Virginia High School Principals' Perceptions on the Readiness of a School Culture for Implementation of the Multi-Tiered Systems of Support Framework

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Abstract

The purpose of this study was to expand upon the research with high school principals and leaders of school divisions as they seek to implement the Multi-Tiered Systems of Support (MTSS) framework. Though a significant number of studies have been conducted at the elementary and middle school levels, research at the high school level has lagged (Choi et al., 2019). This study consisted of a survey sent to 251 principals in the Commonwealth of Virginia. The survey return rate was 17%, with a fully completed survey return rate of 10%. The survey consisted of a principal self-assessment of the MTSS framework and of the four elements necessary for the implementation of MTSS: collaborative culture, Response to Intervention (RtI), Positive Behavior Intervention and Supports (PBIS), and social-emotional learning (SEL). The self-assessment section of the survey was followed by a series of Likert scale statements addressing collaborative culture, RtI, PBIS, and SEL. These statements went into specific detail to create a deeper reflection on the school culture by principals. The statements were divided into two parts. The first part addressed potential obstacles within the school culture and the second addressed potential principal actions.

The first phase of analysis consisted of a two-tailed *t* test to compare the mean of the MTSS framework self-assessment to the means of the self-assessments for collaborative culture, RtI, PBIS, and SEL. The second phase was a series of two-tailed *t* tests to compare the means of collaborative culture, RtI, PBIS, and SEL to the means of the Likert scale statements. The *p*-value for all but one two-tailed *t* test performed in the study exceeded the accepted 0.05. The one exception was the mean of the principal self-assessment for SEL compared to the mean of the Likert statements for SEL at 0.03 and $N = 25$.

Beyond conducting the mean analysis, Likert scale ratings for each statement were examined to identify trends and outliers. The implications of the results are that the data from the survey or similar surveys can be useful to principals and leaders of other school divisions to inform professional development, prioritize resources, and implement strategies to improve student performance in both academic and social-emotional learning.

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General Audience Abstract

Multi-Tiered Systems of Support (MTSS) was part of the Every Student Succeeds Act (ESSA) in 2015. Originally focused on literacy, MTSS has evolved into a framework designed to eliminate achievement gaps in academics and in social-emotional learning (SEL) for students. This study was designed to add to the research as it applies to the implementation of MTSS at the high school level. The research at the elementary level, and to a lesser degree at the middle school level, is much more robust than at the high school level.

The survey used in this study was based on a literature review that showed there are four elements necessary for the implementation of MTSS: collaborative culture, Response to Intervention (RtI), Positive Behavior Intervention and Supports (PBIS), and SEL. The survey was sent to high school principals in the Commonwealth of Virginia and consisted of five sections. The first section was a principal self-assessment of the readiness of the culture of their school to support the MTSS framework, as well as for collaborative culture, RtI, PBIS, and SEL. The following four sections of the survey included a series of Likert scale statements for each element of implementation (i.e., collaborative culture, RtI, PBIS, and SEL) that addressed obstacles to implementation as well as principal actions to overcome those obstacles.

A two-tailed *t* test was performed to determine whether any of the comparisons of the means were statistically significant. Only one *t* test, the mean comparison of SEL self-assessment to the mean of the Likert scale statements, was statistically significant with a *p*-value of 0.03, with the mean of the self-assessment rating higher than the mean of the Likert scale statements. The analysis of the Likert scale statements did show trends and outliers for specific statements for all four elements necessary for the implementation of the MTSS framework (i.e., collaborative culture, RtI, PBIS, and SEL).

The data collected along with the literature review, adds to the research on MTSS for high school principals and school division leaders. The data point to implications for principals and leaders of school divisions in terms of professional development, allocation of resources, and areas of focus for closing academic and social-emotional gaps for students.

Dedication

It has been a lifetime goal or mine to obtain my Doctorate. It is not common for a person as far along in a career as I am in my career to pursue a Doctorate, however, I believe that learning is a lifelong process and I am proud that I continue to learn and model for my children, Zachary, and Clare, that learning never ends. To Zachary and Clare, I am so thankful for your love and support as you have had to put up with a sometimes-grumpy dad for the past three years. To my wife, Grace, who has been beyond supportive. You are my best friend and best "critical" friend. Without you, there are many milestones in my life that I would not have accomplished, including and especially this dissertation.

I am grateful to my committee members, Dr. Price my chair, Dr. Ivey, Dr. Grotto, and Dr. Alexander. While there were times when I felt like one more feedback conversation would make me go crazy, I see that every one of those feedback conversations were vital and always given in the spirit of growth and support. To Dr. Price who took over as my committee chair, a very special thank you for everything you have done, it is not an easy task to take over as chair especially given the untimely passing of Dr. Glenn, I am so appreciative of your time and efforts on my behalf. I would be remiss if I did not thank Dr. Cash my unofficial committee member. Your feedback, constant encouragement, and availability to work through the dissertation, the paperwork, and the university process made the completion of this dissertation possible. I cannot imagine working through this process without your constant support and encouragement. Thank you, Dr. Cash.

My fellow cohort members have been a constant source of encouragement and strength throughout the past three years. We are unique in that we were the Covid 19 cohort, and we suffered the untimely passing of our leader, original committee chair, and friend, Dr. Glenn. With so many circumstances out of our control, we became closer, looked out for each other, and am certain we will continue to do so.

Lastly, I would like to dedicate this dissertation to Dr. Bill Glenn. As an educator, it is easy to spot those who work in education because of their passion for their students and those who don't. I have never met an educator more dedicated to his students and to their success. Bill's influence will live on long after his untimely passing. It is rare to find someone who can be an advocate, mentor, friend, and the source of tough love when necessary. Dr. Glenn was this rare educator. Thank you, my friend, I miss you greatly and I thank you for your unwavering support and love.

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CHAPTER I
INTRODUCTION

For over 100 years, the goal of universal public education in the United States has consisted of preparing students for success beyond compulsory schooling, as Chen (2018) stated that,

> by 1890, the Department of Education's responsibilities expanded to include support for institutions of higher education. This duty continued to grow through the 20th century, as vocational education for college and high school was added to the mix to provide training in areas like agriculture, industry and home economics. (The Establishment of the Department of Education section, para. 2)

The modern U.S. education system began in 1918 when all states implemented compulsory education laws (The American Board, 2015). Schools then and now teach reading, writing, mathematics, science, and citizenship. However, for most of the 19th century and much of the 20th century, schools have tracked students into one of two paths (Daggett, 2012). The first path was to move students successfully and directly into the workforce. The second, and much smaller group, was students who pursued postsecondary options with the goal of continuing their education at the college and university level (Daggett, 2012). As universal public education in the United States evolved, the basic goal of teaching reading, writing, mathematics, science, and citizenship remained. However, the levels of expectation changed for all students to be able to pursue college and career readiness (Daggett, 2012). The U.S. Department of Education (2015) reinforced this concept in part by stating the Every Student Succeeds Act (ESSA) "Requires – for the first time – that all students in America be taught to high academic standards that will prepare them to succeed in college and careers" (ESSA Highlights section, para. 2).

Statement of the Problem

Students graduating from high school now compete in a world where college and career readiness have become necessary for all students (Daggett, 2012). Additionally, the nature of work has changed in the United States as well as globally as jobs have become increasingly more technical and collaborative (Larson & Miller, 2011). To achieve the ESSA requirement that all students are "taught to high academic standards" (U.S. Department of Education, 2015, ESSA

Highlights section, para. 2), school staff must work to eliminate achievement gaps. Secondary school leaders cannot control many of the external factors that create learning challenges for students and lead to learning gaps (Daily et al., 2020). However, instructional leaders within the nation's high schools are required by the ESSA to take actions to systematically address the challenges students face to successfully close learning gaps (U.S. Department of Education, 2015). These challenges include socioeconomic status, ethnicity, poor attendance, time away from instruction, and trauma (Daily et al., 2020; Dworkin & Torres, 2020; Gratto, 2016).

Socioeconomic status and ethnicity correlate with increased learning gaps for students (Dworkin & Torres, 2020). Additionally, time away from instruction due to poor attendance, loss of academic skills during breaks, and removal from class due to discipline issues all contribute to learning gaps (U.S. Department of Education, n.d.). In 2016, the U.S. Department of Education stated 6.5 million students were considered chronically absent (i.e., missing 15 or more school days), a number that represented 13% of all students in the United States (Gratto, 2016, p. 41). At the secondary school level, the number of chronically absent students rose to 18%, with Latino and Black students chronically absent at an even higher rate of 22% (Gratto, 2016, p. 41). There is a direct correlation between attendance and student success (Daily et al., 2020; Gratto, 2016). When students are increasingly absent from instruction, their learning gaps grow, which puts them further behind their peers in terms of academic achievement (Cuffe et al., 2017; Daily et al., 2020). The ESSA clearly articulated that regardless of the factors that contribute to learning gaps, public school leaders are expected to prepare students "to succeed in college and careers" (U.S. Department of Education, 2015, ESSA Highlights section, para. 2).

Missing instruction affects all students via summer, winter, and other planned school holidays. Research has consistently demonstrated all students experience a loss of math skills over breaks, but the loss of skills does not manifest equally (Dworkin & Torres, 2020). Students from low-income communities not only lose math skills at a higher rate, they also lose reading skills when compared to students from middle-class and affluent communities (Dworkin & Torres, 2020). Students also miss classes for discipline reasons. Research shows students of color are two to three times more likely to be suspended out of school or removed from class as compared to their White peers (Caldwell et al., 2020). Time away from instruction increases learning gaps and negatively affects student engagement while in class (Daily et al., 2020).

Trauma creates and perpetuates learning gaps for students and affects student behavior. Many underlying student learning gaps may be explained by trauma (McBride et al., 2016). Trauma can take the form of posttraumatic stress disorder (PTSD), developmental trauma disorder (DTD), or complex trauma disorder (Dworkin & Torres, 2020). Trauma affects students both academically and behaviorally. Students suffering from trauma may have trouble accessing and positively engaging with instruction (Dworkin & Torres, 2020; McBride et al., 2016). Students may also act out with negative behavior that is disruptive or aggressive, which then causes an interruption of learning through the discipline process (Dworkin & Torres, 2020). Trauma can affect all students; when combined with other risk factors, trauma then increases gaps in learning that are difficult to overcome (McBride et al., 2016).

Students face even higher stakes and accountability in their own lives if they do not overcome their learning gaps. The Bureau of Labor Statistics stated that in 2016, a high school dropout earned $385,000 less than a high school graduate and $1.34 million less than a college graduate over their lifetime (Gratto, 2016). The need to address student achievement has been an ongoing effort by the federal government. Waldron and McLeskey (2010) stated, “Over the last 40 years, policymakers have called for school reform that improves the practices of teachers and other professionals and increases student achievement” (p. 58). Most recently, the U.S. Department of Education required public schools to address the learning gaps that exist through the ESSA legislation in 2015 and, prior to ESSA, via No Child Left Behind (NCLB). “These legislative demands for improved outcomes and inclusive and equitable education for all students create a need for many schools to reshape their policies, systems, and practices” (Choi et al., 2019, p. 15). The Multi-Tiered Systems of Support (MTSS) framework provides systems and practices designed to lead to high levels of achievement for all students (Choi et al., 2019).

Study Background

Public schools are an important and integral part of U.S. society as they play a vital role in preparing students for college and the workforce. Whether entering the workforce directly upon graduation, enrolling in trade school, or enrolling in college, eventually today’s students become tomorrow’s workforce. High school leaders have an obligation to prepare students for the workforce by delivering a strong general and technical education curriculum (Tucker, 2016, p. 33). Student postsecondary success depends on the mastery of foundational skills in reading, writing, mathematics, science, and civic responsibility to provide students the ability to problem solve, collaborate, and communicate (Daggett, 2012; Greiff et al., 2015; Larson & Miller, 2011). One study of 343 executives in 2014 showed the three most important skills for newly hired employees were "critical thinking and problem solving (72%), collaboration and teamwork (63%), and communication (54%)" (Goodwin & Hein, 2016, p. 84). Unfortunately, not all students enter high school equally prepared to build and master these skills. School leaders must develop a culture that will meet the needs of all students regardless of level of preparation or the gaps they may possess (Greiff et al., 2015; Larson & Miller, 2011; Rowe et al., 2015).

The federal government passed two major legislative measures in the past 20 years designed to prepare all students for college and career readiness, both of which reauthorized the Elementary and Secondary Education Act (ESEA). No Child Left Behind (NCLB) was passed in 2002 with the goal of holding K–12 schools more accountable for standardized student success (Klein, 2015). NCLB gave the federal government a greater role in determining teaching and student achievement standards. The Every Student Succeeds Act (ESSA) of 2015 moved away from stronger federal government control of teacher and student standards by placing more emphasis on state and local school control (Ujifusa et al., 2019; U.S. Department of Education, n.d.).

The ESSA legislation also introduced the concept of MTSS to provide a framework that enables educators to address students' social-emotional needs along with their academic needs.

> Furthermore, recent legislation has introduced more variability; Every Student Succeeds Act (ESSA, 2015) introduced the term MTSS which represents a broader constellation of supports than RTI. MTSS incorporates not only academic outcomes but also behavior and social emotional learning. ESSA provided little additional procedural guidance or clarification for RTI or MTSS implementation and emphasized states and local education agencies may develop their own models. (Al Otaiba et al., 2019, p. 35)

MTSS incorporates components from Positive Behavior Intervention and Supports (PBIS), social-emotional learning (SEL), and Response to Intervention (RtI). PBIS was part of the reauthorization of IDEA in 1997 (Sailor et al., 2008) and contains a focus on student behavior and the school climate from an educational lens. PBIS is considered a preventative framework designed to proactively address student behavior across a school. The framework includes a multi-tiered process for responding to student behavior and for providing behavioral education

(Sugai & Horner, 2020). The SEL framework was introduced and incorporated with PBIS to address the social-emotional needs of students that either interfere with student achievement or are identified as necessary skills for students to succeed. The purpose of the SEL framework was and continues to be the intentional teaching of social and emotional skills to students in the school setting (Yang et al., 2018).

RtI was first introduced as part of the 2004 IDEA reauthorization (Al Otaiba et al., 2019). Originally developed as an elementary reading framework, the multi-tiered process of early identification, universal screening, progress monitoring, and evidence-based instruction has been expanded to all academic areas (Barnes & Harlacher, 2008). The underlying principles hold that by providing early intervention and ruling out improper teaching, fewer students will be identified as needing special education services and more students will be able to close gaps and become successful in the general education setting (Al Otaiba et al., 2019).

Consistent with the RtI approach, the reauthorization of the Individuals with Disabilities Education Act (IDEA) in 2004 (originally passed in 1975) placed an emphasis on intervention and prevention for students with the goal of closing gaps and eliminating the need for students to access special education services (PBIS Rewards, 2020). The recognition that all students must graduate from high school with the skills they need to succeed in the workforce and college has been intertwined with the expectation that students with disabilities are given the scaffolding they need to ensure they are able to master the same skills as their non-disabled peers (Choi et al., 2019). The challenge becomes how to address all students in a manner that allows all students to succeed by giving each student the level of support necessary to access a rigorous curriculum.

Current and past educational practices have included adopting programs or trying to solve issues with technology rather than taking a focused and comprehensive approach that addresses the school's culture (Schmoker, 2016). The issue at the high school level is the need to implement a framework that addresses learning gaps and meets students' social-emotional and academic gaps at the school culture level. The idea that academic achievement and student behavior are interconnected and influence each other is the foundation of MTSS as a framework (Choi et al., 2019). Simultaneously addressing academic and social-emotional gaps enables educators to address the whole child. MTSS involves resources and a multi-tiered approach that allows those resources to be leveraged in a manner that meets the needs of all students (Buffum et al., 2018; Choi et al., 2019; Freeman et al., 2017).

Purpose of the Study

Organizational management researcher Peter Drucker initially coined the phrase "culture eats strategy for breakfast" (Drucker, n.d.). Education reformer and founder of the International Center for Education Leadership Bill Daggett uses this quote and concept to emphasize the need to create a school culture that allows for effective strategies to take hold and thrive (Daggett, 2012). MTSS reflects a cultural shift and is much more than a strategy or a series of strategies (Choi et al., 2019; Freeman et al., 2017; Schein, n.d.). The principal's role in the implementation and maintenance of the school culture is pivotal as successful change comes from strong principal leadership (Camburn et al., 2003). The purpose of this study was to identify the perceptions of Virginia high school principals regarding their readiness to implement MTSS, and the barriers and supports within their school culture related to implementation. Based on the literature review, emphasis was given to principals' understanding of how a collaborative culture, RtI, SEL, and PBIS created the conditions within their school culture that allowed for the implementation and maintenance of MTSS. Finally, this study was designed to add to the body of research that directly addresses MTSS at the high school level.

Research Questions

The research questions used to guide this study were as follows:

1. What are the perceptions of Virginia's high school principals regarding their readiness to implement MTSS?
2. What are the perceptions of Virginia's high school principals regarding what, in their school's culture, created barriers to effective MTSS implementation?
3. What are the perceptions of Virginia's high school principals regarding what, in their school's culture, supported effective MTSS implementation?

Limitations

Three limiting factors needed to be addressed in this study. The first factor was the decision to conduct the study across school districts in the Commonwealth of Virginia during a global pandemic. The pandemic paused in-person learning for many school districts and focused resources toward online learning, which affected the allocation of resources that would have otherwise been devoted to the MTSS process. A second factor was the fact that the survey was sent during the 2021–2022 school year, which is when students returned to in-person schooling for the first time in nearly 18 months. This created an atypical re-introduction to school for many students and staff that may have negatively affected participation in the study. Last, the resources available to different schools and school districts in support of the MTSS framework vary widely in Virginia, and these variations in size and location had the potential to create variance related to the data collection.

Delimitations

This study was delimited to high schools in the Commonwealth of Virginia that serve students in Grades 9–12. School selection was based on school divisions that did not require a separate Institutional Review Board (IRB) process. This delimitation removed 51 schools from the study, including one large school system. Second, middle schools were excluded from the study. Middle school principals face many of the same challenges high school principals face, including block scheduling, similar demographics to their feeder high schools, and the challenges of creating a positive school culture. Though middle schools could have been selected, the decision was made to focus on high schools as the literature review revealed high schools have the largest gap in the existing research.

Definition of Terms

Collaborative culture: A school culture that includes a focus on student learning (not teaching), teams working interdependently (not in isolation), and in which staff work toward a shared vision of student achievement (collective responsibility; Buffum et al., 2018; Solution Tree, n.d.).

Evidence-based interventions (EBIs): Standardized, validated interventions designed for at-risk students (Bailey, n.d., p. 21).

