did play a role in how teachers experienced the process and more importantly spoke to teachers on what the priorities were within their building.

The drivers of leadership, competency, and organization did not act in isolation. Each one was intertwined with the most obvious connection to be how leadership supports the other drivers of competency and organization in how they make decisions and set up these structures to communicate the importance of an MTSS.

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Appendix A

Facilitated Assessment of Multi-Tier System of Support-School Level (FAM-S)

Rationale

It is the vision of North Carolina Department of Public Instruction (NC DPI) that every NC Pre K-12 public education system implements and sustains all components of a Multi-Tiered System of Support (MTSS) to ensure college and career readiness for all students. The NC FAM-S measures school-level implementation of NC MTSS. The purpose of administration and its resulting data is to help school and district-level personnel identify and prioritize implementation steps. The instrument contains 41 items in 6 domains (Leadership, Building Capacity/Infrastructure for Implementation, Communication and Collaboration, Data-based Problem-solving, Three-tiered Instruction/Intervention Model, and Data-Evaluation).

History

Most items in the NC FAM-S were originally developed and validated in Florida as part of the Self-Assessment of MTSS (SAM). North Carolina began using the items in 2016 after a diverse group of educational professionals examined each item to determine its accuracy and validity for use in North Carolina. In 2018, stakeholders from the NC MTSS Consortium as well as a group of identified content experts from across the state again reviewed and revised the instrument to include essential features from both NC MTSS professional development and Positive Behavior Intervention and Support. This review panel included institute of higher education professionals as well as district and school level practitioners. The revised instrument, released in 2019, provides the field with an integrated tool which assesses the breadth and depth of academic, behavior and social-emotional supports.

Recommended Use

The FAM-S is intended to be used within a **facilitated administration** setting which would allow the district personnel to review evidence to support the school team's proposed score. NC DPI recommends an annual facilitated administration between April and June. The facilitated administration should be led by the district MTSS/PBIS Coordinator and/or another member of the District MTSS Team. The instrument can be used at any time as an implementation self-report and guide for school leadership teams.

Administration Guidelines

Prior to Administration

• Schedule 1.5 - 2 hours for facilitation of the tool with the school team.

• Provide the school team with a copy of the FAM-S.

• Instruct the school leadership team that EACH member should review the item descriptors independently and provide a personal response to each item. During the Facilitated Administration (including all school leadership team members & designated facilitator from the District MTSS Team)

• Each item will be reviewed, and the school team members will come to a consensus on a response for each item.

• The facilitator will assist the team in determining appropriate evidence for each item.

• The facilitator will enter each response and its supporting evidence in the FAM-S scoring

system.

• Total scores for the facilitated administration will produce a percentage for each critical component, as well as an overall percentage.

• The facilitator will assist the team in using the data to plan the school's next steps for MTSS implementation.

After the Facilitated Administration

• The District MTSS Team will examine data from each administration site to identify district-wide trends and patterns.

• The District MTSS Team will use the data to inform district-wide professional development and coaching.

NC FAM-S 2.2019

MULTI-TIERED SYSTEM OF SUPPORT
Integrated Academic & Behavior Systems
NC Department of Public Instruction

Leadership

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
1. The principal is actively involved in and facilitates **MTSS implementation.**	The principal does not actively support MTSS.	The principal is actively involved in MTSS implementation by communicating an urgent desire to implement MTSS, participating in professional development on MTSS, and establishing an MTSS vision.	The principal actively supports the leadership team and staff to build capacity for implementation.	The principal actively supports data-based problem-solving use at the school.

Related Notes

Responsibilities for facilitating **MTSS implementation** are not limited to, but can include:
   ● Promoting a school-wide vision and mission for MTSS implementation, including the development and dissemination of a school-wide implementation plan that outlines attendance, behavior, social-emotional, and academic areas
   ● Allocating resources (e.g., time, personnel, materials) for planning and delivery of evidence-based assessment, instruction and intervention
   ● Providing ongoing professional development and coaching support to school staff
   ● Collecting and analyzing data on MTSS implementation efforts

Examples of Supporting Evidence

- School Improvement Plan shows evidence of MTSS systems and practices
- Agendas and meeting rosters showing evidences of principal participation
- PD plan(s) with MTSS systems and practices showing principal involvement
- Staff/student handbook with evidence of MTSS practices

NC FAM-S 2.2019 1

MULTI-TIERED SYSTEM OF SUPPORT
Integrated Academic & Behavior Systems
NC Department of Public Instruction

Leadership

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
2. A **leadership team** is established that includes 5-7 members, has **cross disciplinary representation**, and is responsible for facilitating **MTSS implementation**.	No leadership team with explicit responsibility for leading MTSS implementation exists.	A leadership team exists that includes cross-disciplinary representation.	The leadership team has explicit expectations for facilitating MTSS implementation.	The leadership team members have the beliefs, knowledge, and skills to lead implementation efforts.

Related Notes

At the school level, a school-based **leadership team** should guide implementation of an MTSS. This may take place within the structure of the School Improvement Team or may be a subset of this team that is charged with implementation planning. Teams may differ based on several factors, but a connection should always be made in order to facilitate effective implementation. A long-term plan for implementation of MTSS should be developed by the school-based leadership team. This may be a part of the school improvement plan or separate. If it is separate, there should be clear alignment of the MTSS implementation plan with the overall goals and action steps within the school improvement plan.

Cross-disciplinary representation may include administration, teachers, content area experts, student support personnel, instructional support personnel, individuals with expertise in behavior and social/emotional skills, and student and family representation when appropriate.

Responsibilities for facilitating **MTSS implementation** are not limited to but can include the following:
- Promoting a school-wide vision and mission for MTSS implementation, including the development and dissemination of a school-wide implementation plan
- Allocating resources (e.g., time, personnel, materials) for the planning and delivery of evidence-based assessment, instruction and intervention
- Providing ongoing professional development and coaching support to school staff
- Collecting and analyzing data on MTSS implementation efforts

- Leadership team roster and roles
- Leadership team meeting agendas/minutes
- Leadership team's participation in professional learning opportunities

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MULTI-TIERED SYSTEM OF SUPPORT
Integrated Academic & Behavior Systems
NC Department of Public Instruction

Leadership

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2)	Optimizing (3)
3. A **linked teaming structure** exists that facilitates the implementation of a multi tiered system of support for attendance, behavior, social emotional, and academic support.	No linked teaming structure exists.	A linked teaming structure exists that demonstrates 1 of the following:	A linked teaming structure exists that demonstrates 2-3 of the following:	A linked teaming structure exists that demonstrates all of the following:
		1) Teams meet regularly and have regular meeting formats/agendas, minutes, and defined meeting roles. 2) Team members have expertise in the area being problem solved, administrative authority, knowledge of the student(s), and knowledge of the school operations. 3) Team members include family, community, and multi-agency support when appropriate. 4) District or school contact person(s) with access to external support agencies and resources for planning and implementing non-school-based interventions (e.g., intensive mental health) when appropriate.		

Related Notes

A **linked teaming structure** refers to the teams in a school charged with implementation of MTSS. Multiple teams at a school may be charged with implementation of MTSS (e.g., school leadership team, school improvement team, grade-level teams). A formal communication protocol between teams and overlapping membership across teams exists.

Examples of Supporting Evidence

- Team rosters and roles
- Teams' meeting agendas/minutes
- Formal communication plan
- School organizational chart
- Meeting role descriptions

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MULTI-TIERED SYSTEM OF SUPPORT
Integrated Academic & Behavior Systems
NC Department of Public Instruction

Leadership

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
4. The leadership team ensures staff are actively engaged in ongoing **professional development and coaching** necessary to support MTSS implementation.	The leadership team does not have a needs-based plan to provide staff with professional development or coaching to support MTSS implementation.	A needs assessment is conducted to gather information on beliefs, knowledge, and skills to develop a professional development plan to support MTSS implementation.	A professional development plan is created based on the needs assessment and used to engage staff in ongoing professional development and coaching.	Ongoing professional development activities are informed by data collected on the outcomes of professional development and coaching for continuous improvement.

Related Notes

Professional development and coaching are ongoing activities that develop the capacity of staff to implement MTSS. Professional development ideally includes a coaching component, so the two terms are used together throughout this tool. Efforts should be aligned with results of school needs assessments and modified based on the results of professional learning.

"Coaching" is defined as technical assistance and support provide to school staff to improve implementation of components of an MTSS model, including co-planning, modeling/demonstration, co-facilitation, and guided practice with high quality feedback.

"Coaching does NOT necessarily have to be completed by one person. Coaching can be provided by a number of different individuals depending upon their specializations, skill sets, as well as the particulars of the context of activities. It is unreasonable to assume that just one individual, or one coach, will have all the skills required to effectively provide coaching for MTSS in every given situation that may arise."
March, A.L. and Gaunt, B.T. (2013). Systems Coaching: A model for building capacity.

