A Multi-Tiered System of Support for Teacher Professional Development in Social-Emotional Learning in Nova Scotia

By

Sarah Lewis

Submitted in partial fulfilment of the requirements
for the degree of Master of Arts in School Psychology
at

Mount Saint Vincent University,
Halifax, Nova Scotia

DEDICATION

This effort is dedicated to all those who know they have more to give, and who are brave enough to leave their comfort zone to make their community just a little bit better.

TABLE OF CONTENTS

ABSTRACT

This thesis will propose a Multi-Tiered System of Support (MTSS) for sustainable and embedded teacher professional development in social-emotional learning in the province of Nova Scotia. Since teachers in Nova Scotia are now responsible for supporting the well-being of their students after the implementation of the Inclusive Education Policy in Nova Scotia in 2020, there exists a gap in available teacher professional development for social-emotional learning. This thesis will provide an overview of MTSS models, including critical components like being data-driven and using evidence-based practices. After explaining the importance of evidence-based practices, it will provide an overview of the literature on effective professional development and social-emotional learning. The proposed model will consider the resources and structures already in place in Nova Scotia, including the specialization of school psychologists.

ABBREVIATIONS

Multi-Tiered System of Support (MTSS)

Organisation for Economic Co-Operation and Development (OECD)

Positive Behavior Interventions and Supports (PBIS)

Programme for International Student Assessment (PISA)

Response to Intervention (RTI)

ACKNOWLEDGEMENTS

Dr. Krista Ritchie, thank you for your guidance and encouragement as my thesis supervisor. There were many moments when you calmed my fears and frustrations. I appreciate your willingness to let the direction of our work evolve as many times as was necessary, all while keeping with my vision.

Dr. Melissa McGonnell, thank you for your involvement as my second reader. I always felt confident that I was creating something of quality thanks to your insights and high expectations.

Mom and Dad, thank you for your never-ending support and encouragement as I picked away at this seemingly never-ending project. The final product has your love all through it.

Yves, you taught me consistency is the game changer. Even if the timeline of this wasn't what we expected, you've always pushed me to keep going and for that, I am thankful.

Finally, Carolyn, you turned out to be such an unexpected gift. Thank you for becoming my unofficial Nova Scotian grandma. You are my inspiration for living an active, social, and full life.

CHAPTER 1: LITERATURE REVIEW

Nova Scotia's (2020) Inclusive Education Policy states that teachers are responsible for supporting the well-being of students. To help do this, a Multi-Tiered System of Support (MTSS) model has been adopted. In an MTSS model, focus is on both student well-being and academic achievement (Government of Nova Scotia, 2019). Regional Centres for Education (the term used in Nova Scotia for school districts) have implemented this model, in part, through use of instructional coaches (e.g., mentors) to support teachers in traditional academic subjects. This thesis proposes that instructional coaches should also be introduced to support teachers in implementing social-emotional learning practices to support student well-being.

First, an overview of MTSS models will be provided, highlighting important elements like the use of evidence-based practices. Next, evidence-based professional development will be discussed, followed by an explanation of the importance of teaching social-emotional learning in schools. This review of MTSS models, evidence-based practices, teacher professional development, and social-emotional learning will lead to a proposed MTSS model for teacher professional development in social-emotional learning for the Nova Scotia context.

Multi-Tiered Systems of Support

MTSS is a model that organizes interventions and service delivery in schools (Kearney & Graczyk, 2020). It is typically divided into three tiers, with interventions increasing in intensity and individualization depending on the needs of students and their response to previous academic instruction or social-emotional or behavioral intervention (August et al., 2018). To begin, all students receive universal instruction or intervention in Tier 1 (August et al., 2018; State et al., 2019). When properly following an MTSS model (i.e., using evidence-based practices and making data-based decisions), it can be expected that approximately 80% of

students will meet success criteria after universal instruction (Loftus-Rattan et al., 2021). If students struggle after universal instruction, they move to Tier 2, where practices are typically focused on their specific needs and are often delivered in small groups (August et al., 2018; State et al., 2019). Schools could expect about 20% of their students to require Tier 2 instruction (Loftus-Rattan et al., 2021). Of those 20% who move to Tier 2 instruction, it would be expected that approximately 5% would continue to not respond to interventions, in which case they would receive individualized and more intensive intervention at Tier 3 (August et al., 2018; Loftus-Rattan et al., 2021; State et al., 2019). It is important to note that students can transition between the tiers as needed, and based on their progress (August et al., 2018). By implementing an MTSS model, the goal would be that all students' instructional needs will be met as their needs change.