Multi-Tiered Systems of Support (MTSS): “MTSS provides a framework to extend evidence-based instruction and supportive interventions to serve all students, including those who need extensive academic, or behavior supports… (AA-AAS; Sailor & McCart, 2014; Sailor & Roger, 2005).”

Necessary Elements for Implementation of MTSS: The four components that make up the the Necesssary Elements for Implementation of MTSS are, collaborative culture, RtI, SEL, and PBIS (Choi et al., 2019; Dulaney et al., 2013; Flannery & Kato, 2017; Forman & Crystal, 2015; Freeman et al., 2017)

Principal actions: Actions principals take to overcome barriers or challenges to create a school culture that is ready for the implementation of MTSS (Buffum et al., 2018; Buffum et al., 2012; Donohoo et al., 2018).

Response to Intervention (RtI): RtI is designed to provide systematic screening of students to identify gaps and needs, as well as provide EBIs, ongoing progress monitoring, and early intervention (Bartholomew & De Jong, 2017; Sansosti et al., 2011).

School-Wide Positive Behavior Support or SW-PBS (PBIS): The systematic and formal consideration of (a) measurable academic and social behavior outcomes, (b) information or data to guide decision making and the selection of effective behavioral interventions, (c) EBIs that support students' academic and social behavior success, and (d) systems supports designed to increase the accuracy and durability of practice implementation (Sailor et al., 2008, p. 309).

Secondary schools: Schools designated by their local education agencies (LEAs) as middle, junior, or high school. Typically, these schools encompass Grades 7–12 although some LEAs define Grades 6–12 as secondary schools.

Social-emotional learning (SEL): The Collaborative for Academic, Social, and Emotional Learning (CASEL) defines SEL as

> the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions. (Yang et al., 2018, p. 46)

Summary

Given the fact that the implementation of MTSS is required by federal law and that much of the MTSS research has been conducted at the elementary level, more research at the secondary level is necessary (Choi et al., 2019). This study was designed to focus on the perceptions of Virginia high school principals regarding the unique challenges they faced when implementing the MTSS process. Along with a review of the challenges, the study included a review of specific actions principals can take to establish a school culture that is ready for the implementation of MTSS. The intention behind conducting the study was to add to the research surrounding MTSS at the high school level.

Organization of the Study

This research study is organized into five chapters. Chapter 1 outlined the historical expectations associated with public schools. The chapter identified the changing expectations of public schools and highlighted the dangers of not addressing the achievement gaps that currently challenge high school students an MTSS holds promise for being effective at the high school level as an approach to achieving the goal of equitable education for all students (Choi et al., 2019). MTSS reflects a cultural shift in schools that requires more than a strategy or a series of strategies to be successfully implemented (Balow, 2018; Freeman et al., 2017; McIntosh & Kent, 2016). School staff who want to improve student outcomes must create a school culture that allows for effective strategies to take hold and thrive (Daggett, 2012). MTSS and the implementation of MTSS have been undertaken by many states. As an example, California has an MTSS framework that includes common core components (California Department of Education, N.D.). Virginia has adapted MTSS into the Virginia Tiered Systems of Support that relies heavily on RtI (Virginia Department of Education, N.D.). Local Education Agencies have also adapted different elements of collaborative culture, RtI, PBIS, and SEL to develop their own MTSS system (Thompson Valley School District, 2021). The purpose of this literature review was to narrow the current literature and present universal aspects of MTSS that have been labeled as elements necessary for the implementation of MTSS. Regardless of the state or LEA, the necessary elements for the implementation are included in other MTSS frameworks.

The interconnectedness of the four necessary elements that make up the MTSS framework is critical in creating and maintaining a culture that is conducive to the implementation of MTSS (Balow, 2018; Choi et al., 2019). This need for interconnectedness is articulated in the following quote by Castro-Villarreal et al. (2014):

> Researchers have suggested effective RTI frameworks should incorporate common core features. These features include: (a) dual focus on school-level variables and student-level variables, (b) coordination of school-wide prevention and intervention supports, (c)

> universal screening and progress monitoring as part of ongoing data-based decision-making, (d) implementation of evidence-based practices, (e) leadership from administrators and school teams, and (f) on-going professional development. (p. 105)

Although referring to RtI, the quote is applicable to a collaborative culture, which includes common core features with a focus on (b) a coordination of school-wide prevention and intervention supports and (c) ongoing data-based decisions (Castro-Villarreal et al., 2014). RtI and PBIS are closely intertwined and, like RtI, PBIS also requires common core features. When discussing PBIS, Sansosti et al. (2011) wrote:

> Positive Behavior Support have demonstrated that common features of successful implementation include (a) staff buy-in, (b) shared vision for change, (c) professional development/ongoing technical assistance, (d) organizational restructuring, and (e) committed administrative leadership. (p. 10)

SEL follows the other necessary elements of implementation and incorporates common core features with (a) school- and student-level variables and (b) the coordination of school-wide support being especially important. The current trend within school systems of placing greater emphasis on re-teaching when students exhibit misbehavior and less of an emphasis on punishment will likely continue (Castro-Villarreal et al., 2014). McIntosh and Kent (2016) affirmed the concept of multiple approaches to MTSS clearly when they wrote, "Adopting an integrated MTSS model can provide synergistic effects that can make our work better across both academics and behavior" (p. 32).

As established within the literature, MTSS is a framework that, when successfully implemented, positively influences student achievement and closes learning gaps. Though complex, the integration of each necessary element of implementation creates a school culture that is conducive to the implementation of MTSS. Principal actions are instrumental in creating and maintaining this type of school culture. Principal perceptions affect principal actions and, as such, a deeper understanding of how principals perceive their school culture in relationship to the four necessary elements that make up the MTSS framework: collaborative culture, RtI, PBIS, and SEL is needed (Dulaney et al., 2013).

It is important to note that the lack of research at the high school level regarding MTSS has created a gap in the current literature. This research was designed to contribute to the literature by focusing on the high school level and specifically high school principals' instructional leadership with MTSS.

Chapter 2 provides an in-depth review of the MTSS literature and the four necessary elements for the implementation of MTSS: collaborative culture, RtI, SEL, and PBIS. Chapter 2 establishes the need for MTSS to be embedded into a school culture and the actions principals can take to accomplish this goal. Chapter 3 establishes the research questions and details the way in which this quantitative study was conducted. Chapter 4 presents the results of the analysis of the data. Finally, Chapter 5 concludes the study with implications and recommendations for future study.

CHAPTER II
LITERATURE REVIEW

MTSS has proven to be a successful approach to increasing the equity of educational outcomes in elementary schools. MTSS is defined as: "MTSS provides a framework to extend evidence-based instruction and supportive interventions to serve all students, including those who need extensive academic, or behavior supports… (AA-AAS; Sailor & McCart, 2014; Sailor & Roger, 2005)." The research on the implementation of MTSS within secondary schools continues to grow (Choi et al., 2019), but still lags when compared to research on the implementation of MTSS at the elementary level (Sansosti et al., 2011). Researchers have found that structural and cultural differences between elementary and secondary schools create different barriers and leadership opportunities at each level (Dulaney et al., 2013; Flannery & Kato, 2017). The size and scope of secondary schools present barriers to implementation that may be overcome by principals' actions (Bezzina, 2006; Castillo et al., 2018). In addition, Bezzina (2006) stated middle and high school staff tend to resist change and are slower to adopt new changes than are elementary schools. Effective and proactive leadership is necessary for the successful implementation of any system intended to sustain school improvement (Bezzina, 2006). This review contains a focus on the necessary elements for MTSS implementation, potential obstacles within the school culture, and principal actions that lead to the effective implementation of MTSS at the secondary school level.

Necessary Elements for MTSS

The necessary elements for MTSS guide the actions of principals as they create a school culture that is conducive to the implementation of the MTSS framework. The necessary elements consist of evidence-based programs and practices that serve as elements necessary for implementation of MTSS. The four necessary elements for implementation of MTSS consist of collaborative culture (Choi et al, 2019; Dulaney et al., 2013), Response to Intervention (RtI; Freeman et al., 2017), social-emotional learning (SEL; Forman & Crystal, 2015), and Positive Behavior Intervention Support (PBIS; Flannery & Kato, 2017). This section of the review covers each of the necessary elements for implementation of MTSS .

Collaborative Culture

A collaborative culture functions as the cornerstone to successfully implementing and maintaining MTSS within the greater school culture (Choi et al., 2019; Sugai & Horner, 2020; Thompson School District, 2021). Buffum et al. (2018) stated a collaborative culture is necessary because no individual teacher possesses all the qualities needed to promote excellent student achievement across the school. Teachers need to work with others to ensure such success.

The concept of school culture must first be defined before considering MTSS and the requirements of its implementation. School culture is defined as

> the beliefs, perceptions, relationships, attitudes, and written and unwritten rules that shape and influence every aspect of how a school functions, but the term also encompasses more concrete issues such as the physical and emotional safety of students, the orderliness of classrooms and public spaces, or the degree to which a school embraces and celebrates racial, ethnic, linguistic, or cultural diversity. (Great Schools Partnership, 2013, para. 1)

Researchers have offered several other definitions for a collaborative culture. The search for a definition has become the subject of academic studies in the United States as well as internationally (Antinluoma et al., 2018; Bezzina, 2006). However, researchers generally accept certain commonly held elements of a collaborative culture. These elements include a focus on student learning (not teaching), teams working interdependently (not in isolation), and working toward a shared vision of student achievement (collective responsibility; Buffum et al., 2018; Solution Tree, n.d.). Professional learning communities (PLCs) offer one model for creating a collaborative culture.

Solution Tree (n.d.) defines a PLC as "educators committed to working collaboratively in ongoing processes of collective inquiry and action research to achieve better results for the students they serve" (p. 2). PLCs operate under the assumption that the key to improved learning for students is continuous, job-embedded learning for educators (Solution Tree, n.d.). Antinluoma et al. (2018) proposed a similar definition in their study of Finnish schools:

> The underlying assumption of PLC is that the core mission of formal education is deep learning, not teaching (DuFour, 2004; Hargreaves, 2007) and this shift of focus has profound implications for schools. Out of many different definitions, this study draws on the definition by Stoll et al. (2006, p. 5): "a professional learning community is an

inclusive group of people, motivated by a shared learning vision, who support and work with each other, finding ways, inside and outside their immediate community, to enquire on their practice and together learn new and better approaches that will enhance all pupils' learning". (p. 77)

A collaborative culture involves a focus on student learning with teams that work interdependently toward a shared vision of student achievement (Antinluoma et al., 2018; Bezzina, 2006; Brown et al., 2018; Buffum et al., 2018; Buffum et al., 2010; Freeman et al., 2017; Hipp et al., 2008; Kohm & Nance, 2013). Teachers' shared beliefs and expectations for student learning and engagement formed in a collaborative culture promote the other three necessary elements for implementation of MTSS: RtI, SEL, and PBIS (August et al., 2018; Buffum et al., 2018; Freeman et al., 2017; Molloy et al., 2013; Sansosti et al., 2011). The review of the literature revealed there are three essential conditions for the implementation of a collaborative culture: collective responsibility, identifying essential standards, and the creation of common assessments.

Collective Responsibility

Collective responsibility occurs when all staff members take responsibility for all the students in the school, not just those in their own classrooms (Buffum et al., 2018). Collective responsibility for all students can occur through collaborative teams that are organized by content (e.g., all the teachers who teach Algebra 2) or through cross curriculum teams (e.g., English, social studies, and science teachers who work with a common group of students). The often-used phrase, in the United States and internationally, "ALL means ALL" has roots in collective responsibility (Antinluoma et al., 2018; Bezzina, 2006; Buffum et al., 2018; Jackson, 2008).

School personnel in collaborative cultures in which there is a sense of collective responsibility work in teams that take the standards given to them from their respective states and school district leadership and collectively break down those standards, coming to a consensus in identifying the essential standards and what is expected under each standard (DuFour & DuFour, 2012; Marzano & Haystead, 2008). From this shared understanding, common assessments and interventions are designed for all students by the members of the collaborative team. Student achievement data no longer belong to one teacher, but to the team, as do interventions designed to close learning gaps (Brown et al., 2018). Additionally, teachers share strategies with one another that have proven to be effective. This allows students to benefit from the team's collective expertise. Collective responsibility benefits all students when school staff and teams look beyond their own student caseload or classroom and work together to close the gaps for all students.

Identifying Essential Standards

One of the core functions of a collaborative culture involves identifying essential standards (Buffum et al., 2012; French, 2013). School staff must identify essential standards and agree on when those essential standards are to be taught and assessed. Standards create a unified set of expectations for all students and become the basis for the measurement of what is to be taught and how success is to be measured. Teachers and administrators must move beyond a checklist approach and engage in deep discussions around standards (Buffum et al., 2012). These discussions must be used to ensure team members understand each standard in the same way, agree about what performance meets the standards, and determine what students need to know beforehand if they are to meet the standards (Buffum et al., 2012). Reeves (2002) argued that student performance in terms of meeting or exceeding the standards is the most important consideration in making pedagogical decisions, though teaching and leadership practices also make a difference.

Some standards serve as foundations and create the basis for building essential concepts, whereas others are less essential (Marzano & Haystead, 2008). Identifying foundational standards principally contributes to the success of Tier 1 instruction and RtI (Buffum et al., 2018; Buffum et al., 2010). As Marzano and Haystead (2008) have pointed out, the need to prioritize foundational standards focuses learning on the essential standards, outcomes, and skills that will enable students to demonstrate mastery and continue into more complex concepts. Establishing and teaching essential standards are the initial actions taken by staff in a school with a collaborative culture. The development of common assessments is the next step in creating a collaborative culture. Demonstration of mastery or lack of mastery of the essential standards occurs through the production of common assessments.

Creation of Common Assessments

School leaders and teams must develop common assessments for both formative and summative purposes (Buffum et al., 2018; Buffum et al., 2012; Johnson, 2015). Formative assessments take place during instructional units and are used to guide instruction. Summative assessments are given at the end of units to determine achievement and progress (Buffum et al., 2018; Johnson, 2015). Formative and summative common assessments must be created within collaborative teams with specific purpose. Teachers make crucial decisions regarding instruction and grading based on assessments, so common assessments must possess high quality designs at the proper level of rigor, with clear purposes and learning objectives (Buffum et al., 2010; Shepard et al., 2018). When a school culture involves the shared use of common assessments, educators can assess student needs in real time and monitor the effectiveness of interventions. Such effective and efficient assessment practices enable school staff to identify student needs early in the learning process, before difficulties grow too large (Castillo et al., 2018). The three essential conditions for implementation that occur in a collaborative culture provide the foundation for the other three necessary elements that make up the MTSS framework. RtI is the next necessary element for implementation of MTSS addressed in this review.

Response to Intervention

RtI was initially enacted as part of the IDEA reauthorization of 2001 (Sansosti et al., 2011). Initially developed for and implemented at the elementary school level, RtI is designed to provide systematic screening of students to identify gaps and needs, evidence-based interventions (EBIs), ongoing progress monitoring, and early intervention (Bartholomew & De Jong, 2017; Sansosti et al., 2011). Additionally, RtI involves three tiers of instruction and interventions that are implemented school wide (Castro-Villarreal et al., 2014). To fully realize the impact of RtI, it is vital that school staff implement each of the three tiers of instruction with fidelity (Castro-Villarreal et al., 2014).

Tier 1 instruction, also referred to as prevention by some researchers, should ensure at least 80% of students master the essential standards. Tier 2 must be implemented for students who have failed to master the essential standards through Tier 1 instruction. Two factors must be in place when considering Tier 2 intervention. First, the focus must be on essential standards, as trying to intervene on all standards is not practical. Second, the percentage of students requiring

Tier 2 intervention must not be higher than 20% (Bradea, 2018; Lane et al., 2010; Oakes et al., 2014). A school staff must improve Tier 1 instruction to make it more robust if more than 20% of students need Tier 2 support. Dealing with a percentage of students needing prevention above 20% takes too many resources away from the school, thereby preventing effective intervention (Oakes et al., 2014).

Tier 3 interventions are reserved for the 5% of students who continue to need more individualized intervention. Students who receive Tier 3 interventions are those who have been through Tier 2 specialized instruction and still need support (Buffum et al., 2018). Tier 3 interventions often take the form of remedial classes that can last for a semester or an entire academic year. These classes must involve the use of evidence-based curriculum or programs. The drawback to semester or yearlong classes at the secondary level is that students must give up an elective class to make room for the intervention class in their schedule. There are three essential and interconnected conditions necessary for school staff to effectively implement RtI at all three tiers. These conditions include universal screeners, robust Tier 1 instruction, and progress monitoring at the Tier 2 and Tier 3 levels.

Universal Screeners

The accurate placement of students and assessment of their skills must be in place before students can receive the education that best meets their needs. Data helps teachers address students' strengths and weaknesses in Tier 1 instruction. Data must also be used to identify students who need Tier 2 and 3 interventions (August et al., 2018; Buffum et al., 2018; Volpe et al., 2018). Bartholomew and De Jong (2017) pointed out in their qualitative study that principal leadership and actions can overcome the barrier to implementation by using school-wide data from universal screeners to create an effective MTSS system. However, universal screeners are more commonly used at the elementary level (Sansosti et al., 2011).

Principals of secondary schools have noted that for their schools to move forward in the RtI process, it is imperative to use data for the proper identification and placement of students (Sansosti et al., 2011). Researchers outside of the United States are coming to the same conclusions as researchers within the United States. Volpe et al. (2018) stated, "Although there is increasing interest in MTSS in Europe (e.g., Grosche & Volpe, 2013), the absence of viable assessment tools to identify at-risk students represents a clear barrier to adopting such tiered models of support" (p. 26). Creating universal screeners around essential skills can inform instruction at all three tiers. At the Tier 1 level, instruction is designed to teach the skills necessary for all students to master essential standards. When school staff are aware of their students' strengths and gaps via universal screening, teacher teams can plan and create instruction that meets students' needs based on data.

The challenges with creating universal screeners at the secondary level are complex. As with RtI, universal screening initially emphasized elementary school students and, though not designed only for literacy, has been mostly implemented for literacy (Al Otaiba et al., 2019; Beecher, 2011; Hughes & Dexter, 2011). Though different screeners are in development, variability arises because leaders of schools and school systems create their own screeners. Concerns about the reliability of the screeners adds to the complexity, as does the challenge of establishing cut-scores and percentile ranks (Hughes & Dexter, 2011). Whether universal screeners are developed locally or adopted from an external source, the data universal screeners provide can be used to inform effective Tier 1 instruction by providing a baseline for planning and instruction.