Examples of Supporting Evidence

- Professional development and coaching plan
- Professional development roster(s)
- Needs assessment
- Professional development and coaching evaluation data
- Coaching follow-up meeting notes
- Staff handbook

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MULTI-TIERED SYSTEM OF SUPPORT
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Leadership

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
5. A **plan for MTSS implementation** is developed and aligned with or part of the school improvement plan.	No plan for MTSS implementation exists.	The leadership team is engaging district, family, and community partners to identify stakeholder needs, as well as resources for and barriers to MTSS implementation.	As part of the school improvement planning process, a plan is developed that specifies MTSS implementation.	A plan for MTSS implementation is updated, as needed based on student outcome and implementation fidelity data, as part of the school improvement planning process.

Related Notes

At the school level, a school-based **leadership team** should guide implementation of an MTSS. This may take place within the structure of the School Improvement Team or may be a subset of this team that is charged with implementation planning. Teams may differ based on several factors, but a connection should always be made in order to facilitate effective implementation. A long-term plan for implementation of MTSS should be developed by the school-based leadership team. This may be a part of the school improvement plan or separate. If it is separate, there should be clear alignment of the MTSS implementation plan with the overall goals and action steps within the school improvement plan.

A **plan for MTSS implementation** should address the following components (at a minimum):
- Communication and collaboration strategies
- Capacity building targets and activities
- Data to monitor implementation fidelity of the critical elements of MTSS
- Evaluation of outcomes

Examples of Supporting Evidence

- MTSS implementation/strategic plan with alignment to or as a part of the School Improvement Plan
- Leadership team meeting agenda/minutes
- Implementation fidelity data

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MULTI-TIERED SYSTEM OF SUPPORT
Integrated Academic & Behavior Systems
NC Department of Public Instruction

Leadership

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
6. The leadership team is actively **facilitating implementation of MTSS** as part of their school improvement planning process.	The leadership team is not actively engaging in efforts to facilitate MTSS implementation.	The leadership team engages in planning and has created a plan to facilitate implementation of the **essential elements** of MTSS.	The leadership team provides support to educators implementing the **essential elements** of MTSS identified in the plan.	The leadership team uses data on implementation fidelity of the **essential elements** of MTSS to engage in data-based problem-solving for the purpose of continuous school improvement.

Related Notes

Different approaches to **facilitating school-wide implementation of an MTSS** model can include:
- The focus on a three-stage model of consensus building, infrastructure development, and implementation of practices consistent with an MTSS model
- The focus on a specific set of activities related to successful implementation of a designated model of service delivery (e.g., National Implementation Research Network framework)
- The approach to facilitating school-wide implementation of an MTSS model should be connected to the School Improvement Plan (SIP), as well as other school wide plans

Responsibilities for facilitating **MTSS implementation** are not limited to but can include the following:
- Promoting a school-wide vision and mission for MTSS implementation, including the development and dissemination of a school-wide implementation plan
- Allocating resources (e.g., time, personnel, materials) for the planning and delivery of evidence-based assessment, instruction and intervention
- Providing ongoing professional development and coaching support to school staff
- Collecting and analyzing data on MTSS implementation efforts

Essential elements of MTSS communicated to staff include the following:
- Curriculum and instruction frameworks and support (e.g., reading, math, behavior, social-emotional learning)
- Assessment
- Multiple tiers of instruction and intervention (i.e., three-tiered instruction/intervention model)
- Data-based problem-solving

Examples of Supporting Evidence

- School improvement plan with evidence (direct language or components explicitly mentioned) of MTSS
- Professional development plan
- Implementation fidelity data

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MULTI-TIERED SYSTEM OF SUPPORT
Integrated Academic & Behavior Systems
NC Department of Public Instruction

Building the Capacity/
Infrastructure for Implementation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
7. The **essential elements** of MTSS implementation are defined and understood by school staff.	No information on the essential elements of the school's MTSS is available.	The essential elements of MTSS are in the process of being defined.	The essential elements of MTSS are defined and communicated to school staff.	The curriculum, assessment, and instructional practices that define the school's essential elements of MTSS can be communicated by all school staff.

Related Notes

Essential elements of MTSS communicated to staff include the following:
- Curriculum and instruction frameworks and support (e.g., reading, math, behavior, social-emotional learning)
- Assessment
- Multiple tiers of instruction and intervention (i.e., three-tiered instruction/intervention model)
- Data-based problem-solving

Examples of Supporting Evidence

- Common instructional framework for academics and behavior
- At least 10% of staff members can define critical aspect of a tier and a content area (e.g., "Tell me one critical aspect of Core, Supplemental, or Intensive instruction for literacy, math or behavior at your school.")
- Formal comprehensive assessment system
- Formal core and intervention matrix
- Defined data-based problem-solving model

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**Building the Capacity/
Infrastructure for Implementation**

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
8. The leadership team ensures **professional development and coaching** for all staff members on assessments and data sources used to inform decisions relative to job roles and responsibilities.	Initial professional development is not provided to all staff members.	The staff engages in initial, job-embedded professional development focusing on the following: 1) purpose and administration of assessment tools, 2) role of assessment/data sources in making instructional decisions, 3) analyzing and using assessment results to improve instruction, 4) using various types of data to inform instructional practices to meet the needs of diverse learners, and 5) communicating and partnering with families about data and assessment practices.	The staff engages in ongoing professional development and coaching related to the administration of assessments and interpretation of the data/data sources. Professional development includes the following: 1) changes or updates to assessments/data sources, 2) changes to data collection, tracking and analysis, and 3) ongoing coaching on instructional practices and interpreting assessment results	The leadership team analyzes feedback from staff as well as outcomes in order to identify professional development and coaching needs in the area of assessment/data sources in support of continuous improvement.

Related Notes

Professional development and coaching are ongoing activities that develop the capacity of staff to implement MTSS. Efforts should be aligned with results of school needs assessments and modified based on the results of professional learning.

"Coaching" is defined as technical assistance and support provide to school staff to improve implementation of components of an MTSS model, including co-planning, modeling/demonstration, do-facilitation, and guided practice with high quality feedback.

"Coaching does NOT necessarily have to be completed by one person. Coaching can be provided by a number of different individuals depending upon their specializations, skill sets, as well as the particulars of the context of activities. It is unreasonable to assume that just one individual, or one coach, will have all the skills required to effectively provide coaching for MTSS in every given situation that may arise."
March, A.L. and Gaunt, B.T. (2013). Systems Coaching: A model for building capacity.

Examples of Supporting Evidence

● Professional development plan/calendar that includes training content on assessments and data sources ● PLC/Grade level/Department team agendas that include professional learning on assessments and data sources ● Other evidence of coaching or PD specific to job roles/responsibilities on assessments and data sources, professional development evaluation data

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MULTI-TIERED SYSTEM OF SUPPORT
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Building the Capacity/ Infrastructure for Implementation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
9. The leadership team **ensures professional development and coaching** for staff members on **data based problem-solving** relative to their job roles/responsibilities.	Professional development does not focus on data-based problem-solving.	Initial professional development on data-based problem-solving is provided that includes the following elements: 1) rationale for use of data based problem-solving, 2) problem-solving steps to address school-wide, classroom, small-group and individual student needs, and 3) roles and responsibilities for team members engaging in data-based problem solving.	Ongoing professional development and coaching on data-based problem-solving is delivered and includes the following elements: 1) differentiation of professional development based on staff roles/responsibilities, 2) coaching, 3) modeling, practice, and collaborative feedback on problem-solving steps, and 4) support for collaboration and teaming skills.	Data on use of problem solving skills and application are used to inform continuous improvement of professional development and coaching efforts.

Related Notes

Professional development and coaching are ongoing activities that develop the capacity of staff to implement MTSS. Efforts should be aligned with results of school needs assessments and modified based on the results of professional learning.
Data-based problem solving refers to a multi-step process that includes examining performance related to goals/expectations (problem identification), understanding variables causing problems (problem analysis), selecting/designing and implementing strategies to lessen barriers and achieve goals (instruction/intervention delivery), and monitoring effectiveness (monitoring/evaluation).

Examples of Supporting Evidence

● Professional development plan/calendar that includes training content on assessments, data sources, data-based problem-solving ● PLC/Grade level/Department team agendas that include professional learning on assessments, data sources, data-based problem-solving ● Other evidence of coaching or PD specific to job roles/responsibilities on assessments and data sources ● Staff handbook

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MULTI-TIERED SYSTEM OF SUPPORT
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Building the Capacity/ Infrastructure for Implementation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
10. The leadership team ensures **professional development and coaching** for all staff on **multi-tiered instruction and intervention** relative to their job roles/responsibilities.	No explicit connection to multi-tiered instruction and intervention is evident in professional development provided.	Initial professional development on multi-tiered instruction and intervention is provided that includes the following elements: 1) rationale for and modeling of **instruction and intervention design and delivery**, 2) alignment/ integration between the practices and MTSS, 3) guidance around data informed instruction design and delivery, as well as intervention design and delivery, that ensures optimal learning opportunities for all sub-groups of students, and 4) orientation on the essential behavioral practices of teaching school-wide expectations, acknowledging appropriate behavior, correcting errors.	Ongoing professional development and coaching on multi-tiered instruction and intervention is provided that includes the following elements: 1) differentiation of professional development and coaching based on staff roles/responsibilities, 2) on-going coaching, and 3) modeling of, practice of, and collaborative feedback on, evidence-based practices.	The leadership team regularly uses data on student needs and implementation fidelity of evidence-based practices to continuously improve professional development and coaching efforts.

