CHANGING ADULT BEHAVIORS: EXAMINING THE FACTORS OF CHANGE THAT FACILITATE THE MTSS IMPLEMENTATION FRAMEWORK IN A SMALL RURAL SCHOOL DISTRICT

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Approval Page

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Abstract

CHANGING ADULT BEHAVIORS: EXAMINING THE FACTORS OF CHANGE THAT FACILITATE THE MTSS IMPLEMENTATION FRAMEWORK IN A SMALL RURAL SCHOOL DISTRICT. Whitaker, Briana G., 2023: Dissertation, Gardner-Webb University.

This mixed methods study sought to identify the incorporation of support for implementing evidence-based instructional practices within an MTSS framework among teachers and the impact on student growth outcomes in three K-2 schools. The study also determined teacher perceptions regarding how support in adult behavior change, which is the theoretical framework of the study, impacted a shift in their instructional practices utilizing a qualitative survey, one-on-one interviews, and two independent samples *t* tests. Participants in the study expressed that school climate, principal instructional leadership, purposeful PLCs, and their attitudes about new behaviors best supported them in adopting innovative instructional reading practices. Participants also expressed that students grew with the newly implemented practices; however, independent samples *t*-test data indicated no significant difference in student growth for teachers who perceived a high level of support with the instructional reading practices as compared to all other K-2 teachers. These findings suggest that adult change factors do support changes in teaching practices, but additional factors including administrative leaders' active involvement should be considered to see improvement in summative assessment data.

Keywords: MTSS framework, adult behavior change, evidence-based reading practices, implementation science, leadership

Table of Contents

Page

Chapter 1: Introduction 1
- Statement of the Problem 4
- Purpose of the Study 7
- Theoretical Framework 8
- Research Questions 9
- Significance of the Study 9
- Setting of the Study 10
- Research Design and Methodology 11
- Definitions of Terms 12
- Summary 17

Chapter 2: Literature Review 19
- An MTSS Framework 19
- Six Critical Components of MTSS 20
- Effective Implementation 22
- Theoretical Framework 27
- Theory of Planned Behavior 28
- Social Cognitive Theory 29
- Critical Components of MTSS Involving Change 32
- Factors Influencing Change to Adopt Evidence-Based Practices 39
- Summary 68

Chapter 3: Methodology 71
- Introduction 71
- Setting 72
- Participants 72
- Description of Participating Schools 73
- Research Design 75
- Addressing Bias 87
- Reliability and Validity 88
- Summary 89

Chapter 4: Results 90
- Introduction 90
- Research Questions 90
- Methods and Procedures 90
- Study Participants 91
- Qualitative Data Collection Revision 92
- Quantitative Data Collection Revision 92
- Data Analysis 92
- Quantitative Data Analysis Revision 94
- Research Question 1: To What Extent Do the Factors Supporting Adult Change Impact Teachers' Instructional Practices 94
- Research Question 2: What Does K-2 Student Growth Data Indicate When Support is Provided on the Use of Evidence-Based Practices Incorporating the Factors of Adult Change Theory 109
- Quantitative Data Display Revision 116

Summary 116
Chapter 5: Discussion 118
Introduction 118
Summary of Results 119
MTSS as a Leadership Study 119
Theoretical Framework 120
Analysis and Discussion of Qualitative Findings 121
Analysis and Discussion of Quantitative Findings 125
Alignment 126
Limitations of the Study 133
Recommendations for Future Research 134
Conclusion 135
References 137
Appendices
A Permission to Conduct Research 164
B MTSS Instructional Practices Support Survey Section 1 167
C Interview Questions 174
D MTSS Instructional Practices Support Survey Section 2 176
E MTSS Instructional Practices Support Survey Section 3 178
F IRB Approval 181
G Informed Consent Form for Online Survey 183
H Informed Consent Email for One-on-One Interviews 186
Tables
1 Comparison of Two Behavior Change Theories 32
2 K-2 Teacher Demographics 73
3 Alignment of Research Questions, Survey Questions, Interview Questions, and Factors of Adult Behavior Change 78
4 Qualitative Survey Results on Teacher Perceptions of Support Received 96
5 Alignment of Research Questions, Factors Supporting Adult Behavior Change, Survey Questions, and Interview Questions 127
Figures
1 Six Critical Domains of MTSS Implementation 22
2 Fixsen and Blasé's Implementation Drivers 26
3 Theory of Planned Behavior Model 29
4 Social Cognitive Theory 31
5 Guskey's Logic Model of Teacher Change 43
6 Exploratory Mixed Methods Design 76
7 Data Analysis Process in Qualitative Research 85
8 High Support Group Teacher Perceptions of Personal Factors Supporting Adult Change 97
9 High Support Group Teacher Perceptions of Social Factors Supporting Adult Change 98
10 High Support Group Teacher Perceptions of Organizational Factors Supporting Adult Change 98
11 Survey Question 22 Responses for All Respondents 99
12 Survey Question 20 Responses for All Respondents 110

13 Survey Question 20 Responses for High Support Group Teachers 110
14 Survey Question 20 Responses for Low Support Group Teachers.....111
15 Independent Samples *t* Test for All K-2 Students 113
16 Independent Samples *t* Test for Second Grade 115

Chapter 1: Introduction

Over the past few decades, education has experienced unprecedented amounts of change through the efforts of school reform. Higher performance through school reform has been the desired aim for schools in the United States with the passage of Public Law 89-10, the Elementary and Secondary Education Act (ESEA) of 1965. This piece of legislation was the government's response to growing concerns that the United States could not compete with the scientific accomplishments of Russia and that there was a need for more equity in the educational system for disadvantaged groups (Fullan, 1982). According to Fullan (1982), this was the beginning of an era of reform that focused on creating innovative practices to address these concerns and lead to school improvement; however, the passage of ESEA failed to increase the academic outcomes for students, particularly those who are marginalized (United States Government Accountability Office, 2010).

The document entitled *A Nation at Risk*, written by the National Commission on Excellence in Education (1983), examined the quality of education in response to concerns about the public perceptions of the nation's schools. The document boldly addressed the problems facing the United States educational system when it revealed that students in other countries significantly outperform American students on standardized tests, and deficiencies in basic reading, science, and mathematical skills meant that the average K-12 graduate of that time was not as well-educated as the graduates from generations before them, despite greater educational opportunities (National Commission on Excellence in Education, 1983). The commission found inadequacies in four areas of the educational process that they believed contributed to the declines in student

performance: a decrease in the number of students enrolling in courses that prepare them for college and careers, a decrease in academic rigor, ineffective use of instructional time, and poor teacher preparation practices.

In 1998, positive behavior interventions and supports (PBIS) were first funded as a reform effort (Sugai & Horner, 2020). There were several provisions that supported more inclusive education for students with disabilities. Ronald Edmonds, the director of the Center for Urban Studies at Harvard, and other school effectiveness researchers inspired the first provision to establish high expectations using school-wide approaches and provide a set of supports in the regular education classroom (Gartner & Lipsky, 1998). This was the beginning of the three-tiered system, PBIS (Gartner & Lipsky, 1998; Sugai & Horner, 2020).

The next piece of federal legislation, the No Child Left Behind Act (2001), introduced scientifically based instructional reading strategies to schools for struggling readers with its Reading First Program. This program provided funding for reading materials and curricula focusing on key components of reading instruction, professional development and coaching for teachers on the use of scientifically based reading practices, and diagnoses and prevention of early reading challenges (National Center for Education Evaluation and Regional Assistance, n.d.). In 2004, the reauthorization of the Individuals With Disabilities Act continued to shift inequities in education by including regulations on early intervention for regular education students, the use of prevention methods in general education classes before special education referrals could be made, and response to research-based interventions to determine special education eligibility (Preston et al., 2015). This path toward change signified the beginning of Response to

Intervention (RTI), which is a model of prevention including multi-tiered instruction in the general education classroom, screening of academic skills, identification and research-based interventions provided to lower performing students, monitoring of their progress, and data-based decision-making (Preston et al., 2015). Further changes in education came with the passage of the Every Student Succeeds Act (ESSA) in 2015. The primary goal of the ESSA legislation was to more effectively prepare all students for college and career success (U.S. Department of Education, n.d.). The legislation emphasizes the importance of equity for disadvantaged students and students with special needs; high-quality instruction for all students; communication between schools, communities, and families; support for local innovations; and accountability to ensure positive change in underperforming schools. ESSA also prioritizes the use of multi-tiered systems of support (MTSS), which has increasingly become the framework of choice for school improvement and systems change in the United States in recent years. The goal of successful MTSS implementation is to increase student outcomes in academics and behavior through the use of collaborative processes. McIntosh and Goodman (2016) provided this definition of MTSS:

> An integrated MTSS model provides all students with the best opportunities to succeed both academically and behaviorally in school. MTSS focuses on providing high-quality instruction and interventions matched to student needs across domains and monitoring progress frequently to make decisions about changes in instruction or goals. There is a systematic and careful integration of these systems to enhance the efficiency and effectiveness of all school systems. (p. 6)

In South Carolina, only 46.6% of students in third through eighth grade met or exceeded grade-level expectations in reading during the 2021-2022 school year, demonstrating that significant changes are still needed to help more students graduate college and career ready (South Carolina Department of Education, 2023).

Statement of the Problem

Although adequate school reform is long overdue and school districts have been mandated by law to implement new programs and given resources to do so, many of their efforts to implement the protocols have not generated the desired change due to either inadequate implementation or inadequate sustainability (Loveless, 2021; van Kuijk et al., 2021). One reform approach that showed promising effects on school improvement and consistent benefits across schools despite variations in student socioeconomic status was comprehensive school-wide reform (Borman et al., 2003). This approach fosters school-wide change that positively impacts several areas: curriculum and instruction, professional learning, parent engagement, and how a school is organized (Desimone, 2002). According to Desimone (2002), comprehensive school-wide reform, with its focus on changing classroom teaching practices and placing more emphasis on how students learn, has been the most successful reform model since *A Nation at Risk* was first published and has yielded evidence-based programs with high yields of success (van Kuijk et al., 2021). However, there have been limitations to this model's effectiveness due to concerns with capacity building (van Kuijk et al., 2021), fidelity of implementation (Loveless, 2021; van Kuijk et al., 2021), and unpredictability of curriculum and instruction delivered by individual teachers (Loveless, 2021).

When the human element is involved, as is required in the implementation of the

practices in an MTSS framework, it is challenging to ensure consistent delivery of evidence-based practices. Although programs are considered to provide a standard set of components to service recipients in a uniform manner, the delivery of the programs is where a great deal of variability lies (Mihalic et al., 2004, as cited in Gagnon et al., 2015). Fixsen, Blasé, Naoom, et al. (2009) explained the reasoning behind this as the complexity involved in applying scientifically proven practices to human service settings such as education. Unlike other fields where the science can be built into a single product with very little impact on its effectiveness by the user, in the education field, what has been proven to work (the science) must be embedded into the daily practices of millions of educators teaching tens of millions of students in approximately 100,000 schools across the nation which are all subject to the unexpected and uncontrollable changes of life. The amount of varying circumstances along with concerns about teacher skill levels in utilizing data for decision-making and minimal understanding of the nuances of systems change makes implementation fidelity difficult (Arden & Benz, 2018; Arden & Pentimonti, 2017).

Implementation of any programs or practices in a system will require changes in adult behaviors. Because classroom teachers and school support personnel are implementers of the practices within the MTSS framework, their behaviors are critical for successful outcomes; however, Desimone (2002, as cited in Schutte, 2020) asserted that shifting the instructional practices of adults is one of the most difficult areas in education to change.

The difficulty with change could come down to how those changing perceive it. Change forces us to examine our own beliefs and practices and alter what we

> "normally" do. It is based on the belief that something better exists or can be done more effectively. For some, that leads to the perception that what they are doing now is of poor quality or wrong. While that may be true, it more likely means that even though what they are doing may be good, it could be better. (Teaching and Learning Consulting Network, LLC, n.d., Understanding the Process and Need for Change section, para. 1)

Despite educator perceptions, change is necessary due to the differences between innovative standards-based instructional practices and traditional instructional practices that most teachers are accustomed to using. They should not be expected to just figure it out on their own (National Implementation Research Network, n.d.). With so many human variables impacting implementation and little to no improvement taking place despite the introduction of new programs, the question for decision-makers to consider is this: “Is the problem the way programs and initiatives are implemented overall or with leaders’ approach to supporting the change of behaviors that are required to realize the successful outcomes the programs promise?”

According to Grenny et al. (2013), the most important skill a person can acquire is the ability to motivate and enable others to change their actions. In an experiential study on the impact of culinary nutrition education programs on behavior change outcomes, Fredericks et al. (2020) found several key drivers of behavior change that are most effective in motivating adults to try new foods and develop new eating habits. Those drivers are skill building, skill reinforcement, peer support, collaboration, challenge, celebration, and success. Additionally, Rafferty and Minbashian (2019) found that certain beliefs and attitudes were positively associated with government employee readiness for

change and their engagement in change-supportive behaviors. On an organizational or systems level, shifting practice takes time, focus, and perseverance (Fullan & Quinn, 2016).

Purpose of the Study

This study sought to identify the incorporation of support for implementing evidence-based instructional practices within an MTSS framework among teachers and the impact on student growth outcomes in three K-2 schools. In addition, the study determined teacher perceptions regarding how support in adult behavior change impacted a shift in their instructional practices. The federal government and states are providing certain levels of support to aid in the improvement of student outcomes but, in some cases, not providing enough support to build the capacity of local schools to implement it well and support the changes in practices necessary to meet student needs (Allensworth et al., 2022; Comstock et al., 2022). When the practices within an MTSS framework are not conducted well, or with fidelity, successful student outcomes will remain elusive (Goodman, 2017). Goodman (2017) asserted that investing in building local capacity so educators know how to implement MTSS effectively and efficiently is paramount for students to learn and for teachers to be able to effectively teach.

Celestine (2021) summarized the research on behavior change factors that best facilitate required shifts in adult behavior. Research strongly supports the consideration of behavior change factors that best facilitate required shifts in adult behaviors. These factors can fall into three broad categories: personal factors, social factors, and organizational factors. Personal factors include motivation, attitude (Eickelmann & Vennemann, 2017; Locke et al., 2019), agency, and beliefs (Bandura, 1977, as cited in

Hivner et al., 2019). Social factors include social expectations, peer pressure, and collaboration (Liu et al., 2021; Sun, 2022). Organizational factors include leadership, professional learning, and coaching (Lyon, n.d.; Sun, 2022). Deliberate attention to these factors by school leaders and strategic implementation can help foster sustainable change to adopt practices that work (Lyon, n.d.).

Theoretical Framework

Change theory was chosen as the theoretical framework grounding this study. According to Reinholz and Andrews (2020), change theory is a theoretical framework of knowledge, supported by empirical evidence, about how change occurs regardless of the chosen program or innovation. One benefit of change theory is helping an organization troubleshoot problems when parts of the innovation are stalled and progress is impeded (Reinholz & Andrews, 2020), which can occur when there is a lack of positive persuasion, acceptance, and understanding of the benefits of adopting new practices that support the innovation (Salmasi et al., 2021). More specifically, behavior change focuses on the long-term alteration of ingrained habits (Celestine, 2021). As it relates to behavior change in education, teacher instructional practices would be altered from traditional practices to more innovative approaches to more adequately meet the needs of students and improve student outcomes (Allensworth et al., 2022; Mitchell et al., 2017). In the psychology field, there are various theories about behavior change, but according to Celestine (2021), there are two that are most frequently mentioned in the literature: the theory of planned behavior and the social learning theory. According to the theory of planned behavior, if a person has a positive attitude about changing a particular behavior, if others around them are engaging in or supporting the behavior change, and if they

believe they can perform the behavior, the intention to change will increase and they will be more likely to change successfully (Madden et al., 1992, as cited in Celestine, 2021; Smith, 2013). Social learning theory proposes that behaviors are learned through observing others in the context of their social surroundings and the consequences of those behaviors (Bandura, 1999, as cited in Celestine, 2021; Lee, 2021). Behavior adoption comes as a result of modeling, remembering, or retaining what has been modeled, replicating it while receiving feedback, motivation, and reinforcement to persist in the new learning (Lee, 2021). This theory also considers cognitive, affective, and biological factors that are specific to individuals and determine human behavior.

Research Questions

This study was guided by the following research questions:

1. To what extent do the factors supporting adult change impact teachers' instructional practices?
2. What does K-2 student growth data indicate when support is provided on the use of evidence-based practices incorporating the factors of adult change theory?

Significance of the Study

Given the negative impacts of the COVID-19 pandemic on student learning and mental health, MTSS is needed more now than ever before to close the gaps (Eisele, 2022); however, the complicated nature of the practices within the MTSS framework may include additional administrative tasks for teachers, such as interpreting and managing large amounts of data and documentation, which may take a further toll on educators who are already experiencing stress and burnout (Eisele, 2022). Unfortunately,

teachers in schools where many students are not learning year after year may doubt that all students are capable of learning (Fullan, 2020), which has a negative impact on intervention integrity and teacher effort (O'Connor & Freeman, 2012). According to Fullan (2011), to change educator beliefs, leaders must focus on first changing their behaviors. Grenny et al. (2013) added that the majority of the problems that exist do not require more technology, philosophy, theory, or data; rather, they require the skills to change what people in the organization do.

Literature is abundant regarding challenges related to the implementation of evidence-based practices due to a lack of understanding and application of implementation science; however, there is a need for additional research on effective change practices as it relates to the implementation of the practices in an MTSS framework that positively impacts adult practitioner beliefs and behaviors. This study's findings were intended to help school districts more effectively influence change in teacher instructional practices and shed light on some of the barriers to implementation that may help build momentum despite unpredictable change and practitioner resistance. In addition, this study attempted to help other school district leaders more strategically influence system-wide change.

Setting of the Study

The study was conducted in a small, recently consolidated rural district located in the east-central region of South Carolina. There are 11 schools in the system with a population of approximately 4,300 students: one high school, two 6-12 schools, one 7-8 school, one 4-6 school, one 2-3 school, one 3-5 school, one elementary (K-5) school, two early childhood centers, and one alternative school serving Grades 6-12. One school

houses the Pre-K through third-grade Montessori program. The F.E. Dubose Career Center provides more than 60 Career and Technology Education courses for high school students. The district also partners with a local technical college and a university in the area to offer dual enrollment opportunities to qualifying students. Eighty percent of the student population is in poverty; however, all schools are served as school-wide Title 1 schools. Written permission was obtained from the district's superintendent for the access and use of the data (Appendix A).

Research Design and Methodology

This study sought to identify the incorporation of support for implementing evidence-based instructional practices within an MTSS framework among teachers and the impact on student growth outcomes in three K-2 schools. In addition, the study determined teacher perceptions regarding how support in adult behavior change impacted a shift in their instructional practices. The findings are useful in determining the critical elements needed to change adult behavior during the implementation of innovative programming. The mixed methods approach led to a deeper understanding of the research problem, which is adult behavior change as it relates to MTSS implementation, and aided in the comparison of different perspectives gathered from both qualitative and quantitative data (Creswell & Creswell, 2018). It also aided in the triangulation of the data sources used, helped explain any contradictions, and led to an explanation of any confirmations or contradictions found in the study. The specific type of mixed methods design used was exploratory mixed methods. It is a type of design in which qualitative data collection and analysis precede quantitative data collection and analysis and are then interpreted together (Creswell & Clark, 2017). In this study, student growth data in

reading was used to determine student outcomes while support was provided on using evidence-based instructional practices incorporating change theory. Teacher survey and subsequent interview data explored K-2 teacher perceptions of the support received with evidence-based instructional reading practice utilizing the change factors and their impact on instructional shifts.

The qualitative design portion was used to understand the meaning that people attribute to a social problem. In the case of this study, it meant that teachers and administrators attributed to the level of support they received in changing instructional practices. The qualitative data helped explain the impact of those changes at the practitioner level. It was inductive in that it starts with specifics and then moves to general or broad themes. This approach is recommended if the researcher does not already know the exact variables involved (Tracy, 2020). A partly qualitative research design also suited this study because it was reflective of effective school reform, which is a social issue that the United States and state governments have long been attempting to resolve. This reason aligns with the constructivist worldview, which is typically seen in qualitative research (Creswell & Creswell, 2018). A partly quantitative approach also fit this study because it helped identify the possible changes needed to improve academic performance and the factors that influence MTSS implementation outcomes at the practitioner level (Creswell & Creswell, 2018).

Definition of Terms

The purpose of this section is to provide the reader with the definitions of terms that may be unfamiliar and are mentioned throughout this dissertation. With many different interpretations of MTSS and the varying forms it takes in different parts of the

country, it is important to specifically define the terms utilized in this study.

Adult Behavior Change

The long-term alteration of ingrained habits (Celestine, 2021). As it relates to behavior change in education, teacher instructional practices would be altered from traditional approaches to more innovative approaches to more appropriately meet the needs of students and support improved student outcomes (Allensworth et al., 2022; Mitchell et al., 2017).

Beliefs

A set of assumptions, convictions, and deep-seated views that teachers accept as true regarding students, student learning, the classroom environment, education and educational theories, curriculum, methods of teaching, and discipline (Center for Responsive Schools, 2021).

Capacity Building

The process of building local expertise in specific content and competence for long-term implementation of a program to enable educators to select and continue implementing evidence-based practices with fidelity, sustain them over time despite changes in context, and scale up implementation (Sugai et al., 2016).

Coaching

Job-embedded professional development that is regularly conducted and aids staff in the proper use of selected evidence-based programs or practices. Educators who know the evidence-based practice models and facilitate the teacher's learning about proper ways to use the evidence-based practice observe the implementation of that evidence-based practice in the classroom setting and provide ongoing support and feedback to the

implementer (Mahoney, 2020; National Implementation Research Network, n.d.).

Collaboration

The ability for general and special educators, administrators, support professionals, and other stakeholders to work together to attain a shared goal. In effective collaboration, educators are expected to share knowledge and skills and take joint ownership of student learning and progress (DeHartchuck, 2021; Gerzel-Short et al., 2018; Ortiz & Robertson, 2018).

Collective Leadership

A leadership approach that ensures all members of a team, with a shared vision and working toward a common goal, participate in decision-making that impacts student learning and a school's overall success (Center for Teaching Quality, 2021).

Collective Efficacy

Teacher beliefs about the school faculty's ability as a whole to organize and carry out the actions required to positively influence student growth (Goddard et al., 2004, Skaalvik & Skaalvik, 2010, as cited in Aasheim et al., 2020).

Communication

The reciprocal sharing of information between school personnel, families, and other stakeholders involves listening to concerns and suggestions and being responsive to needs in a timely, authentic, and continual manner (Branching Minds, 2022).

Competency Drivers

The processes used to develop, strengthen, and maintain an educator's ability to implement an innovation to benefit students (Metz & Bartley, 2012).

Culture

The guiding beliefs, insights, attitudes, relationships, behaviors, and written and unwritten norms that influence the way a school operates (Fullan, 2007; Great School Partnership, 2014).

Distributed Leadership

A team of educators representing different grade levels, departments, and levels of leadership who work together to generate positive change throughout a school (Center for Student Achievement Solutions, 2021).

Evidence-Based Practices

Programs or practices that have been proven to yield positive, statistically significant results across settings after rigorous experimental evaluation (IRIS Center, 2023).

Fidelity

Evidence of an innovation being carried out the way it was intended to be carried out to better ensure positive outcomes (Arden & Benz, 2018).

Growth Mindset

The belief that ability can be developed through effort, constructive feedback, or help from others, and the use of effective strategies (Dwek, 2016; Yeager et al., 2022).

Implementation

A specified plan designed to put an activity or program in place over time (Metz et al., 2011).

Implementation Drivers

Core implementation components create and support practitioner behavior that is

carried out with high fidelity. These components include appropriate staff selection, meaningful preservice and in-service training, ongoing coaching to extend knowledge gained in training, assessment of staff practices and performance, decision support for continuous system improvement, facilitative administration that ensures educators have the skills and supports needed to be effective with every student, and strategies to collaborate with external stakeholders to obtain needed resources to support the work (Fixsen, Blasé, Naoom, et al., 2009).

Implementation Science

The transfer of evidence-based practices and programs with fidelity from the field of research into practitioner practice to produce positive outcomes for program recipients in settings such as social service, mental health, education, juvenile justice, early childhood education, and substance abuse prevention and treatment areas (Fixsen et al., 2005).

Instructional Leadership

The actions a principal takes that are aimed at improving teaching and learning in their buildings (Liu et al., 2021). These behaviors include defining and communicating the school's mission and goals that emphasize teaching and learning, directing instructional programs, developing a positive school climate to include protecting instructional time, being highly visible in the school (Bellibaş et al., 2022), and providing incentives for expected teacher behaviors (Williams et al., 2021).

Self-Efficacy

A belief in one's ability to carry out the requirements to reach certain outcomes (Bandura, 1997).

Social Norms

The informal and unwritten rules and expectations that define acceptable behaviors in a community of people. Social norms can shape behavior through what an individual believes others in their community do and what others in their community approve (UNICEF, 2021).