In education, the term MTSS is sometimes used interchangeably with Response-to-Intervention (RTI) and Positive Behavioral Interventions and Supports (PBIS). Although similar, they are all different, and this distinction is important for understanding an MTSS model. The aim of RTI is to prevent and remediate academic difficulties (Fletcher & Vaughn, 2009), while PBIS targets behavioral concerns with the goal of creating positive and predictable school environments (McIntosh et al., 2014; Sugai & Horner, 2009). MTSS is an overarching model that combines the two, targeting both academic and behavioral/social-emotional skills (Freeman et al., 2017; Gamm et al., 2012).

While an MTSS model is responsive to current needs, it is also designed to be preventative rather than reactive, offering early intervention for students struggling with academic or social-emotional needs in addition to bolstering the social-emotional skills of all students (August et al., 2018; Kearney & Graczyk, 2020; Loftus-Rattan et al., 2021). As such, an effective MTSS model requires data-based decision-making as well as the use of evidence-based

practices (Eagle et al., 2015; Freeman et al., 2017; Loftus-Rattan et al., 2021; State et al., 2019; Sugai & Horner, 2009). Continuous progress monitoring (i.e., the collection and analysis of data) will help to ensure that the evidence-based practices being implemented (another characteristic of an MTSS model), are effective (Eagle et al., 2015; Freeman et al., 2017; Noell et al., 2005; State et al., 2019; Sugai & Horner, 2009). It will also allow decisions to be made about when students would benefit from a transition from one tier to another (August et al., 2018; Eagle et al., 2015; Freeman et al., 2017).

Evidence-Based Practices

References to evidence-based practices have become increasingly common in the field of education, partially due to the No Child Left Behind Act of 2001 in the United States, which uses the terms evidence-based practice and scientific research over 100 times (Berliner, 2002; Greenberg et al., 2003; Yoon et al., 2007). In Nova Scotia, the Inclusive Education Policy explicitly states that evidence-based practices must be used in schools (Government of Nova Scotia, 2020). Practices include the skills, techniques, and strategies used by classroom teachers (Fixsen et al., 2005). To be considered evidence-based, a practice is generally backed by at least one randomized control trial, has at least two studies with a specific client population, has been replicated, and has found statistically significant differences between groups (Berliner, 2002; Cook et al., 2008; Forman et al., 2013). The higher the number of high-quality studies, the more evidence there is, and the more confident educators can be that practices will have predictable and positive influences for students (Cook et al., 2008; Forman et al., 2009).

While an MTSS model requires the use of evidence-based practices, these are only effective if they are implemented properly (Durlak, 2016; Eagle et al., 2015; Forman et al., 2013; Freeman et al., 2017; Kratochwill & Shernoff, 2004). Implementation refers to the way a

program is put into practice, and how closely its application is compared to what was intended, and tested, by the developers and researchers (Durlak, 2016; Low et al., 2019). Implementation fidelity can be influenced by changes made to the practice, the amount administered, and how much the participants were actively involved (Durlak, 2016). Importantly, Durlak et al. (2011) found that problems in implementation had a negative influence on student outcomes.

Since implementation is the critical link between research and practice (Cook & Odom, 2013), it is essential that teachers be educated on the importance of both choosing evidence-based practices and implementing them properly (Brock & Carter, 2017). Teachers who participated in interviews for Vanderburg and Stephens (2010) reported that they believed they were better teachers when they were able to explain the evidence behind the practice they learned, and with that knowledge, they believed they could better share their teaching practices with parents, administrators, and colleagues. The findings suggested that contrary to the perception that sometimes exists that teachers only want to know what to do the next day, teachers did in fact want to understand the research and theory behind effective instructional practices (Vanderburg & Stephens, 2010). Similarly, Denton et al. (2003) found that successful professional development programs were ones that recognized the professionalism of teachers and shared the connection between the research and their everyday teaching situations. Knowing this interest teachers have in learning the research behind a practice, teachers should be afforded the opportunity to learn about evidence-based practices and how to implement them properly. Despite this, there are several barriers to the use of evidence-based practices in schools.