Robust Tier 1 Instruction and Prevention

One of the foundational aspects of successful MTSS is prevention, or Tier 1 instruction (Beecher, 2011). Teachers and school leaders aspire to help students master essential skills and inspire a love of learning. Robust Tier 1 instruction creates an environment in which students learn essential standards and extend their understanding while creating a curiosity for academic learning. The goal of Tier 1 instruction in the MTSS model is for students to show mastery at an 80% or higher level. Tier 1 teacher preventions become necessary when students' mastery of essential standards falls below the 80% threshold. Teachers' goals then turn to the use of Tier 1 preventions within the classroom setting to reach the 80% threshold. Teachers typically offer low intensity preventions and afford students increased opportunities to respond and show mastery (Oakes et al., 2014).

Ruling out poor instruction as the reason for failure to reach the 80% threshold with initial Tier 1 instruction is key (Barnes & Harlacher, 2008). Teams that use research-based instruction can reflect on the complexity of concepts and skills, design preventions within the classroom setting to address student needs, and re-teach as necessary when student mastery falls below the 80% threshold. However, many competing Tier 1 instructional programs, systems, and strategies claim to be research-based, but currently schools lack a systematic or universally agreed upon method with which to critique all the different options (August et al., 2018). Though there is validity in the claims of the different research-based programs, the idea of including all of them was beyond the scope of this literature review. However, Universal Design for Learning (UDL) is a concrete example of one method of effective Tier 1 instruction.

The basis for the UDL system is rooted in neural science and includes two layers. The first layer contains a focus on conceptual principles and the second centers around implementation (Al-Azawei et al., 2016). Al-Azawei et al. (2016) broke down these two layers as follows:

> Recognition network: this represents the "what" of learning. Learners use different ways to categorize what they see, hear, and read. Strategic network: this represents the "how" of learning. Learners use different ways to organize and express their thoughts and ideas. Affective network: this represents the "why" of learning. Different ways can be applied to engage learners and keep them excited and interested. (p. 42)

The strength of the UDL system is that it can be adapted to most curricula, so it gives concrete methods for differentiating and providing access points to the curricula for all students (CAST, n.d.). Differentiation is often referred to as a means of reaching all students. Effective differentiation within Tier 1 instruction should be viewed in the wider context of all the ways in which students access school. It is important to note that differentiation does not lower expectations; rather, it gives students multiple ways to access, explore, and show they have mastered the material.

Creating a culture in which teachers and teacher teams review data and create opportunities for students to show mastery at an 80% or higher level allows for more effective Tier 2 and Tier 3 interventions. Once a culture of robust Tier 1 instruction is established, there will still be students who will need additional intervention. This condition is not a failure of Tier 1 instruction but is the basis for Tier 2 and Tier 3 interventions (Buffum et al., 2018; Coyne et al., 2018; McIntosh & Kent, 2016).

Tier 2 and Tier 3 Interventions With Progress Monitoring

Once robust Tier 1 instruction has been taught with fidelity and Tier 1 preventions have been exhausted, Tier 2 and Tier 3 interventions must be implemented (Lane et al., 2010). Tier 2 interventions are increasingly more intense and rely on a smaller number of students to be effective. No more than 20% of students should be receiving Tier 2 interventions. Oakes et al. (2014) stated, "We frequently see school-site teams working too hard at Tier 2 by attempting to connect as many as 40% of students with Tier 2 strategies, practices, and intervention programs" (p. 184). Tiered intervention falls short when school leaders stretch resources, especially human resources, too thin, resulting in teachers and administrators being unable to effectively progress monitor. The progress monitoring of Tier 2 and Tier 3 interventions can be time and resource intensive (Bartholomew & De Jong, 2017). Provided that the school staff has accurately identified the students needing Tier 2 and Tier 3 interventions, ensuring students are able to master and move forward becomes the priority.

Progress monitoring allows students to move in and out of Tier 2 interventions as necessary while keeping them learning grade-level content (McIntosh & Kent, 2016). Tier 2 interventions are characterized as short, intensive interventions that fill specific learning gaps for students (Bartholomew & De Jong, 2017; Buffum et al., 2018; McIntosh & Kent, 2016). As such, school staff must ensure they both effectively teach and monitor the progress of students (Sansosti et al., 2011). Once school staff exhaust Tier 2 interventions, students will need even more prescriptive and intensive interventions. Unlike Tier 2 interventions, Tier 3 interventions are longer term and typically occur in the form of additional classes that can span a semester or entire year (Daggett, 2012).

Tier 3 interventions function as the last resort before moving to special education screening and can often be avoided when school staff implement Tier 2 interventions with fidelity (Buffum et al., 2018; McIntosh & Kent, 2016). The responsibility of the school leadership and the school principal cannot be overstated in this regard. Taking away electives from students to allow for Tier 3 intervention classes raises a serious concern. Therefore, Tier 3 interventions should be held as the last option. Effective RtI meets the academic needs of students and is part of the MTSS process to close the achievement gaps for students. As MTSS is used to address the whole child, social-emotional solutions to closing gaps must be implemented at the Tier 1, Tier 2, and Tier 3 levels as well. Addressing the whole child from the social-emotional lens begins with SEL.

Social-Emotional Learning

MTSS addresses both academic and non-academic barriers to student achievement (August et al., 2018, McIntosh & Kent, 2016). In MTSS, RtI is used to address the learning gaps that come from academic deficiencies. When considering the whole child, social-emotional gaps must also be addressed. In fact, over 50 years of research supports the connection between academic gaps and social-emotional gaps (McIntosh & Kent, 2016). As with RtI, SEL is a process in which students are explicitly and proactively taught skills in the school setting that will enable then to make positive choices in a variety of social and academic situations (Neth et al., 2020). CASEL defines SEL as,

> the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions. (as cited in Yang et al., 2018, p. 58)

Nearly all school districts include the SEL skills listed in the CASEL definition as part of their vision and mission statements. The challenge for leaders of school districts and schools, administrators, and teachers is incorporating these aspirational goals within the daily framework of academic achievement for students. Researchers have identified three essential conditions for the creation and establishment of a school culture that is conducive to the implementation of SEL. The first is student–teacher connectedness (García-Moya et al., 2020), which leads to greater student engagement. The second condition is the intentional instruction of SEL skills (Adelman & Taylor, 2012; Yang et al., 2018). The intentional instruction of SEL skills then creates the environment necessary for the third condition, which is the integration of SEL into the school culture.

SEL must be a Tier 1 instructional strategy (Burroughs & Barkauskas, 2017; Choi et al., 2017; Espelage et al., 2015; Mercer et al., 2017; Neth et al., 2020; Yang et al., 2018). SEL proves most effective when students are taught SEL skills with the same intentionality as academic skills (Valosek et al., 2019). For MTSS to be successfully implemented, SEL must be part of the school's culture, as it increases engagement and positive student–teacher relationships, which benefits students and staff alike (Choi et al., 2019; Mercer et al., 2017).

Student–Teacher Connectedness

Humans are social beings who require connections that help them find identity, develop meaning, and build skills (MindWise Innovations, n.d.). Learning is a social construct that requires interactions and trust (Vygotsky, 1999). When students and teachers connect, both students and teachers benefit. Connections between students and teachers are understood to be the meaningful relationships students develop with their teachers that create a positive classroom environment and positive interpersonal relationships that allow the students to achieve in academics and personal well-being (García-Moya et al., 2020; Yang et al., 2018). In fact, students in the García-Moya et al. (2020) study could identify teachers who stood out by name. Without exception, the teachers identified as the best were those who formed positive relationships with students (García-Moya et al., 2020).

The importance of positive relationships and personal connections between students and teachers is well researched and established (García-Moya et al., 2020; García-Moya et al., 2019; Macleod et al., 2012; Yang et al., 2018). Increased student engagement emerges as a positive result of student–teacher connectedness. Student engagement manifests in a multitude of ways, such as actively participating in school activities, valuing the educational process through goal setting and embracing the school's values, and making connections with teachers and peers (Yang et al., 2018).

Beyond the well-documented impact of teacher–student connectedness for students, connectedness also produces a positive impact on teachers. All teachers in the García-Moya et al. (2020) study identified student connectedness as either essential or an important part of teaching. Student–teacher connectedness was found to have positive impacts on teacher morale, well-being, and job satisfaction (García-Moya et al., 2020; García-Moya et al., 2019). Two international studies by García-Moya (García-Moya et al., 2020; García-Moya et al., 2019) showed that student–teacher connectedness has a positive impact on students and teachers in other countries. Teachers and students reported being more engaged and satisfied with their school experience when connections were strong and positive.

Intentional Instruction of SEL

SEL skills enable students to adapt to changing circumstances and challenges. However, the intentional instruction of SEL skills rarely occurs at the secondary level and when done it is often done poorly (Neth et al., 2020; Sansosti et al., 2011; Yang et al., 2018). Student success from an emotional wellness view and from an academic lens requires the ability to navigate an ever-fluid school culture. As students gain SEL skills, they can control their emotions, create positive goals, and navigate relationships, which enables them to succeed socially and academically (Carrizales-Engelmann et al., 2016). Nearly all researchers on the topic agree that SEL skills and instruction are essential for students of all grade levels. In particular, secondary school students are viewed as needing SEL skills as they are at a critical point in their development (Yang et al., 2018). The major failing of students learning SEL skills entails the ad hoc way in which school staff teach them (Adelman & Taylor, 2012; Yang et al., 2018). SEL must be intertwined with Tier 1 instruction, RtI, and PBIS (Adelman & Taylor, 2012; Yang et al., 2018).

Social-Emotional Learning Integration

Tier 1 SEL is prevention designed to address student needs before students move into crisis and require Tier 2 and Tier 3 interventions. The prevention model stops fragmented and reactionary responses to student behavior as part of the school culture (Adelman & Taylor, 2012). Adelman and Taylor (2012) argued that SEL must be integrated with mental health for academic goals to be accomplished. Integration eliminates the unnecessary competition between important outcomes and occurs when the school culture reflects the integration of SEL and mental health (Adelman & Taylor, 2012). One of the chief influencers of school culture and teacher morale is student behavior. Students with positive SEL skills are able to better control their behavior (Bradea, 2018; García-Moya et al., 2019; Neth et al., 2020).

Intentionally teaching SEL skills improves teacher–student and student–student relations (García-Moya et al., 2019; Neth et al., 2020; Yang et al., 2018). The student who requires more intensive instruction can access Tier 2 and Tier 3 interventions. Tier 2 and Tier 3 students are assigned to smaller and more intensive groups that focus on closing behavior gaps (Harn et al., 2011; Oakes et al., 2014). These gaps negatively affect the school culture as SEL gaps often manifest in externalized and internalized behaviors that can be disruptive to the student exhibiting the behavior as well as their peers (Neth et al., 2020). Staff within the school must view these behaviors as gaps and address them as such. Neth et al. (2020) concluded a school culture that facilitates student connectedness, which leads to student engagement, is one in which educators intentionally teach and integrate SEL skills within the curriculum as well as create conditions in which MTSS and the other three necessary elements that make up the MTSS framework can flourish (Dulaney et al., 2013).

Positive Behavior Intervention and Support

The establishment of PBIS started at the federal level. Both the Individuals with Disabilities Act (IDEA) and the No Child Left Behind Act required states, local education agencies (LEAs), and school leaders to focus on student behavior, social development, and social skills (Sailor et al., 2008). The paradigm shift of moving from reactive discipline and actions to proactive and intentional instruction is manifested in PBIS. Sailor et al. (2008) defined PBIS as follows:

> Operationally, SW-PBS is the systematic and formal consideration of (a) measurable academic and social behavior outcomes, (b) information or data to guide decision making and selection of effective behavioral interventions, (c) evidence-based interventions that support student academic and social behavior success, and (d) systems supports designed to increase the accuracy and durability of practice implementation. (p. 309)

PBIS places an emphasis on prevention. When referring to PBIS (and RtI), Castillo et al. (2018) made a strong case for its inclusion in order to achieve successful MTSS implementation even though research at the secondary level lacks clarity on the degree to which causality can be established between PBIS and MTSS. Research clearly documents that PBIS improves school climate, improves outcomes for all students, and reduces negative student behavior (Barrett et al., 2008; Horner et al., 2014; Kittelman et al., 2019; Molloy et al., 2013).

Clear Outcomes and Well-Defined Procedures

The key to a successful implementation of any strategy or program is clarity and consensus of desired outcomes. In the case of PBIS, clear outcomes and well-defined procedures are the foundation of the program. Horner et al. (2014) pointed to the creation of three to five clear behavior outcomes that school staff hold all students accountable for and proactively reinforce and teach. The goals of PBIS consist of positively influencing the entire school culture, improving systems of support, and establishing clear discipline procedures to accomplish the three to five behavior outcomes established by multiple stakeholders (Molloy et al., 2013). Procedures that include the constant analysis of data allow for real-time decision making grounded in specific behaviors, times of day, situations, and places in the building in which negative behavior takes place. By being explicit in the desired behavioral outcomes and being able to teach and intervene based on specific data, students and staff experience positive changes in the school culture (Barrett et al., 2008; Molloy et al., 2013).

Consistency Throughout the Building and Between Teachers

The establishment of three to five behavior outcomes and agreement on the procedures needed to achieve those outcomes must be consistently applied throughout the building and in all classrooms (Flannery et al., 2009). As stated in the previous section, clear outcomes, well-defined behaviors, and accountability are necessary for creating a school culture that is conducive to implementing PBIS. However, the high school structure presents challenges due to the size and scope of many high schools. Consistency among teachers in all structured and non-structured environments must be planned and must include teachers, administrators, students, and families (Sugai & Horner, 2020). Regular communications and check-ins with all stakeholders are instrumental in correcting inconsistent behaviors by students and staff (Flannery & Kato, 2017). The tighter the expectations for consistency, the greater the effectiveness of the program (McIntosh & Kent, 2016; Weist et al., 2018). In fact, effective organizational capacity depends on administrative support and interdependency between teachers, between teachers and administration, and between all staff members in the school (Molloy et al., 2013).

Tiered Approach to PBIS

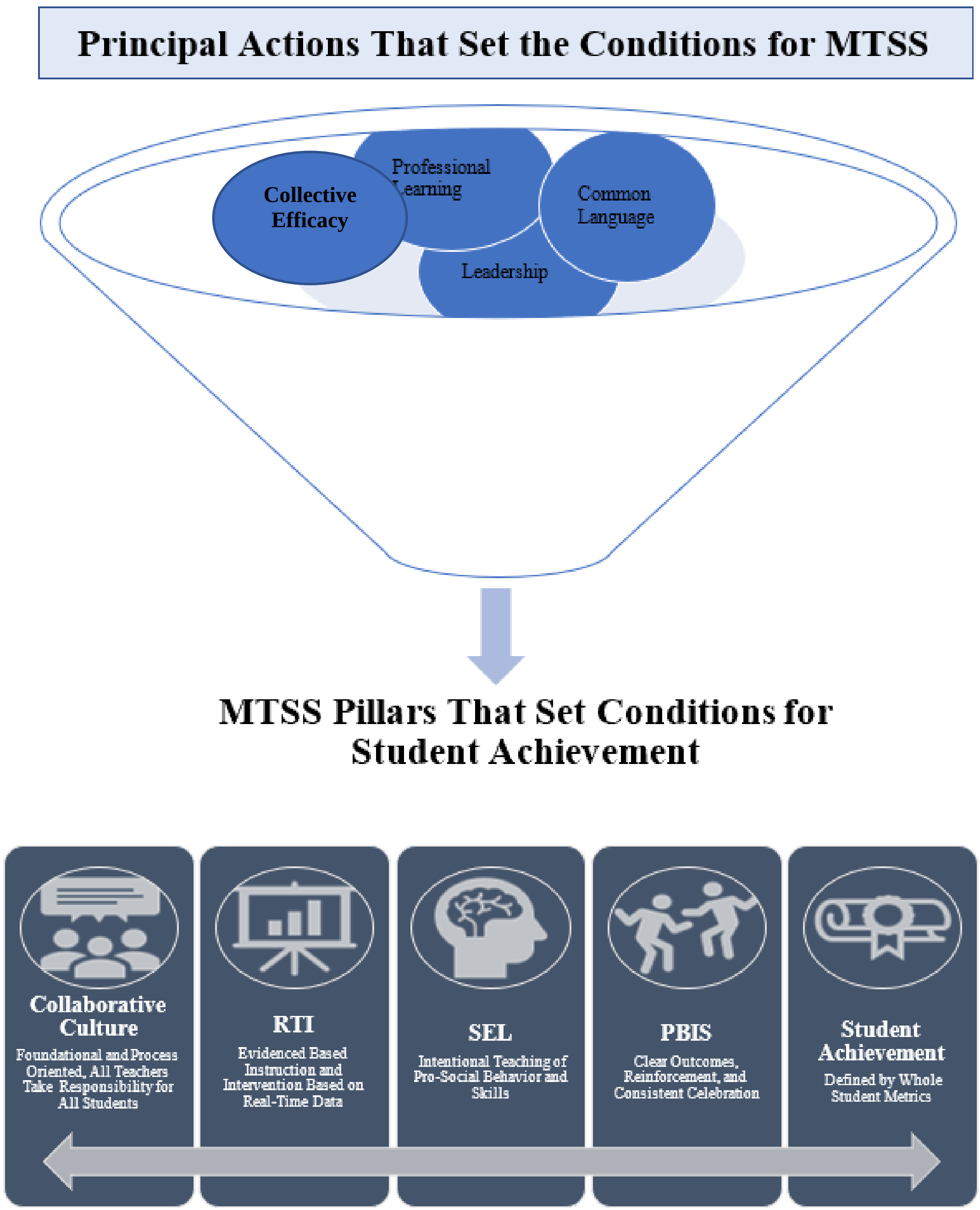
The three-tiered approach within PBIS aligns with the MTSS three-tiered system. Tier 1 prevention addresses school-wide outcomes and should be effective with a minimum of 80% of students, Tier 2 addresses specific needs with specific and increasingly more intensive interventions for students who are at risk of failing academically and behaviorally, and Tier 3 uses specialized programs for specific needs with the most intensive intervention level (Barrett et al., 2008). Tier 2 and 3 interventions need to be based on data and targeted to close the gaps in terms of specific skills. As with RtI and SEL, Tier 2 and 3 interventions that address more than 20% of students will not be effective as they stretch resources too thin. However, when the school culture is conducive to implementing PBIS, Tier 1 preventions are consistently implemented, which prevents the over identification of Tier 2 students. Tier 2 discipline practices are consistent among teachers and administrators, which then allows for an even smaller number of Tier 3 students (Barrett et al., 2008; Horner et al., 2014). Effective implementation of the PBIS three-tiered approach allows for the concentration of resources given to the students who are most in need.