Sustainability

A focus on the long-term survival and effectiveness of an innovative practice at an implementation site despite changes over time in program requirements, regardless of the lack of political and financial support and staff turnover (Fixsen et al., 2005).

Teacher Agency

The beliefs a teacher has about their ability to attain professional goals as both teacher and learner and their outlook on their capacity to work with and influence their colleagues (Liu et al., 2016).

Summary

This dissertation was divided into five chapters. Chapter 1 provided an overview of the history of educational reform efforts to improve the academic outcomes for students. The research questions were presented along with the purpose and significance of the study. The definitions of key terms were also provided. Chapter 2 begins with an overview of the study, a description of the setting, a summary of MTSS, and an explanation of effective implementation. Next is the theoretical framework, which grounded the study with supporting literature regarding how it relates to the implementation of MTSS in schools. Chapter 3 describes the methodology of the study, the population and sample selection process, the data analysis process, the validity, and

the unit of analysis in the design of the study. Chapter 4 presents the analysis and interpretation of the findings. Finally, Chapter 5 closes with a discussion of the findings, possible impact on current practice, and implications for future research.

Chapter 2: Literature Review

This mixed methods study sought to identify the incorporation of support for implementing evidence-based instructional practices within an MTSS framework among teachers and the impact on student growth outcomes in three K-2 schools. In addition, the study determined teacher perceptions regarding how the support in adult behavior change impacted a shift in their instructional practices. Change, for many school systems, is needed to produce successful outcomes for students, which is the benefit of operating under an MTSS framework. However, research has shown that these large-scale changes are difficult to achieve (Allensworth et al., 2022), in large part due to the lack of support provided by states and districts (Allensworth et al., 2022; Comstock et al., 2022) and the propensity of teachers to do what they have always done in the classroom (DuFour et al., 2005; Riley & Stolic, 2017; Teaching and Learning Consulting Network, LLC, n.d.). However, effective change that impacts the system and moves a school toward high student achievement begins with changing individual teacher behaviors (Missouri Department of Elementary and Secondary Education, 2018).

An MTSS Framework

MTSS is a framework for school improvement that is proactive and preventative and focuses on maximizing student achievement through the use of data and high-quality instruction (American Institutes for Research, 2023). It provides structure and guidance for educators to adequately address the needs of the whole child in the areas of academics, and behavior, social, and emotional learning by engaging in data-based problem-solving. Data-based problem-solving related to instruction and intervention, positive behavioral supports, and social-emotional learning is what helps to ensure more

positive outcomes for school systems, teachers, and students. MTSS also supports the proper identification of students with disabilities.

Six Critical Components of MTSS

The authors of the Self-Assessment for MTSS as part of the Florida Response to Intervention Project have identified the six critical components for an MTSS framework as displayed in Figure 1 (Stockslager et al., 2016). The following are the definitions of the six critical components, as defined by the Florida Response to Intervention, that are needed to facilitate the implementation of the programs and practices selected under the framework.

- Leadership: Actively involved leadership who supports the use of evidence-based practices consists of the school principal, assistant principal(s), and the leadership team. The responsibilities of leadership include communicating a vision and mission to school faculty and staff, providing resources for planning and delivering instruction and intervention, ensuring that faculty and staff have the data that are needed for data-based problem-solving, and engaging staff in ongoing professional development specific to MTSS (Problem Solving and Response to Intervention Project, 2022).
- Capacity Building and Infrastructure: To implement and sustain MTSS over time, school-wide capacity and infrastructure must be built. Ongoing professional learning opportunities and follow-up coaching on data-based problem-solving and multi-tiered instruction and intervention, developing procedures that enable data-based problem-solving, and scheduling that are conducive to planning and implementing instruction and intervention are key

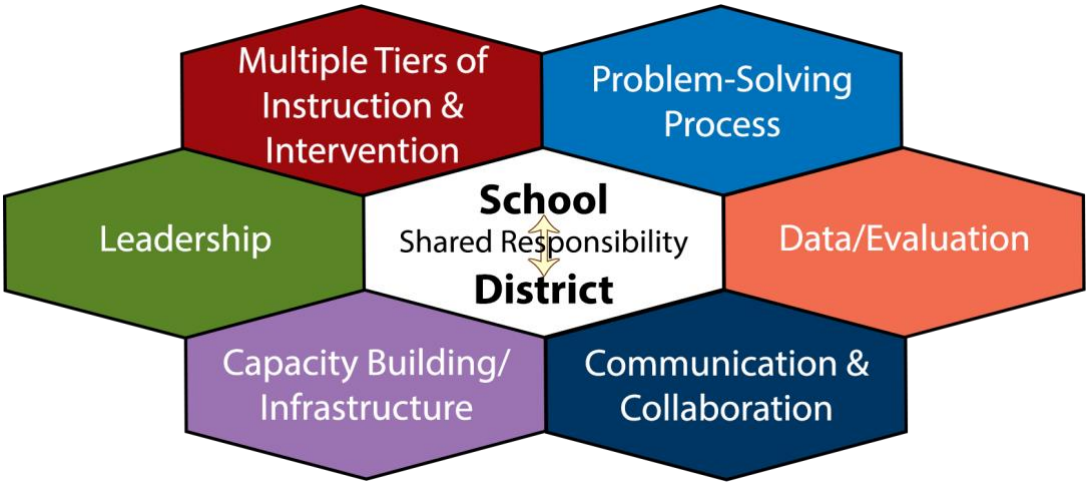
elements of capacity building and infrastructure (Problem Solving and Response to Intervention Project, 2022).

- Communication and Collaboration: This involves obtaining buy-in and consensus, involving key stakeholders in planning for implementation, establishing feedback loops to and from implementers to support continuous improvement, and putting structures in place to communicate and work with families and other community stakeholders (Problem Solving and Response to Intervention Project, 2022).
- Data/Evaluation: Data/evaluation focuses on easily accessing and understanding the data sources used for decision-making and how they align with the purposes of assessment. It also focuses on having procedures and protocols in place for administering assessments and using outcome and fidelity data so staff can more effectively make educational decisions (Problem Solving and Response to Intervention Project, 2022).
- Problem-Solving Process: Data-based problem-solving involves the use of data to inform educational decisions regarding student outcomes for all content areas, grade levels, and tiers of intervention. It also helps to address barriers to school-wide implementation of practices under the MTSS framework (Problem Solving and Response to Intervention Project, 2022).
- Multiple Tiers of Instruction and Intervention: Multiple tiers of instruction and intervention include three tiers. Tier 1 includes the core or universal academic and behavioral instruction delivered to all students. Tier 2 includes supplemental instruction or intervention provided to some students

(approximately 15%) who are not meeting grade-level benchmarks. Tier 3 includes intensive, small group, or individual interventions for a few students (approximately 5%) who are facing significant barriers to learning the required skills and need more intensive or different instruction (Problem Solving and Response to Intervention Project, 2022).

Figure 1

Six Critical Domains of MTSS Implementation



Note. This graphic shows the six critical components of an MTSS framework. From *Project Information*, by Problem Solving and Response to Intervention Project, 2022. https://floridarti.usf.edu/about/projectinformation.html. Copyright 2022 by the Problem Solving and Response to Intervention Project.

Effective Implementation

One important aspect of the MTSS framework is its continuum of evidence-based systematic practices to achieve positive outcomes for all. Evidence-based practices are skills, techniques, and strategies that have been proven to yield positive, statistically significant results across settings after rigorous experimental evaluation (IRIS Center,

2023). Studies show a divide between research evidence and practices that are used in general education and special education classrooms (Wood et al., 2016). Research also supports that while many teachers want to improve student outcomes, they are unprepared to properly deliver the type of evidence-based instruction that meets the needs of all learners (Wood et al., 2016); therefore, the desire to and the simple use of evidence-based practices by themselves will not yield desired outcomes. There must be a focus on the pathway to those desired outcomes. According to Fixsen, Blasé, Horner, et al. (2009), the process toward effective and affordable implementation begins with program implementers' readiness for change, which has to be developed and sustained rather than expected to already exist within the system. Top-down mandates or incentives do not typically yield the actions expected by system leaders but rather can lead to resistance to change and ultimately failure to produce expected results (Fixsen, Blasé, Horner, et al., 2009).

While most studies on the fidelity of implementation in an MTSS framework align with previous research which points to the lack of resources (Goodman, 2017), the variability in the delivery of evidence-based programs (Loveless, 2021; Mihalic et al., 2004), teacher skill level (Arden & Benz, 2018; Arden & Pentimonti, 2017), and teacher resistance to top-down initiatives (Fixsen, Blasé, Horner, et al., 2009) as the cause of low fidelity, Anderson (2017) demonstrated an alternative finding. The study found that there is a positive statistically significant relationship between the magnitude of change that teachers were asked to execute with their newly adopted comprehensive school reform models and fidelity of implementation. Anderson concluded that teachers who were expected to make larger changes in practice did so with a higher degree of fidelity

because of the shift in their thinking about the work they did. Due to the likelihood that more moderate shifts, which are easier to implement, may be absorbed into the old ways of operating, high fidelity may be compromised (Anderson, 2017). Despite the varying rationales for implementation effectiveness, research shows that positive and sustainable outcomes depend on effective, evidence-based practices, effective implementation, and an enabling context that supports their sustainability (Bertram et al., 2011; Fixsen et al., 2015). When effective interventions are combined with ineffective or insufficient implementation, the results are poor and inconsistent outcomes.

Organizations would benefit from an understanding of implementation science to prevent such outcomes. The implementation science model focuses on implementing evidence-based practices and programs with fidelity to produce positive outcomes for program recipients in settings such as social service, mental health, education, juvenile justice, early childhood education, and substance abuse prevention and treatment areas (Fixsen et al., 2005). Fidelity is reached when an innovation is carried out the way it was intended to be carried out to better ensure positive outcomes (Arden & Benz, 2018). Implementation science, which began in the health sciences arena, developed out of a need to transfer scientifically validated programs and practices into the field so practitioners could use them with an effective level of fidelity to improve outcomes (Odom et al., 2014, as cited in Steinbrenner et al., 2020). Eccles and Mittman (2006, as cited in Bauer & Kirchner, 2020) specifically defined implementation science as the study of ways to promote the systematic utilization of research and evidence-based practices in practitioner use to improve the effectiveness of health services and care.

Due to the challenges associated with implementation, the likelihood of

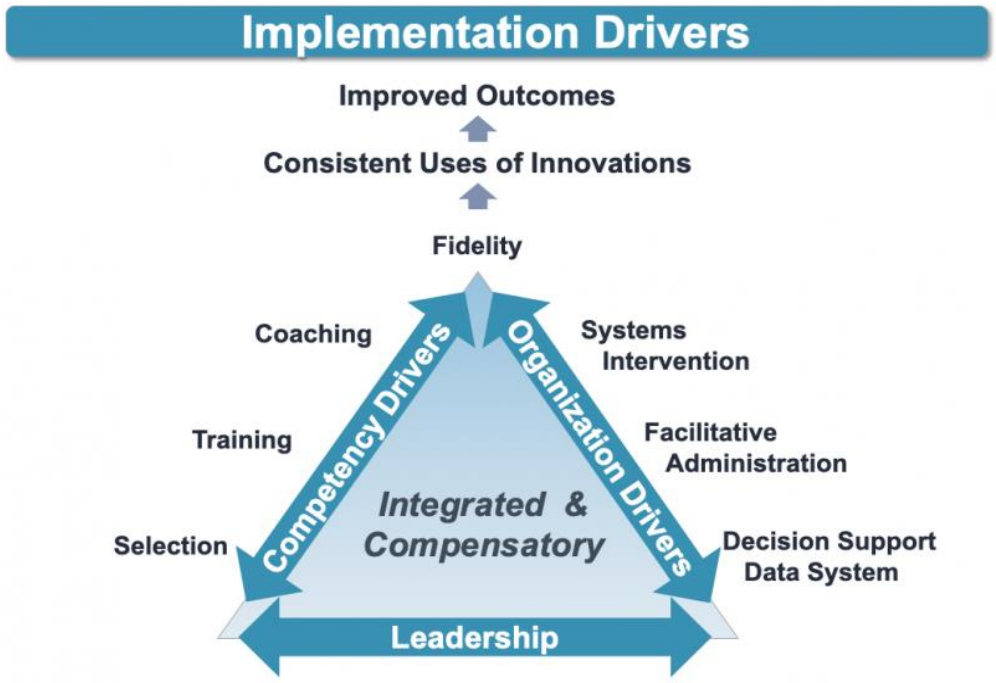
innovative practices having the desired impact on student learning and being sustained over time is low without an active and supportive approach. There are three approaches to implementation: letting it happen, helping it happen, and making it happen (Fixsen et. al. 2011, as cited in National Implementation Research Network, n.d.). Letting it happen is when an organization adopts or mandates a policy or program and expects its employees to take the information provided about it and put it into practice with minimal support while also holding them accountable for positive outcomes (National Implementation Research Network, n.d.). Helping it happen is when a policy or program is mandated or adopted, and the organization provides training resources and materials to support but expects employees to solve problems on their own and to reach expected outcomes (National Implementation Research Network, n.d.). The most active approach, making it happen, is when an organization employs purposeful best practices for implementation through a team to support employees once a policy or program is mandated or adopted (National Implementation Research Network, n.d.). The team is responsible for establishing support systems, solving organization and system problems, and producing positive results.

Other important factors that support effective implementation are the core components of implementation science as defined by Fixsen et al. (2005). This is the stage in which the core components or the most important parts of an implementation practice or program are prepared. To attain effective innovation use and high-fidelity behavior among practitioners in any field, core implementation components, also known as implementation drivers, must be identified and developed to positively influence implementation and positively support and influence staff behavior (Fixsen, Blasé,

Naoom, et al., 2009). Implementation drivers are so impactful when used that even ineffective programs can be implemented well (Fixsen, Blasé, Naoom, et al., 2009). Conversely, effective programs can be implemented poorly without their use (Fixsen & Blase, 1993, as cited in Fixsen et al., 2005). As shown in Figure 2, core implementation components consist of three main drivers: leadership, competency, and organization.

Figure 2

Fixsen and Blase's Implementation Drivers



Note. This graphic shows the three main drivers involved in the core implementation components. Those three drivers are leadership, competency drivers and organization drivers. From *Implementation drivers: Assessing Best Practices*, by National Implementation Science Network, 2015. https://nirn.fpg.unc.edu/sites/nirn.fpg.unc.edu/files/imce/documents/NIRN-ImplementationDriversAssessingBestPractices2015.pdf. Copyright 2015 by National Implementation Science Network).

There are smaller areas within these components. When integrated and interacting with each other, these components lead to fidelity, consistent use of innovations, and improved outcomes (Fixsen, Blasé, Naoom, et al., 2009). There is a need for effective implementation of evidence-based programs and practices to realize desired student outcomes; however, students cannot benefit from instructional practices they do not receive from their teachers (Minnesota Department of Education, n.d.), and effective implementation largely depends on the vital behaviors of the adult implementers. Therefore, an understanding of how people change long-standing and ineffective practices to adopt new behaviors is needed and was further explored in this literature review.

Theoretical Framework

This study was theoretically founded on change theory. According to Reinholz and Andrews (2020), change theory is a theoretical framework of knowledge, supported by empirical evidence, about how change occurs regardless of the chosen program or innovation. One benefit of change theory is helping an organization troubleshoot problems when parts of the innovation are stalled and progress is impeded (Reinholz & Andrews, 2020). This can occur when there is a lack of positive persuasion, acceptance, and understanding of the benefits of adopting new practices that support the innovation (Salmasi et al., 2021). More specifically, behavior change focuses on the long-term alteration of ingrained habits (Celestine, 2021). As it relates to behavior change in education, teacher instructional practices would be altered from traditional approaches to more innovative approaches to more appropriately meet the needs of students and improve student outcomes (Allensworth et al., 2022; Mitchell et al., 2017). In the

psychology field, there are various theories about behavior change, but according to Celestine (2021), there are two that are most frequently mentioned in the literature. The next section provides a brief overview of each theory and provides the common constructs in both.

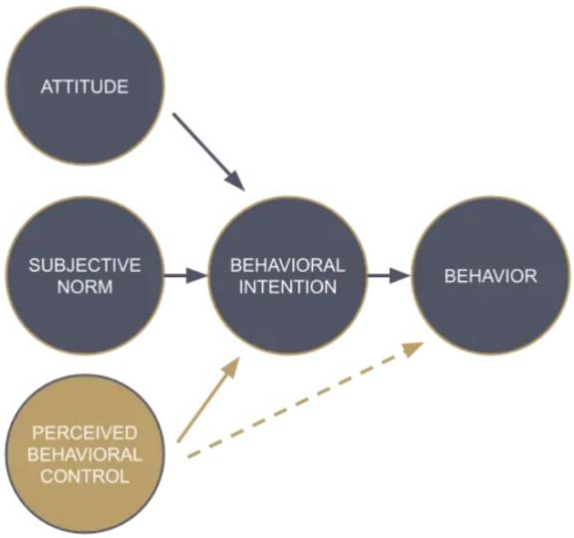
Theory of Planned Behavior

The theory of planned behavior, as shown in Figure 3 is an extension of Fishbein and Azjen's original theory of reasoned action developed in 1970 (Celestine, 2021). The theory of reasoned action submitted that intentions drive behavior and personal attitude, and perceived social standards are predictors of intention. A person's behavioral attitude consists of two aspects: affective and instrumental attitude (Smith, 2013). Affective attitude has to do with whether or not a person perceives the behavior as something they enjoy. Instrumental attitude refers to the belief that the behavior will be helpful or hurtful (Smith, 2013). Like attitude, perceived social norms have two types: injunctive and descriptive. Injunctive norms involve encouragement to engage in the new behavior. Descriptive norms relate to the degree to which a person's identified social group also performs the behavior (Smith, 2013). In the 1980s, Azjen added perceived behavioral control to the model, turning it into the theory of planned behavior (Madden et al., 1992, as cited in Celestine, 2021). Perceived behavioral control is defined as a person's belief in their ability to implement the new behavior and the extent to which they believe they can overcome potential barriers. In this model, perceived behavioral control is an additional predictor of intention and can sometimes also directly influence behavior (Madden et al., 1992, as cited in Celestine, 2021). According to this theory, if a person has a positive attitude about changing a particular behavior, if others around them are engaging in or

supporting the behavior change, and if they believe they can perform the behavior, the intention to change will increase and they will be more likely to change successfully (Madden et al., 1992, as cited in Celestine, 2021; Smith, 2013).

Figure 3

Theory of Planned Behavior Model



Note. This graphic shows the parts of the Theory of Planned Behavior. From *What is Behavior Change in Psychology? Five Models and Theories*, by Madden et al., 1992, as cited in Celestine, 2021. https://positivepsychology.com/behavior-change/. Copyright 2021 by Positive Psychology.com.

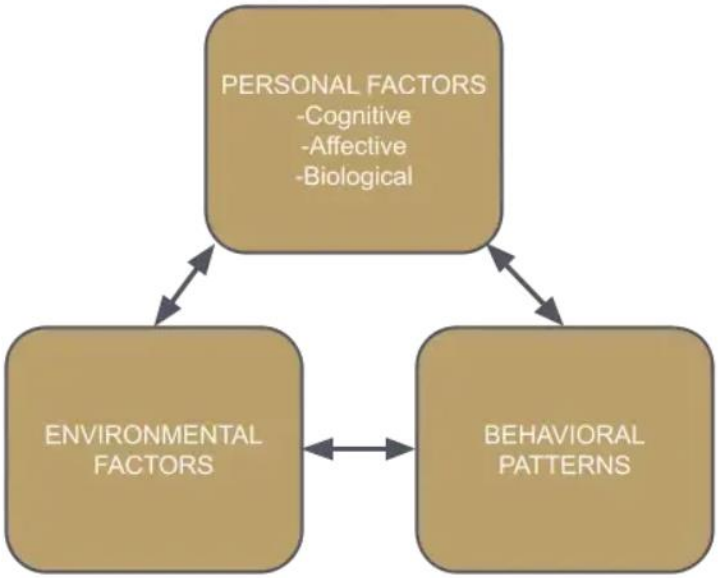
Social Cognitive Theory

In 1986, social cognitive theory, as shown in Figure 4, developed from Albert Bandura's social learning theory (Sutton, 2021). In his theory, Bandura postulated that behaviors are learned through observing others in the context of their social surroundings and the consequences of those behaviors (Bandura, 1999, as cited in Celestine, 2021; Lee, 2021). Behavior adoption comes as a result of modeling, remembering, or retaining

what has been modeled, replicating it while receiving feedback, motivation, and reinforcement to persist in the new learning (Lee, 2021). This theory also considers cognitive, affective, and biological factors that are specific to individuals and determine human behavior. Cognitive factors include knowledge, expectations of the costs and benefits of the behavior change, and attitudes. Environmental factors include access to resources in the community, perceived opportunities and barriers that may help or impede the change, social norms, and influence on others. Behavioral factors include expertise, opportunities to practice, and belief in one's ability. According to Bandura (1997, as cited in Lee, 2021), there are four sources of self-efficacy: mastery of one's own personal and direct experiences, physiological arousal (positive or negative feelings associated with the new learning), vicarious experiences of others modeling the behavior, and social persuasion from one's teachers or peers.

Figure 4

Social Cognitive Theory Model



Note. This graphic shows the components of the Social Cognitive Theory Model. From *What is Behavior Change in Psychology? Five Models and Theories*, by Bandura, 1977, as cited in Celestine, 2021. https://positivepsychology.com/behavior-change/. Copyright 2021 by Positive Psychology.com.

The theory of perceived planned behavior and social cognitive theory have several factors in common that are named differently. Table 1 compares the two theories according to the common constructs and synthesizes them into personal, social, and organizational factors that facilitate changes in adult behavior.

Table 1

Comparison of Two Behavior Change Theories

Factors	Constructs	Characteristics of the theory of planned behavior	Characteristics of social cognitive theory
Personal	• Motivation, attitudes • Beliefs	• Perceived behavioral control • Attitude, intention	• Self-efficacy • Affective • Agency
Social	• Social norms • Culture • Peer modeling • Professional learning communities • Collective efficacy	• Subjective norms	• Social norms • Environment
Organizational	• Principal leadership • Professional learning • Coaching	• Perceived behavioral	• Environmental factors

Note. This table shows the common constructs of the Theory of Planned Behavior and Social Cognitive Theory, which are broken into personal, social, and organizational factors. Adapted from *What is Behavior Change in Psychology? Five Models and Theories,* by Madden et al., 1992 & Bandura, 1977, as cited in Celestine, 2021. https://positivepsychology.com/behavior-change/. Copyright 2021 by Positive Psychology.com.

Critical Components of MTSS Involving Change

The critical components more closely related to change theory are leadership, capacity building, and communication and collaboration.

Collective Leadership

According to Louis et al. (2010, as cited in Batsche, 2021), leadership accounts for approximately 25% of the change in student learning across schools, which is significant. Leadership has two core functions. The first, providing direction, has to do with expressing a clear vision to improve student outcomes (Choi et al., 2019; Fullan, 2016). The second core function, exercising influence, involves a network of control exercised by most internal and external stakeholders on decisions in the school (Choi et al., 2019; Fullan, 2016). This indicates that the building principal is not the only person with decision-making power, but rather the principal empowers school teams to include grade-level teachers, coaches, other school representatives, family partners, and students to exchange ideas, request support for instruction, and make decisions (Louis et al., 2010, as cited in Batsche, 2021; Choi et al., 2019). This method, utilized by higher-performing schools, describes collective leadership, which according to Louis et al. (2010, as cited in Batsche, 2021), has a stronger impact on student performance than individual leadership. Improved student achievement is possible with this set of practices because it ensures that relevant skills are embedded in every classroom and school or district team (Center for Teaching Quality, 2021). School leaders through the use of collective leadership influence student achievement most significantly through teacher motivation and working conditions (Louis et al., 2010, as cited in Batsche, 2021).

In terms of MTSS installation, implementation, and sustainability, Choi et al. (2019) found that meaningful change is not likely to occur without the intervention of high-quality school leadership, even when technical assistance is specifically targeted to the operational mechanics of MTSS installation; thus, MTSS implementation and school

transformation require attention to developing administrative leadership that includes instructional leadership, reciprocal communication, and trust to be effective. Once the foundation of administrative leadership is in place, the work of building the infrastructure can take place. Schools with well-established processes and capacities in place have the essential foundations on which to build an MTSS system (Louis et al., 2010, as cited in Batsche, 2021). In a study of MTSS implementation in Michigan, schools that were considered high implementers of the framework because they demonstrated the most improvement for students had strong leaders and specialized staff in place who made MTSS a priority (Sparks, 2016). Prioritizing MTSS involves managing the processes involved, distributing necessary resources, building educator competency to deliver evidence-based practices, and creating hospitable environments that make MTSS implementation possible (Goodman, 2017).