Related Notes

Professional development and coaching are ongoing activities that develop the capacity of staff to implement MTSS. Efforts should be aligned with results of school needs assessments and modified based on the results of professional learning.
Multi-tiered instruction and intervention refers to the concepts of multiple layers of support for staff and students as well as the specifics of core and intervention support which may be found in the district/school core matrix and intervention matrix.
Instruction and intervention design and delivery includes factors such as standards, instructional routines, universal behavior supports, lesson planning for active student engagement.

Examples of Supporting Evidence

● Professional development plan/calendar that includes training content on multi-tiered instruction and intervention content   ● PLC/Grade level/Department team agendas that include professional learning on multi-tiered instruction and intervention   ● Other evidence of coaching or PD specific to job roles/responsibilities on multi-tiered instruction and intervention   ● Implementation fidelity data   ● Staff handbook, lesson plans for teacher professional development

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Building the Capacity/ Infrastructure for Implementation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
11. **Coaching** is used to support MTSS implementation.	No coaching is provided to build staff capacity to implement the critical elements of MTSS.	Initial coaching is occurring that is focused primarily on facilitating or modeling the components of MTSS.	Coaching activities are expanded to include the following: 1) opportunities to practice and 2) collaborative and performance feedback.	Data on professional development, implementation fidelity, and student outcomes are used to refine coaching activities.

Related Notes

"Coaching" is defined as technical assistance and support provide to school staff to improve implementation of components of an MTSS model, including co-planning, modeling/demonstration, do-facilitation, and guided practice with high quality feedback.

"Coaching does NOT necessarily have to be completed by one person. Coaching can be provided by a number of different individuals depending upon their specializations, skill sets, as well as the particulars of the context of activities. It is unreasonable to assume that just one individual, or one coach, will have all the skills required to effectively provide coaching for MTSS in every given situation that may arise."
March, A.L. and Gaunt, B.T. (2013). Systems Coaching: A model for building capacity.

Examples of Supporting Evidence

- Coaching logs/documentation of coaching activities/opportunities
- School improvement plan includes information about coaching supports and structures around MTSS
- PLC/Grade Level/Department Team meetings logs evidencing coaching opportunities
- Professional development and coaching evaluation data
- Implementation fidelity data

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Integrated Academic & Behavior Systems
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Building the Capacity/ Infrastructure for Implementation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
12. **Schedules** provide adequate time for **professional development and coaching** support.	Schedules do NOT include time allocated to professional development and coaching for MTSS.	Schedules include time allocated to professional development	Schedules include time for ongoing coaching support	Schedules permit personnel to access additional professional development and coaching support that is differentiated based on their needs.

Related Notes

Schedules refer to both the year-long schedule of activities that may include professional development and coaching, universal screening/benchmark assessments, and data-analysis. Schedules also refer to on-going (e.g., weekly) activities related to professional development and coaching, assessment, and data-analysis.

Professional development and coaching are ongoing activities that develop the capacity of staff to implement MTSS. Efforts should be aligned with results of school needs assessments and modified based on the results of professional learning.

Examples of Supporting Evidence

- ● Master schedule has time provided for PD and coaching
- ● PLC/Grade level/Department agendas evidence coaching support/coaching opportunities
- ● PD calendar

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Building the Capacity/ Infrastructure for Implementation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
13. **Schedules** provide adequate time to administer academic, **behavior, and social-emotional assessments** needed to make data-based decisions.	Schedules do NOT include time allocated to administer assessments needed to make decisions across tiers.	Schedules include time for administration of academic, behavior, and social emotional assessments for all students (e.g., universal screening).	Schedules include time to administer progress monitoring assessments for students receiving supplemental and intensive support as specified (e.g., weekly or monthly assessments).	Schedules permit personnel to administer additional assessments (e.g., diagnostic assessments) across content areas when needed for data based problem solving.

Related Notes

Schedules refer to both the year-long schedule of activities that may include professional development and coaching, universal screening/benchmark assessments, and data analysis. Schedules also refer to on-going (e.g., weekly) activities related to professional development and coaching, assessment, and data-analysis.

Behavior/Social-Emotional Assessment:
Screening - Recommended Behavior/Social-emotional screening data include reviewing and analyzing all students' adherence to school-wide expectations through collection of the following:
- ▪ Minor problem behavior (classroom managed)
- ▪ Major problem behavior (office discipline referral)
- ▪ Attendance patterns
- ▪ Other areas that some schools may choose to universally screen in the area of Behavior/Social-emotional skills using a school-wide screening for internalizing behaviors (e.g., depressive symptoms, anxiety, etc.).

Diagnostic - Diagnostic assessments for behavior/social-emotional skills include use of functional behavior assessments in order to find the root cause for the student's difficulties.
Progress-Monitoring - In the area of behavior/social-emotional functioning, the monitoring of student progress with the intervention should be matched with the problem of concern. Teams will want to consider monitoring frequency, duration, intensity, and latency recording.

Examples of Supporting Evidence

- Master schedule or master calendar with time for data collection included
- Assessment calendar
- Progress monitoring fidelity data

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Building the Capacity/ Infrastructure for Implementation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
14. The **master schedule** provides adequate time for multiple tiers of evidence based instruction and intervention to occur.	The master schedule is developed without consideration of student data and does not include time for multi-tiered interventions.	The master schedule is developed utilizing student data and includes time for multi-tiered interventions.	The master schedule facilitates effective implementation of multi tiered interventions matched to student needs by area and intensity (core, supplemental, intensive).	The master schedule allows for flexible student groupings.

Related Notes

The **master schedule** refers to allocation of resources daily (e.g., staff, time). The master schedule may also include on-going/weekly activities such as time for staff to engage in problem-solving and data-analysis.

Examples of Supporting Evidence

- Master schedule with evidence of intervention/instruction time based on needs of school population (adequate time for Core, Supplemental and Intensive)

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Building the Capacity/ Infrastructure for Implementation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
15. The **master schedule** provides adequate time for staff to engage in collaborative, data-based problem-solving and decision making.	The master schedule does not provide opportunities for collaborative, data-based problem-solving and decision making among staff.	The master schedule provides opportunities to engage in collaborative, data-based problem-solving and decision making among staff.	The master schedule provides sufficient time for the process to occur with fidelity.	The master schedule provides opportunities for collaborative, data-based problem-solving and decision making among staff to occur in settings such as leadership team meetings, grade-level meetings, cross grade-level meetings, professional learning communities.

Related Notes

The **master schedule** refers to allocation of resources daily (e.g., staff, time). The master schedule may also include on-going/weekly activities such as time for staff to engage in problem-solving and data-analysis.

Examples of Supporting Evidence

● Master schedule with evidence of data-based problem-solving time reserved
● Meeting agendas/minutes (staff meetings, PLC meetings, etc.)

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Building the Capacity/ Infrastructure for Implementation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
16. **Processes/procedures and decision-rules** are established for **data-based problem-solving** at each tier.	No systematic processes/procedures or decision-rules are established.	Processes/procedures and decision-rules needed to engage in data-based problem-solving are developed and existing structures and resources are incorporated.	The following are communicated to staff: 1) steps of problem-solving, 2) procedures for accessing, submitting, and using data, and 3) decision-rules needed to make reliable decisions.	Data-based problem-solving processes/procedures and decision-rules are refined based on data and feedback from staff, schedule changes, and resource availability.

Related Notes

Districts and schools develop **processes/procedures and decision rules** to establish and communicate the problem-solving process to be used, specific steps to be followed, and criteria to use when making decisions (e.g., what is good, questionable, or poor response to instruction/intervention). Processes/procedures include procedures for staff, parents, and stakeholders requesting assistance. Schools should consider district and state guidelines when available.

Data-based problem solving refers to a multi-step process that includes examining performance related to goals/expectations (problem identification), understanding variables causing problems (problem analysis), selecting/designing and implementing strategies to lessen barriers and achieve goals (instruction/intervention delivery), and monitoring effectiveness (monitoring/evaluation).

Examples of Supporting Evidence

● Evidence of processes, procedures and decision-rules for tiers of instruction found in implementation plans, guidance or school improvement plans
● Data-decision rules outlined on some type of planning document that is evident to teams across the school building
● Staff feedback
● Staff handbook
● Clear policy/procedure (e.g., flowchart) for addressing office-managed versus staff-managed problems.

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Building the Capacity/ Infrastructure for Implementation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
17. **Resources** available to support MTSS implementation are identified and allocated.	No process exists for mapping and allocating resources available to support MTSS implementation.	Leadership team members are gathering information on the personnel, funding, materials, and other resources available to support MTSS implementation.	Resource inventories are established using the gathered information on the personnel, funding, materials, and other resources available to support MTSS implementation and plans for allocating the resources are established.	Existing resource maps and resource allocations are updated at least annually based on student need, available personnel, funding, materials, and other resources.