Principal Actions

Figure 1 shows how principal actions can create a school culture that is conducive to the implementation of the MTSS framework. Researchers have identified the need for different principal actions related to MTSS, but four have commonly reoccurred throughout the literature. These four actions are collective efficacy, creating consensus, professional learning, and common language, all of which are widely cited as important when comparing research from multiple studies. Each action by itself will have a positive impact on student achievement (Hattie, 2012). Implementing multiple actions strengthens the school's culture and makes it more likely that the MTSS framework will take root in the school culture and positively influence student achievement (Buffum et al., 2018; Buffum et al., 2012; Donohoo et al., 2018).

Figure 1

Principal Actions



Leadership

The literature broadly defines leadership to include multiple stakeholders, including teachers (Al Otaiba et al., 2019; Bezzina, 2006; Castro-Villarreal et al., 2014; Volpe et al., 2018), psychologists and school counselors (Adelman & Taylor, 2012; Forman & Crystal, 2015), and administration, specifically principals (Bezzina, 2006; Buffum et al., 2018; Choi et al., 2019; Dulaney et al., 2013; Freeman et al., 2017). Leadership establishes a culture that supports change during the implementation phase of the MTSS framework (Choi et al., 2019). The principal provides the leadership and resources necessary for success (Bezzina, 2006; Choi et al., 2019) and serves as the instructional leader (Dulaney et al., 2013). Under leadership, four specific actions by principals have been emphasized: collective efficacy, creating consensus, professional learning, and common language (Bartholomew & De Jong, 2017; Buffum et al., 2018; Daggett, 2012; Hattie, 2014).

Collective Efficacy

Collective efficacy was first introduced by Bandura (1997), who defined it as "a group's shared belief in it its conjoint capability to organize and execute the course of action required to produce given levels of attainment" (p. 477). Since Bandura's original research, the concept of collective efficacy and its link to student achievement have been researched by many scholars. Most notably, Hattie (2014) stated in his book, *Visible Learning*, that collective efficacy had an effect size of 1.57 on influencing student achievement. This is a significant finding as Hattie defined the minimal Cohen's *d* as needing to be 0.40 or higher in order to have a positive impact on student learning (Donohoo et al., 2018; Hattie, 2014). Other highly touted or often referenced factors influencing student learning, such as prior achievement (0.65), socioeconomic status (0.52), home environment (0.52), parental involvement (0.49), motivation (0.48), concentration/persistence/engagement (0.48), and homework (0.29), are all dwarfed in term of effect size by collective efficacy (Donohoo et al., 2018).

Principals and teachers have many competing demands placed on them, many of which have little to do with student achievement. Principals must focus on instructional leadership with faculty if they are going to establish a school culture that promotes a focus on student achievement (Donohoo et al., 2018; Schmoker, 2016). Creating a school culture that exemplifies collective efficacy has been shown to increase student achievement by leveraging the collective abilities of the faculty.

> Team member's confidence in each other's ability and their belief in the impact of the teams work are key elements that set successful school teams apart. Publicly seeking evidence of positive effects on student learning does not happen serendipitously or by accident. (Donohoo et al., 2018, p. 43)

Principals have the power, ability, and responsibility to create an instructional focused culture. Principals are uniquely positioned to create a school's culture. Schmoker (2016) stated the case clearly when discussing school improvement and leadership: "It has always been about something rarely learned in administrative training: a willingness to attend methodically and exclusively to a very obvious, fundamental elements of schooling" (p. 55). Collective efficacy is a proven and fundamental mover in terms of increased student achievement. It is a principal action that lies well within the control of the principal and as such must be put into practice.

Creating Consensus

Leaders must create consensus that clearly articulates the definition of student success and improvement, the expectations for meeting structures, and the channels of communication between stakeholders (Choi et al., 2019). Principals possess a substantial ability to influence the school culture; to create processes, norms, and accountability; and to influence student achievement (Flannery & Kato, 2017). The building principal's leadership sets the tone when the principal embraces an MTSS culture and then holds all stakeholders accountable to the MTSS culture.

Instructional leadership is an important role of the principal. One of the ways in which principals can demonstrate instructional leadership and create consensus is by ensuring effective professional development or learning. Effective professional learning affects both principals and staff. Camburn et al. (2003) stated, "the effects of staff development were strongly related to the performance of instructional leadership" (p. 361). When principals actively and successfully move the school culture toward MTSS, teachers need professional learning to move from concepts to practice.

Professional Learning

Professional learning is a key practice within highly effective schools in which staff promote student achievement through teaching and learning (Bezzina, 2006). Castillo et al. (2018) promoted professional learning as imperative for implementing MTSS with fidelity. The sustainability of MTSS in a school culture relies heavily on consistent and ongoing professional learning. Even though school staff share widespread recognition for the need for professional learning, the research shows teachers engage inconsistently in systematic and focused professional learning (Castillo et al., 2018).

Regardless of the school reform being implemented, professional development must be an integral part of the process (Freeman et al., 2017; Oakes et al., 2014). Professional development must be ongoing throughout the entire process of creating an MTSS culture, which includes ongoing implementation as the continued effectiveness of MTSS depends on skilled staff (Choi et al., 2019). MTSS is a complicated process that must be implemented as its name suggests, systematically. As with any profession, educators need active professional learning that meets the needs of the professionals working with students every day (Oakes et al., 2014).

Each necessary element that makes up the MTSS framework is complex, so MTSS requires an investment of time and professional learning to successfully implement each necessary element. Professional learning takes time, resources, and long-term commitment (Schmoker, 2016). In fact, multiple researchers have argued that professional learning must take place over multiple years for full implementation to take place (Brown et al., 2018; Flannery & Kato, 2017). Professional learning is a principal action that establishes consensus, ensures consistency, and greatly increases the likelihood that the necessary elements that make up the MTSS framework (ie., collaborative culture, RtI, PBIS, and SEL), will become part of the school culture. One of the most important components of professional learning is an emphasis on systematic implementation and consistency throughout the school and between staff members. Common language, often referred to as a lynchpin of effective implementation, provides the common ground and understanding of the expectations, processes, and outcomes for all stakeholders.

Common Language

Common language enables those within a school to work from the same understanding of words and the processes those words represent (Center on PBIS, 2011). In recognizing that learning is a social exercise, shared language is the first necessary step to creating the tools, norms, and practices that make up the school culture (Shepard et al., 2018). Common language allows staff and students alike to learn and promote the school culture. Merriam-Webster's online dictionary defines language as "the words, their pronunciation and the methods of combining them used and understood by a community" (Merriam-Webster, n.d.-b) and common as "belonging to or shared by two or more individuals or things or by all members of a group" (Merriam-Webster, n.d.-a). The importance of common language was highlighted by Dulaney et al. (2013) when they stated common language allows all stakeholders to avoid confusion based on having a common understanding of expected outcomes and the processes that are put in place to achieve those outcomes.

Common language creates a condition in which all stakeholders understand common vocabulary (Center on PBIS, 2011). This ensures clear discussions concerning student outcomes and the processes used to derive outcomes. Thus, all stakeholders work together with the same end goal in mind. Agreement must be reached regarding the behaviors and language the school staff will use (Sailor et al., 2008). Teachers have pointed to an absence of well-defined behaviors, expectations, and common language as a barrier to the implementation of PBIS (Flannery et al., 2009). However, Horner et al. (2014) pointed out that with agreement about behaviors and expectations, students can succeed. Once school staff develop expectations, the implementation of those expectations becomes key. For the expectations to become standardized and operational, teacher and administrator practices must be consistent across the school building, which requires a common language.

Summary

MTSS holds promise for being effective at the high school level as an approach to achieving the goal of equitable education for all students (Choi et al., 2019). MTSS reflects a cultural shift in schools that requires more than a strategy or a series of strategies to be successfully implemented (Balow, 2018; Freeman et al., 2017; McIntosh & Kent, 2016). School staff who want to improve student outcomes must create a school culture that allows for effective strategies to take hold and thrive (Daggett, 2012). MTSS and the implementation of MTSS have been undertaken by many states. As an example, California has an MTSS framework that includes common core components (California Department of Education, N.D.). Virginia has adapted MTSS into the Virginia Tiered Systems of Support that relies heavily on RtI (Virginia Department of Education, N.D.). Local Education Agencies have also adapted different elements of collaborative culture, RtI, PBIS, and SEL to develop their own MTSS system (Thompson Valley School District, 2021). The purpose of this literature review was to narrow the current literature and present universal aspects of MTSS that have been labeled as elements necessary for the implementation of MTSS. Regardless of the state or LEA, the necessary elements for the implementation are included in other MTSS frameworks.

The interconnectedness of the four necessary elements that make up the MTSS framework is critical in creating and maintaining a culture that is conducive to the implementation of MTSS (Balow, 2018; Choi et al., 2019). This need for interconnectedness is articulated in the following quote by Castro-Villarreal et al. (2014):

> Researchers have suggested effective RTI frameworks should incorporate common core features. These features include: (a) dual focus on school-level variables and student-level variables, (b) coordination of school-wide prevention and intervention supports, (c) universal screening and progress monitoring as part of ongoing data-based decision-making, (d) implementation of evidence-based practices, (e) leadership from administrators and school teams, and (f) on-going professional development. (p. 105)

Although referring to RtI, the quote is applicable to a collaborative culture, which includes common core features with a focus on (b) a coordination of school-wide prevention and intervention supports and (c) ongoing data-based decisions (Castro-Villarreal et al., 2014). RtI and PBIS are closely intertwined and, like RtI, PBIS also requires common core features. When discussing PBIS, Sansosti et al. (2011) wrote:

> Positive Behavior Supports have demonstrated that common features of successful implementation include (a) staff buy-in, (b) shared vision for change, (c) professional development/ongoing technical assistance, (d) organizational restructuring, and (e) committed administrative leadership. (p. 10)

SEL follows the other necessary elements of implementation and incorporates common core features with (a) school- and student-level variables and (b) the coordination of school-wide support being especially important. The current trend within school systems of placing greater emphasis on re-teaching when students exhibit misbehavior and less of an emphasis on punishment will likely continue (Castro-Villarreal et al., 2014). McIntosh and Kent (2016) affirmed the concept of multiple approaches to MTSS clearly when they wrote, “Adopting an integrated MTSS model can provide synergistic effects that can make our work better across both academics and behavior” (p. 32).

As established within the literature, MTSS is a framework that, when successfully implemented, positively influences student achievement and closes learning gaps. Though complex, the integration of each necessary element of implementation creates a school culture that is conducive to the implementation of MTSS. Principal actions are instrumental in creating and maintaining this type of school culture. Principal perceptions affect principal actions and, as such, a deeper understanding of how principals perceive their school culture in relationship to the four necessary elements that make up the MTSS framework (ie., collaborative culture, RtI, PBIS, and SEL) is needed (Dulaney et al., 2013).

It is important to note that the lack of research at the high school level regarding MTSS has created a gap in the current literature. This research was designed to contribute to the literature by focusing on the high school level and specifically high school principals’ instructional leadership with MTSS.

CHAPTER III
METHODOLOGY

Purpose of the Study

The purpose of this study was to identify the perceptions of Virginia high school principals regarding their readiness to implement MTSS, and the barriers and supports within their school culture related to implementation. Based on the literature review, the study was designed to examine principals' understanding of how collaborative culture, RtI, SEL, and PBIS created the conditions within their school culture that promoted or hindered the implementation and maintenance of the MTSS framework. The study involved gathering principals' perceptions of barriers that existed within the school culture and the actions principals can take to support the implementation of the MTSS framework. Finally, this study was designed to add to the body of research that directly addresses MTSS at the high school level.

Research Design

The researcher applied a quantitative approach in conducting this study. A survey was sent via email to 251 high school principals in the Commonwealth of Virginia who worked in school systems that did not require a separate IRB for the school division. The survey was hosted on Qualtrics through Virginia Tech. Likert scale statements (i.e., 1 - *strongly disagree,* 2 - *disagree,* 3 - *neither agree nor disagree*, 4 - *agree,* and 5 - *strongly agree*) were developed to describe each individual principal's perception of their school's culture as it related to the MTSS framework and the four necessary elements for implementation of MTSS (i.e., collaborative culture, RtI, PBIS, and SEL). A three-pronged quantitative approach was used to analyze the principals' responses.

The mean of the completed principals' self-assessments of the MTSS framework were compared to the means of each of the self-assessments of the four necessary elements for MTSS (i.e., collaborative culture, RtI, PBIS, and SEL). Prior to each self-assessment statement, principals were given a definition that emerged from the literature review so all principals operated from a common definition. The second prong involved comparing the means of the self-assessment of each necessary element of implementation for MTSS (i.e., collaborative culture, RtI, PBIS, and SEL) to the means of the Likert scale statements that identified barriers and principal actions that promote the implementation of MTSS. Likert scale statements were included for each necessary element (i.e., collaborative culture, RtI, PBIS, and SEL). The third prong broke down each Likert scale statement by the percentages and the total number of principal responses to identify trends and outliers in the responses. Creswell and Creswell (2018), in defining a quantitative study, stated, “A survey design provides a quantitative description of trends, attitudes, and opinions of a population, or tests for associations among variables of a population, by studying a sample of that population” (p. 147).

Two sets of *t* tests were run to determine whether the means of the self-assessments were statistically significant. The first set of *t* tests was used to compare the mean of the self-assessment of the MTSS framework with the means of the self-assessments for each of the necessary elements for the implementation of MTSS: one *t* test was used to compare collaborative culture, one *t* test was used to compare RtI, one *t* test was used to compare PBIS, and one *t* test was used to compare SEL. The second set of *t* tests was used to compare the self-assessment means for each necessary element of implementation for MTSS to means of the Likert scale statements under each necessary element. Likert scale statements were connected to barriers to the implementation of collaborative culture, RtI, PBIS, and SEL, and principal actions that support implementation. In addition to the two sets of *t* tests, each Likert scale statement was examined to determine trends and outliers from the principal responses.

Sample Selection

The study was conducted in the Commonwealth of Virginia and the researcher used the Virginia Tech email database to obtain the email addresses of high school principals. Of the 333 high school principals in the Commonwealth of Virginia, 251 principals were sent the survey via email. The decision to survey the 251 high school principals across the Commonwealth of Virginia was purposive as these principals, regardless of school system, school size, or demographics, have similar expectations regarding MTSS implementation (Balow, 2018). In the web article entitled, “ESSA & the Pathway to Successful Implementation of Multi-Tiered Systems of Support,” Balow (2018) stated ESSA requires school district leaders to “provide ‘for a multi-tier system of supports for literacy services.’ As well as for specific groups of students such as at at-risk, disengaged, unmotivated, unresponsive, underperforming, or consistently unsuccessful students” (The Requirements of ESSA section, para. 1). The 251 selected high school principals across the Commonwealth of Virginia were included as they are all principals of comprehensive high schools and are held to the same state accountability standards and ESSA requirements. Additionallly, the selected principals worked in school divisions that did not require an additional IRB process through their school division. Trochim et al. (2016) stated "[researchers] sample with a purpose related to the kind of participant you're looking for" (p. 87). The large sample enabled the researcher to compare readiness across a diverse state with participants who had the same set of expectations (Trochim et al., 2016). Principals were emailed a brief description of the study along with a link to the survey (see Appendix A and B).

Research Questions and Methodology

1. What are the perceptions of Virginia's high school principals regarding their readiness to implement MTSS?
2. What are the perceptions of Virginia's high school principals regarding what, in their school's culture, created barriers to effective MTSS implementation?
3. What are the perceptions of Virginia's high school principals regarding what, in their school's culture, supported effective MTSS implementation?

The quantitative method enabled principals to respond with Likert scale ratings representing their perceptions of their school's culture and its readiness to implement the MTSS framework, as well as the four necessary elements for the implementation of MTSS (i.e., collaborative culture, RtI, SEL, and PBIS). Research questions were adapted from the Dulaney et al. (2013) study and were used to establish a baseline of the perceived readiness, obstacles, and principal actions that promoted the implementation of MTSS from a principal's point of view rather than that of a superintendent.

Research Question 1 (R1) measured principals' Likert scale self-assessments without giving principals time to think deeply about the different elements of MTSS beyond the given research-based definition. The same method was used when obtaining a Likert scale rating of each principal's self-assessments for collaborative culture, RtI, SEL, and PBIS. The definitions of MTSS and each of the four necessary elements for the implementation of MTSS (i.e., collaborative culture, RtI, SEL, and PBIS) emerged directly from the literature review.

Research Questions 2 (R2) and 3 (R3) were used to explore the principals' perceptions of obstacles within their school culture and principal actions that can be taken to overcome obstacles. The Likert scale statements included in the survey for R2 and R3 emerged from the literature review. The set of Likert scales statements that followed each necessary element of implementation for MTSS allowed the principals to think and reflect on their school culture. To mitigate bias and avoid influencing principals' self-assessment ratings and perceptions regarding the MTSS framework, the series of Likert scale statements for the necessary elements for the implementation of MTSS came after the self-assessments. All statements were written in the positive so the Likert scales could be compared. Writing the statements in this manner allowed for all five of the Likert scale categories (i.e., 1 - *strongly disagree*, 2 - *disagree*, 3 - *neither agree nor disagree*, 4 - *agree*, and 5 - *strongly agree*) to be compared to one another.

Table 1 lists the research questions and the survey statements in five separate sections. To create consistency, the researcher provided a definition with a citation from the literature review at the beginning of each section. The first section focused on MTSS as an overall framework and was used to address the first research question. Sections 2 through 5 addressed the necessary elements for the implementation of MTSS established from the literature review. These four sections of statements consisted of collaborative culture, RtI, SEL, and PBIS. All five sections followed the same structure. First was a definition of MTSS or the necessary element for the implementation of MTSS, which included a citation, followed by a Likert scale self-assessment. In sections 2 through 5, in addition to the Likert scale self-assessment, a series of statements followed that addressed R2 and R3. Under each of the necessary elements for the implementation of MTSS, specific statements that addressed R2, which measured perceptions of barriers to implementation, and R3, which addressed principal actions, were presented to the principals using Likert scales. These statements went into specific detail to generate deeper reflection on the school culture by principals. Collaborative culture had 11 statements with six addressing R2 and five addressing R3. RtI had 12 statements with six addressing R2 and six addressing R3. SEL had 13 statements with six addressing R2 and seven addressing R3. PBIS had 12 statements with six addressing R2 and six addressing R3.