Capacity Building

Due to the positive correlation between implementation fidelity and positive student outcomes, it is important to build educator capacity in evidence-based programs and practices. Capacity building is defined as the process of building local content expertise and competence for the long-term implementation of a program to enable educators to select and continue implementing evidence-based practices with fidelity, sustain them over time despite changes in context, and scale up implementation (Sugai et al., 2016). As it relates to the sustainability of practices over time, Solomon et al. (2022) found five factors that contribute to implementers' continued engagement with an innovation for improving school climate: (a) the schools' beginning levels of motivation and capacity, (b) the presence of innovator champions, (c) shared leadership and shared

vision, (d) engaging in data discussions and seeking input from stakeholders, and (e) active engagement with technical assistance coaches to work through challenges. In terms of building organizational capacity to implement, the effort school teams put into implementing the new model had the most impact. School teams who had active participation by decision-makers, who engaged with their survey data after they were collected, and who embraced the fact that change takes time indicated a greater ability to improve school climate (Solomon et al., 2022). The indirect yet positive growth those schools experienced was an increase in the ability to read, understand, and communicate data, a greater capacity for shared leadership, and more commitment to engage external stakeholders in other areas of improvement (Solomon et al., 2022).

Readiness in an organization is seen in the degree to which the members share a resolve and commitment to change, whether or not they value or buy into the change, and the degree to which they believe that they have the collective ability to effectively implement the change based on the required tasks, the available resources, and current circumstances (Weiner, 2009, as cited in Khedhiri, 2018). The higher the readiness level within the organization for change, the higher the likelihood that members will initiate, cooperate, persist through challenges, and display greater effort, which results in a higher degree of effective implementation and sustainability (Weiner, 2009, as cited in Khedhiri, 2018). In a study conducted by Williamson (2019), the district's previous and unsuccessful experience with implementing RTI had a negative impact on readiness and caused some educators to express reluctance about adopting a new initiative (Williamson, 2019). Engaging in the process of assessing and creating readiness for change can in many cases prevent the resistance that occurs when top-down decisions are made and

implementers are expected to implement change before they are ready, and it can prevent ineffective and unnecessarily expensive but failed attempts at implementation (Fixsen et al., 2013). Arden and Benz (2018) added that assessing readiness for MTSS implementation requires leaders to think about the functioning of their current systems and to build on the strengths that already exist, so as not to frame implementation as a new initiative for implementers to take on but rather an integration of initiatives and best practices. Assessing readiness can be done by collecting interview and observation data from key stakeholders such as those who are knowledgeable about the tiered systems in place, the implementers, and representatives of all student groups (Arden & Benz, 2018). The National Implementation Research Network (n.d.) also stated that communication during this phase should include family and community stakeholders, other sites implementing the program, and outside experts who can provide technical assistance to aid with fidelity. Even in non-educational settings, scales can be used that ask about the need for improvement; training needs; institutional resources such as space, staffing, and technology; staff attributes such as efficacy and adaptability; and the climate of the organization to include the mission, vision, goals, and communication.

Communication and Collaboration

An increasing body of research suggests that intentional and effective collaboration and communication among and between key stakeholders are needed for the improvement of student outcomes, particularly for students with unique learning needs (Gomez-Najarro, 2020; Heisler & Thousand, 2021; Problem Solving and Response to Intervention Project, 2022). McLeskey et al. (2017) identified collaboration as a high-leverage practice for special educators to master to make a positive difference with

struggling students. Proactive, student-centered collaboration between principals and teacher teams, general educators and special educators, teachers and paraprofessionals, and interdisciplinary team members such as behavior specialists and speech-language pathologists can provide necessary resources to classrooms, schools, and systems by leveraging the expertise and experiences of important stakeholders (Barnes et al., 2021; Chow, 2022; Chow & Hollo, 2022; Chow & Wallace, 2021; Voelkel & Chrispeels, 2017). These types of partnerships provide teachers with a comprehensive understanding of their students' learning needs; equip them to address those needs through effective planning and implementing instruction; and foster meaningful connections between educators, families, and other stakeholders (Chow, 2022; McLeskey et al., 2017). Collaboration can and should occur when developing individual student instructional programs and goals, in data meetings where general and special educators discuss student data together to ensure effective differentiated instruction, assessment, and intervention practices, and monitoring progress toward the specified goals (Gomez-Najarro, 2020; McLeskey et al., 2017). It can also occur with the delivery of interventions in co-teaching models between general educators and special educators (Heisler & Thousand, 2021). In addition, collaboration can and should occur in classrooms between certified teachers and paraprofessionals (Barnes et al., 2021). For this type of collaboration to be most effective in self-contained classrooms, there should be a consistent show of teamwork between teachers and their paraprofessionals, clarification of assigned roles and responsibilities, and an ongoing practice of respect and appreciation one for the other (Barnes et al., 2021).

Although an MTSS is designed to foster collaboration to provide a more equitable

approach to addressing student needs and prevent overidentification for special education through the RTI process, there are instances where traditional approaches to special education evaluation are still in effect (Gomez-Najarro, 2020; Ortiz & Robertson, 2018). A study conducted by Gomez-Najarro (2020) found that an elementary school in a major metropolitan area in a United States city in its seventh year of RTI implementation for reading did not consistently encourage opportunities for collaboration across tiers between general and special education teachers. The limited collaboration that did occur happened in two settings. One setting was apart from RTI data meetings in the form of informal conversations that general and special educators initiated on their own to exchange information about students. The other setting was in referral meetings where their RTI model required special education teachers to attend to determine eligibility for special education placement. According to this school's model, special education teachers' expertise was limited to the final stages of the RTI process but was not utilized in preventing unwarranted referrals in the beginning stages, which is a premise of MTSS (Gomez-Najarro, 2020; Schulte, 2016, as cited in Gomez-Najarro, 2020).

Researchers suggest that barriers to collaboration in schools include time constraints for planning, consultation, and training; limited opportunities for purposeful communication embedded in the culture; a lack of understanding of and appreciation for respective interdisciplinary roles; traditional mindsets about teacher training; and limited resources (Archibald, 2017); therefore, successful and productive collaboration should rally support from district and school administrators, who can foster a commitment to and sustainability of collaborative practices, provide professional learning experiences to improve educators' collaborative skills and create schedules that support different types

of continuing collaboration (Chow, 2022; McLeskey et al., 2017).

Factors Influencing Behavior Change to Adopt Evidence-Based Practices

There are several factors common to the theory of planned behavior and social learning theory that influence behavior change when adopting innovative, evidence-based instructional practices. These factors can be characterized as personal, social, and organizational factors.

Personal Factors

Research supports that individual characteristics such as motivation and attitudes may better indicate future evidence-based practice use than organizational characteristics such as culture and leadership (Eickelmann & Vennemann, 2017; Locke et al., 2019).

Motivation. According to Bandura (1997), self-motivation and willful intent are based on a cognitive activity called forethought concerning the future. Forethought is a mental exercise that causes future states to be pictured in the present and is translated into incentives and self-guiding actions. A person's perception of a future state or goal can serve as a current motivator and regulator of their purposive behavior. During this process, beliefs are formed about what an individual is capable of doing, positive and negative outcomes are anticipated, and goals are set to realize the desired future (Bandura, 1997). Bandura also postulated that individuals' willingness and likelihood to exhibit what they have learned depend on their motivation, and that motivation is influenced by the reinforcement and or punishment received (Sutton, 2021). When a person can expect reinforcement for demonstrating specific behaviors, attention and learning increase (Sutton, 2021). Research shows that in health settings, nurses can be personally motivated to actively participate in evidence-based practice use when nurse

managers provide ongoing reminders and encouragement and inspect and reward the expected practices (Clavijo-Chamorro et al., 2021; Clignet et al., 2017; Sving et al., 2017). Receiving updates on the positive outcomes of implementation actions can also serve as a motivational factor to continue utilizing new practices and to make improvements where needed (Sving et al., 2017). According to Fu and Clarke (2017), teacher motivation is linked to building teacher capacity and, as a result, promotes school improvement.

Teacher Agency. Both motivation and agency are key determinants of behavior change (Bandura, 1977, as cited in Hivner et al., 2019). Whereas motivation is related to whether or not a person will attempt to change a behavior, agency refers to how much control or influence someone feels they have over their actions and the outcomes of those actions regarding their behavior (Moore, 2016). In an educational setting, agency is defined as the beliefs a teacher has about their ability to attain professional goals as both teachers and learners and their outlook on their capacity to work with and influence their colleagues (Liu et al., 2016). This type of teacher attitude, according to research, is a necessary factor involved in changing teacher practices (Bellibaş et al., 2022). According to Bandura, when people believe they cannot influence results regarding matters that affect them, they will not be motivated to try to make changes happen, and apprehension, indifference, and distress may occur (Bandura, 1977, as cited in Hivner et al., 2019). Promoting teacher agency and allowing teacher autonomy and risk-taking to try new ideas help to create school cultures that are ready for change (Hollingworth et al., 2018), foster teacher commitment to changes in teaching practices that are a part of the school improvement process (Emirbayer & Mische, 1998, as cited in Bellibaş et al., 2022),

encourage teachers to seek out and engage in the professional learning they need, help accomplish collective goals, and encourage teachers to exercise greater influence in the work environment (Bellibaş et al., 2022; Liu et al., 2016).

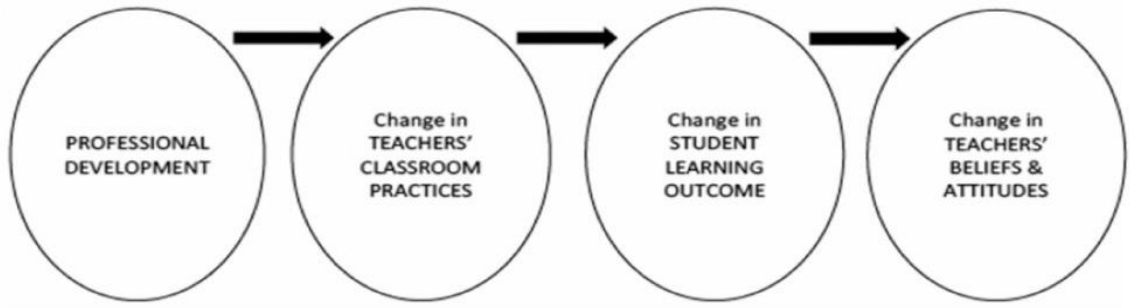
Attitudes and Beliefs About New Behaviors. According to the theory of perceived behavioral control, one of the predictors of intention to perform a behavior is a person's attitude towards it (Ajzen, 1991, as cited in Greisel et al., 2023). A person's attitude toward a specific behavior is made up of their beliefs about the behavior (Greisel et al., 2023). Those beliefs tie the behavior in question to a specific outcome that is expected as a result of demonstrating the behavior. In the individual's mind, that outcome holds a certain value and has a certain likelihood of occurring after the performance of the behavior (Greisel et al., 2023). Evidence suggests that individual characteristics such as attitude (Locke et al., 2019, perception of appropriateness (Aasheim et al., 2020), usefulness of selected practices, and the perception of their simplicity for use predict attitudes toward implementing new practices and their success in schools (Granić & Marangunić, 2019; Scherer et al., 2019; Sun, 2022). In a study on teacher belief changes about synchronous online teaching in China, Sun (2022) challenged that evidence when it found teacher perceived values of online instruction and perceived simplicity of its use to be significant predictors of their attitudes toward implementing it before the COVID-19 pandemic but insignificant after it. Sun's research instead found that teacher perceptions of usefulness were a significant positive predictor of the actual change in teacher behavior toward the use of synchronous online teaching. In a study conducted by Knauder and Koschmieder (2019), the specific behaviors needed to implement individualized student support and lesson design by primary school teachers in Austria

were strongly influenced by attitude and intention to support. Similarly, Greisel et al. (2023) found that preservice teachers who had a positive intention to use evidence-based practices were more likely to self-report using them when applied to case study examples. In a study that examined special education teachers' intentions toward data collection and their data collection behavior, researchers found that beliefs and attitudes supported the practice (Ruble et al., 2018). Because consistent evidence shows that individual attitudes and beliefs about the practices used are positively associated with implementation outcomes and thus vital behaviors used (Locke et al., 2019; Nilsen, 2015, as cited in Merle et al., 2023), before practitioner behaviors are expected to change, interventions that focus on altering or supporting beliefs and attitudes about the change should be considered (Locke et al., 2019).

Although attitudes are important in determining individual intentions to adopt new behaviors, they may not be enough by themselves to employ new behaviors (Greisel et al., 2023; Sun, 2022). According to Greisel et al. (2023), only the self-reported or subjective behavior of preservice teachers was predicted by attitude, whereas the objective and observed behavior was not related to the intention. Likewise, Ruble et al. (2018) found that there was no significant correlation between teachers' intention to collect data for IEP goals and their actual data collection practices, although positive attitudes were reported. Mitchell et al. (2017) offered yet another view of the impact of teacher beliefs on behavior change. These researchers, based on Gusky's logic model of teacher change, argued that a change in teacher practices that leads to positive student outcomes is a prerequisite for a change in beliefs, as seen in Figure 5 (Mitchell et al., 2017).

Figure 5

Guskey's Logic Model of Teacher Change



Note. This graphic shows the four components of Guskey's Logic Model of Teacher Change. From "Professional development and teacher change," by T. R. Guskey, 2002, *Teachers and Teaching: Theory and Practice, 8*(3), p. 383. hppts://doi.org/10.1080/135406002100000512). Copyright 2002 by Taylor and Francis Group.

Beliefs About Personal Ability. In social cognitive theory, beliefs are characterized as self-efficacy beliefs, and these beliefs can directly impact a person's performance (Bandura, 1997). According to Bandura (1997), people's beliefs in their capability to perform certain actions influence the actions they take, the amount of effort that will be exerted, and how long they will persevere when faced with challenges. Although self-efficacy was not significantly associated with intention to engage in evidence-based practices for preservice teachers (Greisel et al., 2023), it is positively associated with positive student outcomes in three-tiered systems (Lane et al., 2021; Oakes et al., 2021) and with implementation fidelity of innovations (Kuhn et al., 2022). Both Oakes et al. (2021) and Lane et al. (2021) found that at the elementary and secondary levels, there is a positive relationship between implementation fidelity of a

comprehensive, integrated, three-tiered model of prevention (Ci3T) and teacher efficacy for using instructional practices, managing a classroom, and engaging students. These researchers attribute higher self-efficacy to the specific use of student and fidelity data to customize professional learning for adults and to the act of including their voices in the implementation processes (Kuhn et al., 2022; Lane et al., 2021). Helping educators increase their self-efficacy in the area of utilizing new practices to support students is an important part of successful implementation (Mitchell et al., 2017).

Beliefs About Teaching and Learning. When the context involves the instructional practices used in classrooms under an MTSS framework, beliefs can take on another form outside of what teachers feel they are capable of doing to improve student outcomes. In that case, meeting the needs of learners with various abilities may present as a contextual factor that introduces additional challenges or hindrances to teacher performance (Bandura, 1997) and negatively impacts teachers' sense of self-efficacy. Teacher beliefs are a set of assumptions, convictions, and deep-seated views that they accept as true regarding students, student learning, the classroom environment, education and educational theories, curriculum, methods of teaching, and discipline (Center for Responsive Schools, 2021). This belief system influences their thoughts, behaviors, decision-making, and how teacher-student relationships are established and helps to sort and prioritize information (Center for Responsive Schools, 2021). To sustain the hard work required for significant change in old habits to adopt new practices, traditional beliefs associated with school culture must be challenged and overcome (DuFour et al., 2005). One way to begin to challenge beliefs is to bring them to the surface through deep inquiry (Sinnema et al., 2021). This process helps educators unearth assumptions that

support their instructional and leadership practices and how they lead to the current learning outcomes. Sinnema et al. (2021) argued that improved student outcomes may be impeded by some unrecognized and unquestioned beliefs. O'Connor and Freeman (2012) suggested that a significant portion of educators may not believe that all children can meet specific learning targets, which negatively impacts intervention integrity and teacher effort. In districts that have successfully implemented RTI, however, staff believe that systematically analyzing how students respond to high-quality interventions will eventually lead to valuable data that can be used to close skill gaps (O'Connor & Freeman, 2012); thus, a culture of beliefs about student learning should reflect that all students can be successful with appropriate support and instruction (Marlowe, 2021).

In addition, there is a difference between current and traditional beliefs about school reform and its purpose. According to DuFour et al. (2005), the purpose of school is to ensure that learning at high levels occurs for all students. Traditional thinking, in contrast, aims to ensure that teaching occurs to all students, putting more emphasis on teaching than on learning (DuFour et al., 2005). Traditional thought believes that educators provide the opportunity for students to learn, but the extent to which students learn depends on outside and uncontrollable factors such as home life, student motivation, ability, parental support, and socioeconomic status (DuFour et al., 2005). Another traditional belief is that students should be classed according to ability and socioeconomic status, that high-level learning is reserved for the elite, and that people are born with a certain amount of intelligence and thus cannot gain intelligence through education, which has permeated the educational system to this day, showing up in the policies and practices of today's schools and in the outcomes for students who attend

them (DuFour et al., 2005).

Such limiting beliefs often influence classroom culture and instruction. Through years of research, the evidence shows that there is a positive relationship between teacher beliefs and the instructional practices in which they engage (Rodgers et al., 2022). Although beliefs determine actions, beliefs can also be changed as a result of teacher experiences. A study conducted by Rodgers et al. (2022) attempted to examine teacher beliefs about literacy instruction and efficacy and whether or not teacher beliefs would change throughout their participation in a year-long professional development on reading instruction based on their students' growth. The study also aimed to see if teachers would attribute student growth or lack of growth to their change in instructional practice or to individual student characteristics (Rodgers et al., 2022). The study confirmed that teacher beliefs about instruction are responsive to change whether positive or negative. Teachers whose students made positive progress as a result of the new instructional practices showed greater alignment with the instructional beliefs associated with the reading program than teachers whose students made little or no progress (Rodgers et al., 2022). Teachers in the latter category ended their professional development with the same beliefs they held before the professional development began (Rodgers et al., 2022). This finding suggests that teacher beliefs can be boosted in a positive direction with innovations when their students experience success.

Because implementation science suggests that it takes 2 to 4 years for a new initiative to reach full and successful implementation, it is likely that it will take time for teachers to see the positive impact of MTSS on student outcomes (Bertram et al., 2011). Therefore, it stands to reason that even in the absence of immediate student growth data,

educators need to experience some type of successful outcomes, which can come in the form of fidelity data. Fidelity assessments measure how well the innovation is being carried out. Assessing fidelity of implementation is important because that practice helps to properly interpret outcomes (National Implementation Research Network, n.d.). If the outcome is not positive, fidelity assessment can help to reveal whether the undesired outcome was the result of adopting an ineffective program, whether it was used at all, and where to focus improvement efforts. This information is useful to leaders in that it updates them on the progress of implementation efforts and overall performance and encourages continuing implementation over time (Fixsen et al., 2005). According to Glidewell et al. (2022), failure to disseminate (outcome data) fidelity assessment data impeded the success of the implementation of evidence-based practices in a primary care facility. Because practitioners could not see any improvement resulting from their efforts to implement the new practices, managers were demotivated to share results with staff, which led to the intervention becoming less visible and thus less influential in practice (Glidewell et al., 2022). Fullan (2020) referred to this common decline in progress as the implementation dip. The goal of change leadership is to reduce the period of the implementation dip so implementers, who experience the most immediate and palpable costs associated with innovations, will see benefits outweighing the costs (Fullan, 2020).

Growth Mindset Versus Fixed Mindset. Organizations create cultures of growth that help members of their organization accomplish more than they expected of themselves when they reinforce innovation, learning, and action and when their leaders have a growth mindset (Fullan & Quinn, 2016). According to Dwek (2016) and Yeager et al. (2022), a growth mindset is the belief that ability can be developed through effort,

constructive feedback or help from others, and the use of effective strategies, whereas a fixed mindset is the belief that abilities are innate gifts individuals are born with and thus cannot be developed. Research supports that teachers can influence student mindsets, particularly for more at-risk students, by providing a classroom environment that supports growth mindset actions (Walton & Yeager, 2020). Yeager et al. aimed to further discover the impact of teachers' growth mindset on their students' growth mindset and subsequently on their grades. The study found that students whose teachers possessed a growth mindset showed more significant academic gains than students whose teachers espoused a more fixed mindset (Yeager et al., 2022). Furthermore, the study found that students who began the experiment with a fixed mindset but received instruction from a teacher with a growth mindset experienced even larger gains in achievement than students who previously reported having a growth mindset (Yeager et al., 2022). This finding strongly suggests that educator mindsets matter in the case of student achievement.

Social Factors

Evidence supports that social factors such as social expectations, peer pressure, and teacher collaboration have an influence on educator attitudes, beliefs, and behavior change to accept and adopt evidence-based instructional practices (Liu et al., 2021; Sun, 2022). Recognizing the limitations of behavior learning theories that focus on the environment and reinforcement's effects on behavior, Bandura considered the acquisition of learning new skills in social environments that provide shared interactions between people in a particular environment to support change in a particular behavior (Celestine, 2021). The following social factors have been identified as common constructs in both

the theory of planned behavior and social learning theory.

Social Norms. There is an abundance of evidence that social norms, or behaviors that are agreed upon by a social group (Gelfand et al., 2017), have an impact on shaping adult behaviors (Gelfand et al., 2017; Melnyk et al., 2022; Schultz et al., 2018). Even across different cultures, social norms for socially acceptable behaviors have a strong influence (Melnyk et al., 2022). In a study conducted by Kuhn et al. (2022), teachers who thought their colleagues were implementing a physical activity break in their classrooms frequently were over 17 times more likely to implement the break frequently themselves. The study also found that school culture influences teacher behaviors in the classroom (Sallis et al., 2006, as cited in Kuhn et al., 2022). In a review of mediating factors on the implementation of nutrition policies in schools, McIsaac et al. (2019) found that presenting nutrition as the way a school will operate and integrating it into daily school activities is important for shaping school and cultural norms around healthy eating.

School Culture. Research supports that school environments have a direct impact on adult behaviors and support teaching attitudes related to the proficient and sustained use of evidence-based practices that lead to positive student outcomes as well as student academic achievement (Bayar & Karaduman, 2021; Liu et al., 2021; Williams et al., 2019). One way to determine the status of a school's environment is to examine its culture. School culture, as defined by Fullan (2007), comprises the beliefs, values, attitudes, and expected behaviors that guide the way a school operates. Because school reform is highly correlated to culture (Stokes, 2018), it bears to reason that strategies intended to change educational outcomes for the better must also focus on changing the people implementing the strategies and the culture within which they work (Fullan,

2006). Hollingworth et al. (2018) added that culture is connected to the behavior within an organization when it is confronted with change. One factor that contributes to culture building that integrates evidence-based practice use in a healthcare setting is disseminating results to practitioners after they have performed corresponding actions (Clavijo-Chamorro et al., 2021). In a study conducted by Williams et al. (2019), the aim was to discover how a comprehensive school culture and climate profile impacted teacher evidence-based practice use and level of fidelity. Schools with comprehensive profiles employed staff who perceived that they (a) were expected to hold the well-being of their students as top priority and to maintain proficiency in current best practices; (b) were not expected to maintain the status quo by rigidly following prescribed rules; (c) received the necessary cooperation and support from their colleagues, were given growth opportunities, and were clear on their roles; and (d) felt a sense of accomplishment from their work and experienced a lower level of work overload (Williams et al., 2019). The study found that these schools implemented evidence-based practices for youth with autism with a significantly higher level of fidelity than schools with a different type of culture and climate profile.

Conversely, the results of a lack of school culture were demonstrated in a study on the implementation of professional learning communities (PLCs) at a low-performing priority middle school in North Carolina. Wortham (2018) showed that 63% of participating teachers rated the effectiveness of their PLCs as low and perceived them as ineffective in producing positive results. Seventy-nine percent of participants indicated cultural challenges to their PLC implementation such as a lack of trust among staff, lack of administrative support, lack of expectations to alter classroom instruction following

PLCs, a lack of engagement from fellow teachers, and a lack of efficient structure. Wortham shared that teachers perceived PLCs to be impactful for student growth only if implemented correctly.

Much has been written about the importance of school culture; however, district culture also has an impact on system-wide reform. Stokes (2018) asserted that districts should establish a strong culture by creating and communicating vision statements and goals to schools and the surrounding community to better prepare schools for change. The district implementation teams are primarily responsible for creating the cultural conditions for change and are critical for local capacity building and support to school or building implementation teams (BITs). DITs serve two purposes. According to the National Implementation Research Network (n.d.), the district implementation team develops effective school-level leadership teams, or building implementation teams that will utilize evidence-based practices, build the team members' skills, help school administrators and their staff align administrative practices with teachers' use of the practices, and help influence leadership engagement and support for implementation teams to function properly. The district implementation team also develops a district-wide infrastructure for building skills in the evidence-based practices adopted, which include systems to select needed staff, professional development, coaching, data collection, and data analysis. This level of support and local responsibility of MTSS ensures that resources are allocated appropriately and policy and practice barriers are addressed in a way that state-level leaders cannot address them (Goodman, 2017).