Related Notes

Resources encompass not only available monetary assets but also available personnel, instructional materials, and time that will facilitate the implementation and sustainment of an MTSS as a framework for supporting all students.

Examples of Supporting Evidence

- Resource allocation documentation (i.e., maps, inventories, etc.)
- MTSS implementation plan
- School Improvement Plan

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Communication and Collaboration

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
18. **Staff** is **engaged** in consensus building activities for MTSS implementation.	Staff is not provided opportunities to gain understanding of the need for MTSS.	Staff is provided opportunities to gain understanding of the need for MTSS.	Staff has opportunities to gain understanding of its relevance to their roles and responsibilities.	Staff understands the need for MTSS and its relevance to their roles and responsibilities and has opportunities to provide input on how to implement MTSS.

Related Notes

Staff refers to employees at the school that will be impacted by or will be involved in implementation of MTSS. This will always include administration, teachers, other professionals and para-professional support staff. The degree to which other employees (e.g., bus drivers, cafeteria workers, administrative support staff, etc.) are included may be determined by their level of involvement with/implementation of MTSS components at the individual school level.

Efforts to **engage** staff should align with district and state guidance regarding MTSS implementation to facilitate staff understanding of connections between school, district and state initiatives.

Examples of Supporting Evidence

- NC Beliefs Survey results indicating consensus
- Agenda and minutes from meetings where data is discussed that indicates good staff representation in problem-solving
- Professional development calendar
- Staff input/feedback, i.e. surveys
- Staff handbook

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Communication and Collaboration

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
19. Staff is provided **data** on MTSS implementation *and* student outcomes at all tiers.	Staff is not provided any data regarding MTSS implementation nor student outcomes.	Staff is provided data 1x/per year regarding MTSS implementation and student outcomes.	Staff is provided data 2x/per year regarding MTSS implementation and student outcomes.	Staff are regularly (≥3x/year) provided data regarding MTSS implementation and student outcomes.

Related Notes

Data on student outcomes, school-level implementation fidelity, the capacity of educators to implement, and commitment from staff are needed to inform implementation. Staff roles and responsibilities will drive the specific data they need to inform implementation.

Examples of Supporting Evidence

• Meeting minutes/agendas/notes from various platforms that show presentation of both outcome and implementation data to staff- representative of the number of times per year they are reporting sharing of data
• Student outcome data
• Implementation data (i.e., FAM-S results, % of students receiving intervention with fidelity, etc.)

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Communication and Collaboration

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2)	Optimizing (3)
20. The infrastructure exists to support the school's goals for **family and community engagement** in MTSS.	Family and community engagement are none of the following:	Family and community engagement are 1 of the following:	Family and community engagement are 2 of the following:	Family and community engagement are all of the following:
	1) defined and monitored with data 2) linked to school goals in MTSS plan 3) include documented procedures for facilitating 2-way communication			

Related Notes

Family and community engagement is the active and meaningful partnership that educators build and maintain with students' families and the broader community for the purpose of supporting student learning.

Examples of Supporting Evidence

- Intentional connection and involvement of families in School Improvement Planning
- Family engagement plan/protocol for all populations
- PTA documentation
- Family and community engagement data (e.g., attendance at activities)
- Family and community input surveys

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Communication and Collaboration

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2)	Optimizing (3)
21. Educators actively engage students, families, and community stakeholders at all tiers of MTSS.	Staff do none of the following:	Staff do 1 of the following:	Staff do 2-3 of the following:	Staff do ALL of the following:
	1) engage students and families that represent the diverse population of the school 2) engage students and families in problem solving when their children need additional supports 3) provide intensive outreach to **unresponsive families** 4) increase the skills of families to support student learning			

Related Notes

Intensive outreach to **unresponsive families** refers to additional activities undertaken by the school to engage families of students who need additional supports but are not engaging with the school's typical outreach practices (e.g., letters, phone calls, etc.) Intensive outreach is an individualized approach requiring information gathering and problem solving to identify outreach strategies that are more likely to be successful for a family.

Examples of Supporting Evidence

- Family attendance and active participation at problem-solving meetings evidenced through meeting minutes
- Family attendance and active involvement during leadership or school improvement meetings evidenced through meeting minutes
- Protocols for family engagement clearly communicated through handbooks, guides, expectations, etc.
- Evidence of outreach using a variety of venues (i.e., websites, videos, mass phone messages, emails, handouts, parent nights, etc.)
- Documentation of information provided to families regarding interventions, student response and progress on repeated assessments
- Student/family handbook

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Data-Based Problem-Solving

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
22. ACROSS ALL TIERS, **Integrated data-based problem-solving** for student attendance, behavior, social emotional, and academic outcomes occurs across areas and grade levels.	Attendance, behavior, social emotional, and academic data may be collected BUT integrated data-based problem-solving by a team does not occur: 1) in 2 or more areas 2) in at least 50% of grade levels 3) at any tier.	Integrated data-based problem-solving by a team occurs: 1) in at least 2 areas 2) in at least 50% of grade levels 3) at a single tier.	Integrated data-based problem-solving by a team occurs: 1) in at least 3 areas 2) in at least 75% of grade levels 3) at least two tiers.	Integrated data-based problem-solving by a team occurs: 1) across all areas 2) in all grade levels 3) in all tiers.

Related Notes

Integrated data-based problem-solving should occur (1) across attendance, behavior, social-emotional, and academic content areas (e.g., literacy, math) for a school) (2) within and across grade levels (e.g., horizontal meetings for 6th, 7th, 8th, as well as vertical meetings), and (3) across tiers (performance data in response to instruction used to engage in problem solving for all students [Core], for some students receiving supplemental instruction [Supplemental], and for students receiving individualized support [Intensive]).

Data-based problem solving refers to a multi-step process that includes examining performance related to goals/expectations (problem identification), understanding variables causing problems (problem analysis), selecting/designing and implementing strategies to lessen barriers and achieve goals (instruction/intervention delivery), and monitoring effectiveness (monitoring/evaluation).

Examples of Supporting Evidence

Meeting minutes from data-based problem-solving meetings (i.e., SIT, MTSS leadership team, PLC/Grade level/Department meetings, Individual Student Problem-Solving Team meeting, etc.) indicate problem-solving is occurring
● MTSS Implementation Plans document procedures aligned with model
● Observation of data-based problem-solving occurring with fidelity
● Multiple sources of data used
● School policy (TFI)
● Formal decision rules

NC FAM-S 2.2019 22
Data-Based Problem-Solving

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
Problem Identification 23. ACROSS ALL TIERS, multiple sources of data are used to identify the difference or "gap" between expected and current student outcomes relative to attendance, behavior, social-emotional, and academic goals.	The gap between expected and current student outcomes is NOT identified.	The gap between expected and current student outcomes is identified.	The gap between expected and current student outcomes is associated with specific attendance, behavior, social emotional, and academic goals.	The data are used to identify the appropriate tier of instruction/ intervention (i.e., "Is the gap best remedied through core changes, supplemental intervention matching, intensive intervention matching or a combination of these?")

Related Notes

Rubric scoring example:
0 - There is a problem in reading in 4th grade.
1 - Reading appears to be a problem in 4th grade, only 47% of students met the benchmark on the universal screening. That is consistent with previous year's performance. 2 - 47% of students met the benchmark on the universal screening. That is consistent with previous year's performance.
We want 75 - 80% of students to meet the benchmark.
3 - 47% of students met the benchmark on the universal screening. That is consistent with previous year's performance.
We want 75 - 80% of students to meet the benchmark. This problem should be solved by making changes to our core instruction.

Examples of Supporting Evidence

- Meeting minutes from data-based problem-solving meetings (i.e., SIT, MTSS leadership team, PLC/Grade level/Department meetings, Individual Student Problem Solving Team meeting, etc.) indicate problem-solving is occurring
- MTSS Implementation Plans document procedures aligned with model
- Observation of data-based problem-solving occurring with fidelity
- Formal decision rules

NC FAM-S 2.2019 23

Data-Based Problem-Solving

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
Problem Analysis 24. ACROSS ALL TIERS, attendance, behavior, social emotional, and academic data are used to analyze and hypothesize reasons students are not meeting expectations.	**Hypotheses** are not developed for why students are not meeting expectations.	Hypotheses are developed across relevant domains (instruction, curriculum, environment, and learner) for why students are not meeting expectations.	Hypotheses are tested using multiple sources of data and across relevant domains (instruction, curriculum, environment, and learner).	Problem analysis results in a precise problem statement.

Related Notes

Reasons why students are not meeting expectations are sometimes referred to as **hypotheses** or barriers to learning. The big idea is that schools identify potential curriculum, instruction, environment (e.g., peer distractions, classroom management issues), and learner (e.g., skill deficits) for why the student is not meeting expectations and collect data/information to determine which reasons are contributing to the problem.