Table 1

Research Question and Survey Question Alignment

Research question	Survey questions
(R1) What are the perceptions of Virginia's high school principals regarding their readiness to implement MTSS?	Given the following definition of MTSS: "MTSS provides a framework to extend evidence-based instruction and supportive interventions to serve all students, including those who need extensive academic, or behavior supports… (AA-AAS; Sailor & McCart, 2014; Sailor & Roger, 2005)." To what degree do you with agree with the statement: R1. MTSS is completely implemented as part of the school culture.
Collaborative culture (R1) What are the perceptions of Virginia's high school principals regarding their readiness to implement MTSS?	Given the following definition of Collaborative Culture: A school culture that includes a focus on student learning (not teaching), teams working interdependently (not in isolation), and work towards a shared vision of student achievement (collective responsibility) (Buffum et al., 2018; Solution Tree, n.d.). To what degree do you with agree with the following statements: CC.R1. Collaborative Culture is implemented in the overall school culture.
(R2) What are the perceptions of Virginia's high school principals regarding what, in their school's culture, created barriers to effective MTSS implementation?	CC.R2.1. Teachers focus on student learning and outcomes more than they do delivering content (sage on the stage). CC.R2.2. Teachers operate in Collaborative Teams (CTs) or Collaborative Learning Teams (CLTs) instead of operating independently of other teachers within their content area (i.e., all teachers teaching Algebra 1). CC.R2.3. There is a shared vision on what constitutes student mastery of content within the school culture. CC.R2.4. There is consensus within CTs on which essential standards all students must master. CC.R2.5. Summative assessments are created by CT members and given within a defined window. CC.R2.6. Formative assessments are created by CT members and given within a defined window.

(continued)

Table 1 *(cont.)*

Research question	Survey questions
(R3) What are the perceptions of Virginia's high school principals regarding what, in their school's culture, supported effective MTSS implementation?	R3. As the principal I have taken or intend to take the following actions to address barriers in the school culture to implement Collaborative Culture as part of the overall school culture. CC.R3.1. Provide time for the interpretation of student achievement data that focuses on student learning and outcomes. CC.R3.2. Provide common planning by department (i.e., the entire math department) or by content (i.e., all Algebra 1 teachers) which is set aside for collaborative planning. CC.R3.3. Provide professional learning for the interpretation of student achievement data that focuses on student learning and outcomes. CC.R3.4. Provide time for Collaborative Teams to identify essential standards. CC.R3.5. Provide professional learning for Collaborative Teams to plan lessons based on essential standards.
Response to Intervention (RtI)	Given the following definition of Response to Intervention (RtI):
(R1) What are the perceptions of Virginia's high school principals regarding their readiness to implement MTSS?	RtI is designed to provide systematic screening of students to identify (academic) gaps and needs, evidence-based interventions (EBIs), ongoing progress monitoring, and early intervention (Bartholomew & De Jong, 2017; Sansosti et al., 2011). To what degree do you with agree with the following statements: RtI.R1. RtI is embedded in the overall school culture.

(continued)

Table 1 *(cont.)*

Research question	Survey questions
(R2) What are the perceptions of Virginia’s high school principals regarding what, in their school’s culture, created barriers to effective MTSS implementation?	RtI.R2.1. Universal Screeners are given to all students in Mathematics and English classes at the beginning of each school year and at the midpoint of each school year to identify students with learning gaps. RtI.R2.2. CTs monitor student achievement data to ensure that at least 80% of their students master essential skills. RtI.R2.3. Teachers remediate within their class when less than 80% of their students show mastery of an essential standard and then reassess as part of their progress monitoring. RtI.R2.4. Tier 2 interventions are created for targeted interventions for the 20% or fewer students who continue to not show mastery after teachers remediate within their class periods. RtI.R2.5. Tier 2 interventions are flexible in the sense that students can move in and out of Tier 2 interventions based on progress monitoring of student mastery. RtI.R2.6. School staff members utilize a formal system to monitor Tier 2 interventions and can move students to Tier 3 interventions as necessary.
(R3) What are the perceptions of Virginia’s high school principals regarding what, in their school’s culture, supported effective MTSS implementation?	R3. As the principal I have taken or intend to take the following actions to address barriers in the school culture to implement RtI as part of the overall school culture. RtI.R3.1. Resources (time, administrative instructional support, clear expectations, accountability) are provided for the interpretation of student achievement data that focuses on student learning and outcomes by CT. RtI.R3.2. Faculty members see each other as competent and can work together to address instruction at the Tier 1, Tier 2, and Tier 3 level. RtI.R3.3. As the principal, I have built a culture in my school where teachers believe in their own instructional abilities are effective and believe their colleagues are also effective educators. RtI.R3.4. There is consensus within the school culture and a clear definition on what constitutes student success academically. RtI.R3.5. Professional learning is embedded in the school culture that focuses on effective evidence-based Tier 1 instruction. RtI.R3.6. There is common language regarding what constitutes student’s success. For example, regardless of content area, all teachers have a common understanding of the definition of skill mastery and can apply it to their content area.

(continued)

Table 1 *(cont.)*

Research question	Survey questions
Social-emotional learning (SEL) (R1) What are the perceptions of Virginia's high school principals regarding their readiness to implement MTSS?	Given the following definition of SEL: (SEL) Is the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set, and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decision's" (CASEL, 2017; Yang et al., 2018, p. 58). To what degree do you with agree with the following statements: SEL.R1. SEL is embedded in the overall school culture.
(R2) What are the perceptions of Virginia's high school principals regarding what, in their school's culture, created barriers to effective MTSS implementation?	SEL.R2.1 Every student has a strong and positive relationship with at least one adult within the school. SEL.R2.2 SEL skills are taught with the same intentionality as academic skills across the curriculum. SEL.R2.3 SEL skills are taught in a manner that supports student's academically across the curriculum (i.e., study skills, organizational skills, self-advocacy skills). SEL.R2.4 SEL skills are taught in a manner that supports student's social-emotional development across the curriculum (i.e., manage emotions, set, and achieve goals, make responsible decisions, and maintain positive relationships). SEL.R2.5. Tier 2 behavior interventions are flexible in the sense that students can move in and out of Tier 2 interventions based on progress monitoring of student mastery of regulating their off-task or disruptive behavior. SEL.R2.6. School staff members utilize a formal system to monitor Tier 2 behavior interventions and can move students to Tier 3 behavior interventions as necessary.

(continued)

Table 1 *(cont.)*

Research question	Survey questions
(R3) What are the perceptions of Virginia's high school principals regarding what, in their school's culture, supported effective MTSS implementation?	SEL.R3. As the principal I have taken or intend to take the following actions to address barriers in the school culture to embed SEL as part of the overall school culture. SEL.R3.1 The school schedule is structured in such a way that there are opportunities for students and adults to create strong and positive relationships in where the adult is able to focus on the relationship, which is free of academic content (i.e., homeroom or advisory period). SEL.R3.2. Resources (time, administrative instructional support, clear expectations, accountability) are provided for the interpretation of student behavior data. SEL.R3.3. As the principal, I have built a culture in my school where teachers believe in their own instructional abilities to effectively teach SEL within their content area. SEL.R3.4. Faculty members see their peers as competent in the teaching of SEL and can work together to teach SEL skills to students across all curricular areas. SEL.R3.5. There is consensus within the school culture and a clear definition on what constitutes SEL. SEL.R3.6. Professional learning is embedded in the school culture that focuses on effective SEL Tier 1 instruction. SEL.R3.7. There is common language regarding what constitutes SEL. For example, regardless of content area, all teachers have a common understanding of the definition of SEL skill mastery both academically and social-emotionally.
Positive Behavior Intervention and Support (PBIS) (R1) What are the perceptions of Virginia's high school principals regarding their readiness to implement MTSS?	Given the following definition of PBIS: School-Wide Positive Behavior Support or SW-PBS (PBIS) is the systematic and formal consideration of (a) measurable academic and social behavior outcomes, (b) information or data to guide decision making and selection of effective behavioral interventions, (c) evidence-based interventions that support student academic and social behavior success, and (d) systems supports designed to increase the accuracy and durability of practice implementation (Sailor et al., 2008, p. 309) To what degree do you with agree with the following statements: PBIS.R1. PBIS is embedded in the overall school culture.

(continued)

Table 1 *(cont.)*

Research question	Survey questions
(R2) What are the perceptions of Virginia's high school principals regarding what, in their school's culture, created barriers to effective MTSS implementation?	PBIS.R2.1. There are three to five behavioral outcomes that are clearly defined and expected of all students within the school culture.
	PBIS.R2.2. Procedures are in place to monitor where behavioral issues occur, how often, and at what times of the day.
	PBIS.R2.3. Teachers consistently enforce the agreed upon procedures throughout the school. For example, all teachers and students have a common definition of what it means to be tardy to class and follow the same accountability procedures.
	PBIS.R2.4. Systems are in place to reinforce the desired behavior from students in a proactive manner.
	PBIS.R2.5. Reinforcements for students are utilized by all staff and given to students on a consistent basis overtime.
(R3) What are the perceptions of Virginia's high school principals regarding what, in their school's culture, supported effective MTSS implementation?	PBIS.R3. As the principal I have taken or intend to take the following actions to address barriers in the school culture to embed PBIS as part of the overall school culture.
	PBIS.R3.1. Resources (time, administrative instructional support, clear expectations, accountability) are provided for the interpretation of student behavioral data.
	PBIS.R3.2. Faculty members see each other as competent and can work together to reinforce desired student behavior.
	PBIS.R3.3. As the principal, I have built a culture in my school where teachers believe in their own abilities to proactively reinforce positive behavior expectations and hold students accountable and believe their colleagues and administration are also consistent and effective with behavior management.
	PBIS.R3.4. There is consensus within the school culture and a clear definition on what constitutes student success regarding student behavior.
	PBIS.R3.5. Professional learning is embedded in the school culture that focuses on effective PBIS implementation.
	PBIS.R3.6. There is common language regarding what constitutes student's success. For example, regardless of content area, all teachers have a common understanding of the definition of what "on-time" means in all classes regardless of teacher.

Data Collection Procedures

Using the Qualtrics online survey system through Virginia Tech, quantitative data were gathered and all responses were anonymous. The researcher did not know which principals, schools, or school systems participated in the survey. The results from the survey were recorded and kept in the researcher's Virginia Tech Google account.

Instrument Reliability and Validity

Comparing the principals' self-assessment means for MTSS to the means of the four necessary elements for the implementation of MTSS (i.e., collaborative culture, RtI, PBIS, and SEL) provided the researcher a method of assessing reliability.

> In effect, you judge the reliability of the instrument by estimating how well the items of the instrument that reflect the same construct yield results. You are looking at how consistent the results are for different items for the same construct within the measure. (Trochim et al., 2016, p. 124)

Validity was addressed by using a two-tailed *t* test to compare the means of the principals' self-assessments of the four necessary elements for the implementation of MTSS (i.e., collaborative culture, RtI, PBIS, and SEL) to the means of the Likert scale statements that followed each of the necessary elements. "In other words, construct validity is an assessment of how well your actual program or measures reflect your ideas or theories" (Trochim et al., 2016, p. 128). Principals' perceptions or ideas of their school culture were quantified through the Likert scales. The *t* tests were used to compare the means of the self-assessments to the means of Likert scales that measured the principals' perceptions of the implementation of the components of each necessary element of implementation for MTSS. Analysis through the Likert scale provided for the analysis of data from a wide geographical area and from principals of multiple schools.

Data Analysis Techniques

The use of descriptive statistics and an inferential statistic in the form of a *t* test is appropriate when using Likert scales and comparing means (Norman, 2010). Norman (2010) concluded parametric statistics can be used when analyzing data:

> Parametric statistics can be used with Likert data, with small sample sizes with unequal variances, and with non-normal distributions with no fear of "coming to the wrong

> conclusion". The findings are consistent with empirical literature dating back nearly 80 years. (p. 631)

Data were evaluated using Microsoft Excel to perform the two-tailed *t* tests. This enabled the researcher to compare means using analytical reports and statistical tables. The itemized statements provided by principals on the Likert scale statements under each element necessary for the implementation of MTSS (i.e., collaborative culture, RtI, PBIS, and SEL) were not included in the two-tailed *t* test. However, the statements were examined individually in Tables 12 through 23. The percentages and total number of principals who selected each of the Likert scale options were examined to identify trends and outliers.

Summary

The researcher chose a quantitative design based on three factors. First, the literature review indicated collaborative culture, RtI, SEL, and PBIS are all necessary elements when implementing the MTSS framework. Using the Likert scale as a method of gauging principals' self-assessments of their school culture enabled the researcher to document quantifiable comparisons between the mean of MTSS self-assessments and means of the self-assessments of the four necessary elements for the implementation of MTSS (i.e., collaborative culture, RtI, PBIS, and SEL). Second, the use of Likert scales through a state-wide survey enabled principals from multiple school divisions to participate in a manner that was convenient for them and yielded data that contributed to research on Virginia high school principals' perceptions of MTSS implementation. Finally, analyzing each Likert scale statement under each necessary element of implementation served as additional data points for the identification of trends and outliers.

CHAPTER IV
RESULTS OF THE STUDY

The purpose of this study was to identify the perceptions of Virginia high school principals regarding their readiness to implement MTSS, and the barriers and supports within their school culture related to implementation. A survey was created to address the following three research questions:

1. What are the perceptions of Virginia's high school principals regarding their readiness to implement MTSS?
2. What are the perceptions of Virginia's high school principals regarding what, in their school's culture, created barriers to effective MTSS implementation?
3. What are the perceptions of Virginia's high school principals regarding what, in their school's culture, supported effective MTSS implementation?

The first phase of the survey focused on principals' self-assessments when given a definition for MTSS, which emerged from the literature review. The MTSS self-assessment was then compared to the self-assessments of each of the four necessary elements that make up the MTSS framework (i.e., collaborative culture, RtI, PBIS, and SEL). As with the MTSS framework self-assessment, principals were provided definitions of each component that emerged from the literature review. A two-tailed *t* test was used to compare the mean of the overall MTSS self-assessment against the means of the self-assessments for collaborative culture, RtI, SEL, and PBIS. The second phase of the study involved comparing the means of the self-assessments for collaborative culture, RtI, SEL, and PBIS to the means of the Likert scale statements that emerged from the literature review as necessary components within each necessary element of implementation for MTSS. As in the first phase, a two-tailed *t* test was used to compare the differences between the self-assessment of each of the elements of implementation for MTSS (i.e., collaborative culture, RtI, PBIS, and SEL) to the means of Likert scale statements that followed each self-assessment. The third phase of the study was the analysis of the responses for each Likert scale statement under collaborative culture, RtI, PBIS, and SEL. Analyzing each Likert scale statement served as additional data points for the identification of trends and outliers.

The survey was sent to 251 high school principals in the Commonwealth of Virginia. Principals from five school divisions were excluded as those school divisions required a separate

IRB process. Emails with an invitation to participate in the survey were sent over a period of 3 consecutive weeks (see Appendix C). After the initial email was sent, two reminder emails were sent the following 2 weeks. A total of 43 principals initially responded to the survey, which constituted a 17% return rate. Once incomplete surveys were removed, the final number of completed surveys was reduced to 25, which was a 10% return rate. Data analysis for all means was based on this sample of 25 principals.

Research Question 1

What are the perceptions of Virginia's high school principals regarding their readiness to implement MTSS? This question was framed by giving the principals definitions for MTSS, collaborative culture, RtI, SEL, and PBIS and asking them to self-assess the readiness of their school culture based on the provided definition. All statements were rated on a 5-point Likert scale with options of 1 (*strongly disagree*), 2 (*disagree*), 3 (*neither agree nor disagree*), 4 (*agree*), and 5 (*strongly agree*). Table 2 shows the means of each of the statements.

Table 2

Comparison of the MTSS Framework Mean with the Means of the Necessary Elements of Implementation

Statement group	*M*
MTSS framework	3.96
Collaborative culture	4.29
RtI	3.96
PBIS	4.04
SEL	3.63

In addition to the comparisons of means in Table 2, Tables 3 through 7 are included to show the percentages of principals who rated their self-assessments with each Likert scale option. These tables also include the total number of principals who rated their self-assessments with each Likert scale option. Note that the *N* for each table varies and does not match Table 1 with *N* = 25. The *N* in Tables 2 through 7 represents the total number of principals who answered the question, including principals who did not complete the entire survey. Eighteen of the surveys received were incomplete and were not used for the analysis of the means. However, the inclusion of these data was useful as it provided additional insights into how the principals perceived their school culture, which added understanding to the thinking of the participating principals.

Table 3 illustrates that most of the principals who participated rated the implementation of the MTSS framework within their schools at a high level with 78% or 25 of the 32 responses rated as 4 (*agree*) or 5 (*strongly agree*). Conversely, 9% or three principals rated their culture at a low level as their ratings were 1 (*strongly disagree*) or 2 (*disagree*). The data here indicate most of the principals, when given a researched definition, had strong confidence in their school culture as it related to MTSS.

Table 3

Research Question 1 – MTSS Framework

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
R1. MTSS is completely implemented as part of the school culture.	1	3%	2	6%	4	13%	11	34%	14	44%

Note. *N* = 32.

Table 4 shows most of the principals rated the implementation of collaborative culture within their schools at a high level with 87% or 26 of the 30 responses rated as 4 (*agree*) or 5 (*strongly agree*). Conversely, 7% or two principals rated their culture at a low level with a rating of 1 (*strongly disagree*) or 2 (*disagree*). The data indicate most of the principals, when given a researched definition, had strong confidence in their school culture as it related to a collaborative culture.

Table 4

Research Question 1 – Collaborative Culture

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
CC.R1. Collaborative Culture is implemented in the overall school culture.	0	0%	2	7%	2	7%	11	37%	15	50%

Note. *N* = 30.

Table 5 shows most of the principals who participated rated the implementation of RtI within their schools at a high level with 73% or 19 of the 26 responses rated as 4 (*agree*) or 5 (*strongly agree*). Conversely, 16% or four principals rated their culture at a low level with ratings of 1 (*strongly disagree*) or 2 (*disagree*). Additionally, and of note, 12% or three principals rated at a 3 (*neither agree nor disagree*). Though not the highest count, it was the highest percentage of the five data points as the number of principals answering was 26. The data indicate many of the principals, when given a researched definition, had strong confidence in their school culture as it related to RtI.

Table 5

Research Question 1 – RtI

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
RtI.R1. RtI is embedded in the overall school culture.	1	4%	3	12%	3	12%	11	42%	8	31%

Note. *N* = 26.

Table 6 shows most of the principals who participated rated the implementation of SEL within their schools at a high level with 81% or 21 of the 26 responses rated as 4 (*agree*) or 5 (*strongly agree*). Conversely, 12% or three principals rated their culture at a low level with a rating of 1 (*strongly disagree*) or 2 (*disagree*). The data indicate the majority of the principals, when given a researched definition, had strong confidence in their school culture as it related to SEL.

Table 6

Research Question 1 – SEL

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
SEL.R1. SEL is embedded in the overall school culture.	0	0%	3	12%	2	8%	12	46%	9	34%

Note. *N* = 26.