Peer Modeling. According to social learning theory, people learn new behaviors by observing and imitating others who serve as models (Sutton, 2021). Social learning

theory argues that attention given to models who are demonstrating particular behaviors increases when the model is more similar to the observer (Sutton, 2021). The benefits of peer modeling are documented in research. A study conducted by Campbell and Lassiter (2020) found that observing other teachers implementing physical activity breaks and sharing experiences facilitated the observer's use of the strategy and fostered a sense of accountability to continue its use. DiBonaventura (2019) also found that peer observations positively impacted teaching and instructional practices. Another benefit of peer modeling is a shift in teacher beliefs about instruction and learning, which influence the instructional practices they choose to use (Pajares, 1992, as cited in Spillane et al., 2018). According to a study conducted by Spillane et al. (2018), mathematics teachers who engaged more deeply in pedagogy with their peers over a year developed more reform-oriented beliefs, which supported the new instructional strategies.

PLCs. As was previously mentioned, innovations such as implementing new practices within an MTSS framework are difficult to implement in stagnant cultures. People or organizations who refuse to change and adapt to societal shifts run the risk of becoming obsolete or extinct (Fullan, 2020). In addition, sustaining the hard work required for significant change in old habits to adopt new practices has been historically problematic for schools (DuFour et al., 2005). One way to prevent stagnation and shift educational practices for sustained school improvement is to move to more collaborative cultures. Evidence suggests that school environments that provide opportunities for sustained teacher collaboration better support improvement in instructional practices (Chen et al., 2020). According to Hattie's (2016, as cited in Donohoo et al., 2018) visible learning research, teachers' collective work had a higher effect size and thus a greater

impact on student learning than other influences such as prior achievement, parental involvement, socioeconomic status, student motivation and engagement, and home environment; however, collaboration is not always an easy practice to achieve. One barrier to effective collaboration, outside of resistance to change itself, is the long-standing tradition of teachers working in silos where they are comfortable, their reluctance to work collaboratively, and their inclination to resist change (DuFour et al., 2005; Riley & Stolic, 2017). This type of thinking makes collaboration difficult and, according to DuFour et al. (2005), does not make learning at high levels for all students possible. Fullan (2020) described the problem as a need to distinguish between autonomy and collaboration since many seem to believe autonomy is synonymous with isolation. Educators of today must now change their way of thinking to embrace teamwork and collaboration (DuFour et al., 2008). It is through building the collective capacity of the entire school community, rather than individual educators, that sustainable school improvement can be achieved. According to Fullan and Quinn (2016), meaningful work done while working with others motivates people to change their practices and accelerates the attainment of new skills and knowledge.

The most common forum where such collective work would occur in schools is PLCs. PLCs have been touted by numerous educational organizations as an effective strategy for school improvement for the past 4 decades (Dufour et al., 2005; Fullan, 2020). PLCs and the practices within the MTSS framework go hand-in-hand with their learning for all premises, the realization that some students will require more time and support to be successful, and the development of processes and procedures that allow for additional time and support during the school day. While PLC practices promote

collaboration among educators, the concept faces many challenges when endeavoring to make the practice a normal part of educational institutions. In many cases, collaboration is ineffective when it lacks a clear purpose or when practitioners collaborate on the wrong things (Fullan, 2020). Hargreaves and O'Connor (2018), who conducted research on professional learning networks in seven different countries, described two types of collective experiences that can exist: collaborative professionalism and professional collaboration. Collaborative professionalism is based on professionals coming together under the following conditions–a school culture where the shared work of teachers is embedded, educators show care for one another while they pursue challenging work, and their collaboration responds to and includes the culture of internal and external stakeholders (Hargreaves & O'Connor, 2018). Professional collaboration, on the other hand, refers to professionals meeting to do just about anything (Hargreaves & O'Connor, 2018).

Voelkel and Chrispeels (2017) studied the effectiveness of PLCs within the same school in a California public school district to analyze the differences in how teams implemented collaborative practices and teacher perceptions of their principal's leadership and support of their team. Several team differences emerged from the research. First, high-functioning teams expressed greater clarity on a shared vision for collaboration (Voelkel & Chrispeels, 2017). These team members agreed on a commitment to understanding student needs through data analysis, moving student progress forward, developing and working together to meet goals, meeting regularly to focus on student learning, and altering instruction to address the needs. Second, high-functioning team members were more enthusiastic about their collaborative work,

whereas the less well-functioning teams expressed a more perfunctory attitude with no carryover of those interactions into their classroom instruction (Voelkel & Chrispeels, 2017). Another difference between high-functioning versus lower-functioning teams was how they used their time to collaborate. Effective teams spent their time sharing and working together to revise lessons that would better reach students and accepted collective responsibility to help their teammates (Voelkel & Chrispeels, 2017). Ineffective teams perceived lesson plan revision as the sole responsibility of individual teachers (Voelkel & Chrispeels, 2017). Finally, what distinguished high-functioning PLC teams from lower-functioning teams was their data culture. Lasater et al. (2020) defined positive data cultures as collaborative environments that are trusting and supportive and use data to foster responsibility for the collective improvement of student achievement, teacher performance, and the school as a whole. Negative data cultures on the other hand are isolating environments characterized by competition and distrust and that use data to punish and promote compliance with school mandates (Lasater et al., 2020). The latter undermines the type of collaboration needed to experience positive outcomes. High-functioning teams demonstrated a positive data culture in that they reported analyzing their data and using the results to alter instruction to close a learning gap or to make adjustments to student grouping (Voelkel & Chrispeels, 2017).

In a similar study on PLC culture, Lasater et al. (2020) examined how teachers and leaders in Arkansas schools use their data in PLCs, how they value their data, and their experiences with data-informed decision-making. The researchers discovered seven factors that influence data cultures in schools: trust and collaboration, data used for compliance versus improvement, data ownership, principal competency, data used as a

tool for improvement rather than for teacher evaluation, principal expectations, and teacher agency (Lasater et al., 2020).

According to Vijayadevar et al. (2019), PLCs can also be a promising but challenging practice for school improvement in Singapore. In this country, competition among school leaders tends to be promoted by their marketized educational system and hierarchical leadership practices; therefore, school improvement is influenced by a more top-down approach to leadership that is common in Asian culture. Vijayadevar et al. found that the principal participants in the study saw PLCs as an opportunity to reduce the isolation among leaders, build educator capacity through the sharing of ideas, and strengthen early childhood education despite the barriers presented. As discussed in the Lasater et al. (2020) research, trust building in the Singaporean early childhood PLCs around respect and confidentiality needed to be established before they could engage in meaningful, collaborative work. In addition, principals who made small shifts in their leadership approaches such as building trusting relationships with teachers, showing more confidence in teacher expertise, offering more opportunities for teachers to lead, and listening to teachers' concerns began to value collaboration and became more reflective in their work (Vijayadevar et al., 2019).

Collective Efficacy. Collective efficacy refers to teacher beliefs about the school faculty's ability as a whole to organize and carry out the actions required to positively influence student growth (Goddard et al., 2004, Skaalvik & Skaalvik, 2010, as cited in Aasheim et al., 2020). Collective efficacy has a motivational effect on the group's aspirations and its level of perseverance and resilience when faced with challenges (Bandura, 2000, as cited in Ninković & Knežević Flori, 2018) and has a strong positive

correlation with student achievement across subjects and locations (Eells, 2011, as cited in Donohoo et al., 2018). Due to the social nature of learning new behaviors, teachers are likely to be influenced by the school community of which they are a part and to influence the perception of the collective ability of the school (Ninković & Knežević Flori, 2018). According to Bandura, collective efficacy is grounded in self-efficacy, meaning teacher self-efficacy can serve as a predictor of collective efficacy (Bandura, 1977, as cited in Chu & Garcia, 2021; Ninković & Knežević Flori, 2018). Limited research has examined the effect of collective efficacy on change in instructional practices directly; however, research shows that collective efficacy has a direct impact on teacher turnover (Conley & You, 2017; Qadach et al., 2020) and a school's academic priority (Nadav et al., 2023) and can play a significant role in predicting future behavior regarding teacher commitment and effort (Geijsel et al., 2003, as cited in Qadach et al., 2020). There is documented research that identified significant relationships between collective efficacy and faculty behaviors that lead to improved academic outcomes such as high expectations for success and extra effort put into ensuring student learning (Bandura, 1993, Goddard, 2001, Tschannen-Moran & Barr, 2004, as cited in Chu & Garcia, 2021; Ninković & Knežević Flori, 2018). To build collective efficacy, school leaders should explicitly link teacher instructional practices and student outcomes by encouraging teams of teachers to examine evidence of student learning (Donohoo et al., 2018).

Organizational Factors

Organizational factors such as school leadership, professional learning, and coaching support are facilitating conditions that can directly determine adult behavior change (Sun, 2022).

Principal Leadership. Years of extensive research show that leadership is critical in the development of effective school culture and climate mostly through impacting people and processes (Liu et al., 2021; Stokes, 2018). According to a study on four highly effective principals in the Midwest, Hollingworth et al. (2018) identified three key leadership practices that influence positive school cultures to support multiple change initiatives simultaneously: communicating effectively, getting to know staff well, and engaging in trust-building efforts. Two types of leadership are significantly and directly associated with self-efficacy and teacher job satisfaction: instructional leadership and distributed leadership (Liu et al., 2021).

Instructional Leadership. Instructional leadership is defined as the principal's actions that are aimed at the improvement of teaching and learning in their buildings (Liu et al., 2021). According to Bellibaş et al. (2022), three overall actions of principals demonstrating instructional leadership are defining and communicating the school's mission and goals that emphasize teaching and learning; directing instructional programs; and developing a positive school climate to include protecting instructional time, being highly visible in the school, and providing incentives for expected teacher behaviors (Williams et al., 2021). Specific instructional leadership strategies that can build change-ready cultures are overseeing and evaluating instruction and curriculum, monitoring student progress, enforcing nonnegotiable standards and incentivizing students and staff (Bellibaş et al., 2022), encouraging teacher leadership and professional growth, identifying staff strengths and opportunities for growth (Williams et al., 2021), and allowing teacher autonomy and risk-taking to try new ideas (Hollingworth et al., 2018; Liu et al., 2016).

According to Glickman et al. (2018), the way a leader organizes a school to include its culture, level of collaboration among staff, and readiness for change are factors that affect the quality of implementation. Also critical to successful implementation is the school leader's ability to facilitate change and commit to innovation. Glickman et al. also stated that support from leadership impacts implementation. Innovations are best supported by leadership when they provide opportunities for professional learning beyond the initial training on a new program, such as visits to other schools, access to workshops, and classroom assistance from a coach. Teachers also benefit from being able to problem solve together in PLCs about issues that may occur during implementation (Glickman et al., 2018). Although principal instructional leadership may not significantly predict changes in teacher practice, research shows that it does have a moderate, statistically significant effect on it (Al-Mahdy et al., 2022; Bellibaş et al., 2022). In a study conducted by Sebastian et al. (2017), the researchers found that school principals can have the greatest impact on student achievement when they provide structures for teachers to improve practices, when they guide and support teachers, and when they monitor the success of teacher efforts to change practices. In a more nuanced way, instructional leaders impact change in practice through their promotion of shared learning and improving teacher beliefs about their effectiveness in learning new ways to improve teaching and sustain the will to continue learning (Bellibaş et al., 2022).

Contrary to the current expectation for instructional leadership, Fullan (2014) challenged the notion of principals as instructional leaders who spend an exorbitant amount of time conducting classroom observations, evaluating teachers, and taking steps

to develop or remove ineffective teachers, all of which have the potential to detach principals and teachers from each other. A more effective approach to influencing teachers, according to Fullan (2014), is for principals to become lead learners. Lead learners model the expectation of continuous learning for teachers, create conditions for groups to learn from the work through cycles, and take part in solving implementation problems together (Fullan, 2016). Principals who take a learner stance by learning alongside teachers and visibly struggling with them on new and difficult innovations build more credibility and trust and become more effective due to the knowledge acquired (Fullan, 2016). This factor regarding the principal's impact on student achievement was shown to be the most significant (Robinson et al., 2008, as cited in Xu, 2018). In a study conducted by Lee and Madden (2019), the negative effects of principal nonparticipation in the professional development of teachers were evident. During the implementation of a new professional development structure in a Japanese school, Lesson Study, principals were included in the study as active participants in the PLCs with teachers (Lee & Madden, 2019). In addition to being trained in Lesson Study, the principals also received training on cognitive coaching to assist them with stepping out of an evaluator's role and into a coach's role (Lee & Madden, 2019). This approach helps the principal serve as a nonjudgmental member of the team so that teachers feel safe to take risks. As a result of an integral partnership in professional development, principal roles shifted from being outsiders to insiders in that they gained more insight into how teachers think, learned the importance of teachers talking to one another, became more aware of teacher struggles, gained a more in-depth understanding of their teachers and students, and became more informed evaluators. Researchers made a critical observation

during this study when one principal who had not participated in any of the Lesson Study sessions joined a group already in progress (Lee & Madden, 2019). During a lesson debriefing session, this administrator proceeded to evaluate the teaching, critique the lesson plan developed by the team, and do most of the talking while teachers remained silent and frustrated (Lee & Madden, 2019). This instance demonstrates two things: How trust can be broken when principals serve solely as evaluators rather than coaches in collaborative settings and how principals can be more effective in cultivating collaborative cultures when they actively participate with teachers as learning partners (Lee & Madden, 2019).

Distributed Leadership. Distributed leadership in education can be defined as a team of educators representing different grade levels, departments, and levels of leadership who work together to generate positive change throughout a school (Center for Student Achievement Solutions, 2021). Contrary to more top-down leadership approaches centered around the roles and responsibilities of the school principal, distributed leadership emphasizes the inclusion of teachers and other stakeholders in the school decision-making process and contributes their specific influence, knowledge, and expertise to address instructional concerns (Avvisati et al., 2019). The positive impact of distributed leadership is documented in literature as having an impact on academic performance, teacher collaboration, teacher job satisfaction, and instructional quality (Bellibaş et al., 2022; Malloy & Leithwood, 2017). Research also suggests that teachers are more likely to make adjustments to their teaching behaviors when their principals include them in decision-making (Mayrowetz et al., 2007, Mayrowetz & Smylie, 2004, as cited in Özdemir et al., 2023).

Building Implementation Teams. Another form of distributed leadership in an MTSS system that supports sustainable changes in new and different instructional practices in a school is building implementation teams (McIntosh & Goodman, 2016). According to the National Implementation Research Network (n.d.), an implementation team is a group of stakeholders who are responsible for overseeing and maintaining accountability for selecting, implementing, and improving innovations. This team works to build capacity within the system so that the identified needs of students, staff, and families are addressed and desired outcomes are achieved while using relevant data and providing efficient communication to and receiving communication from all stakeholders. Implementation teams provide teachers the support they need to ensure that their daily use of effective innovations with students is beneficial and of high quality (National Implementation Research Network, n.d.). According to the National Implementation Research Network, with support from skilled implementation teams, over 80% of sites attempting to implement evidence-based practices met fidelity, whereas only 30% of sites without skilled implementation teams met fidelity measures (Fixsen et al., 2001, as cited in National Implementation Research Network, n.d.).

Fixsen et al. (2011, as cited in National Implementation Research Network, n.d.) distinguished three approaches to implementation of innovations: letting it happen, helping it happen, and making it happen. An implementation team falls into the making-it-happen approach because they design systems to support the innovation, resolve any barriers to implementation in the system, ensure ongoing training and coaching to staff, monitor the use of practices, and are accountable for achieving positive outcomes (National Implementation Research Network, n.d.).

Barrier Removal. Similar to the sense of agency discussed in social learning theory, perceived behavioral control in the theory of planned behavior refers to how people perceive the level of ease or difficulty involved in performing desirable behaviors and their ability to control the perceived barriers related to the performance (LaMorte, 2022). School leaders play an instrumental role in developing teachers' perceived behavioral controls which may lead to an increase in behavioral intention to implement evidence-based practices and possibly to a direct change in instructional practices (Ruble et al., 2018). Research shows that school principals play a vital role in creating environments that specifically support the use of evidence-based practices by removing barriers such as protecting instructional time and allocating resources to support necessary instructional shifts (Al-Mahdy et al., 2022; Williams et al., 2021). Williams et al. (2021) conducted a qualitative study where special education teachers at schools already identified as having a comprehensive culture and climate indicated the specific behaviors and practices that their principals employed to help them utilize evidence-based practices effectively with autistic students. The behaviors were as follows: encouraging and providing time for teachers to attend professional development opportunities focused on autism; applying performance expectations that take into account the unique needs of autistic students and realistic adaptations to the curriculum they are taught; providing the resources such as staff, materials, and collaboration time needed to meet student needs; and modifying procedures and practices such as schedules and classroom environments to be responsive to student needs. Fullan (2016) also argued that leaders at the system, district, and school levels also need to be intentional about coordinating the work of all practitioners and keeping that work focused on collaboration

to improve student learning. Ways that school leaders can coordinate the work of all practitioners and keep the work focused on collaboration to improve student learning, according to Marlowe (2021), are to create master schedules that allow time for quality core instruction and intervention to occur and to establish protected time for teachers to collaborate.

Professional Learning. Based on adult learning theory, adult learners are more motivated to learn new practices when they perceive their relevance in their teaching when instant and explicit connections are made between the new skills, their current practices, and the expectations for the new skills acquired (Teaching and Learning Consulting Network, LLC, n.d.). Recognizing that implementing evidence-based practices represents new ways of doing things and thus requires additional knowledge about when, where, how, and with whom to use the new practices, Fixsen et al. (2005) asserted that preservice and in-service training are effective and efficient ways to build competency. Ennis et al. (2020) recommended that a tiered continuum of support be provided to teachers to assist them with implementing new practices at high rates. These training opportunities and approaches build background knowledge; introduce key skills and concepts, theories, and values; provide time for practicing new skills and obtaining feedback in a safe environment (Fixsen et al., 2005; National Implementation Research Network, n.d.); and promote the acquisition and use of new instructional practices (Darling-Hammond et al., 2017; Mitchell et al., 2017). In a study conducted by Allensworth et al. (2022), teacher professional learning addressing content standards was more strongly correlated to instructional practices than to a particular curriculum or the availability of materials.

Mahoney (2020) outlined what a training session between a facilitator and the teacher(s) should look like to be effective and help ensure the fidelity of the practice. Training sessions may include modeling and role-play of the evidence-based practice presented by the facilitator, role-play between the facilitator and the teachers, fidelity checklists to ensure all parts of the evidence-based practice are completed, and practice and successful demonstration of the evidence-based practice, followed by implementation of the evidence-based practice in the classroom (Mahoney, 2020). Other key features of professional learning that can lead to changes in practice are opportunities for teachers to collaborate, support from specialists, and learning that is sustained over time (Darling-Hammond et al., 2017). Professional learning can also be effective for building teacher confidence and self-efficacy, which are associated with implementing new behaviors (Abi Nader et al., 2018; Kuhn et al., 2022; Macdonald et al., 2021; Michael et al., 2019). Professional learning alone, however, is not effective for behavior change without ongoing coaching in the areas trained.

Coaching and Mentorship. According to Wood et al. (2016), traditional professional development that is typically delivered through a 1-day in-service or workshop lacks the time for practice, feedback on performance, and ongoing coaching support teachers need to select and implement strategies in the classroom. A study conducted by Mahoney (2020) further stated that teachers by and large reported their lack of knowledge of evidence-based practices to use in the classroom as a barrier to MTSS implementation. Current research supports coaching as an answer to the dilemma related to typical professional development in changing teacher behaviors for the benefit of students (Williams et al., 2021). Fullan and Quinn (2016) added when quality learning

design (to include opportunities for teachers to practice new learning within roles; to reflect on student work; and to receive feedback from coaches, mentors, and peers) is combined with collaboration, sustained and systemic shifts can occur.

Coaching, according to the National Implementation Research Network (n.d.), is defined as job-embedded professional development that is regularly conducted and aids staff in the proper use of a selected evidence-based program. Mahoney (2020) defined coaching as the process educators with knowledge of the evidence-based practice use to model and facilitate a teacher's learning in the use of the evidence-based practice, observe the use of that evidence-based practice in the classroom, and provide the teacher with ongoing support and feedback. A study conducted by Glidewell et al. (2022) demonstrated the positive impact of feedback on practice in a healthcare setting. Glidewell et al. found that an implementation package including the implementation drivers audit and feedback was successful in that they observed a significant, cost-effective reduction in risky prescribing of non-steroidal anti-inflammatory drugs to patients. This result was in part due to the timely feedback directed toward specific behaviors that helped the practitioners with continuous goal setting and action review, as well as increasing motivation and progress toward desired actions (Glidewell et al., 2022). Wood et al. (2016) offered two types of coaching--supervisory and side-by-side coaching--as critical elements of professional development that support the implementation of newly learned strategies. Different forms of feedback have been documented as effective in literature for increasing desirable teacher behaviors such as in-person feedback (Brock & Beaman-Diglia, 2018), written or emailed feedback including visual graphs of performance (Gage et al., 2018), and audio or video recordings

of instruction for personal goal setting (Hawkins & Heflin, 2011, as cited in Ennis et al., 2020).

Implementation of evidence-based practices is not only an issue in educational settings but also in the healthcare setting. A study conducted at a hospital in Singapore in 2020 aimed to evaluate the effects of a mentorship program for nurses on the participants' use of evidence-based practices and on the effect of the program on their colleagues' use of evidence-based practices (Chan et al., 2020). Chan et al. (2020) found that participation in the mentorship program produced positive effects on the nurse mentees. There were significant improvements in the nurses' knowledge of evidence-based practices, their attitudes about them, and their practices using them, as indicated by increases in their pre to posttest scores in those areas, with the largest area of improvement being in their practice. As for the colleagues of the nurse mentees, Chan et al. found that their knowledge, attitudes, and practices also improved as a result of educational programs conducted by the mentees, although the increases in these areas were not as large as the increases for the mentees themselves. Similarly, numerous studies have shown that coaching on teacher use of specific positive feedback has yielded large effect sizes for changing adult and student behaviors (Ennis et al., 2020). Those findings indicated a positive change in the culture of evidence-based practice use among all practitioners when support through coaching and mentorship is provided.

Conversely, in a study conducted by Glidewell et al. (2022) in a UK primary care facility, the impact of coaching, or lack thereof, as an implementation driver was also documented. Glidewell et al. found that the educational outreach slated to be delivered by external clinicians was not as effective in improving patient outcomes due to the delay in

scheduling outreach meetings and the delivery not occurring as intended. This prevented ownership of the intervention and reduced the time needed to make improvements (Glidewell et al., 2022); thus, the culture of the organization did not improve to support implementation.

Summary

The literature review provided a framework for understanding MTSS as a change initiative involving the use of evidence-based instructional practices, what facilitates and hinders effective implementation of those practices, the critical components of MTSS that support successful and sustainable instructional practices at the systems level, and the common theoretical constructs from the theory of planned behavior and social learning theory that best influence changes at the teacher level regarding their instructional habits and align with the critical components. The literature supported the need for an instructional leader to build an environment that encourages communication and collaboration, ensures high-quality professional learning to build capacity, and empowers others to participate in decision-making. Research has shown changing teacher beliefs and thus behaviors that are influenced by those beliefs is a challenging feat (Spillane et al., 2018); however, change at the practitioner level, where instruction is delivered, is critical to realizing positive outcomes. Educational leaders who desire significant change in student outcomes are wise to discover the best approaches to use when leading change efforts that are largely dependent on classroom instruction. Collective leadership, capacity building, and communication and collaboration are the drivers that work hand-in-hand to establish leaders throughout the system who are equipped to develop the skills necessary to implement changes among critical stakeholders. The literature review also

merged the critical components of MTSS more closely involving change with the factors that influence behavior change to examine potential ways to effectively implement the evidence-based practices within the MTSS framework, which require a fair amount of change in educational practices.

Behavior change research suggests that there are personal, social, and organizational factors that can predict whether or not an individual will make adjustments in their typical daily instructional habits. Researchers recommended attending to teacher motivation, agency, attitudes, and beliefs about the proposed change, personal and collective abilities, and student learning because these individual characteristics may be the best predictors of behavior change (Eickelmann & Vennemann, 2017; Locke et al., 2019). Secondarily, researchers suggested attending to social influences such as norms, culture, and peer interactions because they have the potential to significantly influence attitudes, beliefs, and behavior change (Liu et al., 2021; Sun, 2022). Lastly, organizational factors including principal leadership, the removal of perceived barriers, and the availability of professional learning and coaching facilitate the conditions needed to enable a change in adult behaviors (Sun, 2022).

Without an understanding and application of the factors that facilitate effective system and practitioner change and result in effective implementation in educational settings, the positive student outcomes that are related to the framework will remain elusive. Taking the time to address the personal, social, and organizational challenges and ultimately the fidelity of implementation will lead to higher performance and effective school reform. The following chapter outlines the methodology of this study which measured the effectiveness of strategies used to support changes in adult behavior within

an MTSS framework among teachers and its impact on student outcomes.