Rubric Scoring Examples
- Only 47% of student met the reading universal screening benchmark due to lack of explicit comprehension and vocabulary instruction.
- Only 47% of students met the reading universal screening benchmark. From reviewing, interviewing, observing, we know that rate and accuracy appear intact and that our school-wide literacy plan does not emphasize vocabulary instruction and explicit comprehension instruction.
- From reviewing, interviewing, observing, we know that rate and accuracy appear intact and that our school-wide literacy plan does not emphasize vocabulary instruction and explicit comprehension instruction. Only 47% of students met the reading universal screening benchmark due to a lack of explicit comprehension and vocabulary instruction across grade levels.

Examples of Supporting Evidence

- Meeting minutes from data-based problem-solving meetings (i.e., SIT, MTSS leadership team, PLC/grade level/department meetings, Individual Student Problem Solving Team meeting, etc.) indicate problem-solving is occurring.
- MTSS Implementation Plans document procedures aligned with model
- Observation of data-based problem-solving occurring with fidelity
- Instruction and intervention plans show use of measures that inform "root cause" or answer the reason why students are not meeting expectations (i.e., diagnostic assessments/processes)

NC FAM-S 2.2019 24

Data-Based Problem-Solving

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
Plan Implementation 25. ACROSS ALL TIERS, specific **instructional/ intervention plans** are developed and implemented based on verified reasons why students are not meeting attendance, behavior, social-emotional, and academic expectations.	Instructional/intervention plans are NOT developed.	Instructional/Intervention plans are developed based on verified reasons students are not meeting expectations.	Instructional/ intervention plans consistently specify what will be done, by whom, when, and where with enough detail to be implemented.	Specific instructional/ intervention plans are implemented with fidelity.

Related Notes

Specific **instruction/intervention plans** may be found in the district/school core matrix and intervention
matrix. Plans should include the following information:
- The goal of the intervention/action plan (e.g., SMART goal)
- What intervention or action steps (e.g., curriculum adjustments, instructional processes and procedures) will be put in place
- How often (daily/weekly/etc.) the intervention will be utilized
- How long each session is to be implemented
- Who is responsible for intervention implementation and support
- Where and when the intervention will happen
- Plan for monitoring instruction/intervention fidelity and progress towards identified goals
- Timeframe (dates) for periodic review of progress monitoring data and decision points
Resources for goal setting

Examples of Supporting Evidence

- Meeting minutes from data-based problem-solving meetings (i.e., SIT, MTSS leadership team, PLC/Grade level/Department meetings, Individual Student Problem Solving Team meeting, etc.) indicate problem-solving is occurring
- MTSS Implementation Plans document procedures aligned with model
- Observation of data-based problem-solving occurring with fidelity
- Instruction/intervention plans with corresponding information
- Instruction/intervention implementation fidelity data
- Random selection of student support plans

NC FAM-S 2.2019 25

Data-Based Problem-Solving

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
Plan Evaluation 26. ACROSS ALL TIERS, student progress specific to attendance, behavior, social/emotional, and academic goals are monitored (this includes progress towards **IEP goals, DEP goals, LEP goals**)	Progress monitoring does NOT occur, and student progress is NOT evaluated.	Plans for monitoring progress toward expected student outcomes are developed.	In most cases, data are collected to monitor student progress and intervention fidelity.	Changes are made to instruction/ intervention based on student responses.

Related Notes

Specific **instruction/intervention plans** may be found in the district/school core matrix and intervention matrix. Plans should include the following information:
- The goal of the intervention/action plan (e.g., SMART goal)
- What intervention or action steps (e.g., curriculum adjustments, instructional processes and procedures) will be put in place
- How often (daily/weekly/etc.) the intervention will be utilized
- How long each session is to be implemented
- Who is responsible for intervention implementation and support
- Where and when the intervention will happen
- Plan for monitoring instruction/intervention fidelity and progress towards identified goals
- Timeframe (dates) for periodic review of progress monitoring data and decision points

Resources for goal setting

Examples of Supporting Evidence

- Meeting minutes from data-based problem-solving meetings (i.e., SIT, MTSS leadership team, PLC/grade level/department meetings, Individual Student Problem Solving Team meeting, etc.) indicate problem-solving is occurring
- MTSS Implementation Plans document procedures aligned with model
- Observation of data-based problem-solving occurring with fidelity
- Progress-monitoring graphs utilizing valid and reliable assessments
- Intervention fidelity data
- Student progress monitoring data (e.g. % of students meeting goals)

NC FAM-S 2.2019 26

Data-Based Problem-Solving

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
27. ACROSS ALL TIERS: **Data-based problem solving** includes regular analysis of performance of **diverse groups** across all areas.	Data is not collected on student performance across diverse groups.	Data on student performance across diverse groups is collected.	The patterns of student performance are identified across tiers of instruction.	Data on student outcomes is used in MTSS evaluation.

Related Notes

Integrated data-based problem-solving should occur (1) across attendance, behavior, social-emotional, and academic content areas (e.g., literacy, math) for a school) (2) within and across grade levels (e.g., horizontal meetings for 6th, 7th, 8th, as well as vertical meetings), and (3) across tiers (performance data in response to instruction used to engage in problem solving for all students [Core], for some students receiving supplemental instruction [Supplemental], and for students receiving individualized support [Intensive]).
Data-based problem solving refers to a multi-step process that includes examining performance related to goals/expectations (problem identification), understanding variables causing problems (problem analysis), selecting/designing and implementing strategies to lessen barriers and achieve goals (instruction/intervention delivery), and monitoring effectiveness (monitoring/evaluation).
Diverse groups include racial/ethnic, cultural, social-economic, language proficiency, disability status

NC FAM-S 2.2019 27

Data-Based Problem-Solving

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
28. Resources for and barriers to the implementation of MTSS are addressed through a data-based **problem-solving** process.	Data-based problem solving of resources for and barriers to implementation of MTSS does not occur.	School leadership discusses resources for and barriers to implementation of MTSS, but does not collect data to assess implementation levels or develop action plans to increase implementation.	School leadership discusses resources for and barriers to implementation of MTSS and does one of the following: 1) collects data to assess implementation levels 2) develops action plans to increase implementation	School leadership discusses resources for and barriers to implementation of MTSS and does both of the following: 1) collects data to assess implementation levels 2) develops action plans to increase implementation

Related Notes

Structured **problem solving** is utilized to identify resources that can be used to facilitate implementation and barriers that are hindering implementation for the purpose of developing specific action plans to increase implementation levels.

Examples of Supporting Evidence

- Resource allocation maps with evidence of data-based problem-solving use
- School Improvement Plan with evidence of resources allocated to sustaining an MTSS
- MTSS implementation plan with evidence of data-based problem-solving use
- Data-based problem-solving meeting agendas/minutes
- Implementation fidelity data

NC FAM-S 2.2019 28
Three-Tiered Instruction/Intervention Model

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2)	Optimizing (3)
29. Core academic practices exist that are defined across grade levels/spans and content areas by essential components of instruction, curriculum and environment (ICE). These are refined based on both student outcome and implementation data for continuous improvement.	Core academic practices have not been defined across instruction, curriculum and environment for all grade levels/spans and content areas.	Core academic practices have been defined by all grade levels/spans and content areas AND include 1 of the following:	Core academic practices have been defined by all grade levels/spans and content areas AND include 2-3 of the following:	Core academic practices have been defined by all grade levels/spans and content areas AND include all of the following:

1. Instruction
   specified design of culturally responsive instruction, practices for ensuring student engagement, opportunities for scaffolding, description of practice opportunities, etc.
2. Curriculum
   materials/resources utilized, standards/goals addressed, defined scope/sequence of skills, etc.
3. Environment
   grouping options, time (duration and frequency), **behavioral expectations** of students, etc.
4. Academic instruction defined in consideration of behavior and social-emotional instruction

Related Notes

Behavioral expectations for instruction often include elements related to the instructional routine (e.g., whole-group, small-group, and independent practice), amount of time dedicated to instruction, and which evidence-based instructional strategies are used.

Examples of Supporting Evidence

● Core academic matrix
● Instructional framework
● Classroom walkthrough documents
● Instructional plans
● School Improvement Plans/MTSS implementation plans

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Three-Tiered Instruction/Intervention Model

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2)	Optimizing (3)
30. Core behavior practices exist that are defined schoolwide or across all grade levels/spans by essential components of instruction, curriculum and environment (ICE). These are refined based on both student outcome and implementation data for continuous improvement.	Core behavior practices have not been defined across instruction, curriculum and environment schoolwide or for all grade levels/spans.	Core behavior practices are defined at the school and/or grade level AND classroom level AND incorporate 1 of the following:	Core behavior practices are defined at the school and/or grade level AND classroom level AND incorporate 2-3 of the following:	Core behavior practices are defined at the school and/or grade level AND classroom level AND incorporate all of the following:

1. Instruction
    culturally responsive design and delivery of explicit instruction for schoolwide **behavior expectations** *and* classroom rules, routines/procedures (e.g., classroom management) on an established schedule
2. Curriculum
    a matrix of school-wide behavioral expectations with operational definitions of expected behavior by setting (behavior matrix), student/staff acknowledgement system for appropriate behaviors, and a well-defined continuum of consequences for problem behaviors
3. Environment
    adult routines to promote success (i.e., active supervision, pre-corrects, clear definition of major/minor problem behaviors, consistent logical consequences, schedule for delivery of positive reinforcement, etc.)
4. Behavior practices defined in consideration of academic and social-emotional instruction

Related Notes

Structured instruction of **behavioral expectations** is provided to all students. Classroom routines and classroom management strategies are embedded into instruction. School climate and environments support student well-being. A small number of clearly defined school-wide expectations that are positively stated are a foundational element of core school-wide behavior practices. Routines and procedures should emphasize proactive, instructive, and/or restorative approaches to student behavior.