Table 7 shows many of the principals who participated rated the implementation of PBIS within their schools at a moderate level with 60% or 15 of the 25 responses rated as 4 (*agree*) or 5 (*strongly agree*). Conversely, 20% or five principals rated their culture at a low level with a rating of 1 (*strongly disagree*) or 2 (*disagree*). Combined with the 20% who strongly disagreed or disagreed, 20% neither agreed nor disagreed. PBIS was the lowest rated of the four necessary elements for MTSS implementation. The data indicate the principals, when given a researched definition, has a mixed level of confidence in their school culture as it related to PBIS.

Table 7

Research Question 1 – PBIS

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
PBIS.R1. PBIS is embedded in the overall school culture.	3	12%	2	8%	5	20%	6	24%	9	36%

Note. *N* = 25.

Table 8 contains the results of the two-tailed *t* test comparing the mean of the MTSS self-assessment to the mean of the collaborative culture self-assessment. The *p*-value of the two-tailed *t* test was 0.24, which exceeds the accepted *p*-value of 0.05; therefore, no statistical difference was found. Based on the data, participating principals' perceptions of the MTSS framework and collaborative culture were aligned in that they believed a collaborative culture supported the MTSS framework in their schools.

Table 8

MTSS Framework Self-Assessment Mean Compared With the Collaborative Culture Self-Assessment Mean

Group	*N*	*M*	*SD*	*p*
MTSS framework	25	3.96	0.24	0.24
Collaborative culture	25	4.29		

Table 9 contains the results of the two-tailed *t* test comparing the mean of the MTSS self-assessment to the mean of the RtI self-assessment. The *p*-value of the two-tailed *t* test was 1.00, which far exceeds the accepted *p*-value of 0.05; therefore, no statistical difference was found. Based on the data, participating principals' perceptions of the MTSS framework and RtI were perfectly aligned, as the principals believed RtI was supporting the MTSS framework in their schools.

Table 9

MTSS Framework Self-Assessment Mean Compared With the RtI Self-Assessment Mean

Group	*N*	*M*	*SD*	*p*
MTSS framework	25	3.96	0.00	1.00
RtI	25	3.96		

Table 10 contains the results of the two-tailed *t* test comparing the mean of the MTSS self-assessment to the mean of the SEL self-assessment. The *p*-value of the two-tailed *t* test was 0.78, which far exceeds the accepted *p*-value of 0.05; therefore, no statistical difference was found. Based on the data, participating principals' perceptions between the MTSS framework and SEL were nearly perfectly aligned. In fact, principals rated SEL slightly higher with a mean of 4.04 compared to 3.96 for the MTSS framework. This data point indicates the principals rated SEL as an area of strength in their schools.

Table 10

MTSS Framework Self-Assessment Mean Compared With the SEL Self-Assessment Mean

Group	*N*	*M*	*SD*	*p*
MTSS framework	25	3.96	0.06	0.78
SEL	25	4.04		

Table 11 contains the results of the two-tailed *t* test comparing the mean of the MTSS self-assessment to the mean of the PBIS self-assessment. The *p*-value of the two-tailed *t* test was 0.37, which exceeds the accepted *p*-value of 0.05; therefore, no statistical difference was found. Based on the data, participating principals' perceptions between the MTSS framework and PBIS were aligned, and they believed PBIS supported the MTSS framework in their schools.

Table 11

MTSS Framework Self-Assessment Mean Compared With the PBIS Self-Assessment Mean

Group	*N*	*M*	*SD*	*p*
MTSS framework	25	3.96	0.24	0.37
PBIS	25	3.63		

Research Questions 2 and 3

Research Question 2 (R2) was: What are the perceptions of Virginia's high school principals regarding what, in their school's culture, created barriers to effective MTSS implementation? Research Question 3 (R3) was: What are the perceptions of Virginia's high school principals regarding what, in their school's culture, supported effective MTSS implementation? The subset of Likert statements in this section was used to explore how the means of the principals' self-assessments compared to the means of the subset of Likert scale statements from R2 and R3 for the four elements necessary for MTSS (i.e., collaborative culture, RtI, SEL, and PBIS). The subset of Likert statements was identified in the literature review as necessary components for the implementation of each element necessary for MTSS.

Comparisons of the self-assessment means and the Likert scale statement means for collaborative culture with a *p*-value of 0.28 (Table 14), RtI with a *p*-value of 0.63 (Table 17), and

PBIS with a *p*-value of 0.62 (Table 23) were not found to be statistically significant. SEL was found to be statistically significant with a *p*-value of 0.03 (Table 20) and a standard deviation of .35 with $N = 25$. The SEL data indicated principals' self-assessments did not match their perceptions of the components of SEL.

R2 and R3 each have tables that groups the percentages and total number of principal answers for each element necessary for MTSS. These tables represent the total number of principals who answered the questions, including principals who did not complete the entire survey. Eighteen of the surveys received were incomplete and were not used for the analysis of the means. However, the inclusion of the data was useful as it provided additional insights into how the principals perceived their culture, which adds awareness to the thinking of the participating principals. As with R1, Tables 12 through 19 show the percentages of principals who rated their cultures ranging from 1 (*strongly disagree*), 2 (*disagree*), 3 (*neither agree nor disagree*), 4 (*agree*), to 5 (*strongly agree*).

Table 12 breaks down the percentages and the total count for each Likert scale statement in the research survey under R2 for collaborative culture. The agree and strongly agree percentages ranged from 73% to 83%. The one exception was CC.R2.6, which stated: Formative assessments are created by CT members and given within a defined window. The agree to strongly agree ratings were 47% with strongly agreeing at 7%. This data point is useful as it allows principals to focus on continuous improvement of their collaborative culture even though, overall, it was perceived as an area of strength.

Table 12

Research Question 2 – Collaborative Culture

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
C.R2.1. Teachers focus on student learning and outcomes more than they do delivering content (sage on the stage).	0	0%	3	10%	3	10%	17	57%	7	23%
CC.R2.2. Teachers operate in Collaborative Teams (CTs) or Collaborative Learning Teams (CLTs) instead of operating independently of other teachers within their content area (i.e., all teachers teaching Algebra 1).	1	3%	3	10%	2	7%	15	50%	9	30%
CC. R2.3. There is a shared vision on what constitutes student mastery of content within the school culture.	0	0%	4	13%	2	7%	18	60%	6	20%
CC.R2.4. There is consensus within CTs on which essential standards all students must master.	0	0%	4	13%	1	3%	16	53%	9	30%
CC.R2.5. Summative assessments are created by CT members and given within a defined window.	2	7%	3	10%	3	10%	13	43%	9	30%
CC.R2.6. Formative assessments are created by CT members and given within a defined window.	1	3%	6	20%	9	30%	12	40%	2	7%

Note. N = 30.

Table 13 breaks down the percentages and the total count for each Likert scale statement in the research survey under R3 for collaborative culture. The ratings of agree and strongly agree ranged from 70% to 97%. The lowest rating at 70% was question CC.R3.2, which stated: Provide common planning by department (i.e., the entire math department) or by content (i.e., all Algebra 1 teachers) which is set aside for collaborative planning. The disagree rating of 23% and neither agree or disagree rating at 7% are noteworthy as providing common planning allows teachers to work interpedently toward common goals and is the building block to the creation and maintenance of a collaborative culture (Antinluoma et al., 2018; Bezzina, 2006; Brown et al., 2018; Buffum et al., 2018; Buffum et al., 2010; Freeman et al., 2017; Hipp et al., 2008; Kohm & Nance, 2013).

Table 13

Research Question 3 – Collaborative Culture

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
CC.R3.1. Provide time for the interpretation of student achievement data that focuses on student learning and outcomes.	0	0%	0	0%	0	0%	16	53%	14	46%
CC.R3.2. Provide common planning by department (i.e., the entire math department) or by content (i.e., all Algebra 1 teachers) which is set aside for collaborative planning.	0	0%	7	23%	2	7%	11	37%	9	33%
CC.R3.3. Provide professional learning for the interpretation of student achievement data that focuses on student learning and outcomes.	0	0%	2	7%	1	3%	18	60%	9	30%
CC.R3.4. Provide time for Collaborative Teams to identify essential standards.	0	0%	0	0%	1	3%	14	47%	15	50%
CC.R3.5. Provide professional learning for Collaborative Teams to plan lessons based on essential standards.	0	0%	1	3%	1	3%	15	52%	12	41%

Note. $N = 30$.

Table 14 contains the results of the two-tailed *t* test comparing the mean of the collaborative culture self-assessment (R1) to the subset of Likert statements (R2 & R3) for collaborative culture. Though no statistical difference was shown by the two-tailed *t* test, Table 12 and Table 13 highlighted areas principals can focus on for continuous improvement.

Table 14

Self-Assessment Mean R1 Compared With Self-Assessment Mean for R2 and R3 for Collaborative Culture

Group	*N*	*M*	*SD*	*p*
Collaborative culture (R1)	25	4.29	0.15	0.28
Collaborative culture (R2 & R3)	25	4.08		

Table 15 breaks down the percentages and the total count for each Likert scale statement in the survey under R2 for RtI. One strong data point for RtI is that the agree and strongly agree percentages were noticeably lower than those for collaborative culture. The agree and strongly agree percentages ranged from 54% to 77%. The first question in Table 15 stands out for its low rating for agree and strongly agree at 54%, and the high percentage for strongly disagree and disagree at 42%. RtI.R2.1 addressed the use of universal screeners: Universal Screeners are given to all students in Mathematics and English classes at the beginning of each school year and at the midpoint of each school year to identify students with learning gaps. This data point is an example of the need to consider specific questions along with the comparison of means as the comparison of means does not present the full picture of the school culture.

Table 15

Research Question 2 – RtI

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
RtI.R2.1. Universal Screeners are given to all students in Mathematics and English classes at the beginning of each school year and at the midpoint of each school year to identify students with learning gaps.	6	23%	5	19%	1	4%	8	31%	6	23%
RtI.R2.2. CT's monitor student achievement data to ensure that at least 80% of their students master essential skills.	2	8%	2	8%	5	19%	14	54%	3	12%
RtI.R2.3. Teachers remediate within their class when less than 80% of their students show mastery of an essential standard and then reassess as part of their progress monitoring.	0	0%	4	12%	15	4%	14	54%	5	19%
RtI.R2.4. Tier 2 interventions are created for targeted interventions for the 20% or fewer students who continue to not show mastery after teachers remediate within their class periods.	0	0%	1	4%	7	27%	13	50%	5	19%
RtI.R2.5. Tier 2 interventions are flexible in the sense that students can move in and out of Tier 2 interventions based on progress monitoring of student mastery.	0	0%	2	8%	4	15%	16	62%	4	15%
RtI.R2.6. School staff members utilize a formal system to monitor Tier 2 interventions and can move students to Tier 3 interventions as necessary.	1	4%	5	20%	4	16%	11	44%	4	16%

Note. $N = 26$.

Table 16 breaks down the percentages and the total count for each Likert scale statement in the survey under R3 for RtI. The focus of R3 was on principal actions and the self-assessments were higher when compared to those of R2 for RtI. The lowest rated question was 70% and the highest was 100%. In response to statements for principal actions, the data indicate principals rated their actions as high. The lowest rated question with 70% agree or strongly agree and 30% disagree or neither agree nor disagree was RtI.R3.6: There is common language regarding what constitutes student's success. For example, regardless of content area, all teachers have a common understanding of the definition of skill mastery and can apply it to their content area.

Table 16

Research Question 3 – RtI

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
RtI.R3.1. Resources (time, administrative instructional support, clear expectations, accountability) are provided for the interpretation of student achievement data that focuses on student learning and outcomes by CT.	0	0%	4	15%	3	12%	10	38%	9	35%
RtI.R3.2. Faculty members see each other as competent and can work together to address instruction at the Tier 1, Tier 2, and Tier 3 level.	1	4%	3	12%	2	8%	15	58%	5	19%
RtI.R3.3. As the principal, I have built a culture in my school where teachers believe in their own instructional abilities are effective and believe their colleagues are also effective educators.	0	0%	0	0%	0	0%	17	65%	9	35%
RtI.R3.4. There is consensus within the school culture and a clear definition on what constitutes student success academically.	0	0%	0	0%	2	8%	18	69%	6	23%
RtI.R3.5. Professional learning is embedded in the school culture that focuses on effective evidence-based Tier 1 instruction.	0	0%	3	12%	2	8%	13	50%	8	31%
RtI.R3.6. There is common language regarding what constitutes student's success. For example, regardless of content area, all teachers have a common understanding of the definition of skill mastery and can apply it to their content area.	0	0%	4	15%	4	15%	15	58%	3	12%

Note. $N = 26$.

Table 17 contains the results of the two-tailed *t* test comparing the mean of the RtI self-assessment (R1) to the subset Likert scale statements addressing barriers within the school culture and principal actions (R2 & R3) for RtI. Though no statistical difference was found between the mean self-assessment of R1 and the mean of R2 and R3, there were important data points in the subset of Likert scale questions in R2 and R3.

Table 17

Self-Assessment Mean R1 Compared With Self-Assessment Mean for R2 and R3 for RtI

Group	*N*	*M*	*SD*	*p*
RtI (R1)	25	3.96	0.08	0.63
RtI (R2 & R3)	25	3.85		

Table 18 breaks down the percentages and the total count for each Likert scale statement in the survey under R2 for SEL. Of the four elements for the implementation of MTSS, SEL was the lowest rated. The agree and strongly agree options for R2 ranged from 46% to 76%. Of note, SEL.R2.6 had 54% of the responses range between 1 (*strongly disagree*) and 3 (*neither agree nor disa*gree). SEL.R2.6 focused on formal processes of monitoring behavior and stated: School staff members utilize a formal system to monitor Tier 2 behavior interventions and can move students to Tier 3 behavior interventions as necessary. The data from R2 demonstrate that SEL is an area of need.

Table 18

Research Question 2 – SEL

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
SEL.R2.1 Every student has a strong and positive relationship with at least one adult within the school.	0	0%	2	8%	4	16%	15	60%	4	16%
SEL.R2.2 SEL skills are taught with the same intentionality as academic skills across the curriculum.	1	4%	4	15%	4	15%	15	58%	2	8%
SEL.R2.3 SEL skills are taught in a manner that supports student's academically across the curriculum (i.e., study skills, organizational skills, self-advocacy skills).	0	0%	5	19%	3	12%	15	58%	3	12%
SEL.R2.4 SEL skills are taught in a manner that supports student's social-emotional development across the curriculum (i.e., manage emotions, set, and achieve goals, make responsible decisions, and maintain positive relationships).	0	0%	5	19%	3	12%	15	58%	3	12%
SEL.R2.5. Tier 2 behavior interventions are flexible in the sense that students can move in and out of Tier 2 interventions based on progress monitoring of student mastery of regulating their off-task or disruptive behavior.	0	0%	5	19%	6	23%	12	46%	3	12%
SEL.R2.6. School staff members utilize a formal system to monitor Tier 2 behavior interventions and can move students to Tier 3 behavior interventions as necessary.	1	4%	6	23%	7	27%	10	38%	2	8%

Note. *N* = 25.

Table 19 breaks down the percentages and the total count for each Likert scale statement in the survey under R3 for SEL. The analysis of Table 19 focuses on THE highest rated Likert scale statement as opposed to the lower rated statements as the higher rated statement stands out. The overall ratings for R3 were low with four of the seven Likert scale statements rated at 4 (*agree*) or 5 (*strongly agree*) at 57%. Under SEL R3, the highest rated statement with a rating of 4 (*agree*) or 5 (*strongly agree*) at 81% was SEL.R3.1: The school schedule is structured in such a way that there are opportunities for students and adults to create strong and positive relationships in where the adult can focus on the relationship, which is free of academic content (i.e., homeroom or advisory period).

Table 19

Research Question 3 – SEL

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
SEL.R3.1 The school schedule is structured in such a way that there are opportunities for students and adults to create strong and positive relationships in where the adult is able to focus on the relationship, which is free of academic content (i.e., homeroom or advisory period).	3	12%	2	8%	0	0%	12	46%	9	35%
SEL.R3.2. Resources (time, administrative instructional support, clear expectations, accountability) are provided for the interpretation of student behavior data.	3	12%	2	8%	3	12%	14	54%	4	15%
SEL.R3.3. As the principal, I have built a culture in my school where teachers believe in their own instructional abilities to effectively teach SEL within their content area.	0	0%	2	8%	8	31%	11	42%	5	19%
SEL.R3.4. Faculty members see their peers as competent in the teaching of SEL and can work together to teach SEL skills to students across all curricular areas.	0	0%	4	15%	7	27%	13	50%	2	8%
SEL.R3.5. There is consensus within the school culture and a clear definition on what constitutes SEL.	2	8%	3	12%	6	23%	13	50%	2	8%

(continued)

Table 19 *(cont.)*

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
SEL.R3.6. Professional learning is embedded in the school culture that focuses on effective SEL Tier 1 instruction.	0	0%	3	12%	8	31%	13	50%	2	8%
SEL.R3.7. There is common language regarding what constitutes SEL. For example, regardless of content area, all teachers have a common understanding of the definition of SEL skill mastery both academically and social-emotionally.	2	2%	4	15%	7	27%	14	54%	1	4%

Note. *N* = 26.

Table 20 contains the results of the two-tailed *t* test comparing the mean of the SEL self-assessment (R1) to the subset Likert statements (R2 & R3) for SEL. Of the four elements for the implementation of MTTS, SEL was the only one with a statistically significant difference with a *p*-value of .03 and a standard deviation of 0.35 with *N* = 25. Principals consistently rated obstacles to implementation as problematic and principal actions with low levels of confidence.

Table 20

Self-Assessment Mean R1 Compared With Self-Assessment Mean for R2 and R3 for SEL

Group	*N*	*M*	*SD*	*p*
SEL (R1)	25	4.04	0.35	.03
SEL (R2 & R3)	25	3.55		

Table 21 breaks down the percentages and the total count for each Likert scale statement in the survey under R2 for PBIS. The percentage of principals who rated the statements at 4 (*agree*) or 5 (*strongly agree*) ranged from 64% to 76%, with three of the five statements rated at 68%. The consistency of the agree and strongly agree responses is contrasted by the 32% of principals who rated PBIS.R2.1. as 1 (*strongly disagree*) or 3 (*neither agree nor disagree*). PBIS.R2.1 stated: There are three to five behavioral outcomes that are clearly defined and expected of all students within the school culture. The relatively high rate of disagreement is addressed in the findings.

Table 21

Research Question 2 – PBIS

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
PBIS.R2.1. There are three five behavioral outcomes th are clearly defined and exp of all students within the sc culture.	4	16%	2	8%	2	8%	8	32%	9	36%
PBIS.R2.2. Procedures are place to monitor where behavioral issues occur, ho often, and at what times of day.	2	8%	2	8%	4	16%	11	44%	6	24%
PBIS.R2.3. Teachers consistently enforce the agr upon procedures throughou school. For example, all teachers and students have common definition of what means to be tardy to class a follow the same accountabi procedures.	1	4%	5	20%	1	4%	17	60%	1	4%
PBIS.R2.4. Systems are in to reinforce the desired beh from students in a proactive manner.	1	4%	0	0%	5	20%	16	64%	3	12%
PBIS.R2.5. Reinforcements students are utilized by all and given to students on a consistent basis over time.	1	4%	3	12%	4	16%	15	60%	2	8%

Note. *N* = 25.