Chapter 3: Methodology

Introduction

Today's educators are faced with an increasing and unprecedented amount of accountability for improving academic outcomes for all students (Mitchell et al., 2017), which requires foundational changes from traditional teaching practices to more innovative approaches to instruction in all content areas (Allensworth et al., 2022). This mixed methods study sought to identify the incorporation of support for implementing evidence-based instructional practices within an MTSS framework among teachers and the impact on student growth outcomes in three K-2 schools. In addition, the study determined teacher perceptions regarding how support in adult behavior change impacted a shift in their instructional practices. An assumption in the study was that early childhood reading teachers who have received support with evidence-based practices in reading using the factors that facilitate adult behavior change have shared experiences and that those experiences impact teaching and learning. Another assumption was examining their perspectives would help to identify themes that can be used to make recommendations to improve the implementation of innovative practices. Research has shown that large-scale behavioral changes are difficult to implement (Allensworth et al., 2022), in large part due to the lack of support provided by states and districts (Allensworth et al., 2022; Comstock et al., 2022) and the propensity of teachers to do what they have always done in the classroom (DuFour et al., 2005; Riley & Stolic, 2017; Teaching and Learning Consulting Network, LLC, n.d.). However, effective change that impacts the system and moves a school toward high student achievement begins with changing individual teacher behaviors (Missouri Department of Elementary and

Secondary Education, 2018).

Setting

This study was conducted in a small, recently consolidated rural school district located in the east-central region of South Carolina. There are 11 schools in the system with a population of approximately 4,300 students: one high school, two 6-12 schools, one 7-8 school, one 4-6 school, one 2-3 school, one 3-5 school, one elementary (K-5) school, two early childhood centers, and one alternative school serving Grades 6-12. One school houses the Pre-K through third-grade Montessori program. The district partners with F.E. Dubose Career Center to make more than 60 Career and Technology Education courses available for high school students and with a local technical college and a university in the area to offer dual enrollment opportunities to qualifying students. Eighty percent of the student population is in poverty; however, all schools are served as school-wide Title 1 schools.

Participants

Teachers from grades kindergarten, first, and second from three different schools in the district who were involved in MTSS implementation during the 2022-2023 school year were invited to participate in this study. These particular sites were selected due to the boundaries of this study to only include kindergarten through second-grade classroom teachers based on the mandates outlined in South Carolina Act 213, which requires schools to screen all kindergarten, first-grade, and second-grade students as needed three times per year for reading difficulties (South Carolina Department of Education, 2022). The total number of K-2 reading teachers was 25. To reach 50% of the population, the aim was a sample size of 12 participants responding to surveys. The goal was to conduct

10 one-on-one interviews.

Sixty percent of K-2 teachers taught longer than 10 years, with 32% teaching between 11 and 20 years and 28% teaching more than 20 years as seen in Table 2. Four percent had at least 1 year of teaching experience, 4% had 2 to 4 years of experience, and 32% taught between 5 and 10 years. Thirty-two percent of teachers obtained a master's degree, and 32% earned an additional 30 credit hours above their master's. Thirty-two percent have at least a bachelor's degree, and 4% earned an additional 18 graduate hours above their bachelor's.

Table 2

K-2 Teacher Demographics

Years of experience	Percentage
0-1	4%
2-4	4%
5-10	32%
11-20	32%
>20	28%
Highest education level	**Percentage**
BA/BS degree	32%
>BA/BS	4%
MA/MS degree	32%
>1 MA/MS degree	32%
EdD/PhD	0%

Description of Participating Schools

ES1 was a PK-2 school with an enrollment of 135 students, 90% of whom are in poverty. The student population is 90% African American, 6.6% White, 2.2% Hispanic, and 0.7% two or more races. During the 2020-2021 school year, the chronic absenteeism rate was 19.7%. ES1 is also a part of the K-5 Palmetto Literacy Project, which is an effort of the Office of Early Learning and Literacy to provide extensive reading instruction

support to participating schools to improve student outcomes in literacy and their implementation of South Carolina's Read to Succeed Act (South Carolina Department of Education, 2022). That law requires that students be retained in third grade if they fail to meet reading proficiency standards by the end of third grade (South Carolina Department of Education, 2022). Schools that had 33.3% of their students not scoring proficient in reading were designated as Palmetto Literacy Project schools. As part of this project, all teachers (including special education teachers), administrators, and reading coaches are required to take a 2-year course called Language Essentials for Teachers of Reading and Spelling (LETRS®) training. The school was also required to adopt a state-approved reading curriculum that aligned with the science of reading, and all classroom teachers were required to identify a group of students to implement LETRS® strategies with and keep a portfolio to document their progress.

ES2 served second- and third-grade students, 91.6% of whom are in poverty. Of the 314 students, 64.3% are African American, 22.6% are White, 7.0% are Hispanic, 3.5% are two or more races, 1.9% are Asian, 0.3% are American Indian, and 0.3% are unclassified. The student-to-teacher ratio is 21.2 to 1, and the chronic absenteeism rate from the 2021 school year was 42%.

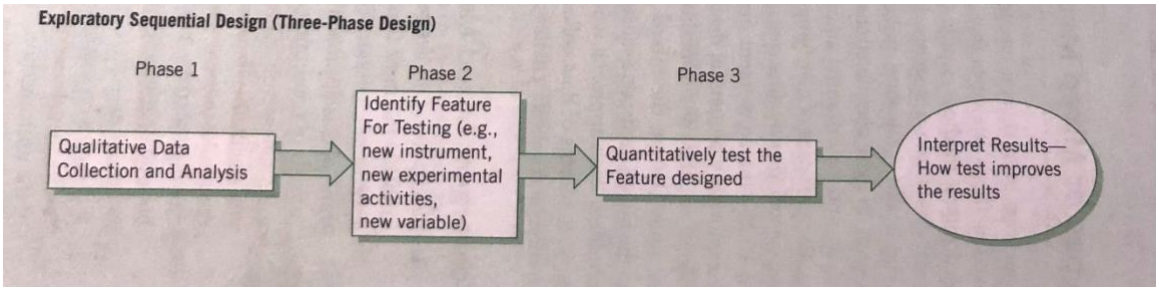
ES3 was a PK-5 school with an enrollment of 554 students, 65.4% of whom were in poverty. The student population is 24.7% African American, 69.1% White, 5.0% Hispanic, 0.5% American Indian, 0.4% Asian, and 0.2% unclassified. The student-to-teacher ratio is 17.8 to 1. During the 2020-2021 school year, the chronic absenteeism rate was 5.8%.

Research Design

Mixed methods research is ideal when either a quantitative or qualitative approach alone is inadequate to fully understand a research problem and the strengths of both approaches are needed to gain the best understanding (Creswell & Creswell, 2018). Conducting a mixed methods study for this research was appropriate because the problem of changing adult behaviors in the implementation of MTSS requires the factors that influence a particular outcome (student achievement and implementation fidelity) to be identified (Creswell & Creswell, 2018) and because MTSS implementation and the instructional practices involved were relatively new in this district and the specific subject of behavior change has never been addressed with this group of teachers and administrators. The specific type of mixed methods design used was exploratory mixed methods (as shown in Figure 6), where qualitative data were collected and analyzed before the collection and analysis of quantitative data (Creswell & Creswell, 2018). I used the exploratory design due to the need to generalize the initial qualitative findings and to interpret how the quantitative results expand on those findings to answer my research questions.

Figure 6

Exploratory Mixed Methods Design



Note. This graphic shows the steps involved in the exploratory sequential design process. From *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.), by J. W. Creswell and J. D. Creswell, 2018, p 218. Copyright 2018 by Sage.

This mixed methods design also represented a pragmatic worldview. Pragmatism is defined as a philosophy that comes out of "actions, situations, and consequences rather than antecedent conditions" (Creswell & Creswell, 2018, p. 10). This worldview focuses on what works to solve problems (Patton, 1990, as cited in Creswell & Creswell, 2018) and utilizes all available approaches for collecting and analyzing data to help understand the problem (Rossman & Wilson, 1985, as cited in Creswell & Creswell, 2018). In an exploratory mixed methods design, data analysis is a four-step process as illustrated in Figure 6 (Creswell & Creswell, 2018).

Research Questions and Rationale

Research questions provide a guide for conducting a planned study (Creswell & Creswell, 2018) and address a problem the study will aim to answer (Bouchrika, 2023). This study used both qualitative and quantitative data to measure the effectiveness of the factors influencing changes in adult behaviors and how those changes impact the implementation of evidence-based instructional reading strategies under an MTSS

framework through teacher perceptions and student outcome data. The first question provided qualitative responses. The second question explored information through the collection of quantitative data.

1. To what extent do the factors supporting adult change impact teachers' instructional practices?
2. What does K-2 student growth data indicate when support is provided on the use of evidence-based practices incorporating the factors of adult change theory?

The specific survey items are outlined in Appendix B, and the interview questions are outlined in Appendix C. The survey questions were designed to gather general teacher perceptions from a larger sample size. Interview questions were all open-ended and designed to allow a smaller sample size of participants the opportunity to share their in-depth experiences and perspectives on the support they received in implementing evidence-based instructional reading practices during the 2022-2023 school year. The questions were designed using the common elements of behavior change found in the theory of planned behavior and social learning theory. The responses were categorized and analyzed using the factors of behavior change common in both the theory of planned behavior and social learning theory. Table 3 identifies the alignment between research questions, survey questions, interview questions, and the factors of adult behavior change.

Table 3

Alignment of Research Questions, Survey Questions, Interview Questions, and Factors of Adult Behavior Change

Research question	Survey questions	Interview questions
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	1: How motivated were you to utilize the instructional reading practices under the MTSS framework? **Motivation**	3: In what ways were you motivated to implement MTSS during the 2022-2023 school year, as compared to years past?
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	2: To what extent can teachers improve their implementation of different instructional reading strategies under the MTSS framework? **Beliefs about personal ability**	2: How has the current year's support impacted your belief system?
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	3: To what extent can teachers increase how much their most difficult students learn from them regarding reading instruction? **Beliefs about student learning**	2: How has the current year's support impacted your belief system?
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	4: To what extent can your school staff as a whole increase how much the most difficult students learn regarding reading instruction? **Collective efficacy**	2: How has the current year's support impacted your belief system?
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	5: How much feedback did you receive on your use of instructional reading strategies from coaches and/or other school leaders? **Coaching amount of feedback**	4: Describe any input from coaches, leadership, and others that might have helped improve your ability to implement MTSS.
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	6: How useful did you find the feedback you received from coaches and/or other school leaders on your use of instructional reading strategies? **Coaching usefulness of feedback**	4: Describe any input from coaches, leadership, and others that might have helped improve your ability to implement MTSS.
2: What does K-2 student growth data indicate when support is provided on the use of evidence-based practices incorporating the factors of adult change theory?	7: How useful did you perceive the instructional reading practices to be in positively impacting student learning? **Attitudes about new behaviors**	8: How did the support you received regarding evidence-based instructional reading practices impact student growth at your school?

(continued)

Research question	Survey questions	Interview questions
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	8: At your school, how valuable were the available professional development opportunities on the instructional reading strategies under the MTSS framework? **Professional learning value**	6: Describe any efforts the district or school may have made to remove barriers, to provide support, or to incentivize you during the implementation process.
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	9: How often did you collaborate with colleagues to share progress with implementing instructional reading strategies under the MTSS framework? **PLCs frequency**	5: How did the support with implementation of these practices impact collaboration?
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	10: How helpful were your colleagues' ideas for improving your reading instruction based on the strategies under the MTSS framework? **PLC's helpfulness of colleagues**	5: How did the support with implementation of these practices impact collaboration?
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	11: How purposeful was the time spent collaborating on reading strategies under the MTSS framework? **PLC purposefulness**	5: How did the support with implementation of these practices impact collaboration?
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	12: To what degree were you expected to implement the reading strategies under the MTSS framework? **School culture**	4: Describe any input from coaches, leadership, and others that might have helped improve your ability to implement MTSS.
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	13: How often were you given opportunities to observe others using the instructional reading practices under the MTSS framework? **Peer modeling**	6: Describe any efforts the district or school may have made to remove barriers, to provide support, or to incentivize you during the implementation process.
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	14: To what extent were barriers to reading instruction (such as limited time or lack of resources) removed to enable you to implement the reading strategies under the MTSS framework? **Barrier removal**	6: Describe any efforts the district or school may have made to remove barriers, to provide support, or to incentivize you during the implementation process.

(continued)

Research question	Survey questions	Interview questions
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	15: How much input did you have about how the instructional reading strategies under the MTSS framework would be incorporated into your teaching? **Teacher agency**	6: Describe any efforts the district or school may have made to remove barriers, to provide support, or to incentivize you during the implementation process.
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	16: To what extent were you included in the decision-making process regarding reading instruction? **Principal distributed leadership**	6: Describe any efforts the district or school may have made to remove barriers, to provide support, or to incentivize you during the implementation process.
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	17: How clear were the school's goals regarding reading instructional practices under the MTSS framework? **Principal instructional leadership**	6: Describe any efforts the district or school may have made to remove barriers, to provide support, or to incentivize you during the implementation process.
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	18: Overall, how supportive were your school leaders of your use of the instructional reading strategies under the MTSS framework? **Principal instructional leadership**	4: Describe any input from coaches, leadership, and others that might have helped improve your ability to implement MTSS.
1: To what extent do the factors supporting adult change impact teachers' instructional practices?	19: Overall, how supportive were district leaders of your use of the instructional reading strategies under the MTSS framework? **Principal leadership**	6: Describe any efforts the district or school may have made to remove barriers, to provide support, or to incentivize you during the implementation process.

Research Question 1 was included to obtain teacher perceptions of each of the factors involved in change theory to implement evidence-based practices under the MTSS framework. Interview Question 1 allowed participants to rate their overall experience with receiving support in evidence-based instructional reading practices. Questions 2, 3, 4, 5, and 6 allowed participants to share their thoughts on the factors that facilitate adult behavior change. Interview Question 8, which aligned with the quantitative data used for Research Question 1, gauged teacher perception of the impact of support in evidence-based instructional reading practices on student growth. Interview

Question 7 allowed participants to make recommendations they believed would improve the district's implementation of practices under an MTSS framework. Finally, Question 9 allowed participants to share any additional thoughts they believed were relevant to the implementation of the newly introduced reading practices. Research Question 2 was included to gather and analyze compiled, longitudinal growth data to measure the impact of incorporating factors that support adult change in the use of evidence-based practices on student outcomes.

Qualitative Data Collection Procedures

The qualitative data for this study were collected first through surveys (Appendix B) sent to all K-2 teachers at three elementary school sites to gauge their perceptions of each of the factors involved in change theory and the impact on instructional practices followed by interviews from the teachers who perceived a high level of support with implementing evidence-based practices under the MTSS framework. A hypothesis was that teachers who were highly involved with support grew their students the most and would be able to provide insight into best practices.

Teachers who responded with a high level of support or a moderately high level of support on Question 24 of the survey (Appendix B) were chosen for the interview sample because the goal of this study was to learn the best practices that support change in adult behaviors when implementing evidence-based programs or practices (Tracy, 2020). This group was considered highly involved with the support provided. After the initial survey questions were answered, these teachers proceeded to Section 2 of the survey (Appendix D) and were asked if they were willing to participate in the interview. If they responded "no," their survey ended. If they responded "yes," they proceeded to

Section 3 (Appendix E) to provide their contact information and their availability for an interview within a 2-week time frame. Conversely, the survey for teachers who selected moderate, low, or no level of support on Question 24 ended after they completed Section 1.

The survey was developed following the research-backed guidelines for survey design (Gehlbach & Brinkworth, 2011). Follow-up interviews were chosen because they allowed participants to provide additional historical information about the MTSS support they received over time including their opinions, explanations, and personal experiences (Creswell & Creswell, 2018; Tracy, 2020). A list of interview questions (Appendix C) was developed and reviewed by a committee of experts for validity and reliability and an interview protocol including both a videorecording and a handwritten method of recording were utilized while interviews were conducted.

Before data collection, I obtained permission to conduct research from Gardner-Webb University's Institutional Review Board (Appendix F). To begin the data collection process, an email was drafted and sent to the district's superintendent to obtain permission to conduct the study within the school system (Appendix A). Once permission was granted, I requested teacher participants' names from the human resources department to ensure that the invitation email was sent to all reading teachers from the appropriate grade levels. After I received the list of teacher names and email addresses, I composed an email to the potential participants (Appendix G), which included a description of the proposed study, a request for their agreement to participate, and a link to the survey. After survey data were collected, I composed an email (Appendix H) to teachers who perceived a high level of MTSS support and requested a follow-up

interview. This email also included an informed consent form (Appendix H) and an inquiry about their availability for scheduling purposes. Pseudonyms were used to protect the participants' confidentiality.

After participant responses were collected, a schedule was developed to conduct the interviews. Once the interview schedule was created, each participant received an additional email with their interview date and time included as well as a Zoom link, which was used to conduct the interviews.

Quantitative Data Collection Procedures

The quantitative data for this study consisted of the Measures of Academic Progress (MAP) Growth Reading RIT (Rasch unIT) data from the fall and spring administrations during the 2022-2023 school year. The RIT scores reflected the overall performance that includes all reading subskills: foundational skills, language and writing, literature and informational texts, and vocabulary. NWEA developed the RIT scoring system to measure and compare students' academic progress over time against their past performance and other students in the same grade who are at the same beginning achievement level (Fleming, 2021; Tests.School, n.d.). The RIT scale is stable in that it provides an accurate calculation of student progress and remains consistent despite grade level and whether students score high or low (Fleming, 2021). The purpose of MAP Growth is to determine what students know and how they are growing in their academics (Fleming, 2021). The MAP data were obtained from the district's instructional technology coach in the form of CSV files for each teacher who perceived a high level of support and all other K-2 teachers downloaded from the reports section of MAP. This type of data collection represents the use of secondary data. According to MacInnes

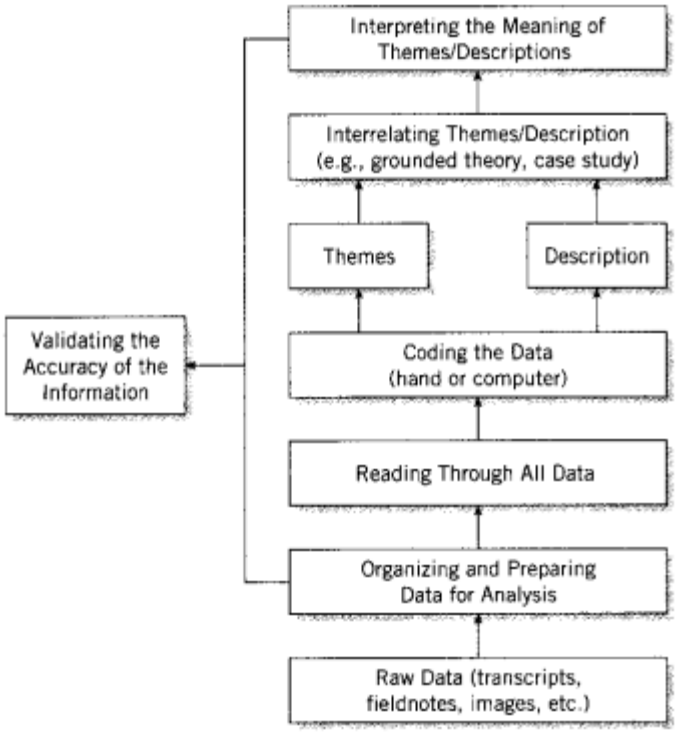
(2020), secondary data are data that were originally collected for a different purpose or by a person or organization other than the current researcher. For this research study, these growth data were collected and utilized by the school district to determine teacher effectiveness in instruction and whether improvement occurred between test administrations. There are several benefits of using secondary data: It promotes transparency, is easier to replicate and reproduce, and is less expensive and less complex to collect than primary data collection through surveys or experiments (MacInnes, 2020).

Qualitative Data Analysis Procedures

According to Creswell and Creswell (2018), the purpose of qualitative data analysis is to make sense of the text data by taking it apart and putting it back together. The first phase of data analysis for this study was to analyze the survey results that measure teacher perceptions. I created a database that placed teachers into two categories–those who perceived a high level of support with MTSS and those who perceived a low level of support based on how they responded to Survey Item 24, rating the support they received. The next step was to utilize a qualitative data analysis process as depicted in Figure 7 to analyze the interview data. After conducting interviews and collecting the raw data in the form of transcripts, I added and organized all the participants' responses to the interview questions to the database and prepared it for analysis. I then coded the data to look for themes and descriptions that emerged across teachers in each category. Finally, the findings built on to the next phase of the exploratory process by identifying which set of teacher MAP data to collect and analyze.

Figure 7

Data Analysis Process in Qualitative Research



Note. This graphic shows the data analysis process in qualitative research from the collection of raw data to the interpreting of themes. From *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.), by J. W. Creswell and J. D. Creswell, 2018, p 194. Copyright 2018 by Sage.

Quantitative Data Analysis Procedures

The second phase of data analysis was to analyze the quantitative MAP Growth RIT scores of teachers in the high-level support category and the scores of teachers who are in the low-level support category. This was to determine if teachers who perceived getting more support with MTSS experienced more student growth than those who did not through the use of descriptive statistics such as mean, median, and mode to describe

the characteristics of each set of teacher data. A two-sample *t* test was also used to determine if the difference in growth between the fall and spring test administrations was statistically significant between teachers who perceived a high level of support and teachers who perceived a low level of support based across grade levels on a 0.05 significance level. The software JASP was used to calculate the data. JASP is an open-source project that is user-friendly, provides analysis procedures in two forms, and is supported by the University of Amsterdam (JASP Team, 2023).

Qualitative Data Display

The qualitative data were displayed in a four-column table that divided high support from low support and categorized corresponding teacher responses into the identified factors that facilitate adult behavior change. This type of display provided a visual of the factors that made the most significant and least significant impact on practices based on teacher perceptions.

Quantitative Data Display

The quantitative MAP Growth data were displayed in bar graphs that show student growth levels across the fall and spring administrations based on teacher categories. This method showed baseline data and growth over time. I also used a table that aligned the overall growth levels with teacher responses to Interview Question 8, which asked how the support they received regarding evidence-based instructional reading practices impacted student progress at their school.

Mixed Methods Data Analysis Procedures

The third and final phase of data analysis was to interpret the connected results. This step involved preparing a narrative summary and interpretation of the qualitative

findings first to include themes and any interconnecting themes that were discovered in the process, followed by a report on how the quantitative data measurement was developed or informed by the qualitative data. The next step was preparing a summary and interpretation of the quantitative findings. Finally, there was a discussion of the extent to which the quantitative results generalize to the qualitative results (Creswell & Creswell, 2018). When conducting an exploratory design, concerns with validity arise with the development of a high-quality instrument to quantitatively test the feature identified in the qualitative analysis phase and whether or not that instrument adequately reflects the abundance of the qualitative findings (Creswell & Creswell, 2018). However, for this study, an instrument did not need to be developed to test the qualitative feature that was discovered. I intended to use the qualitative feature, which was teacher perceptions about support, to determine which historical quantitative data sets needed to be collected and analyzed.

Addressing Bias

My role in the district was as a school counselor at one of the elementary schools included in the study sample. During the 2022-2023 school year, I served as the MTSS coordinator for the newly consolidated district, which could be viewed as a conflict of interest. In this study, I addressed bias by surveying and interviewing teachers rather than school administrators and coaches with whom I had the most contact and interaction in that role. In addition, the MTSS support that teachers received was mainly provided by an external consultant hired by the district to assist with implementing new programs and practices. Before that leadership role, I was the school counselor and facilitator of the MTSS leadership team at another elementary school in the district, which could have

posed an additional conflict of interest with the teachers at that site; however, as an attempt to reduce potential bias in this instance, I excluded that school and its teachers from the sample.

Reliability and Validity

According to Creswell and Creswell (2018), reliability refers to the consistency of the researchers throughout the study, whereas validity refers to the accuracy of the research findings. Reliability was ensured by conducting all interviews with the same online platform and following the interview protocol with each participant. Validity procedures included the following.

- triangulation of the quantitative and qualitative data and documented research
- clarification of the bias I bring to the study as the researcher, including comments about how my employment shaped the interpretations of the findings
- presenting any information that was found to be incongruent with the common themes
- having a committee of experts in the field who have knowledge of an MTSS framework and best practices in the implementation of evidence-based practices review the survey and interview questions.

These four approaches were used to adequately assess the accuracy of the findings and to assure the study's audience of its credibility (Creswell & Creswell, 2018). The validity and reliability of the MAP growth data were addressed through NWEA's collection of evidence over time and the evaluation of scores from the same group of students after several months had passed between administrations (NWEA Connection,

2022).

Summary

This study measured the effectiveness of the factors influencing changes in adult behaviors and how those changes impact the implementation of evidence-based instructional reading strategies in an MTSS framework through teacher perceptions and student outcome data. The following chapter reports and displays the results of the qualitative and quantitative data collection and the results of the data analysis.