Examples of Supporting Evidence

- Core behavior matrix
- Classroom walkthroughs
- School Improvement Plan
- Plans for classroom management
- Clear policy/procedure (e.g., flowchart) for addressing office-managed versus staff-managed problems.
- Behavior lesson plans
- Staff/student handbook
- School policy, code of conduct

NC FAM-S 2.2019 30
Three-Tiered Instruction/Intervention Model

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2)	Optimizing (3)
31. Core social-emotional practices exist that are defined schoolwide or across all grade levels/spans by essential components of instruction, curriculum and environment (ICE). These are refined based on both student outcome and implementation data for continuous improvement.	Core social-emotional practices have not been defined across instruction, curriculum and environment schoolwide or for all grade levels/spans.	Core social-emotional practices are defined at the school and/or grade level AND incorporate 1 of the following:	Core social-emotional practices are defined at the school and/or grade level AND incorporate 2-3 of the following:	Core social-emotional practices are defined at the school and/or grade level AND incorporate all of the following:

1. Instruction
    specified design and delivery of culturally responsive **social-emotional skill instruction**
2. Curriculum
    materials/resources utilized, standards/goals addressed (including **social-emotional learning competencies**) 3. Environment
    grouping options, time (duration and frequency) of instruction and instructional delivery settings (i.e., within academic subject areas, separate time in the day, etc.)
4. Social-emotional practices defined in consideration of academic and behavior instruction

Related Notes

Structured instruction of **social and emotional skills** is provided to all students. Classroom routines include social and emotional learning principles and is embedded into instruction. School climate and environments support student well-being.

Social-emotional learning competencies can be found in the NC Healthful Living Standards and NC Guidance Essential Standards. Additional resources for SEL can be found at https://casel.org/.

Examples of Supporting Evidence

- Core SEL matrix classroom walkthroughs
- School Improvement Plan
- Plans for SEL instruction
- SEL lesson plans

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Three-Tiered Instruction/Intervention Model

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2)	Optimizing (3)
32. Supplemental academic practices exist that are defined across grade levels/spans and content areas by essential components of instruction, curriculum and environment (ICE). These practices are specified in standard treatment **intervention protocols.** These practices are refined based on both student outcome and implementation data for continuous improvement.	Supplemental academic practices have not been defined across instruction, curriculum and environment for all grade levels/spans and content areas. All content areas and grade spans do not have a standard treatment protocol/intervention matrix linked to core instruction.	Across all grade spans/content areas, a supplemental level of support is defined within an intervention matrix with 1-3 of the following:	Across all grade spans/content areas, a supplemental level of support is defined within an intervention matrix with 4-5 of the following:	Across all grade spans/content areas, a supplemental level of support is defined within an intervention matrix with all of the following:

1. Instruction
   includes explicit instruction, modeling, guided practice, independent practice and culturally responsive practices 2. Curriculum
   systematic sequence of skills with frequent formative assessment
3. Environment
   students grouped appropriately by targeted skill areas and size based on program recommendations 4. Clear and consistently applied data decision rules for intervention entry/exit
5. Defined methods of monitoring student progress
6. Supplemental academic practices are defined in consideration of core instruction and behavior and social emotional instruction

Related Notes

Intervention protocols are readily accessible to students based on predetermined data decision rules. **Intervention protocols** include plans for intensification (see item 34).

Examples of Supporting Evidence

- Intervention protocols/Intervention matrices and data decision rules
- Supplemental intervention fidelity checks
- Supplemental problem-solving documentation, random review of student support plans
- Progress-monitoring data on groups of students

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Three-Tiered Instruction/Intervention Model

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2)	Optimizing (3)
33. Supplemental behavior and social-emotional practices exist that are defined schoolwide or across grade levels/spans by essential components of instruction, curriculum and environment (ICE). These practices are specified in standard treatment **intervention protocols**. These practices are refined based on both student outcome and implementation data for continuous improvement.	Supplemental behavior and social-emotional practices have not been defined across instruction, curriculum and environment schoolwide or for all grade levels/spans. All content areas and grade spans do not have a standard treatment protocol or intervention matrix linked to core instruction.	Schoolwide or across all grade spans/levels, a supplemental level of support is defined within an intervention matrix with 1-3 of the following:	Schoolwide or across all grade spans/levels, a supplemental level of support is defined within an intervention matrix with 4-5 of the following:	Schoolwide or across all grade spans/levels, a supplemental level of support is defined within an intervention matrix with all of the following:

1. Instruction
   includes modeling, guided practice and independent practice across settings to encourage generalization, and culturally responsive practices that is matched to student need
2. Curriculum
   clear goals that include a systematic sequence of skills with frequent formative assessment
3. Environment
   students grouped appropriately by targeted skill areas and size based on program recommendations 4. Clear and consistently applied data decision rules for intervention entry/exit
5. Defined methods of monitoring student progress
6. Supplemental behavior and social emotional practices are defined in consideration of academic instruction

Related Notes

Intervention protocols are readily accessible to students based on predetermined data decision rules. **Intervention protocols** include plans for intensification (see item 35).

Examples of Supporting Evidence

- Intervention matrix and data decision rules
- Supplemental intervention fidelity checks
- Supplemental problem-solving documentation, random review of student support plans
- Progress-monitoring data on groups of students

NC FAM-S 2.2019 33
Three-Tiered Instruction/Intervention Model

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2)	Optimizing (3)
34. Intensive academic practices exist that are defined across grade levels/spans and content areas by essential components of instruction, curriculum, environment and learner (ICEL). These practices are specified in **intervention protocols**. These practices are refined based on both student outcome and implementation data for continuous improvement.	Intensive academic practices have not been defined across instruction, curriculum, environment and learner for all grade levels/spans and content areas. All content areas and grade spans do not have a standard treatment protocol/intervention matrix.	Across all grade spans/content areas, an intensive level of support is defined within an intervention matrix with 1-3 of the following:	Across all grade spans/content areas, an intensive level of support is defined within an intervention matrix with 4-6 of the following:	Across all grade spans/content areas, an intensive level of support is defined within an intervention matrix with all of the following:

1. Instruction
   includes explicit/direct instruction, repeated modeling, more intensive scaffolding, guided and independent practice, and culturally responsive practices
2. Curriculum
   systematic sequence of skills with frequent formative assessment
3. Environment
   students grouped appropriately by targeted skill areas and size based on program recommendations 4. Diagnostic processes for individual learners to ensure appropriate curricular and instructional match as well as appropriate intensification
5. Clear and consistently applied data decision rules for intervention entry/exit
6. Defined methods of monitoring student progress
7. Consideration of behavioral and social-emotional skill instruction/support

Related Notes

Intervention protocols are readily accessible to students based on predetermined data decision rules. **Intervention protocols** include plans for intensification (see item 32).

Examples of Supporting Evidence

- Intervention matrix and data decision rules
- Intensive intervention fidelity checks
- Intensive problem-solving documentation, random review of student support plans
- Progress-monitoring data/diagnostic data on individual students

NC FAM-S 2.2019 34

Three-Tiered Instruction/Intervention Model

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2)	Optimizing (3)
35. Intensive behavior/social emotional practices exist that are defined across grade levels/spans and content areas by essential components of instruction, curriculum, environment and learner (ICEL). These practices are specified in **intervention protocols.** These practices are refined based on both student outcome and implementation data for continuous improvement.	Intensive behavior/social emotional practices have not been defined across instruction, curriculum, environment and learner for all grade levels/spans and content areas. All content areas and grade spans do not have a standard treatment protocol or intervention matrix.	Across all grade spans/content areas, an intensive level of support is defined within an intervention matrix with 1-3 of the following:	Across all grade spans/content areas, an intensive level of support is defined within an intervention matrix with 4-7 of the following:	Across all grade spans/content areas, an intensive level of support is defined within an intervention matrix with all of the following:

1. <u>Instruction</u>
    includes culturally responsive strategies on preventing, teaching and responding to ensure skill generalization across multiple settings
2. <u>Curriculum</u>
    sequence of targeted skills with frequent formative assessment
3. <u>Environment</u>
    students grouped appropriately by targeted skill areas and size based on program recommendations, strategies for removing rewards for problem behaviors, specific rewards for desired behaviors, and safety elements where needed 4. Diagnostic processes that include operational description of the problem behavior, identification of context where problem behavior is most likely to occur and maintaining reinforcers of problem behavior
5. Clear and consistently applied data decision rules for intervention entry/exit
6. Defined methods of monitoring student progress and assessing ongoing fidelity of implementation 7. Family and/or community (may include mental health service provider) connection and two-way communication is specified with appropriate memorandums of understanding established with outside agencies
8. Consideration of needed academic supports when appropriate

Related Notes

Intervention protocols are readily accessible to students based on predetermined data decision rules.
Intervention protocols include plans for intensification (see item 33). Protocols include community providers where appropriate.