Table 22 breaks down the percentages and the total count for each Likert scale statement in the survey under R3 for PBIS. The 4 (*agree*) or 5 (*strongly agree*) ratings ranged from 67% to 88%. Unlike R2 for PBIS (Table 21), principals rated their actions as being effective. The two exceptions were PBIS.R3.1 with 24% rating the statement as 1 (*strongly disagree*) or 2 (*disagree*). PBIS.R3.1 addressed time and resources and stated: Resources (time, administrative instructional support, clear expectations, accountability) are provided for the interpretation of student behavioral data. PBIS.R3.1 was followed by PBIS.R3.5 with 21% rating the statement as 1 (*strongly disagree*) or 2 (*disagree*). PBIS.R3.5 addressed professional learning and stated: Professional learning is embedded in the school culture that focuses on effective PBIS implementation. Both statements addressed time and resources, which principals' self-assessment data showed to be a challenge.

Table 22

Research Question 3 – PBIS

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
PBIS.R3.1. Resources (time, administrative instructional support, clear expectations, accountability) are provided for the interpretation of student behavioral data.	3	12%	3	12%	2	8%	10	40%	7	28%
PBIS.R3.2. Faculty members see each other as competent and can work together to reinforce desired student behavior.	1	4%	0	0%	4	16%	14	56%	6	24%

(continued)

Table 22 *(cont.)*

Question	1 Strongly disagree		2 Disagree		3 Neither		4 Agree		5 Strongly agree	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
PBIS.R3.3. As the principal, I have built a culture in my school where teachers believe in their own abilities to proactively reinforce positive behavior expectations and hold students accountable and believe their colleagues and administration are also consistent and effective with behavior management.	0	0%	0	0%	3	12%	16	64%	6	24%
PBIS.R3.4. There is consensus within the school culture and a clear definition on what constitutes student success regarding student behavior.	0	0%	0	0%	5	20%	15	60%	5	20%
PBIS.R3.5. Professional learning is embedded in the school culture that focuses on effective PBIS implementation.	2	8%	3	13%	3	13%	11	46%	5	21%
PBIS.R3.6. There is common language regarding what constitutes student's success. For example, regardless of content area, all teachers have a common understanding of the definition of what "on-time" means in all classes regardless of teacher.	1	4%	2	8%	5	20%	12	48%	5	20%

Note. $N = 25$.

Table 23 breaks down the percentages and the total count for each Likert scale statement in the survey under R2 for PBIS. The combined *p*-value in Table 23, which compares the self-assessment mean with the mean of the Likert scale subset statements, was 0.62, which falls well outside of the accepted *p*-value of 0.05. However, based on the lower ratings for agree and strongly agree in R2, PBIS self-assessments could prove to be useful points of data for principals looking to improve their MTSS process. This data point is an example of the need to look at specific questions along with the comparison of means as the comparison of the means does not present the full picture of the school culture.

Table 23

Self-Assessment Mean R1 Compared With Self-Assessment Mean for R2 and R3 for PBIS

Group	*N*	*M*	*SD*	*p*
PBIS (R1)	25	3.66	0.10	0.62
PBIS (R2 & R3)	24	3.73		

Summary

The data were divided into three phases. The first set of data addressed R1 and compared principals' self-assessments for MTSS when given a definition for MTSS with the principals' self-assessments for the necessary elements for MTSS implementation identified in the literature review as collaborative culture, RtI, SEL, and PBIS. Preceding each necessary element, definitions from the literature review were given. The data reflected each principal's self-assessment of their culture and how ready it was to implement MTSS as well as how ready their culture was for implementing the necessary elements. A two-tailed *t* test was used to compare the means of the principals' self-assessments (N = 25) to the means of the principals' self-assessments for collaborative culture, RtI, SEL, and PBIS (N = 25). The results showed there was not a significant statistical difference when comparing any of the means of the self-assessments.

The second phase of the data addressed R1, R2, and R3, which compared the means of the self-assessments of each necessary element of MTSS implementation with the means of the Likert scale statements that followed each necessary element of implementation. All Likert scale statements were research based and were outlined in the literature review. Collaborative culture consisted of 12 Likert scale statements, RtI consisted of 13 Likert scale statements, SEL consisted of 14 Likert scale statements, and PBIS consisted of 12 Likert scale statements. A two-tailed *t* test was used to compare the means of the self-assessment to the means of the Likert scale statements. In the cases of collaborative culture, RtI, and PBIS, there was not a significant statistical difference between the means. In the case of SEL, there was a significant statistical difference between the means with a *p*-value of 0.03 and a standard deviation of 0.35.

The third phase was not part of the mean data analysis due to incomplete surveys. The examination of the data focused on R2 and R3 and assessed the percentage of principals who answered each Likert scale statement as well as the total number of principals who responded to each of statements. The purpose was to conduct an examination of trends in how principals answered the Likert scale statements to gain insight into principals' thinking as it related to each of the elements necessary for the implementation of MTSS. The data gathered were important and can be used by principals and leaders of school divisions as they look to either work toward continuous improvement in areas of strength or identify areas of need.

CHAPTER V

FINDINGS, IMPLICATIONS, AND FUTURE RESEARCH

The purpose of the current study was to investigate to what degree high school principals perceived that their school culture supported the implementation of MTSS, their perceptions of barriers that existed within the school culture, and elements of the school culture that supported the implementation of the MTSS. A survey was sent to 251 high school principals in the Commonwealth of Virginia. The following research questions were the basis for the survey:

1. What are the perceptions of Virginia's high school principals regarding their readiness to implement MTSS?
2. What are the perceptions of Virginia's high school principals regarding what, in their school's culture, created barriers to effective MTSS implementation?
3. What are the perceptions of Virginia's high school principals regarding what, in their school's culture, supported effective MTSS implementation?

The survey consisted of Likert scale statements that measured principals' perceptions of how ready their school culture was for the implementation of the MTSS framework. The self-assessments were based on statements that were definitions taken from the research that emerged in the literature review. Next, barriers that existed within the school culture and elements of the school culture that supported the implementation of the MTSS framework were examined. Based on the literature review, the study was designed to explore principals' understanding of how a collaborative culture, RtI, SEL, and PBIS created a culture within their school that allowed for the implementation and maintenance of the MTSS framework. A series of two-tailed *t* tests were performed to determine whether there were statistically significant results produced from the survey. Although not included in the two-tailed *t* test, principal responses to R2 and R3 were included in the data set and analyzed to determine themes or outliers and to gain insight into principal perceptions. This study was designed to add to the body of research that directly addresses the study of MTSS at the high school level.

Summary of Findings

Principals' self-assessments demonstrated the principals believed their school cultures were ready for the implementation of MTSS. This became clear when analyzing the means of the self-assessments between the MTSS framework and the four elements necessary for the implementation of MTSS (i.e., collaborative culture, RtI, SEL, and PBIS). The two-tailed *t* test showed there were no statistically significant differences between any of the self-assessment means. A review of the data showed there was one finding of statistical significance when analyzing the Likert scale survey questions compared to the self-assessments of the four elements necessary for the implementation of MTSS. The mean of the self-assessment for SEL and the means of the Likert scale statements had a *p*-value of 0.03, which was significant. Though the other findings were not statistically significant, the findings contain merit and are discussed here as they contribute to suggestions for future research and are addressed in the summary and reflections sections of this chapter.

Finding 1

The principals who participated in the study consistently rated their MTSS self-assessment and the self-assessment of the four elements necessary for the implementation of MTSS as closely aligned. There were no statistically significant differences between the mean of the self-assessment for the MTSS framework and the self-assessment means of the necessary elements of MTSS (Table 2). The following *p*-values exceeded the generally accepted *p*-value of 0.05 for statistical significance. The *p*-value for collaborative culture was 0.24 (Table 8), RtI had a *p*-value of 1.00 (Table 9), SEL had a *p*-value 0.78 (Table 10), and PBIS had a *p*-value of 0.37 (Table 11). The results showed the principals believed teaching academic and social skills were part of their schools' cultures.

The importance of MTSS encompassing student outcomes that focus on academic and social-emotional learning and skill development was part of the ESSA (U.S. Department of Education, 2015). "MTSS incorporates not only academic outcomes but also behavior and social-emotional learning" (Al Otaiba et al., 2019, p. 35). The four necessary elements of MTSS have been consistently identified in the research by multiple authors. The four necessary elements are collaborative culture (Choi et al., 2019; Dulaney et al., 2013), RtI (Freeman et al., 2017), SEL (Forman & Crystal, 2015), and PBIS (Flannery & Kato, 2017).

Finding 2

The participating principals viewed their collaborative cultures as being congruent with the collaborative culture framework. There was little difference between the mean of the self-assessment for collaborative culture and the mean of the Likert scale statements that identified the components of a collaborative culture within the school culture. Results showed the principals who participated in the study consistently rated the collaborative culture self-assessment and the Likert scale statements for collaborative culture such that there was no statistical difference with a *p*-value of 0.28 (Table 14).

As the research indicated, a collaborative culture serves as the cornerstone to the MTSS framework as it creates the necessary conditions for academic and social-emotional outcomes (Choi et al., 2019; Dulaney et al., 2013; Sugai & Horner, 2020; Thompson School District, 2021). The Likert scale statements focused on three essential conditions within the necessary element of collaborative culture: collective responsibility (Antinluoma et al., 2018; Bezzina, 2006; Buffum et al., 2018; Jackson 2008), identifying essential standards (Buffum et al., 2010; Buffum et al., 2012; French, 2013; Marzano & Haystead, 2008; Reeves, 2002), and common assessments (Buffum et al., 2018; Castillo et al., 2018; Johnson, 2015).

Finding 3

Principals indicated they viewed their school cultures as being congruent with the RtI framework. Principal self-assessments showed the principals who participated in the study consistently rated the RtI self-assessment and the Likert scale statements for RtI such that there was little statistical difference between the means. This was evident from the *p*-value of 0.63 when comparing the self-assessment mean with the means of the Likert scale statements (Table 17). However, in reviewing the responses for R2 and R3 for RtI, there were specific Likert scale statements that were rated lower, such as the use of universal screeners with 23% choosing 1 (*strongly disagree*) and 19% choosing 2 (*disagree*; Table 15).

RtI was initially part of the IDEA reauthorization of 2001 and has continued to be a necessary element for MTSS implementation (Sansosti et al., 2011). Although initially developed for elementary schools, the implementation of RtI has been expanded to middle schools and high schools (Bartholomew & De Jong, 2017; Sansosti et al., 2011). The Likert scale statements focused on three essential conditions within the necessary element of RtI: universal screeners (August et al., 2018; Buffum et al., 2018; Volpe et al., 2018), robust Tier 1 instruction and prevention (Barnes & Harlacher, 2008; Beecher, 2011; Oakes et al., 2014), and Tier 2 and

Tier 3 interventions with progress monitoring (Bartholomew & De Jong 2017; Buffum et al., 2018; Lane et al., 2010; McIntosh & Kent, 2016; Oakes et al., 2014).

Finding 4

Principals' self-assessments of their ratings for SEL were higher than their identification of practices within the school culture that created a readiness to implement SEL. Participating principals had a statistically significant discrepancy between the mean of the self-assessment for SEL at 4.04 (Table 20) and the Likert scale statements that reflected on practices within the school culture that make the school culture ready to implement SEL, rated at 3.55 (Table 20). This data set was statistically significant with a *p*-value of 0.03 and standard deviation of 0.35 (Table 20). R2 and R3 provided insight into principals' thinking about SEL, specifically that they rated principal actions higher when it was an action over which they had direct control. As an example, of the many principal actions that are under the purview of the principal, the creation of master schedule is a powerful action and was covered in item SEL.R3.1, which stated the school schedule is structured in such a way that there are opportunities for students and adults to create strong and positive relationships in where the adult is able to focus on the relationship, which is free of academic content (i.e., homeroom or advisory period), with 81% of the principals rating the statement as 4 (*agree*) or 5 (*strongly agree*; Table 19). The creation of the master schedule is an important strategy. It is of note that principals rated this strategy high. The other statements that pertained to the school culture and the elements of the school culture that are less controllable by the principal rated lower. For example, creating a school culture where SEL skills are taught across the school regardless of curricula requires greater teacher buy-in and professional development. For SEL.R2.2, which stated SEL skills are taught with the same intentionality as academic skills across the curriculum, 66% rated the statement as 4 (*agree*) or 5 (*strongly agree*; Table 18). This data point demonstrates principals do have the power to create conditions for SEL success, and though other factors such as staff buy-in and professional development are important, the principals did not show as much confidence in these factors.

MTSS is designed to address both academic and non-academic barriers to positive student outcomes and decreasing student achievement gaps (August et al., 2018). Like PBIS,

SEL is designed to proactively teach students the skills they need to successfully make positive choices in a variety of social and academic settings (Neth et al., 2020).
The research revealed there are three essential conditions within the SEL element: student–teacher connectedness (García-Moya et al., 2020), the intentional instruction of SEL skills (Adelman & Taylor, 2012; Yang et al., 2018), and the integration of SEL within the school culture (Bradea, 2018; García-Moya et al., 2019; Neth et al., 2020).

Finding 5

Principals indicated they had fewer than three to five behavioral outcomes for PBIS. When rating the PBIS statement PBIS.R2.1 (i.e., there are three to five behavioral outcomes that are clearly defined and expected of all students within the school culture), 32% of the principals disagreed that their school culture met this condition (Table 21). For the other conditions of PBIS to be successful, there must be staff consensus of behavioral outcomes. Without consensus, school-wide enforcement and reinforcement are not possible. Even though there was no statistically significant difference between the mean of the self-assessment for PBIS and the mean of the Likert scale statements with a *p*-value of 0.62 (Table 23), a review of the data in Table 21 and Table 22 points to specific areas within PBIS that need improvement.

PBIS is the result of two different federal level mandates, as both IDEA and NCLB required LEAs to focus on social development and to take a proactive approach to reducing negative student behavior (Barrett et al., 2008; Horner et al., 2014; Kittelman et al., 2019; Molloy et al., 2013; Sailor et al., 2008). PBIS places an emphasis on prevention at all levels, including the high school level (Castillo et al., 2018). The Likert scale statements focused on three essential conditions within the necessary element of PBIS: clear outcomes and well-defined procedures (Barrett et al., 2008; Horner et al., 2014; Molloy et al., 2013), consistency throughout the building and between teachers (Flannery & Kato, 2017; Flannery et al., 2009; Sugai & Horner, 2020; Weist et al., 2018), and a tiered approach (Barrett et al., 2008; Horner et al., 2014).

Implications of Findings

Implication 1

The first implication is that **principals should work with other stakeholders to further investigate the school culture and whether others have the same perceptions**. This means principals and school division leaders should survey internal and external stakeholders regarding their perceptions of the school culture. By including more stakeholders, principals will be able to dive deeper into the elements that are necessary for MTSS implementation to discover areas of focus. By further investigating the perceptions of other stakeholders, school division leaders or principals can create opportunities to develop professional learning that deepens the understanding of the MTSS framework and prioritize goals and the allocation of resources in a manner that will increase the effectiveness of the collaborative culture, RtI, PBIS, and SEL, and therefore increase the effectiveness of the overall MTSS framework. School division leaders or principals may need to increase professional development around the understanding of the four necessary elements of implementation and how they are interdependent in creating a school culture that will support the MTSS framework. This implication is associated with Findings, 1, 2, 3, 4, and 5.

Implication 2

Principals and school division leaders should use the data to address the lowest-rated self-assessment for the necessary elements for implementation, which was SEL. The MTSS framework is intricate and needs all four of the necessary elements to be present to function effectively. The effectiveness of the MTSS framework is hampered if even one of the necessary elements for implementation is not functioning properly. SEL was the lowest-rated self-assessment with a mean score 3.63 (Tables 2 & 10), which was lower than the MTSS framework with a mean of 3.96 (Table 2), collaborative culture with a mean of 4.29 (Tables 2 & 8), RtI with a mean of 3.96 (Tables 2 & 9), and PBIS with a mean of 4.04 (Tables 2 &10). As SEL was the only two-tailed *t* test that demonstrated statistical significance with a *p*-value of 0.03 (Table 20), prioritizing SEL among the necessary elements of implementation for MTSS will give principals and school division leaders a focus for improvement by providing professional development, resources, and the time necessary to create a stronger SEL culture. This implication is associated with Finding 4.

Implication 3

Principals and school division leaders should use the data to address the lowest-rated Likert scale statements within the necessary elements for the implementation of SEL.

A school division leader or principal should focus on the three lowest-rated Likert statements from R2, which probed obstacles within the school culture for the implementation of MTSS. These included SEL.R2.2, which stated SEL skills are taught with the intentionality as academic skills across the curriculum (Table 18); SEL.R2.5, which stated Tier 2 behavior interventions are flexible in the sense that students can move in and out of Tier 2 interventions based on progress monitoring of student mastery of regulating their off-task or disruptive behavior (Table 18); and SEL.R2.6, which stated School staff members utilize a formal system to monitor Tier 2 behavior interventions and can move students to Tier 3 behavior interventions as necessary (Table 18). Of note is that SEL.R2 was the lowest SEL Likert statement with a rating of 4 (*agree*) and 5 (*strongly agree*) of 46% (Table 18). Examining R3, which probed principal actions, will further focus school improvement efforts as focusing on the three lowest-rated Likert scale statements can provide strategies that can be implemented by school division leaders or principals. The three lowest rated Likert scale statements were: SEL.R3.5, which stated there is consensus within the school culture and a clear definition on what constitutes SEL (Table 19); SEL.R3.6, which stated professional learning is embedded in the school culture that focuses on effective SEL Tier 1 instruction (Table 19); and SEL.R3.7, which stated there is common language regarding what constitutes SEL. For example, regardless of content area, all teachers have a common understanding of the definition of SEL skill mastery both in academic and social-emotional terms (Table 19). By combining a deeper understanding of the perceived obstacles with a deeper understanding of the lowest-rated principal actions, school division leaders and principals can efficiently apply limited resources such as time, professional development, and strategies to address areas of greatest need. This implication is association with Finding 4.