Chapter 4: Results

Introduction

The purpose of this mixed methods study was to seek to identify the incorporation of support for implementing evidence-based instructional practices within an MTSS framework among teachers and the impact on student growth outcomes in three K-2 schools. In addition, this study determined teacher perceptions regarding how support in adult behavior change impacted a shift in their instructional reading practices. Chapter 4 presents the data collected from the teacher survey, the interviews, and the 2022-2023 MAP growth reading data; an analysis of responses to the survey and interview instruments; statistical analysis of the assessment data; and triangulation of all three forms of data.

Research Questions

The following research questions guided this study:

1. To what extent do the factors supporting adult change impact teachers' instructional practices?
2. What does K-2 student growth data indicate when support is provided on the use of evidence-based practices incorporating the factors of adult change theory?

Methods and Procedures

Qualitative data for this study were collected first through a three-part survey completed by 12 of the 25 K-2 teachers from the three elementary schools. Part 1 of the survey gathered their perceptions of the support they received utilizing the factors of behavior change. Part 2 asked if they were willing to participate in a one-on-one

interview. Part 3 requested an email address and their availability for scheduling purposes. Participants were only taken to Part 2 if they indicated receiving a high or moderately high level of support on Item 24, and only taken to Part 3 if they responded yes to a follow-up interview. Twelve of the 25 teachers completed the first portion of the survey. After all surveys were completed, teachers were categorized into two groups: high support and low support. Two second-grade teachers of the 12 teachers indicated a moderately high level of support with MTSS reading practices and indicated a willingness to participate in a one-on-one follow-up interview. Those two teachers were interviewed to gather detailed information about their personal experience with the support they received. After the interviews were complete, a combination of deductive and inductive coding was used to analyze the raw data. After the interview data analysis, two independent samples *t* tests and descriptive statistics were used to analyze the K-2 MAP Growth reading data, which provided the quantitative data to expand on the qualitative findings.

Study Participants

The anonymous survey was conducted via email sent to the 25 certified teachers who taught reading in grades kindergarten, first, or second during the 2022-2023 school year in one of the three schools included in the study from one district. The sample selection criteria ensured that all teachers responding to the survey had been involved in the implementation of MTSS practices during the 2022-2023 school year and worked with grades that were governed by South Carolina Act 213, which requires screening of all kindergarten and first-grade students three times per year and second-grade students as needed for reading difficulties (South Carolina Department of Education, 2022).

Qualitative Data Collection Revision

According to the study's original qualitative data collection procedures, after the survey data were collected, I would compose an email to teachers who perceived a high level of MTSS support and request a follow-up interview with them; however, Part 2 of the survey asked teachers to indicate their willingness to participate in a one-on-one interview. If they responded yes, they were taken to Part 3 of the survey, which requested days and times they were available. Therefore, the follow-up email (Appendix H) was sent to teachers who perceived a high level of MTSS support and who agreed to participate in the interview to thank them for agreeing to participate. This email also included an informed consent form (Appendix H) and a reminder about their interview date and time.

Quantitative Data Collection Revision

According to the study's original quantitative data collection procedures, MAP data were supposed to be collected only for each teacher who perceived a high level of support; however, after considering the need for data to compare to the high support teacher data, which was the high support group, all other K-2 teacher MAP Growth data were also collected to serve as the all others group data.

Data Analysis

Qualitative data from the survey were analyzed and displayed in percentages on a table to show which change factors used to support implementation were perceived as highly effective in changing teacher practices and which were not among teachers. Survey Item 24 was analyzed to determine who would be invited to participate in a one-on-one interview and to categorize teachers into two groups: teachers who perceived a

high level of support and teachers who perceived a low level of support. The interview data were analyzed using a combination of deductive and inductive coding. Deductive coding was utilized based on codes related to the factors supporting adult change as synthesized from the theory of planned behavior and social cognitive theory, and themes were identified. Inductive coding was done to identify themes that might have emerged outside of the predetermined codes related to adult change theory.

The quantitative data, which consisted of the 2022-2023 MAP Growth Reading data for the fall and spring administrations, were analyzed using the JASP software and presented using descriptive statistics and two independent samples *t* tests to compare two groups of students. The first independent samples *t* test compared the growth of students taught by the two second-grade teachers who were interviewed (high support group) and students taught by all other K-2 teachers (all others group). The second independent samples *t* test compared the growth of students taught by the second-grade high support group teachers and students taught by all other second-grade teachers. Independent samples *t* tests were used to determine if the difference in growth between the fall and spring test administrations was statistically significant between teachers who perceived a high level of support and all other K-2 teachers on a 0.05 significance level. Twenty-one students were eliminated from the calculation due to the absence of beginning-of-year RIT scores.

Triangulation of the survey and responses to interview questions was done by categorizing the survey responses by high level of support and low level of support and comparing the responses of high level of support teachers to the responses to Interview Questions 1-7 and 9 to answer Research Question 1. Triangulation of Interview Question

8 and MAP Growth Reading data provided a comprehensive analysis to answer Research Question 2. All data were presented based on the research question answered.

Quantitative Data Analysis Revision

The second phase of data analysis was originally intended to analyze the quantitative MAP Growth RIT scores of teachers in the high-level support category and the scores of teachers who are in the low-level support category. The purpose was to determine if teachers who perceived getting more support with MTSS experienced more student growth than those who did not using an independent samples *t* test to determine if the difference in growth between the fall and spring test administrations was statistically significant between the two groups. However, due to the anonymity provided by the survey, I was unable to identify which teacher's data in the low support group to use for analysis.

Research Question 1: To What Extent Do the Factors Supporting Adult Change Impact Teachers' Instructional Practices?

The first research question determined teacher perceptions regarding how support in adult behavior change impacted a shift in their instructional reading practices under the MTSS framework.

Survey

All questions on Part 1 of the survey, except for Questions 20, 21, 23, and 24, addressed Research Question 1. Questions 1-19 reflected a different factor of adult behavior change, and Item 22 provided a list of the types of support teachers received. Table 4 shows whether teachers in the high-level support group perceived a low, moderate, or high level of use of each factor supporting adult change. Table 4 also shows

whether teachers in the low-level support group perceived a low, moderate, or high level of use of the factors. Teachers in the high level of support category indicated 80% or more effectiveness with implementing the reading instructional practices under the MTSS framework in the following areas: attitudes about new behaviors, beliefs about student learning and their ability as teachers, school culture, the purposefulness of PLCs, principal instructional leadership, professional learning, and coaching feedback. School culture, the purposefulness of PLCs, and the principal's instructional leadership scored the highest with 100% of teachers in the high level of support category perceiving them as effective. One hundred percent of the high support teachers perceived teacher agency, principal distributive leadership, and barrier removal as moderately effective. Teachers in the low level of support category rated all factors below 60%.

Table 4

Qualitative Survey Results on Teacher Perceptions of Support Received

Qualitative survey results		High support			Low support		
Factors	Constructs	Low	Moderate	High	Low	Moderate	High
Personal	Motivation	20	20	60	0	57	43
	Teacher agency	0	100	0	0	43	57
	Attitudes (new behaviors)	0	20	80	0	43	57
	Beliefs (learning)	0	20	80	0	57	43
	Beliefs (personal ability)	0	20	80	0	43	57
Social	School culture	0	0	100	14	43	43
	Peer modeling	40	20	40	57	43	0
	PLCs (How often)	0	40	60	14	43	43
	PLCs (How helpful are colleagues)	0	40	60	0	57	43
	PLCs (How Purposeful)	0	0	100	14	43	43
	Collective efficacy	0	40	60	0	71	29
Organizational	Principal leadership (instructional leadership)	0	0	100	28	28	43
	Principal leadership (distributive leadership)	0	100	0	57	29	14
	Barrier removal	0	100	0	29	57	14
	Professional learning	0	20	80	14	57	29
	Coaching Feedback	0	20	80	29	57	14

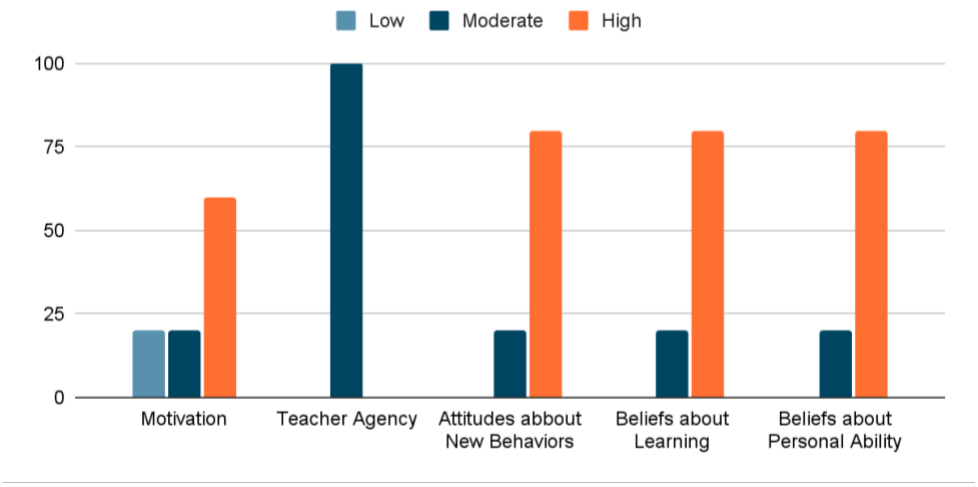
Note. Teachers in the high level of support category indicated 80% or more effectiveness with implementing the reading instructional practices under the MTSS framework in the following areas: attitudes about new behaviors, beliefs about student learning and their personal ability as teachers, school culture, the purposefulness of PLCs, principal instructional leadership, professional learning, and coaching feedback. The survey questions (Appendix B) were vetted by a group of instructional coaches and each construct was taken from the literature review.

Among the high support teachers, the personal factors rated the highest were attitudes about new behaviors, beliefs about learning, and beliefs about personal ability, as shown in Figure 8. Figure 9 indicates that high support teachers rated school culture

and PLC purposefulness as the most impactful social factors. Figure 10 indicates that high support teachers rated principal instructional leadership, professional learning, and coaching feedback the highest in supporting behavior change. Figure 11 provides an overview of the types of support all participants received.

Figure 8

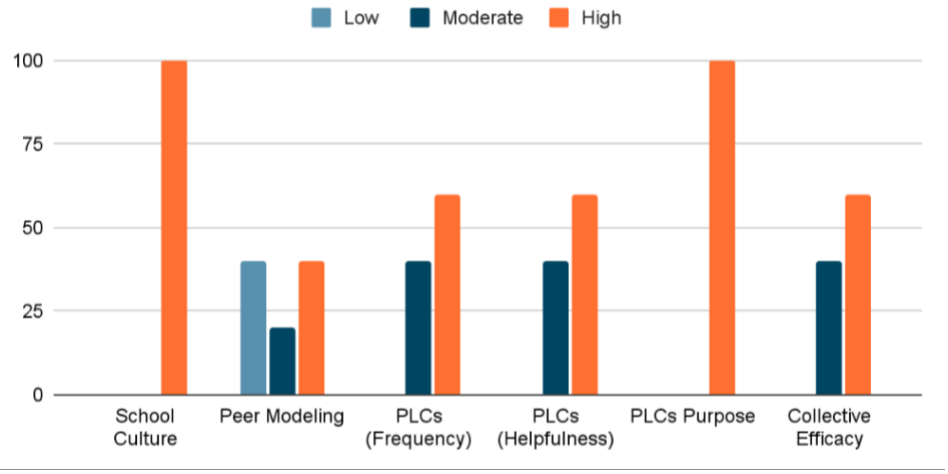
High Support Group Teacher Perceptions of Personal Factors Supporting Adult Change



Note. Teachers who perceived a high level of support rated attitudes about new behaviors, beliefs about learning, and beliefs about personal ability higher than the other personal factors that support adult behavior change.

Figure 9

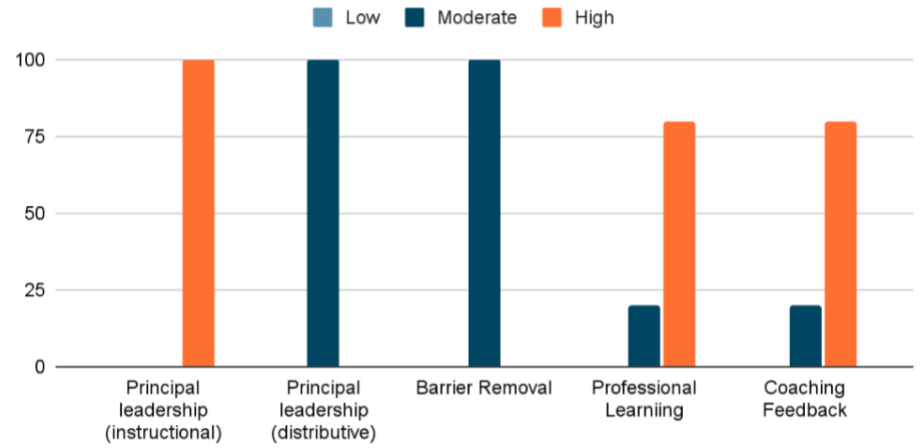
High Support Group Teacher Perceptions of Social Factors Supporting Adult Change



Note. Teachers who perceived a high level of support rated school culture and PLC purposefulness higher than the other social factors that support adult behavior change.

Figure 10

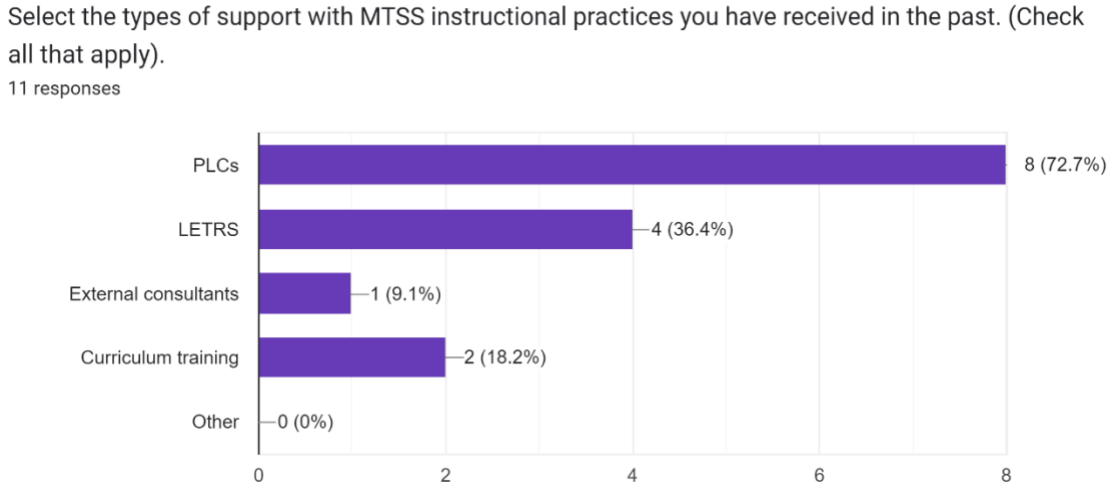
High Support Group Teacher Perceptions of Organizational Factors Supporting Adult Change



Note. Teachers who perceived a high level of support rated instructional leadership from the principal, professional learning, and coaching feedback higher than the other organizational factors that support adult behavior change.

Figure 11

Survey Question 22 Responses for All Respondents



Note. Of all 12 participants, eight indicated participation in PLCs as a support for implementation of instructional reading practices. Four indicated LETRS® as a support. Two participants selected curriculum training as a support, and one participant selected external consultants as support for implementing the practices.

Interviews

Interview Questions 1-7 and 9 addressed Research Question 1 to gain a better perspective of the factors that were incorporated to support adult change in instructional reading practices.

Question 1: Describe the MTSS Support You Received This School Year in Reading With the Use of Evidence-Based Instructional Reading Practices. Both teachers mentioned the district's adoption of Dot It™, an online MTSS platform with tools and resources used to connect and organize student intervention plans, instructional practice, and progress monitoring data for every student in every tier and in special education (Smart Learning Systems, 2023). Teacher A added an explanation of the RTI

process used to include implementing small group instruction, gathering baseline data to see where students are performing, setting goals for progress in weak areas, providing instruction in that area, and progress monitoring. Both teachers also discussed the support they received from their reading coach in the form of evidence-based resources and materials to help build phonics and fluency during instruction.

Teacher B specifically mentioned her reading coach providing "some evidence-based research from the Florida Center for Reading Research" that she used with "students who were struggling." Teacher A described the materials provided by the reading coach as a "mixture of different things based on my kids' needs."

Question 2: How Has the Current Year's Support Impacted Your Belief System? Both teachers agreed that the support they received with the instructional reading practices positively impacted their belief system because they saw the practices working to improve student progress. Regarding the positive changes she could see in her students, Teacher A described it as a "reward" for her as a teacher.

Question 3: In What Ways Were You Motivated to Implement MTSS During the 2022-2023 School Year, As Compared to Years Past? If So, How? Teacher A and Teacher B shared different experiences with aspects that motivated them during the 2022-2023 school year as opposed to other years. Teacher A was more motivated by the increase in help she received from her colleagues any time she needed it. This contrasted with the assistance she received the previous year, which was her first year teaching in the United States when she did not have a clear understanding of who was assigned to help her or what the instructional expectations regarding the workshop model were. Teacher A also mentioned challenges with following the workshop model but expressed

her concern with it as more of a barrier to the time needed to adequately teach students based on their individual needs. She described the workshop model as a "hindrance" due to the specific time constraints. Teacher B also discussed her need to "pull away from it a little bit" and "do what [her] kids needed," which was where she "saw the growth."

Question 4: Describe Any Input From Coaches, Leadership, and Others That Might Have Helped Improve Your Ability to Implement MTSS. Teacher A and Teacher B provided different responses to this question regarding the type of input they received from coaches, leadership, and others. Teacher A's experience included professional learning workshops during which coaches clarified expectations and goals teachers should work toward. Teacher B's experience included coaches observing her instruction and providing constructive feedback after the observations. Coaches not only came to observe, but they offered "hands-on" help and suggestions to improve learning for students whose lack of engagement was not noticed. Teacher B added, "When I'm in the middle of teaching I don't see certain things. I'm just focused on that teaching. What they did was critique me, which helped me." Teacher B also pointed out the encouragement she received from her coaches when she felt like she was not performing as expected when implementing the instructional practices.

Question 5: How Did the Support With the Implementation of These Practices Impact Collaboration? Both teachers agreed that collaboration among peers in PLCs occurred a great deal and that it positively impacted their instructional practices. Teacher A described consulting with other teachers to learn alternative ways to differentiate instruction for various learners. She further explained that her tendency to search for different ways to deliver instruction when one way is not working has

transferred into her approach with students. She encourages her students to find ways to solve math problems in a way that they understand even if it is different than the way she taught it, as long as they get the concept. Similarly, Teacher B described how the collaboration she experiences in PLCs through talking and sharing ideas has transferred into her classroom approach with students. She now provides more group work to promote student collaboration:

> I had my kids do a lot of talking so I got to see their thinking and the kids got to hear each other's thinking, which really did help. Everybody started to feel like I can do this, and I saw that so big last year. They wanted to come up and I'm saying I can't get everybody to talk at one time, so I started pulling names. And that encouraged them. The collaboration carried over from what my coaches and even my principal were telling me to try. I tried it with my kids, and it worked.

Question 6: Describe Any Efforts the District or School May Have Made to Remove Barriers, Provide Support, or Incentivize You During the Implementation Process. Teacher A provided examples of ways she received support from the reading coach such as sharing ideas for assisting students who are not responding to Tier 1 instruction and locating and supplying resources to save teachers time so they would not have to do it. She described this as "doing the work for us" and taking "some of the burden off us as classroom teachers." Teacher B added a different perspective, sharing that the district leadership made efforts to improve collaboration and bridge the gap between the district and schools regarding communicating expectations. In her opinion, as years passed, some teachers may have gotten complacent with implementing instructional practices required by the district due to a lack of follow-up and clear

communication. Although she feels like collaboration and communication have improved, she did also mention that there is room for more improvement in district efforts to hear teacher voices:

> I would love to see them coming to talk to us more or just say, "What are you all thinking? Tell me your thoughts. What's going well for you? What's not going good for you?" Because a lot of the time we are talking to ourselves. I may talk to my principal, but I don't get to see the district as much, and I know they're busy, but I think that would help the teachers some.

Question 7: What Changes Are Needed to Implement Evidence-Based Instructional Reading Practices Better for You? Both Teacher A and Teacher B agree that there are specific barriers that if removed, would make implementation of evidence-based instructional reading practices better for them. Regarding the 2022-2023 school year, Teacher A would have liked to start implementing the practices at the beginning of the school year to allow students who are not meeting proficiency targets more time to work on those areas. Teacher B also mentioned lack of time as a barrier to be removed, but for her, the beginning of the year assessments to gauge where students are performing and any skill deficits take too much time away from instruction. She offered to complete assessments before school starts as a possible solution to the assessment concern. She also mentioned "a lot of paperwork that has to be done" as a barrier. She describes her feelings as "overwhelmed" and feeling like she "just can't get herself together."

Question 9: Is There Anything I Did Not Ask You That You Would Like to Share About Your Experience With the Evidence-Based Instructional Reading Practices Implemented This Year? Again, both teachers agreed that time is a barrier to

implementing evidence-based practices; however, they offer different opinions about what impedes their teaching time. Teacher A's perspective of time reflects a desire to provide more instructional time to struggling students to help them meet their goals. Teacher B's perspective of time reflects a desire to find more time to locate and prepare teaching materials for use during instruction. She added that having "somebody to laminate it for me" would allow her to be able to "just pull it" which makes the material readily accessible.

Triangulation

Teacher survey data, interview data, and themes from the literature review showed three main similarities. In the survey, 100% of teachers in the high support group rated school culture, principal instructional leadership, and PLC purposefulness as highly utilized factors to support their implementation of instructional reading practices.

School Culture. While the word culture was not specifically mentioned in the interviews, its function was discussed between Teacher A and Teacher B. Regarding school culture, the literature review pointed out the role of staff expectations to do what is best for students, to maintain proficiency in current best practices, and to alter classroom instruction following PLCs in impacting teacher use of evidence-based practices. Teacher A described communicating and narrowing teacher expectations and setting goals for teachers to reach as input from coaches and leadership helped improve her ability to implement the instructional practices under the MTSS framework. Teacher B noted improvement in the district leaders' efforts to clearly communicate expectations to teachers and visibly inspect those expectations more often.

Principal Leadership. The words principal leadership were rarely mentioned during interviews, with only Teacher B's brief discussion of it; however, like school culture, the function of instructional leadership was discussed at length among both teachers. According to the literature review, principal instructional leadership involves having a clear mission, vision, and goals that prioritize teaching and learning, influencing positive school cultures, identifying staff strengths and opportunities for growth, allowing teachers to take risks and try new ideas, and providing time for staff to collaborate and problem solve in PLCs and to receive assistance from a coach (Bellibaş et al., 2022; Glickman et al., 2018; Hollingworth et al., 2018; Williams et al., 2021). Both teachers discussed the extensive support they received from their reading coach, which is an indication of instructional leadership in the building. Teacher A described the coach as her "support person who [she] can ask for anything about reading." She went on to say she gives "me different ideas that I can do with kids if they're not getting it" and "she's always giving resources that can help." Teacher B expounded on examples of her school leaders identifying her strengths and opportunities for improvement through classroom observations and one-on-one feedback following those observations, which helped to improve her ability to implement practices under the MTSS framework.

PLC Purpose. Both teachers talked about collaboration with peers a great deal and offered ways the support they received with implementing reading practices impacted that collaboration. Research shows that PLCs are an opportunity to build teacher capacity through the sharing of ideas, to motivate teachers to change their practices, and to accelerate the attainment of new skills and knowledge. Teacher A shared how she often asks other teachers for help with solving problems and getting new ideas

during lesson planning sessions. Those opportunities give her new insights to consider and build her capacity and her teacher toolbox. Teacher B extended the impact of collaboration with colleagues from the PLC to the classroom, demonstrating her new motivation to try collaborative practices with her students:

> When I collaborated with them, it helped me to collaborate with my kids. One of the things I did that was big was group work for them to collaborate, and I kind of threaded it throughout the day. So having the collaboration with them (colleagues) kind of carried over into my classroom. I had my kids do a lot of talking, so I could see their thinking and then the kids could hear each other's thinking which really did help.

Attitudes About New Behaviors. Eighty percent of teachers in the high support group perceived the instructional reading practices to be extremely useful in positively impacting student learning. Evidence suggests that the usefulness of selected practices predicts attitudes toward implementing new practices and their success in schools (Granić & Marangunić, 2019; Scherer et al., 2019; Sun, 2022). Both teachers indicated that they saw student reading improve as a result of using the instructional reading practices under the MTSS framework and the support they received to implement them. Both teachers also discussed specific practices they used to help students build phonological awareness, which is where much of the emphasis was placed under the district's MTSS framework during the 2022-2023 school year. Teacher A mentioned using "control R," and "letter tiles" for creating words that they hear and how those strategies "helped a lot with their reading." Teacher B said she saw "the most growth" when she "used a lot of blends," word "flashcards," and "putting the books in their hands." According to Teacher B, those

strategies caused growth in students who struggled with reading, but they were most effective with students who were “right at the cusp of where they needed to be.”