Examples of Supporting Evidence

- Intervention matrix and data decision rules
- Supplemental intervention fidelity checks
- Supplemental problem-solving documentation, random review of student support plans
- Progress-monitoring data on groups of students

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Data Evaluation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
36. A comprehensive assessment system is established, and staff understand and have access to academic, behavior and social-emotional data sources that address the following purposes of assessment: 1) identify students at-risk academically, socially, and/or emotionally 2) determine why students are at-risk 3) monitor student academic and social-emotional growth/progress 4) Inform academic and social-emotional instructional planning 5) determine student attainment of academic/behavioral outcomes.	Staff does not have access to and understand attendance, behavior, social-emotional, and academic data sources that address the purposes of assessment.	Staff understands the purposes of assessment within MTSS and the leadership team selects measures for the purposes of assessment across attendance, behavior, social emotional, and academic areas that are reliable, valid and accessible, as well as culturally, linguistically, and developmentally appropriate.	Staff engages in assessment with fidelity to do the following: 1) identify students who are at-risk (at least 3-4 times/year) 2) determine why students are at risk 3) monitor student growth/progress 4) inform instructional/intervention planning 5) determine student attainment of academic, behavior, and social emotional outcomes	The leadership team and/or staff collaboratively and systematically evaluate and adjust assessment practices to ensure availability of accurate and useful data to inform instruction, and assessment tools are evaluated for continued value, usefulness, and cultural, linguistic, and developmental appropriateness.

Examples of Supporting Evidence

- Assessment plan (within or separate from MTSS implementation plan), Assessment inventory
- School Improvement Plan, student outcome data
- Screening results and use in identifying students at-risk
- Intervention plans
- Evaluation data

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Data Evaluation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
37. **Policies and procedures for decision-making** are established for the administration of assessments, access to existing data sources, and use of data.	No policies and procedures are in place.	The leadership team outlines policies and procedures for decision-making that include schedules for screening, use of diagnostic assessments, progress monitoring frequency, and criteria for determining tier(s) of support needed.	Staff consistently administer assessments, access data sources and make data-based decisions using policies and procedures for decision making with fidelity.	Adherence to and effectiveness of policies and procedures for decision making are evaluated regularly for efficiency, usefulness, and relevance for students and staff, and data are used to adjust the policies.

Related Notes

Districts and schools develop **processes/procedures and decision rules** to establish and communicate the problem-solving process to be used, specific steps to be followed, and criteria to use when making decisions (e.g., what is good, questionable, or poor response to instruction/intervention). Processes/procedures include procedures for staff, parents, and stakeholders requesting assistance. Schools should consider district and state guidelines when available.

Examples of Supporting Evidence

- Assessment inventory, calendar
- School Improvement Plan
- Progress-monitoring data
- Evaluation data
- Staff handbook
- School website, newsletter, policy

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Data Evaluation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
38. Effective data tools are used appropriately and independently by staff.	Staff does not have access to tools that efficiently provide data needed to answer problem solving questions for academics and behavior.	The leadership team ensures availability of tools that can track and graphically display academic, behavior and social-emotional data, and staff is trained on the use of the tools, as well as on the responsibilities for data collection, entry, and management.	Staff uses the data tools and is provided assistance as needed.	Data tools are periodically assessed, and the necessary changes are made in order to improve functionality, efficiency, and usefulness. Also, staff is proficient and independent with data tools and can easily support new staff members.

Examples of Supporting Evidence

- Assessment plan (within or separate from implementation plan)
- Graphing results
- Professional development/coaching plans on data tools use

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Data Evaluation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
39. Data sources are used to **evaluate the implementation and impact of MTSS** at least annually. Outcomes are shared with stakeholders. Evaluation should occur across: ● All areas ● All tiers ● All diverse groups (e.g., racial/ethnic, cultural, social-economic, language proficiency, disability status)	No data sources to evaluate implementation of the critical elements of MTSS have been identified.	The leadership team has identified data sources that will be used to evaluate implementation of the essential elements of MTSS.	The leadership team uses data sources to evaluate implementation and to make systemic improvements to the essential elements of MTSS.	The leadership team periodically conducts analyses to determine how implementation of essential elements of MTSS relate to positive student outcomes.

Related Notes

Essential elements of MTSS communicated to staff include:
▪ Curriculum and instruction frameworks and support (e.g., reading, math, behavior, social-emotional learning)
▪ Assessment
▪ Multiple tiers of instruction and intervention (i.e., three-tiered instruction/intervention model)
▪ Data-based problem-solving

Examples of Supporting Evidence

● Meeting minutes/agendas
● School improvement planning
● Walkthrough data
● Fidelity tools
● Student outcome data
● District reports
● Staff, student, and family survey data
● Intervention enrollment data

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Data Evaluation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
40. Available **resources** are allocated effectively.	Resources are NOT allocated based on student need and the availability of time, available personnel, funding, and materials.	Resources are allocated based on student need.	The relationship between the resources allocated and the outcomes of students is evaluated at least annually.	Processes and criteria for resource allocation are refined annually based on strategies that result in improved student outcomes.

Related Notes

Resources encompass not only available monetary assets but also available personnel, instructional materials, and time that will facilitate the implementation and sustainment of an MTSS as a framework for supporting all students.

Examples of Supporting Evidence

● School Improvement Plan or MTSS implementation plan with evidence of resources allocated to sustaining a MTSS
● Evaluation data
● Resource inventories and mapping

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Data Evaluation

Item	Not Implementing (0)	Emerging/Developing (1)	Operationalizing (2) *Includes Emerging/Developing*	Optimizing (3) *Includes Emerging/Developing & Operationalizing*
41. Data sources are monitored for consistency, accuracy, and timeliness in collection and entry procedures.	Data sources are NOT monitored for accuracy or consistency.	The leadership team ensures that staff understands the importance of accurate and consistent data collection practices and have provided professional development on policies and procedures for methods, types and frequency of data collection.	The leadership team uses a protocol (e.g., email notifications for failure to take attendance, reminders to staff regarding classroom managed vs. office managed problem behavior, etc.) to monitor data consistency and accuracy.	The leadership team periodically conducts analyses to determine consistency and accuracy of data and adjusts as necessary.

Examples of Supporting Evidence

- Assessment plan (within or separate from implementation plan)
- Professional development/coaching plans on data tools use
- Meeting minutes from leadership team discussion of fidelity with data use

Appendix B

MTISES, Multi-Tiered Instruction Self-Efficacy Scale

(Also known as the RTISES-II, Response to Intervention Self-Efficacy Scale-II)

All scale items use the following response options:

○	○	○	○	○
I'll take anything	I'm starting to get it but I want lots more	I do this, but could benefit from more	I don't feel the need for more	I feel ready to help others

DIRECTIONS: For most of the following questions, you will be asked to indicate your needs for professional development in various educational practices. Please indicate the level of professional development you feel you need for each item.

1. How much professional development do you need about differentiating presentation of information for various learning styles (listening, seeing, manipulating, etc.)?

2. How much professional development do you need about differentiating presentation of information for various ability levels (gifted, students with disabilities, etc.)?

3. How much professional development do you need about differentiating presentation of information for varied levels of English language proficiency?

4. How much professional development do you need about adapting learning activities to engage students of varied learning styles (listening, seeing, manipulating, etc.)?

5. How much professional development do you need about adapting learning activities to engage students of various ability levels (gifted, students with disabilities, etc.)?

6. How much professional development do you need about adapting learning activities to engage students of varied levels of English language proficiency?

7. How much professional development do you need about allowing students to demonstrate learning in ways that accommodate varied learning styles (seeing, listening, manipulating, etc.)?

8. How much professional development do you need about allowing students to demonstrate learning in ways that accommodate varied ability levels (gifted, students with disabilities, etc.)?

9. How much professional development do you need about allowing students to demonstrate learning in ways that accommodate varied levels of English language proficiency?

10. How much professional development do you need to find research-based articles and/or books on practices relevant to specific educational needs of students?

11. How much professional development do you need to judge the trustworthiness of research-based articles or books about effectiveness of educational practices?

12. How much professional development do you need to evaluate whether the research-based practices are worthwhile for my specific students and purposes?

13. How much professional development do you need to compare effectiveness of research-based educational practices for the best fit for my particular student population?