Implication 4

Examination of the data in multiple Likert scale statements within collaborative culture, RtI, and PBIS will allow principals and school division leaders to improve the MTSS process even if *t* tests did not demonstrate statistical significance**. Principals and school division leaders should examine data related to individual Likert scale statements and the impact to implementation of collaborative culture, RtI, and PBIS to improve the MTSS process.** Likert statements within collaborative culture Tables 12 & 13), RtI (Tables 15 & 16), and PBIS (Tables 21 & 22) all contained areas that can be used for school improvement. Principals and school system leaders can use the expanded feedback by principals found in the deeper examination into the elements that are necessary for collaborative culture, RtI, and PBIS implementation to discover areas of growth. Awareness of gaps can result in an increase in professional learning and the prioritization of goals and the allocation of resources in a manner that will increase the effectiveness of the individual elements necessary for implementation of MTSS and therefore increase the effectiveness of the school's MTSS framework. This implication is associated with Findings 2, 3, and 5.

Implication 5

Principals and school division leaders should focus on improved professional learning and the allocation of resources in a manner that will increase the effectiveness of PBIS. Concentrating on the incongruencies within the school culture regarding PBIS will enable principals to dive deeper into the components that are necessary for PBIS implementation and to address specific areas in need of growth. The data from R2 and R3 did produce lower-rated Likert scale statements for PBIS that point to areas needing improvement. The two-tailed *t* tests did not give the full picture of PBIS. The two-tailed *t* tests showed the principals believed staff members within the school were implementing PBIS in a manner that was congruent with the principal self-assessment of PBIS implementation. However, an examination of the Likert scale statements in Tables 21 and 22 pointed to multiple outliers. This implication is associated with Finding 5.

Suggestions for Future Study

The author of this study created an instrument in the form of a survey intended to quantify how ready each principal's school culture was for implementing the MTSS framework. However, other stakeholders make up the school community that creates the school culture, including students, parents, teachers, staff members, school administrators, and the community.

The first recommendation for future study encompasses the inclusion of stakeholder participation in the self-assessment and Likert scale subset of statements that made up the survey. This recommendation includes:

- Increase the total number of stakeholder participants, which will allow for multiple data points that may or may not be congruent with principal perceptions.

- Adapt the survey for teachers.
- Adapt the survey for students.
- Adapt the survey for staff members, to include clinical staff, counselors, instructional assistants, and other administrators.

The second recommendation for future study includes expanding the number of principals participating in the survey. This recommendation includes:

- Expanding the number of surveys sent to include school systems that require a separate IRB. Given that there was a global pandemic at the time of the study, some of the school systems were not accepting research requests. This limited the number of principals who could participate, including those from several large school systems.

The third recommendation for future study includes evaluating the survey with the possibility of weighting elements. This recommendation includes:

- Likert scale statements may not all carry the same level of importance. For example, within a collaborative culture, common planning time is foundational to many of the functions necessary for effective collaborative teamwork. Giving common planning more weight may be appropriate when refining the survey.
- Each of the necessary elements for MTSS implementation are interrelated and necessary. Refining the survey to reflect the need for possible higher leverage elements would possibly give a more accurate view of how to improve the school culture.

The final recommendation for future study is to create a study that would allow for the identification of schools. This recommendation includes:

- Respondents who rate highly could be identified for further study and used as possible exemplars.
- Respondents who rate highly could be used for research that goes beyond perceptions and a further study of artifacts and processes that confirm perceptions can be conducted. This would allow staff in successful cultures to share their processes.

Chapter Summary

Chapter 5 reviewed the five findings from the study. Of the five data points, one was found to be statistically significant and four were not significant. Principal perceptions are a starting point for analyzing how ready a school culture is for implementing the MTSS framework. Using principal perceptions as a starting point, decisions can be made regarding how to deploy resources, develop professional development, and prioritize student learning and behavior goals. Principals' perceptions influence the degree to which the school culture will be analyzed for strengths and areas of growth with the MTSS framework.

Principal perceptions affect principal actions. Time, resources, and academic/social-emotional teaching methods are all limited. An accurate picture of the school culture will lead to a more effective allocation of professional development. The instructional and human resources necessary for the implementation of the MTSS framework and of the four necessary elements for MTSS implementation are also limited and must be allocated based on accurate data. Last, implications for future research were documented. The need to expand the survey to more principals and additional stakeholders was a predominant theme. Additionally, it was recommended that the survey be examined to determine whether weighting some Likert scale statements based on higher leverage practices or needs would be appropriate.

Reflections

Reflecting on this research project and the survey has created a mixture of thoughts. From one perspective, there has been very little research done at the high school level with the MTSS framework. This research project and the literature review simultaneously added to the body of research and highlighted the need for more research. The survey questions were based on the literature review and linked to previous research. Studying principal perceptions is a logical place to begin when attempting to determine the degree to which a school's culture is ready to implement MTSS.

From another perspective, the research study was clearly the start of a deeper process. Principal perceptions alone cannot be expected to be reliable indicators of the culture within a school. Additional perspectives from multiple stakeholders will generate a more accurate picture of the culture within a school. However, all perceptions are biased. A deeper process would include a records examination, an examination of different MTSS processes within the school, and a review of the master schedule. For example, should the master schedule not allow for common planning, it is difficult if not impossible for genuine teacher collaboration to occur. Even when common planning is part of the school culture, the degree to which collaboration occurs varies. Viewing planning documents, school improvement plans, and meeting agendas would be ways to verify perceptions or point out conflicts between perceptions and practices. The previous example used collaborative culture to show how researchers can investigate a school culture at a deeper level. However, the themes that applied to collaborative culture apply to RtI, SEL, and PBIS. The time to thoroughly investigate the readiness of any given school's culture extends beyond the scope of this study.

To the previous point, though this project has been a source of satisfaction in that it has contributed to the research of the MTSS framework at the high school level, it has also left a feeling of incompleteness. The research is clear—an effective MTSS framework raises the level of academic and social learning for all students. Most notably, it shrinks the gaps for students who have been marginalized and underserved in the U.S. education system.

Until the MTSS framework is part of every high school culture, equity will continue to be a goal that is not achieved systematically. Until equity can be achieved systematically, our students' futures and their outcomes will continue to be overly reliant on factors outside student control such as zip codes, ethnicity, English as a second language status, and special education status, to name a few. The MTSS framework brings research-based processes and evidence-based instructional practices that can effectively address these factors—factors over which the students themselves have no control. It is hoped that this study, though inadequate to address the larger systematic issues, highlighted the need for actionable MTSS research and can be viewed as offering possible, if not partial, solutions as every student deserves an equitable education.

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APPENDIX A

EMAIL INVITE TO PARTICIPATE IN THE STUDY

Subject: Studying the implementation of Multi-tiered Systems of Support (MTSS) and how high school principals view their school culture's implementation or readiness for implementation of MTSS

Dear High School Principal and Prospective Survey Participant,

My name is Martin Grimm, and I am currently a Doctoral Student at Virginia Tech and the Principal of Hayfield Secondary School in Alexandria Virginia.

I am studying the implementation of Multi-tiered Systems of Support (MTSS) and how high school principals view their school culture's implementation or readiness for implementation of MTSS (IRB# 21-652), I am conducting this research under Dr. Ted Price who is the Chair of my Dissertation Committee (pted7@vt.edu). This is a Virginia Tech Research Study.

As a current High School Principal, you are eligible to participate in this study. I have created a survey with the goal of eventually helping high school principals gauge their perception of their school culture's readiness to implement MTSS. The survey instrument can be completed online through Qualtrics (an approved Virginia Tech online survey instrument host) and will take between 10 and 20 minutes. There is minimum risk involved in participating in this research. All data collected will be anonymous and aggregated by Qualtrics. It will be impossible to identify you as the person who provided any specific information for the research.

It is important to note that:

- Participation in the study is completely optional
- The Virginia Tech IRB approval to conduct this study is attached to this email
- All data collected are anonymous
- The survey is only asking for your perceptions
- I am not asking for any demographical data of any kind

This survey has been reviewed by the Human Research Protection Program of Virginia Polytechnic Institute and State University. If you have any questions about your rights as a research participant, or concerns or complaints about the research, you may contact the Virginia Tech HRPP at irb@vt.edu or (540)-231-3732.

As a high school principal, I know how busy you are, however, if you can take 10 to 20 minutes to complete this survey, I feel that the data will help with future implementation of MTSS at the high school level. I am happy to share the results of the state-wide survey and my findings with you, if you are interested in receiving this information please email me at Megrimm@vt.edu and

I will send you results once I have completed the dissertation process. If you have any questions, please feel free to contact me at Megrimm@vt.edu as I will be happy to answer or clarify any questions or concerns.

Follow this link to the Survey:

Take the Survey

Or copy and paste the URL below into your internet browser:
https://virginiatech.qualtrics.com/jfe/form/SV_b7S0LMEuCsE7KFo

Thank you for your consideration and best of luck with the coming school year.

Best,
Martin Grimm

APPENDIX B

SURVEY

Given the following definition of MTSS: "MTSS provides a framework to extend evidence-based instruction and supportive interventions to serve all students, including those who need extensive academic or behavior supports… (AA-AAS; Sailor & McCart, 2014; Sailor & Roger, 2005)." To what degree do you with agree with the statement:

R1. MTSS is completely implemented as part of the school culture.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

Given the following definition of Collaborative Culture: A school culture that includes a focus on student learning (not teaching), teams working interdependently (not in isolation), and work towards a shared vision of student achievement (collective responsibility) (Buffum et al., 2018; Solution Tree, n.d.). To what degree do you with agree with the following statements:

CC.R1. Collaborative Culture is implemented in the overall school culture.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

CC.R2.1. Teachers focus on student learning and outcomes more than they do delivering content (sage on the stage).

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

CC.R2.2. Teachers operate in Collaborative Teams (CTs) or Collaborative Learning Teams (CLTs) instead of operating independently of other teachers within their content area (i.e., all teachers teaching Algebra 1).

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

CC. R2.3. There is a shared vision on what constitutes student mastery of content within the school culture.

1	2	3	4	5

Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

CC.R2.4. There is consensus within CTs on which essential standards all students must master.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

CC.R2.5. Summative assessments are created by CT members and given within a defined window.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

CC.R2.6. Formative assessments are created by CT members and given within a defined window.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

R3. As the principal I have taken or intend to take the following actions to address barriers in the school culture to implement Collaborative Culture as part of the overall school culture.

CC.R3.1. Provide time for the interpretation of student achievement data that focuses on student learning and outcomes.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

CC.R3.2. Provide common planning by department (i.e., the entire math department) or by content (i.e., all Algebra 1 teachers) which is set aside for collaborative planning.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

CC.R3.3. Provide professional learning for the interpretation of student achievement data that focuses on student learning and outcomes.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

CC.R3.4. Provide time for Collaborative Teams to identify essential standards

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

CC.R3.5. Provide professional learning for Collaborative Teams to plan lessons based on essential standards

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

Given the following definition of Response to Intervention (RtI):

RtI is designed to provide systematic screening of students to identify (academic) gaps and needs, evidence-based interventions (EBIs), ongoing progress monitoring, and early intervention (Bartholomew & De Jong, 2017; Sansosti et al., 2011). To what degree do you with agree with the following statements:

RtI.R1. RtI is embedded in the overall school culture.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

RtI.R2.1. Universal Screeners are given to all students in Mathematics and English classes at the beginning of each school year and at the midpoint of each school year to identify students with learning gaps.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

RtI.R2.2. CT's monitor student achievement data to ensure that at least 80% of their students master essential skills.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

RtI.R2.3. Teachers remediate within their class when less than 80% of their students show mastery of an essential standard and then reassess as part of their progress monitoring.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

RtI.R2.4. Tier 2 interventions are created for targeted interventions for the 20% or fewer students who continue to not show mastery after teachers remediate within their class periods.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

RtI.R2.5. Tier 2 interventions are flexible in the sense that students can move in and out of Tier 2 interventions based on progress monitoring of student mastery.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

RtI.R2.6. School staff members utilize a formal system to monitor Tier 2 interventions and can move students to Tier 3 interventions as necessary.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

R3. As the principal I have taken or intend to take the following actions to address barriers in the school culture to implement RtI as part of the overall school culture.

RtI.R3.1. Resources (time, administrative instructional support, clear expectations, accountability) are provided for the interpretation of student achievement data that focuses on student learning and outcomes by CT.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

RtI.R3.2. Faculty members see each other as competent and can work together to address instruction at the Tier 1, Tier 2, and Tier 3 level.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

RtI.R3.3. As the principal, I have built a culture in my school where teachers believe in their own instructional abilities are effective and believe their colleagues are also effective educators.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

RtI.R3.4. There is consensus within the school culture and a clear definition on what constitutes student success academically.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

RtI.R3.5. Professional learning is embedded in the school culture that focuses on effective evidence-based Tier 1 instruction.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

RtI.R3.6. There is common language regarding what constitutes student's success. For example, regardless of content area, all teachers have a common understanding of the definition of skill mastery and can apply it to their content area.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

Given the following definition of SEL: (SEL) Is the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decision's" (CASEL, 2017, Yang, Bear, & May, 2018a, p. 58). To what degree do you with agree with the following statements:

SEL.R1. SEL is embedded in the overall school culture.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

SEL.R2.1 Every student has a strong and positive relationship with at least one adult within the school.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

SEL.R2.2 SEL skills are taught with the same intentionality as academic skills across the curriculum.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

SEL.R2.3 SEL skills are taught in a manner that supports student's academically across the curriculum (i.e., study skills, organizational skills, self-advocacy skills).

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

SEL.R2.4 SEL skills are taught in a manner that supports student's social-emotional development across the curriculum (i.e., manage emotions, set, and achieve goals, make responsible decisions, and maintain positive relationships).

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

SEL.R2.5. Tier 2 behavior interventions are flexible in the sense that students can move in and out of Tier 2 interventions based on progress monitoring of student mastery of regulating their off-task or disruptive behavior.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

SEL.R2.6. School staff members utilize a formal system to monitor Tier 2 behavior interventions and can move students to Tier 3 behavior interventions as necessary.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

SEL.R3. As the principal I have taken or intend to take the following actions to address barriers in the school culture to embed SEL as part of the overall school culture.

SEL.R3.1 The school schedule is structured in such a way that there are opportunities for students and adults to create strong and positive relationships in where the adult is able to focus on the relationship, which is free of academic content (i.e., homeroom or advisory period).

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

SEL.R3.2. Resources (time, administrative instructional support, clear expectations, accountability) are provided for the interpretation of student behavior data.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

SEL.R3.3. As the principal, I have built a culture in my school where teachers believe in their own instructional abilities to effectively teach SEL within their content area.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

SEL.R3.4. Faculty members see their peers as competent in the teaching of SEL and can work together to teach SEL skills to students across all curricular areas.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

SEL.R3.5. There is consensus within the school culture and a clear definition on what constitutes SEL.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

SEL.R3.6. Professional learning is embedded in the school culture that focuses on effective SEL Tier 1 instruction.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

SEL.R3.7. There is common language regarding what constitutes SEL. For example, regardless of content area, all teachers have a common understanding of the definition of SEL skill mastery both academically and social-emotionally.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

Given the following definition of PBIS: School-Wide Positive Behavior Support or SW-PBS (PBIS) is the systematic and formal consideration of (a) measurable academic and social behavior outcomes, (b) information or data to guide decision making and selection of effective behavioral interventions, (c) evidence-based interventions that support student academic and social behavior success, and (d) systems supports designed to increase the accuracy and durability of practice implementation (Sailor et al., 2008, p. 309) To what degree do you with agree with the following statements:

PBIS.R1. PBIS is embedded in the overall school culture.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

PBIS.R2.1. There are three to five behavioral outcomes that are clearly defined and expected of all students within the school culture.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

PBIS.R2.2. Procedures are in place to monitor where behavioral issues occur, how often, and at what times of the day.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

PBIS.R2.3. Teachers consistently enforce the agreed upon procedures throughout the school. For example, all teachers and students have a common definition of what it means to be tardy to class and follow the same accountability procedures.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

PBIS.R2.4. Systems are in place to reinforce the desired behavior from students in a proactive manner.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

PBIS.R2.5. Reinforcements for students are utilized by all staff and given to students on a consistent basis over time.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

PBIS.R3. As the principal I have taken or intend to take the following actions to address barriers in the school culture to embed PBIS as part of the overall school culture.

PBIS.R3.1. Resources (time, administrative instructional support, clear expectations, accountability) are provided for the interpretation of student behavioral data.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

PBIS.R3.2. Faculty members see each other as competent and can work together to reinforce desired student behavior.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

PBIS.R3.3. As the principal, I have built a culture in my school where teachers believe in their own abilities to proactively reinforce positive behavior expectations and hold students accountable and believe their colleagues and administration are also consistent and effective with behavior management.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

PBIS.R3.4. There is consensus within the school culture and a clear definition on what constitutes student success regarding student behavior.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

PBIS.R3.5. Professional learning is embedded in the school culture that focuses on effective PBIS implementation.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

PBIS.R3.6. There is common language regarding what constitutes student's success. For example, regardless of content area, all teachers have a common understanding of the definition of what "on-time" means in all classes regardless of teacher.

1	2	3	4	5
Strongly disagree	Disagree	Not sure (Neither agree nor disagree)	Agree	Strongly agree

APPENDIX C

IRB APPROVAL

VIRGINIA TECH.

Division of Scholarly Integrity and Research Compliance
Institutional Review Board
North End Center, Suite 4120 (MC 0497)
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Blacksburg, Virginia 24061
540/231-3732
irb@vt.edu
http://www.research.vt.edu/sirc/hrpp

MEMORANDUM

DATE:	August 9, 2021
TO:	Ted S Price, Martin Edward Grimm, Carol S Cash
FROM:	Virginia Tech Institutional Review Board (FWA00000572)
PROTOCOL TITLE:	High School Principal’s perceptions on the readiness of school culture for implementation of the Multi-Tiered Systems of Support Framework
IRB NUMBER:	**21-652**

Effective August 9, 2021, the Virginia Tech Human Research Protection Program (HRPP) determined that this protocol meets the criteria for exemption from IRB review under 45 CFR 46.104(d) category (ies) 2(i),2(ii).

Ongoing IRB review and approval by this organization is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities impact the exempt determination, please submit an amendment to the HRPP for a determination.

This exempt determination does not apply to any collaborating institution(s). The Virginia Tech HRPP and IRB cannot provide an exemption that overrides the jurisdiction of a local IRB or other institutional mechanism for determining exemptions.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

https://secure.research.vt.edu/external/irb/responsibilities.htm

(Please review responsibilities before beginning your research.)

PROTOCOL INFORMATION:

Determined As:	**Exempt, under 45 CFR 46.104(d) category(ies) 2(i),2(ii)**
Protocol Determination Date:	**August 9, 2021**

ASSOCIATED FUNDING:

The table on the following page indicates whether grant proposals are related to this protocol, and which of the listed proposals, if any, have been compared to this protocol, if required.

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