Distributed Leadership. One hundred percent of teachers in the high support category perceived distributed leadership as moderately effective in supporting their use of instructional reading practices under the MTSS framework. According to documented literature, distributed leadership has a positive impact on academic performance, teacher collaboration, teacher perception of job satisfaction, and the quality of instruction (Bellibaş et al., 2022; Malloy & Leithwood, 2017). Research also suggests that when principals include teachers in the decision-making process, they are more likely to make adjustments to their teaching behaviors (Mayrowetz et al., 2007, Mayrowetz & Smylie, 2004, as cited in Özdemir et al., 2023). Teacher A did not mention specific opportunities to be involved in decision-making and sharing her voice as a teacher, but Teacher B did. She shared how helpful it would be for district leaders to find out what teachers are thinking about the instructional practices and how they are experiencing the requirements of the district at their level. She also felt like not having an opportunity to express their concerns to decision-makers leads to teachers being “afraid to speak up because we think we’re going to get in trouble, but if we don’t speak up then how are they going to fix it?”

Teacher Agency and Barrier Removal. One hundred percent of teachers in the high support category perceived teacher agency and barrier removal as moderately effective in their use of instructional reading practices. Research shows that school principals serve a vital function in creating cultures that specifically support the use of evidence-based practices. They do this by removing barriers through protecting instructional time and dedicating resources to support necessary instructional changes

(Al-Mahdy et al., 2022; Williams et al., 2021). Research also shows that teacher agency is a necessary factor involved in changing teacher practices (Bellibaş et al., 2022). Allowing teacher agency**,** autonomy, and risk-taking to try new ideas helps to create school cultures that are change-ready (Hollingworth et al., 2018) and builds teacher commitment to shifts in teaching practices that are a part of the school improvement process (Emirbayer & Mische, 1998, as cited in Bellibaş et al., 2022).

During interviews, Teacher A mentioned the importance of having more than one way to solve problems if one way is not working for her. She also acknowledged differences in the way students learn and teachers teach, so being able to "modify according to [her] children's ability and what [she] knows they can do because [she's] the teacher" is important to her. Regarding barriers, Teacher A mentioned a lack of time to effectively support the growth of struggling students and the time needed to locate appropriate materials to use for instruction as factors that potentially impede progress. Teacher B added that an overwhelming amount of paperwork and lack of time to teach what her students specifically needed was a barrier created by the district's required instructional framework, the workshop model. The workshop model was not included as an evidence-based practice through the support provided in the district; however, Teacher B included it as a barrier to her use of the reading practices that her students needed most:

> I didn't feel like I had all the time because we had to do the workshop model. I needed this amount of time to teach this and this amount of time to teach that. My thinking honestly was, "They're not little robots." I need more time to teach these kids. That was a hindrance to me--the workshop model. I couldn't really feel it as a teacher, and if I don't feel it, my kids are not going to feel it.

Due to the time constraints she felt within the workshop model, she made a personal decision to exercise her unauthorized agency by [pulling] "away from it a little" and that she "just had to do what [her] kids needed." She indicated that once she started spending more time on what they needed, she saw growth.

Research Question 2: What Does K-2 Student Growth Data Indicate When Support Is Provided on the Use of Evidence-Based Practices Incorporating the Factors of Adult Change Theory?

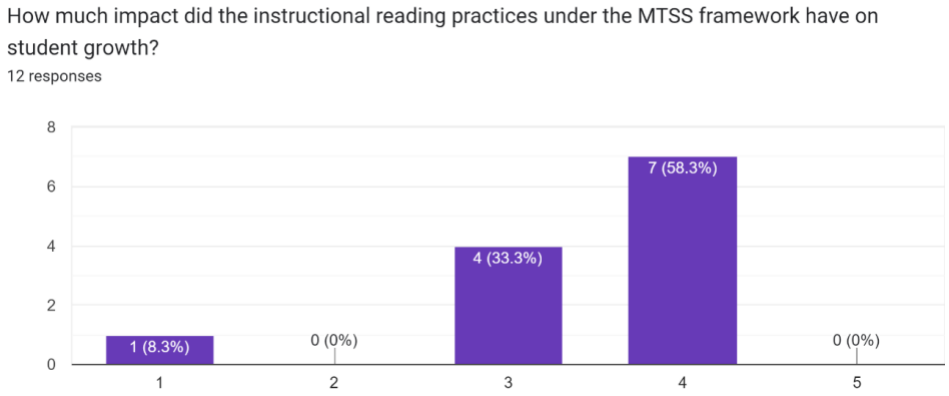
The second research question was included to gather and analyze compiled, longitudinal growth data to measure the impact of incorporating factors that support adult change in the use of evidence-based practices on student outcomes. Survey Item 20 and Interview Question 8 aligned with Research Question 2 and provided qualitative data with which to triangulate MAP Growth Reading scores.

Survey Question 20: How Much Impact Did the Instructional Reading Practices Under the MTSS Framework Have on Student Growth?

As shown in Figure 12, the survey responses indicated that 58% of respondents believed that the instructional reading practices under the MTSS framework had a moderately tremendous impact on student growth. Thirty-three percent of respondents thought there was a moderate impact on student growth, and 8% thought there was not much impact. Figure 13 shows that among the high support group, all of them perceived that the instructional reading practices had a moderately tremendous impact on student growth. Figure 14 shows that among low support teachers, a slight majority thought the instructional practices had a moderate impact on student growth.

Figure 12

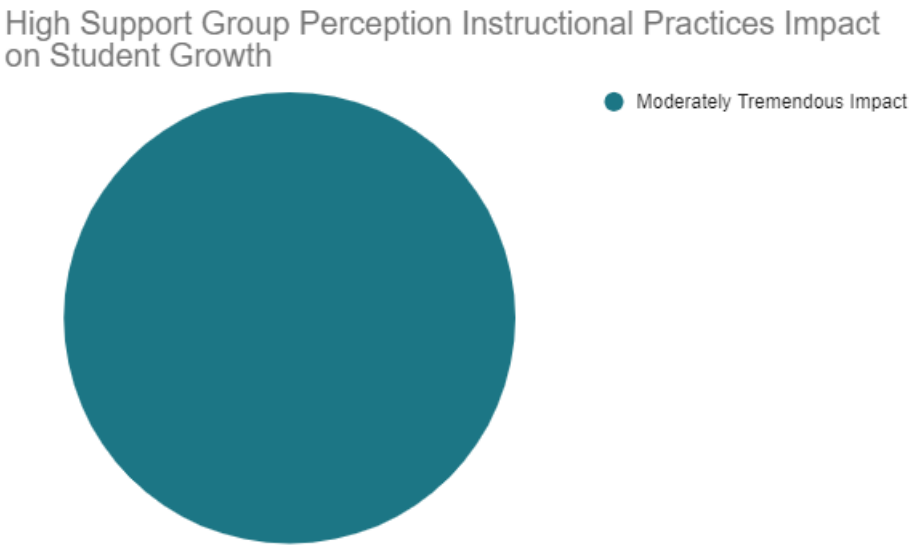
Survey Question 20 Responses for All Respondents



Note. Fifty-eight percent of the survey participants indicated that the instructional reading practices had a moderately tremendous impact on student growth.

Figure 13

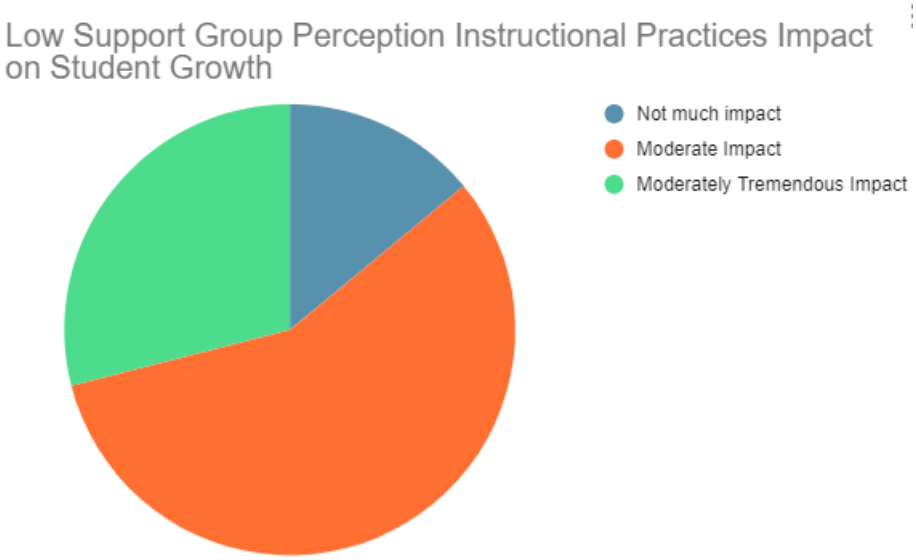
Survey Question 20 Responses for High Support Group Teachers



Note. One hundred percent of the high support teachers indicated the instructional reading practices had a moderately tremendous impact on student growth.

Figure 14

Survey Question 20 Responses for Low Support Group Teachers



Note. Fourteen percent of the low support teachers responded that the instructional reading practices did not have much of an impact on student growth. Fifty-seven percent responded with moderate impact. Twenty-nine percent responded with moderately tremendous impact.

Interview Question 8: How Did the Support You Received Regarding Evidence-Based Instructional Reading Practices Impact Student Progress at Your School?

Both teachers indicated that students made progress in reading with the help of the support they received with evidence-based instructional reading practices. Teacher A shared some of the foundational phonics skills used under the MTSS framework such as the use of letter tiles and control R to help students learn basic sounds to be able to build words. Teacher B also mentioned specific strategies she used with students such as blends, fluency passages, and using flashcards. She attributed her students' growth to the support she received from the special education teacher who served her students with

special needs. The special education teacher supported her by providing materials she could use to instruct the students with special needs, but she also used those same materials with her general education students and saw improvement.

Independent Samples t-Test Data

Two independent samples *t* tests were used to determine if there was a relationship between the high level of support teachers received with instructional reading practices and student growth on the MAP assessment from the beginning of the year to the end of the year. This method of analysis was selected because it compares the means of two different groups to determine whether the difference between them is statistically significant (Urdan, 2017). According to Urdan (2017), independent samples *t* tests are also used when there is an independent variable and a dependent variable that consists of interval data or data that can be added or subtracted. For this study, the dependent variable used in the *t* test was calculated by subtracting the beginning-of-year MAP Growth RIT score from the end-of-year MAP Growth RIT score. The independent variables used were the two categories of teachers who made up the high support group, those that indicated a high level of support with implementation of instructional reading practices under an MTSS framework, and all other K-2 teachers who made up the all others group. Five teachers indicated perceiving a high level of support on the survey; however, only two teachers were included in the high support group because they provided their contact information and agreed to participate in the interviews. Twenty-three teachers were included in the all others group.

Figure 15 shows the results of the first independent samples *t* test for all K-2 student growth. In this data set, 441 students were included in the all others group and 40

students were included in the high support group. The results showed a *t* value of 1.052 and a *p* value of 0.293. With a *p* value of 0.293 being greater than the alpha level of 0.05, the null hypothesis, which states that there is no significant difference between the means of the two groups being compared, cannot be rejected. This suggests that there is insufficient evidence to conclude that there is a significant difference between the means of the all others group and the high support group at the 0.05 significance level; therefore, the difference observed between students taught by teachers who perceived a high level of support and students taught by all other K-2 teachers is not statistically significant.

Figure 15

Independent Samples t Test for All K-2 Students

Independent Samples *t T*est for All K-2 Students

Independent samples *t* test			
	t	df	p
Difference	1.052	479	0.293

Note. Student's *t* test.

Descriptives

Group descriptives

	Group	N	Mean	SD	SE	Coefficient of variation
Difference	All others	441	15.655	9.670	0.460	0.618
	High support	40	13.950	11.318	1.790	0.811

Note. The means of the high support group and the all others group are not significantly different at α=0.05, according to JASP analysis. High support group=students taught by

high support teachers; all others group=students taught by all other K-2 teachers. SD=standard deviation; SE=standard error. Reprinted from JASP Team (2023).

Figure 16 shows the results of the second independent *t* test. In this data set, 226 students were included in the all others group, and 40 students were included in the high support group. The results showed a *t* value of -0.464 and a *p* value of 0.643. Given that *p* (0.643) is greater than α (0.05), we fail to reject the null hypothesis; therefore, there is insufficient evidence to conclude that there is a significant difference between the mean scores of the all others group and the high support group of second-grade students. In summary, the *t* test did not find statistically significant evidence that the two groups have different means.

Figure 16

Independent Samples t test for All Second Grade Students

Independent Samples *t* Test for Second Grade

Independent samples *t* Test			
	t	df	p
Difference	-0.464	264	0.643

Note. Student's *t* test.

Descriptives

Group descriptives						
	Group	N	Mean	SD	SE	Coefficient of variation
Difference	All others	226	13.199	9.061	0.603	0.686
	High support	40	13.950	11.318	1.790	0.811

Note. The means of the high support group and the all others group are not significantly different at α=0.05, according to JASP analysis. High support group=students taught by high support teachers; all others group=students taught by all other second-grade teachers. SE=standard deviation; SE=standard error. Reprinted from JASP Team (2023).

Triangulation

Teacher survey data and interview data indicated that the high support teachers perceived that the instructional reading practices had a moderately tremendous impact on student growth in the classroom; however, the independent samples *t*-test data indicate that there was no statistical significance between the MAP Growth scores of students in

the high support teacher group and students taught by all other teachers. Therefore, the hypothesis of this study that teachers who were highly involved with support grew their students the most is not supported by the quantitative data collected. However, the hypothesis that these teachers would be able to provide insight into best practices is supported by the qualitative data collected. Implementation science suggests that it takes 2 to 4 years for a new initiative to reach full implementation; therefore, it is likely that it will take time for teachers to see the positive impact of instructional practices under the MTSS framework on student reading outcomes (Bertram et al., 2011).

Quantitative Data Display Revision

According to the original data display plan, I intended to use bar graphs to show student growth levels across the fall and spring administrations based on teacher categories. I had also intended to use a table that aligned the overall growth levels with teacher responses to Interview Question 8, which asked how the support they received regarding evidence-based instructional reading practices impacted student progress at their school; however, because there were no significant differences found and only two teachers in the high support category participated in interviews, I decided to only include the table generated by JASP to display the *t*-test results and descriptive statistics.

Summary

This chapter provided perceptual data from K-2 reading teachers on how support in adult behavior change impacted a shift in their instructional reading practices and statistical data reflecting the impact of that support on student growth outcomes in three K-2 schools. A survey instrument, one-on-one interviews, and the MAP Growth Reading assessment provided the data for this study. The qualitative and quantitative data were

analyzed to answer each research question regarding the use of factors supporting adult change during the implementation of instructional reading practices under an MTSS framework and their impact on student learning.

The qualitative data gathered teacher perceptions about the support they received, whereas the quantitative data compared the growth outcomes between students taught by teachers who perceived a high level of support with the implementation of instructional reading practices and students taught by all other K-2 teachers. This chapter summarized the findings related to the most effective adult change factors that positively impact student learning and teacher recommendations for future implementation. Chapter 5 discusses the findings of the study and recommendations for future research.

Chapter 5: Discussion

Introduction

Educators of today are faced with more demanding accountability measures to improve academic outcomes for all students (Mitchell et al., 2017), which requires foundational systemic changes from traditional teaching practices to more innovative approaches to instruction in all content areas (Allensworth et al., 2022). There is a particular focus on reading outcomes due to mandates from state departments of education that emphasize what early childhood teachers need to do to ensure that students can meet grade-level reading targets by the end of third grade (South Carolina Department of Education, 2022). The necessary change that leads to improved student outcomes can be realized when schools and districts operate under an MTSS framework, which guides a shift in the way a system functions, beginning with changing individual teacher behaviors (Missouri Department of Elementary and Secondary Education, 2018); however, research suggests that large-scale shifts like these are hard to achieve (Allensworth et al., 2022), in large part due to the limited support provided by states and districts (Allensworth et al., 2022; Comstock et al., 2022) and teacher tendency to do what they have always done in the classroom (DuFour et al., 2005; Riley & Stolic, 2017; Teaching and Learning Consulting Network, LLC, n.d.). The purpose of this study was to address these challenges by seeking to identify the incorporation of support for implementing evidence-based instructional practices within an MTSS framework among teachers and the impact on student growth outcomes in three K-2 schools. The other purpose was to determine teacher perceptions regarding how support in adult behavior change impacted a shift in their instructional practices through the following research

questions:

1. To what extent do the factors supporting adult change impact teachers' instructional practices?
2. What does K-2 student growth data indicate when support is provided on the use of evidence-based practices incorporating the factors of adult change theory?

Summary of Results

The results of this study indicated that K-2 reading teachers perceived school culture, principal instructional leadership, PLCs that are purposeful, and their attitudes about the new behaviors due to positive results as the most influential factors supporting their implementation of the instructional reading practices under the MTSS framework. These findings are derived from the common factors of the theory of planned behavior and social cognitive theory, which can be categorized as personal, social, and organizational factors involved in changing adult behavior. Although the specific terminology differs, both the theory of planned behavior and social learning theory have similar constructs that fit into one of those three categories.

MTSS as a Leadership Study

Although the factors of adult change are divided into personal, social, and organizational categories, many of the factors that surfaced in this study as the strongest supporters of change fall under the school leaders' responsibilities, making this a leadership study. Personal factors such as helping teachers experience success with new practices as quickly as possible; social factors such as establishing a culture of collaboration; and organizational factors such as providing teachers access to coaches and

feedback and removing barriers to implementation show that principal leadership is foundational for the personal, social, and organizational factors. This finding aligns with the implementation drivers, as defined by Fixsen et al. (2005), that shows leadership at the base of the pyramid supporting the other drivers. Because school leaders play a critical role in impacting people and processes, their role in shifting the instructional practices of teachers makes sense (Liu et al., 2021; Stokes, 2018).

Theoretical Framework

This study's research was based on adult change theory as characterized by the common components of the theory of planned behavior and social learning theory. According to Madden et al. (1992, as cited in Celestine, 2021), the theory of planned behavior equates an increase in a person's intention to change and the increased likelihood of that change being successful with their positive attitude about changing the behavior. The theory also equates intention to change to others around them engaging in or supporting the behavior change and their belief that they can perform the behavior. In social learning theory, Bandura proposed that new behaviors are learned through the observation of others performing the behavior and the consequences that those others experience when the behavior is carried out (Bandura, 1999, as cited in Celestine, 2021; Lee, 2021). Behavior adoption comes as a result of modeling, remembering, or retaining what had been modeled and replicating it while receiving feedback, motivation, and reinforcement to persist in the new learning (Lee, 2021). This theory also considered cognitive, affective, and biological factors that were specific to individuals and determined human behavior. Cognitive factors included knowledge, expectations of the costs and benefits of the behavior change, and attitudes. Environmental factors included

access to resources in the community, perceived opportunities and barriers that may help or impede the change, social norms, and influence on others. Behavioral factors included expertise, opportunities to practice, and belief in one's ability, or self-efficacy. According to Bandura (1997, as cited in Lee, 2021), the four sources of self-efficacy were mastery of one's own personal and direct experiences, physiological arousal (positive or negative feelings associated with the new learning), vicarious experiences of others modeling the behavior, and social persuasion from one's teachers or peers.

There are several factors common to the theory of planned behavior and social learning theory that influence behavior change when adopting innovative, evidence-based instructional practices. In this study, these factors can be characterized as personal, social, and organizational factors. Personal factors include motivation (Sving et al., 2017), teacher agency (Bellibaş et al., 2022), attitudes about new behaviors (Ruble et al., 2018), beliefs about student learning (Rodgers et al., 2022), beliefs about personal ability (Oakes et al., 2021), and growth mindset (Yeager et al., 2022). Social factors include social norms (Gelfand et al., 2017), school culture (Williams et al., 2019), peer modeling (DiBonaventura, 2019), PLCs (Voelkel & Chrispeels, 2017), and collective efficacy (Geijsel et al., 2003, as cited in Qadach et al., 2020). Organizational factors include principal leadership (Liu et al., 2021), barrier removal (Williams et al., 2021), professional learning (Kuhn et al., 2022), and coaching and mentorship (Mahoney, 2020). This framework was used to analyze the findings.

Analysis and Discussion of Qualitative Findings

This analysis supported the theory that there are specific factors that best support adult change. In addition, the analysis provided a concise summary of the factors that

greatly impacted teacher instructional practices, which answered Research Question 1. The analysis also showed how the hypothesis that these teachers would be able to provide insight into best practices was supported by the qualitative data collected.

Areas of Strength

Teachers in the high support category indicated through a qualitative survey and interviews that they were best supported with their implementation of the instructional reading practices under the MTSS framework by school and district culture that provided clear goals and expectations, principal instructional leadership, purposeful PLCs, and their attitudes about the new behaviors based on positive outcomes.

School Culture. Research on the benefits of school culture to improve instructional practice is extensive. This study's findings align with research supporting school environments as having a direct impact on adult behaviors and supporting teaching attitudes related to the proficient and sustained use of evidence-based practices (Williams et al., 2019). Teachers noted the efforts of their school and district leaders to clarify expectations, communicate overall goals, and set specific goals for teachers to achieve as highly effective.

Principal Leadership. The function of principal instructional leadership was identified as a strength among teachers surveyed and teachers interviewed. According to the literature review, the aspects of principal instructional leadership that made the most impact in helping teachers effectively utilize evidence-based practices were providing time for staff to collaborate and problem solve in PLCs, allowing teachers to receive assistance and resources from a coach, and observations and feedback, which also aligns with research (Bellibaş et al., 2022; Glickman et al., 2018; Glidewell et al., 2022;

Hollingworth et al., 2018; Williams et al.,2021).

PLC Purpose. This study's findings regarding PLCs aligned with Wortham's (2018) research, which showed that teachers perceived PLCs to be impactful for student growth only if implemented correctly. In addition, research showed that PLCs are an opportunity to build teacher capacity through the sharing of ideas, to motivate teachers to change their practices, and to accelerate the attainment of new skills and knowledge (Fullan, 2016). Teachers in this study shared the value of collaborating with peers to problem solve, learning new ideas for more effective instruction, and being able to promote the same type of collaboration among students in the classroom environment as highly effective for building their capacity and motivating them to try innovative practices. An additional insight provided by teachers that builds on research is working closely with special educators to support students with special needs and ultimately supporting general education students.

Attitudes About New Behaviors. Teachers perceived the instructional reading practices to be extremely useful in positively impacting student learning, and they saw student reading improve as a result, which is evidence of their attitudes about shifting to the new practices. Evidence suggests that the usefulness of selected practices predicts attitudes toward implementing new practices and their success in schools (Granić & Marangunić, 2019; Scherer et al., 2019; Sun, 2022). These teachers are more likely to continue implementing the practices because of their effectiveness.

Opportunities for Improvement

Teachers also indicated several opportunities for improvement, rating these factors as moderately effective to support their implementation. Those areas were teacher

agency, distributed leadership, and barrier removal. The last two factors have been combined based on the ways they are interconnected in the findings.

Distributed Leadership. Research suggests that teachers are more likely to make adjustments to their teaching behaviors when their principals include them in decision-making (Mayrowetz et al., 2007, Mayrowetz & Smylie, 2004, as cited in Özdemir et al., 2023). One teacher mentioned how helpful it would be for district leaders to find out what teachers are thinking about the instructional practices and how they are experiencing the requirements of the district at their level. Having opportunities to express teacher concerns to decision-makers could lead to more teacher transparency and engagement in the use of instructional reading practices under the MTSS framework.

Teacher Agency and Barrier Removal. Research showed that school principals play a vital role in creating environments that specifically support the use of evidence-based practices by removing barriers through protecting instructional time and allocating resources to support necessary instructional shifts (Al-Mahdy et al., 2022; Williams et al., 2021). Lack of adequate time to deliver appropriate instruction for struggling students and to locate and prepare materials for instruction were barriers hindering the use of the instructional reading practices that school leaders sought to mitigate in some ways; however, more effort in these areas would further support teachers in changing practices. Research also showed that teacher agency was a necessary factor involved in changing teacher practices (Bellibaş et al., 2022). Teachers expressed the value of being able to decide which resources and strategies to use and how to use them to best support their students. According to Hollingworth et al. (2018), promoting teacher agency and allowing teacher autonomy and risk-taking to try new ideas help to create school cultures

that are ready for change and foster teacher commitment to changes in teaching practices that are a part of the school improvement process (Emirbayer & Mische, 1998, as cited in Bellibaş et al., 2022). On the contrary, the results of this study suggest that if teachers are not given agency by their leaders, they will be inclined to exercise their agency, which can negatively impact equitable use of evidence-based practices.