14. How much professional development do you need about changing educational practice to incorporate new instructional practices found in a research-based article or book?

15. How much professional development do you need to work with a team(s) of grade-level or content-specific educators to assess specific learning needs?

16. How much professional development do you need to work with a team(s) of grade-level or content-specific educators to solve specific learning needs?

17. How much professional development do you need to collaborate with professionals outside my own field of specialty to assess specific learning needs (for example, teachers working with school psychologists or guidance counselors)?

18. How much professional development do you need to collaborate with professionals outside my own field of specialty to solve specific learning needs (for example, teachers working with school psychologists or guidance counselors)?

19. How much professional development do you need to use data from appropriate assessment tools to clarify the specific problem for a struggling student?

20. How much professional development do you need to use specific assessments to measure student progress on specific learning objectives?

21. How much professional development do you need to use results of universal screening instruments (like PALS, DIAL-R, or DIBELS) to determine which students may be at risk of specific learning needs?

22. How much professional development do you need to use results of published curriculum-based assessments for instructional planning (like textbook assessments, PALS quick checks, etc.)?

23. How much professional development do you need to make decisions about academic instruction for individual students based upon data?

24. How much professional development do you need to use data on student progress to improve instructional practice?

25. How much professional development do you need to use teaching techniques described in a research-based article or book?

26. How much professional development do you need to use interventions to address specific learning objectives of specific students?

27. How much professional development do you need to implement plans as designed to solve problems for individual students or small groups of students?

28. How much professional development do you need to respond to a learning need when first evident?

Appendix C

Focus Group Discussion Questions

1. Discuss the aspects of your role within an MTSS.

2. Discuss your ability to fulfill the roles of a teacher within an MTSS.

3. Discuss how leadership has affected your successes or needs in the implementation and practice of an MTSS.

4. Discuss how competency factors, such as training, support, feedback, and coaching, have played a role in your successes or needs in the implementation and practice of an MTSS.

5. Discuss how organizational factors, such as time, protocols, teaming structures, and resources, have played a role in your successes or needs in the implementation and practice of an MTSS.

Appendix D

Invitation Letter

Hello,

My name is Heather Jennings and I am currently a doctoral student with Gardner-Webb University's Educational Leadership (EDLS) program. I am working to complete my dissertation titled *The Impact of Implementation Drivers on Teacher Efficacy Beliefs within a Multi-Tier System of Support (MTSS) Framework*. My research seeks to understand teachers' experiences within the implementation and practice of an MTSS. The research will attempt to identify specific factors or drivers that impact how teachers feel about an MTSS and their ability to implement and practice an MTSS.

You are invited to participate in the study to understand the experience of teachers in an MTSS and ultimately provide districts invaluable information on how to best support teachers during implementation and practice of an MTSS. Attached you will find an electronic survey titled *Multi-Tiered Instruction Self-Efficacy Scale* (MTISES). It is a 28-item survey that takes approximately 20 minutes to complete and can be accessed through Survey Monkey. Identifying information will not be collected, and all results will be anonymous.

As teachers are required to build and refine skills of data analysis, data-based decision making, and the implementation and monitoring of academic and behavioral interventions it is key for districts to understand how to best support teachers. With increased support for staff, MTSS implementation will aid in improving student outcomes, overcoming barriers to learning, and increasing sustainability of implementation efforts.

I greatly appreciate your willingness to participate. Should you have any questions please do not hesitate to contact me.

Sincerely,

Heather Jennings

Appendix E

Gardner-Webb University IRB Informed Consent Form

Title of Study

The Impact of Implementation Drivers on Teacher Efficacy Beliefs within a Multi-Tier

System of Support (MTSS) Framework

Researcher

Heather Jennings, Doctoral Candidate with the School of Education

Purpose

The purpose of the study is to better understand the experience of teachers in the

implementation and practice of an MTSS. In addition, the study will seek to identify

specific factors/drivers that enhance and/or inhibit teacher self-efficacy beliefs in the

implementation and practice of an MTSS. Self-efficacy is identified as a teacher's belief

in their ability to effectively carry out a task, in this case implementation of and practices

associated with an MTSS. MTSS is identified as a whole school improvement model

characterized by research-based instruction and intervention, data-based decision making,

and systematic problem solving. The study will seek to provide recommendations to

schools in how to best support teachers in developing, implementing, and practicing

behaviors characteristic of an MTSS.

Procedure

Data will be collected through surveys. No identifying information will be collected, and

participation will be anonymous. The surveys will be distributed through email via

survey monkey. The survey includes 28 Likert scale rating items. The survey will take

approximately 20 minutes to complete. Participation in the survey is completely

voluntary. Items may be skipped if or the survey end at any point if the participant

choses. Following the collection of survey data, participants will be randomly selected to

participate in focus group interviews. Participation is completely voluntary. Staff will be asked to complete a demographic survey should they wish to move forward in the study and participate in the focus groups. This will aid in developing a focus group with diversity in grade level representation and staff who have experienced an MTSS since beginning implementation stages. Questions may be skipped and /or the focus group end at any point if the participant choses. The focus group will consist of four to six members plus the researcher. If more than the expected number volunteer for participation, a randomizer will be utilized to identify focus group members. Predetermined questions will be utilized. The focus group session will be recorded for later transcription and thematic analysis. All responses will be evaluated for response patterns and themes rather than at the individual level. The raw data will only be reviewed by the examiner and the chair of the dissertation.

Time Required

It is anticipated that the survey will require about 20 minutes to complete. The focus groups should take approximately 40 minutes.

Voluntary Participation

Participation in this study is voluntary. You have the right to withdraw from the research study at any time without penalty. You also have the right to refuse to answer any question(s) for any reason without penalty. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identified state.

<u>Confidentiality</u>

Data will be collected through anonymous surveys, as well as focus groups. No

identifying information will be collected through the focus groups. Raw data will only be

viewed by the researcher and dissertation chair. Data will be analyzed at the group level

rather than individual level. All raw data will be destroyed after the publication and

approval of the dissertation.

For common scenarios concerning confidentiality, the following text can be used.

Data Linked with Identifying Information

The information that you give in the study will be handled confidentially. Your

information will be assigned a *code number (or pseudonym.)* The list connecting your

name to this code will be kept in a *locked file.* When the study has been completed and

the data have been analyzed, this list will be destroyed. Your name will not be used in

any report. The audio recording of the focus groups will be deleted from the device.

Anonymous Data

The information that you give in the study will be handled confidentially. Your data will

be anonymous which means that your name will not be collected or linked to the data.

Because of the nature of the data, it may be possible to deduce your identity; however,

there will be no attempt to do so, and your data will be reported in a way that will not

identify you.

Confidentiality Cannot be Guaranteed

In some cases, it may not be possible to guarantee confidentiality (e.g. a focus group

interview). Because of the nature of the data, I cannot guarantee your data will be

confidential and it may be possible that others will know what you have reported.

<u>Risks</u>

Confidentiality cannot be guaranteed to those participating in the focus groups due to the nature of data collected. It may be possible for others to know what the participant has reported.

<u>Benefits</u>

There are no direct benefits associated with participation in this study. The study may help us to understand what factors impact teachers' self-efficacy beliefs in implementation and practice of an MTSS. The Institutional Review Board at Gardner-Webb University has determined that participation in this study poses minimal risk to participants.

<u>Payment</u>

You will receive no payment for participating in the study.

<u>Right to Withdraw From the Study</u>

You have the right to withdraw from the study at any time without penalty. If you choose to withdraw from the study, your audio will be destroyed.

<u>How to Withdraw From the Study</u>

Please modify this section so it accurately describes how to withdraw from the study while it is being conducted and how to withdraw after it is completed, where appropriate (it may be impossible to withdraw if the data are anonymous).

- If you want to withdraw from the study, during the survey phase you may stop the survey at any time. If you would like to withdraw within the focus group phase you may state so and your participation will end. There is no penalty for withdrawing.

- If you would like to withdraw after your materials have been submitted, please

  contact the researcher Heather Jennings at XXXX. It may not be possible to

  withdraw a completed survey as they are collected anonymously.

If you have questions about the study, contact:

Heather Jennings
EdD Candidate
School of Education, Gardner-Webb University
Researcher telephone number: XXXX
Researcher email address: XXXX
Faculty Advisor and Chair: Dr. Steven Laws
School of Education, Gardner-Webb University
Faculty Advisor telephone number: XXXXX
Faculty Advisor email address: XXXXX

If the research design of the study necessitates that its full scope is not explained

prior to participation, it will be explained to you after completion of the study. If

you have concerns about your rights or how you are being treated, or if you have

questions, want more information, or have suggestions, please contact the IRB

Institutional Administrator listed below.

Dr. Sydney K. Brown
IRB Institutional Administrator
Gardner-Webb University
Telephone: XXXXX
Email: XXXXX

Voluntary Consent by Participant

I have read the information in this consent form and fully understand the contents of this

document. I have had a chance to ask any questions concerning this study and they have

been answered for me. I agree to participate in this study. My consent to participate is

indicated by my completion and submission of the survey.