Analysis and Discussion of Quantitative Findings

The results of the qualitative and quantitative data combined provided the answer to Research Question 2. Those results indicate that although teachers in the high support group saw growth and perceived that the support they received with the use of instructional reading practices under the MTSS framework had a moderately tremendous impact on student growth, student growth in their classes did not indicate that the support was effective enough to distinguish them from other teachers. This was contrary to the hypothesis that teachers who perceived a high level of support would grow their students the most. The independent samples *t* tests showed that there is insufficient evidence to conclude that there is a significant difference between the means of the all others group and the high support group at the 0.05 significance level. Therefore, K-2 student growth data indicate that the difference observed between students taught by teachers who perceived a high level of support and students taught by all other K-2 teachers was not statistically significant, even among second-grade teachers exclusively, when support was provided on the use of evidence-based practices incorporating the factors of adult change theory.

A potential explanation of this finding could be that participants were not exposed to the support with instructional practices and the factors of adult change theory long

enough to see significant growth in test scores. According to research on implementation science, it takes 2 to 4 years for a new initiative to reach full and successful implementation (Bertram et al., 2011); therefore, more time with implementation that incorporates the factors supporting adult change could have produced more promising results evidenced by assessment data. An additional explanation could be that even with a high level of support, if the support was not in true evidence-based practices, a significant difference would not be expected. The specific types of instructional reading practices were not defined in this study but were rather based on teacher interpretation.

Alignment

All components of this study were aligned as shown in Table 5. I made sure that interview questions, survey questions, and factors supporting adult change were aligned with the research questions so that my research objectives could be achieved and that the research questions would be answered.

Table 5

Alignment of Research Questions, Factors Supporting Adult Behavior Change, Survey Questions, and Interview Questions

Factors supporting adult behavior change	Research questions	Survey items	Interview questions
Motivation	1	1	3
Teacher agency	1	15	6
Attitudes about new behaviors	2	7	8
Beliefs about learning	1	3	2
Beliefs about personal ability	1	2	2
School culture	1	12	4
Peer modeling	1	13	6
PLC frequency	1	9	5
PLC helpfulness	1	10	5
PLC purpose	1	11	5
Collective efficacy	1	4	2
Principal instructional leadership	1	17	6
Distributed leadership	1	16	6
Barrier removal	1	14	6
Professional learning	1	8	6
Coaching feedback amount	1	5	4
Coaching feedback usefulness	1	6	4

Implications for Practice

These results build on existing evidence of years of implementation science work to transfer and consistently deliver evidence-based practices that have been proven to

work in educational settings where capacity building (van Kuijk et al., 2021), fidelity of implementation (Loveless 2021; van Kuijk et al., 2021), and instruction delivered to students by individual teachers are concerns (Loveless, 2021). These concerns have had lasting negative effects on student outcomes (Goodman, 2017). The findings also build on existing evidence of adult change theory by demonstrating the impact of personal, social, and organizational factors that support adults through the arduous change process. According to Desimone (2002, as cited in Schutte, 2020), shifting the instructional practices of adults is one of the most difficult areas in education to change. The findings of this study add to the evidence that support is needed for teachers to make and sustain the instructional shifts needed to realize desirable student growth.

Celestine (2021) summarized the research on behavior change factors that best facilitate required shifts in adult behavior. Research strongly supports the consideration of behavior change factors that best facilitate required shifts in adult behaviors. These factors can fall into three categories: personal factors such as motivation, attitude (Eickelmann & Vennemann, 2017; Locke et al., 2019), agency, and beliefs (Bandura, 1977, as cited in Hivner et al., 2019); social factors such as social expectations, peer pressure, and collaboration (Liu et al., 2021; Sun, 2022); and organizational factors such as leadership, professional learning, and coaching (Lyon, n.d.; Sun, 2022). Deliberate attention to these factors by school leaders and strategic implementation can help foster sustainable change to adopt practices that work (Lyon, n.d.).

This mixed methods study utilized a survey, one-on-one interviews, and two independent *t* tests to identify the incorporation of support for implementing evidence-based instructional practices within an MTSS framework among teachers and the impact

on student growth outcomes in three K-2 schools. This study also determined teacher perceptions regarding how support in adult behavior change impacted a shift in their instructional practices. The qualitative data shed light on the factors of support that most impacted teacher use of the instructional reading practices under the MTSS framework and shed light on some of the barriers to implementation. Collecting this information positively contributes to school districts' efforts to influence change more effectively in teacher instructional practices to implementation of evidence-based practices, which may help build momentum despite unpredictable change and practitioner resistance as well as help school district leaders more strategically influence system-wide change. The data collected have implications for school and district leaders looking to improve their implementation of evidence-based practices under the MTSS framework.

The following implications were derived from this study:

- District and school leaders should ensure that a culture of collaboration is fostered and supported by schedules that include time for PLCs among teachers and collaboration between and across interdisciplinary roles such as general and special educators. Researchers suggest that barriers to collaboration in schools include time constraints for planning, consultation, and training, and a lack of understanding of and appreciation for respective interdisciplinary roles (Archibald, 2017); therefore, successful and productive collaboration should rally support from district and school administrators, who can foster a commitment to and sustainability of collaborative practices, provide professional learning experiences to improve educators' collaborative skills, and create schedules that support and protect different types of

continuing collaboration (Chow, 2022; Marlowe, 2021; McLeskey et al., 2017). Also, proactive, student-centered collaboration between principals and teacher teams, general educators and special educators, teachers and paraprofessionals, and interdisciplinary team members such as behavior specialists and speech-language pathologists can provide necessary resources to classrooms, schools, and systems by leveraging the expertise and experiences of important stakeholders (Barnes et al., 2021; Chow, 2022; Chow & Hollo, 2022; Chow & Wallace, 2021; Voelkel & Chrispeels, 2017).

- School leaders should make efforts to ensure that PLCs are purposeful and involve problem-solving among teachers and the sharing of ideas. According to Fullan (2020), collaboration is ineffective when it lacks a clear purpose or when practitioners collaborate on the wrong things. Archibald (2017) found that limited opportunities for purposeful communication that is embedded in the culture is another barrier to collaboration that needs to be overcome. In a study conducted by Vijayadevar et al. (2019), principal participants saw PLCs as an opportunity to build educator capacity through the sharing of ideas.
- Principals should take an active role in instructional leadership and be visible to teachers as lead learners. Providing teachers with access to coaches is an important job of the principal; however, according to Fullan (2016), principal direct involvement as lead learners provides a model of the expectation of continuous learning for teachers and creates conditions for groups to learn from the work through cycles and to take part in solving implementation problems together. Principals who take a learner stance by learning alongside

teachers and visibly struggling with them on new and difficult innovations build more credibility and trust and become more effective due to the knowledge acquired (Fullan, 2016). The failure of a principal to get involved with what teachers are learning and doing can result in silent and frustrated teachers (Lee & Madden, 2019).

- School leaders should ensure teachers see and experience positive results when implementing new practices so they will be motivated to continue to implement. Because implementation science suggests that it takes 2 to 4 years for a new initiative to reach full and successful implementation, it is likely that it will take time for teachers to see the positive impact of MTSS on student outcomes (Bertram et al., 2011). Therefore, it stands to reason that even in the absence of immediate student growth data, as is the case with the MAP Growth scores in this study, educators need to experience some type of successful outcomes through more frequent feedback loops. This can be accomplished with progress monitoring student response to instruction and implementation fidelity data. Fidelity assessments measure how well the innovation is being carried out and interpret outcomes (National Implementation Research Network, n.d.). If the outcome is not positive, fidelity assessment can help to reveal whether the undesired outcome was the result of adopting an ineffective program, whether it was used at all, and where to focus improvement efforts. In addition, given that teachers saw notable growth in the classroom setting based on the support they received, we should expect that significant growth would occur with more time

dedicated to implementation support. Ensuring that more teachers have access to this type and level of support could lead to more evidence-based practice use in more classrooms across the district.

- School and district leaders should put greater emphasis on distributed leadership that involves teachers in decision-making through implementation teams to support sustainable changes in different instructional practices. The positive impact of distributed leadership is documented in literature as having an impact on academic performance, teacher collaboration, teacher job satisfaction, and instructional quality (Bellibaş et al., 2022; Malloy & Leithwood, 2017). Research also suggests that teachers are more likely to make adjustments to their teaching behaviors when their principals include them in decision-making (Mayrowetz et al., 2007, Mayrowetz & Smylie, 2004, as cited in Özdemir et al., 2023). Implementation teams, specifically under an MTSS framework, provide teachers the support they need to ensure that their daily use of effective innovations with students is beneficial and of high quality, design systems to support the innovation, resolve any barriers to implementation in the system, ensure ongoing training and coaching to staff, monitor the use of practices, and are accountable for achieving positive outcomes (National Implementation Research Network, n.d.).
- School and district leaders should have conversations with teachers about the barriers that impede their consistent use of instructional reading practices under the MTSS framework and make a sincere attempt to address them. According to the theory of planned behavior, perceived behavioral control,

which is similar to the sense of agency discussed in social learning theory, refers to how people perceive the level of ease or difficulty involved in performing desirable behaviors and their ability to control the perceived barriers related to the performance (LaMorte, 2022). School leaders play an instrumental role in developing teachers' perceived behavioral control, which may lead to an increase in behavioral intention to implement evidence-based practices and possibly to a direct change in instructional practices (Ruble et al., 2018). Research shows that school principals play a vital role in creating environments that specifically support the use of evidence-based practices by removing barriers through protecting instructional time and allocating resources to support necessary instructional shifts (Al-Mahdy et al., 2022; Williams et al., 2021).

Limitations of the Study

This study has potential limitations. First, the generalizability of the results is limited by the small sample size included in the study. According to Tracy (2020), sample size is important to ensure that the statistical result is generalizable to the population. Including a larger sample size to increase participation in the survey and interviews would have further validated the conclusions drawn. This could have also impacted the quantitative findings since more teachers perceiving a high level of support were included in the all others group and compared to teachers in the high support group with similar perceptions; however, triangulating the data rather than drawing themes from the interview data alone was done to validate the data and make recommendations.

Second, the reliability of these data may have been impacted by my previous role

in the district. According to Tracy (2020), researcher bias is considered a liability in qualitative research that should be mitigated. I am aware of my potential bias in this study as an employee of the district included in the study. To minimize bias, I removed one school in the district with K-2 teachers from the population because I was employed there for 9 years and served as the MTSS team facilitator for 2 of those years. It is assumed that teacher responses in the remaining three schools were not influenced by my employment in the district.

Recommendations for Future Research

This study identified the incorporation of support for implementing evidence-based instructional practices within an MTSS framework among teachers and the impact on student growth outcomes in three K-2 schools. This study also determined teacher perceptions regarding how support in adult behavior change impacted a shift in their instructional practices. This study could be utilized in the future for other districts and schools implementing practices under the MTSS framework across the country. Recommendations for future research include the following:

- Replicate the same study including the perspectives of administrators and reading coaches on the implementation of instructional reading practices to gauge how the factors of change impacted their practices.
- Analyze longitudinal data from previous MAP Growth administrations to see growth prior to implementation, during implementation, and after 2 to 4 years of implementation.
- Include independent samples *t* test analyses to compare students taught by teachers perceiving high support to students taught by teachers perceiving a

low level of support. The second phase of data analysis was to analyze the quantitative MAP Growth RIT scores of teachers in the high level of support category and the scores of teachers who are in the low level of support category.

- Include a clear definition of the evidence-based practices that teachers are being trained and supported to implement. According to Wood et al. (2016), there is a divide between evidence-based practices that have been proven to work and traditional practices used in classrooms. Making it explicitly clear which evidence-based reading practices were used such as letter tiles, control R, blends, fluency passages, and flashcards would help to eliminate any questions about the effectiveness of the practices. Instead, it would help to distinguish whether the quantitative results were due to how the practices were implemented or the factors of adult change used in the process.
- Any replications of this study should include a larger sample size to ensure generalizability of the population. This could be achieved by conducting the study in a larger school district.

Conclusion

Many studies have examined the challenges related to the implementation of evidence-based practices due to a lack of understanding and application of implementation science. Much of that research focuses on the perspectives of educators about the critical components involved in implementing new practices under the MTSS framework. This study adds to the available information by gaining the perspectives of teachers on the factors that support the changes in practice that an MTSS framework

necessitates. The study identified the incorporation of support for implementing evidence-based instructional practices within an MTSS framework among teachers and the impact on student growth outcomes in three K-2 schools. This study also determined teacher perceptions regarding how support in adult behavior change impacted a shift in their instructional practices. Participants in the study expressed that school culture, principal instructional leadership, purposeful PLCs, and their attitudes about new practices had the most significant impact on their use of new instructional reading practices. They also emphasized the importance of teacher agency, barrier removal, and distributed leadership to further support improvements in the district's MTSS framework. Information gathered from this study can be used to improve teacher implementation of the instructional reading practices under the MTSS framework and help leaders overcome teacher resistance and other barriers to implementation that are related to change.

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Appendix A

Permission to Conduct Research

BRIANA WHITAKER <[redacted]> Jan 31, 2023, 12:03 PM

to [redacted]

Dr. [redacted],

As you are aware, I am currently enrolled in Gardner-Webb University's Doctoral Graduate Program. My dissertation topic is Changing Adult Behaviors: Examining the Factors of Change that Facilitate the Implementation of MTSS in a Small Rural School District. The purpose of this email is to request your permission to conduct my research in the district which will consist of interviewing various instructional staff at the K-2 level in all three areas of the county and utilizing MAP data for the 2022-2023 school year.

Thank you for your consideration.

Sincerely,

Briana G. Whitaker

Briana G. Whitaker, M.Ed
Multi-Tiered System of Supports (MTSS) Coordinator
[redacted]

[redacted] Feb 1, 2023, 2:55 PM

[redacted]

Approved.

Thanks!
[redacted]

---------- Forwarded message ---------
From: [redacted]>
Date: Tue, Jan 31, 2023 at 12:05 PM
Subject: Fwd: Permission to Conduct Research
To: [redacted]>

--
[redacted]
Executive Assistant to the Superintendent
[redacted]

--
[redacted]
Superintendent
[redacted]

Appendix B

MTSS Instructional Practices Support Survey Section 1

MTSS Instructional Practices Support Survey

Please select the response that most accurately reflects your perceptions of the support you received during the 2022-2023 school year with implementing new instructional reading practices under the MTSS framework.

How motivated were you to utilize the instructional reading practices under the MTSS framework? *

	1	2	3	4	5	
Not at all motivated	○	○	○	○	○	Extremely motivated

To what extent can teachers improve their implementation of different instructional reading strategies under the MTSS framework? *

	1	2	3	4	5	
Cannot improve at all	○	○	○	○	○	Can improve a tremendous amount

To what extent can teachers increase how much their most difficult students learn from them regarding reading instruction? *

	1	2	3	4	5	
Cannot increase at all	○	○	○	○	○	Can increase a tremendous amount

To what extent can your school staff as a whole increase how much the most difficult students learn regarding reading instruction? *

	1	2	3	4	5	
Cannot increase at all	○	○	○	○	○	Can increase a tremendous amount

How much feedback did you receive on your use of instructional reading strategies from coaches and/or other school leaders? *

	1	2	3	4	5	
No feedback at all	○	○	○	○	○	A tremendous amount of feedback

How useful did you find the feedback you received from coaches and/or other school leaders on your use of instructional reading strategies? *

	1	2	3	4	5	
Not at all useful	○	○	○	○	○	Extremely useful

How useful did you perceive the instructional reading practices to be in positively impacting student learning? *

	1	2	3	4	5	
Not very useful	○	○	○	○	○	Extremely useful

At your school, how valuable were the available professional development opportunities on the instructional reading strategies under the MTSS framework? *

	1	2	3	4	5	
Not at all valuable	○	○	○	○	○	Extremely valuable

How often did you collaborate with colleagues to share progress with implementing instructional reading strategies under the MTSS framework? *

	1	2	3	4	5	
Almost never	○	○	○	○	○	Almost always

How helpful were your colleagues' ideas for improving your reading instruction based on the strategies under the MTSS framework? *

	1	2	3	4	5	
Not at all helpful	○	○	○	○	○	Extremely helpful

How purposeful was the time spent collaborating on reading strategies under the MTSS framework? *

	1	2	3	4	5	
Not at all purposeful	○	○	○	○	○	Extremely purposeful

To what degree were you expected to implement the reading strategies under the MTSS framework? *

	1	2	3	4	5	
Almost never expected	○	○	○	○	○	Almost always expected

How often were you given opportunities to observe others using the instructional reading practices under the MTSS framework? *

	1	2	3	4	5	
Almost never	◯	◯	◯	◯	◯	Almost always

To what extent were barriers to reading instruction (such as limited time or lack of resources) removed to enable you to implement the reading strategies under the MTSS framework? *

	1	2	3	4	5	
Almost none removed	◯	◯	◯	◯	◯	A tremendous amount removed

How much input did you have about how the instructional reading strategies under the MTSS framework would be incorporated into your teaching? *

	1	2	3	4	5	
Almost no input	◯	◯	◯	◯	◯	A tremendous amount of input

To what extent were you included in the decision-making process regarding reading instruction? *

	1	2	3	4	5	
Not included at all	◯	◯	◯	◯	◯	Included a tremendous amount

How clear were the school's goals regarding reading instructional practices under the MTSS framework? *

	1	2	3	4	5	
Not very clear at all	○	○	○	○	○	Tremendously clear

Overall, how supportive were your school leaders of your use of the instructional reading strategies under the MTSS framework. *

	1	2	3	4	5	
Not at all supportive	○	○	○	○	○	Extremely supportive

Overall, how supportive were district leaders of your use of the instructional reading strategies under the MTSS framework? *

	1	2	3	4	5	
Not at all supportive	○	○	○	○	○	Extremely supportive

How much impact did the instructional reading practices under the MTSS framework have on student growth? *

	1	2	3	4	5	
Not much impact	○	○	○	○	○	Tremendous impact

Is there anything you would like to share regarding the MTSS support you received during the 2022-2023 school year?

Long answer text

Is there anything you would like to share regarding the MTSS support you received during the 2022-2023 school year?

Your answer

Select the types of support with MTSS instructional practices you have received in the past. (Check all that apply).

- [ ] PLCs
- [ ] LETRS
- [ ] External consultants
- [ ] Curriculum training
- [ ] Other

If you selected "Other" in the previous question, please indicate what other types of MTSS training or support you have received.

Your answer

How would you rate the level of MTSS support you received in reading with the use of evidence-based instructional reading strategies? *

- ◯ A high level of support
- ◯ A moderately high level of support
- ◯ A moderate level of support
- ◯ A low level of support
- ◯ No level of support

Appendix C

Interview Questions

Interview Questions

1. Describe the MTSS support you received this school year in reading with the use of evidence-based instructional reading practices.

2. How has the current year's support impacted your belief system?

3. In what ways were you motivated to implement MTSS during the 2022-2023 school year, as compared to years past? If so, how?

4. Describe any input from coaches, leadership, and others that might have helped improve your ability to implement MTSS?

5. How did the support with implementation of these practices impact collaboration?

6. Describe any efforts the district or school may have made to remove barriers, to provide support, or to incentivize you during the implementation process.

7. What changes are needed to make implementation of evidence-based instructional reading practices better for you?

8. How did the support you received regarding evidence-based instructional reading practices impact student progress at your school?

9. Is there anything I did not ask you that you would like to share about your experience with the evidence-based instructional reading practices implemented this year?

Appendix D

MTSS Instructional Practices Support Survey Section 2

MTSS Instructional Practices Support Survey

briana.whitaker11@gmail.com Switch account

Not shared

* Indicates required question

One-on-one Interview Invitation

Please use this section to indicate your willingness to participate in a one-on-one interview with me to provide additional information about your personal experience with MTSS implementation.

I am willing to participate in a one-on-one interview. *

- ◯ Yes
- ◯ No

Back Next Clear form

Appendix E

MTSS Instructional Practices Support Survey Section 3

MTSS Instructional Practices Support Survey

briana.whitaker11@gmail.com Switch account

Not shared

* Indicates required question

Contact Information

Please provide your email address and the date and time you are available to participate in the interview. Once this information is received, I will send an informed consent form to be signed and the interview schedule to your email address.

What is your email address? *

Your answer

Which date do you prefer? *

- ◯ August 21
- ◯ August 22
- ◯ August 23
- ◯ August 24
- ◯ August 25
- ◯ August 28
- ◯ August 29
- ◯ August 30
- ◯ August 31
- ◯ September 1
- ◯ None of these work

The interview will require about 30 minutes of your time. Please write in a 30-minute time frame (between 8:00 am and 4:00 pm) that works best for you. This can be during your planning or after dismissal. *

Your answer

If you need a date outside of the two-week window provided or a time outside of 8:00 am to 4:00 pm, please tell me what date and/or time is better for you.

Your answer

Appendix F

IRB Approval

Briana Whitaker-New Application

irb

To: Briana Whitaker

Mon 7/31/2023 3:15 PM

Cc: Lesa Widener; Lesa Widener <lesawidener@gmail.com>; Prince Bull

Whitaker 001002366 IRB.pdf
2 MB

Briana and Dr. Widener,
On the informed consent, there is a statement that the study is being conducted in four schools, everything else on the application states three schools. Please update the informed consent to be accurate. This revision does not require further review by the IRB.

Your IRB Application for the Exempt research project titled "Teacher Perceptions of Change in Instructional Reading Practices and the Impact on Student Outcomes" has been approved, effective July 31, 2023. It has been assigned an expiration date of July 30, 2024. Note that IRB time limits are automatically set at one year from date of approval. Regular program time limits still apply.

Please be aware that if you need to continue your study beyond the Expiration Date, you must submit a Request for Continuance prior to that date. This form can be found in the IRB folder in WebbConnect.

Best wishes for a productive investigation!

Sydney K. Brown, PhD
Dean, Gayle Bolt Price of Graduate Studies
Administrator, GWU Institutional Review Board
Professor, School of Education
142 Memorial Dr.
Office: (704) 406-3019
Cell: (919) 451-0203

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Appendix G

Informed Consent Form for Online Survey

Informed Consent Form for Online Survey

Teacher Perceptions of Change in Instructional Reading Practices and the Impact on Student Outcomes

Greetings,

I hope this email finds you well. As a doctoral candidate at Gardner-Webb University, I am currently conducting a research study entitled *Teacher Perceptions of Change in Instructional Reading Practices and The Impact on Student Growth.* I am asking you, a reading instructor, to take part in it.

The purpose of this study is to seek to identify the incorporation of support for implementing evidence-based practices within an MTSS framework among teachers and its impact on student outcomes in three K-2 schools. In addition, this study will determine teacher perceptions about the extent to which factors that support adult behavior change impacted a shift in instructional practices. This study delves deeper into the impact that educator actions have on implementation and the facilitative actions school and district leaders can employ to support changes in vital behaviors that lead to proper implementation that lasts over time. The findings of this study will help school districts more effectively influence change in teacher instructional practices and shed light on some of the barriers to implementation. In addition, this study will seek to provide recommendations to schools in how to lead adults through the changes needed to implement practices under an MTSS framework.

As a participant in this study, you are being asked to complete an online survey. This survey will take approximately 15-20 minutes to complete. 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. The information you provide will be handled confidentially. Email addresses will not be collected in the survey. However, at the end of the survey you may be asked if you are willing to participate in a follow-up, one-on-one interview to provide additional information about your experience with the MTSS support you received. If you are asked for a follow-up interview and agree to participate, you will then be asked to provide an email address so that I may contact you. You will also be asked about your availability for scheduling purposes. Your information will be assigned a pseudonym. The list connecting your name to this pseudonym 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. There are no anticipated risks in this study. You will receive no payment for participation. You have the right to withdraw from this study at any time without penalty by exiting the survey. Data from this study will not be used or distributed for future research studies.

If you have questions about the study, contact:
Briana Whitaker:
Researcher telephone number: XXXXX
Researcher email address: XXXXX
Faculty Advisor name: Dr. Melessa Widener
Faculty Advisor telephone number: XXXXX
Faculty Advisor email address: mlw0202@gardner-webb.edu
Dr. Sydney K. Brown IRB Institutional Administrator
Telephone: 704-406-3019
Email: skbrown@gardner-webb.edu

Clicking the link below to continue to the survey indicates your consent to participate in the study:

Survey Link

Appendix H

Informed Consent Email for One-on-One Interviews

Informed Consent Email for One-on-One Interviews

Greetings,

This is Mrs. Briana Whitaker, school counselor and doctoral candidate at Gardner-Webb University. I am currently conducting a research study entitled *Teacher Perceptions of Change in Instructional Reading Practices and The Impact on Student Growth*. Thank you for responding to the initial survey I shared to gauge your general perceptions of the MTSS support you received during the 2022-2023 school year. I also thank you for your willingness to provide further insight into your personal experience with MTSS support during the 2022-2023 school year through a one-on-one interview with me via Zoom within the next two weeks. Participation in this study is strictly voluntary. However, your participation is greatly appreciated. Please read, sign, and return the attached informed consent form if you are still willing to participate. Also, please note your scheduled interview date and time below. I will send you a Zoom link for the interview after I receive your signed informed consent form.

Sincerely,

Briana Whitaker

Doctoral Candidate

Gardner-Webb University

Interview Date and Time: _____