Barriers to Evidence-Based Practices in Schools

Evidence-based practices may be the stated standard for the implementation of the MTSS model in Nova Scotia schools (Government of Nova Scotia, 2019), but there are several barriers

to the use of evidence-based practices in educational settings. Since evidence-based practices in schools are frequently implemented by the classroom teacher, it is important that these barriers be addressed.

Complexity of Student Needs

Even teachers who are willing to implement new practices will regularly face complications out of their control, including the need to effectively support a wide range of student needs (Buczynski & Hansen, 2010; Timperley & Alton-Lee, 2008). With inclusion policies, students with very different needs learn together in the same classroom and each student might require different levels of support from trained specialists (Lane et al., 2011). This diversity of needs can be overwhelming and often leaves little time to try new things, even if teachers perceive new practices to have benefits (Boardman et al., 2005). With the realities of the COVID-19 pandemic, many deficits in academic development, and presumably social-emotional skills, will have been exacerbated (Loftus-Rattan et al., 2021). This will most likely lead to even more diverse student needs. As a result, the use of evidence-based instructional practices is even more important. Positively, the quality of teachers' instruction, rather than professional backgrounds (i.e., education levels, years of experience), has been found to be the best predictor of student outcomes (Goodnight et al., 2020; Shidler, 2009; State et al., 2019). The use of evidence-based practices can, therefore, ensure that any teacher can positively influence their students' outcomes and teachers can be confident they are being most effective in addressing those diverse student needs (Cook et al., 2008; Timperley & Alton-Lee, 2008).

Variability in Classrooms

Classrooms present unique challenges for implementation in schools, as there is a lot of variability between teacher style, teacher experience, student needs, involvement of school

leadership, and classroom composition (Berliner, 2020; Timperley & Alton-Lee, 2008). Each classroom may be different from most research conditions (e.g., university laboratories, using mental health clinic clients to form a sample, or classrooms used as samples). This can make translating research findings to the realities of an individual classroom a challenge (Cook et al., 2003; Cook & Odom, 2013; Forman et al., 2013; Kratochwill & Shernoff, 2004).

Staff Turnover and Administrator Support

Staff turnover, including a change in administrators, may influence the effective implementation of evidence-based practices if there is less focus on the use of evidence-based practices from one year to the next (Durlak, 2016; Denton et al., 2003). In consultations with practice developers, Forman et al. (2009) found that staff turnover was the most frequently cited obstacle to the sustainability of a practice. They also found that 79% of practice developers mentioned administrator support as an important facilitator of practice implementation (Forman et al., 2009). Showing they care about the practice, being present for training, and discussing implementation during staff meetings were noted as key supports from administrators (Forman et al., 2009; Little & Housand, 2011).

Competing Needs

There are often multiple, and sometimes competing, needs in schools (Reinke et al., 2011). Therefore, administrators must make difficult choices about priorities as they balance demands, including incorporating new evidence-based practices and related professional development, while working within budget constraints (Greenberg et al., 2003; State et al., 2019). A lack of money was frequently cited by developers as an obstacle to the implementation of evidence-based practices in schools (Forman et al., 2009). These competing needs can have repercussions for the efficient use of resources, including teachers' time (Fallon et al., 2015).

Teachers continue to have to manage mandated curricula, classroom management issues, diverse student needs, and sometimes resistance to change from administrators, parents, or students (Darling-Hammond et al., 2017; Reinke et al., 2014). With the many demands on a teacher's time, teachers rarely have opportunities to view each other's classrooms during class time, learn from mentors, or work collaboratively with colleagues (Darling-Hammond et al., 2009). Additionally, teachers are often frustrated when there appears to be frequent changes in mandated instructional practices (Boardman et al., 2005). They sometimes feel they are asked to move back and forth between competing practices based on school district recommendations (Boardman et al., 2005).

Inadequate Training in the Critical Consumption of Research

Teachers are not always trained to identify the evidence supporting a practice during their pre-service training (State et al., 2019). Such training is important because as research evolves, so too may the list of evidence-based practices (Cook et al., 2008). Teachers need to be critical consumers of research to be able to determine whether a particular practice is appropriate for their situation and is worth trying (Boardman et al., 2005; Kratochwill & Shernoff, 2004)). Researchers note that identifying evidence-based practices is not always straightforward, particularly with so many sources (e.g., websites, textbooks, in-service providers, colleagues) claiming to know of best practices (Cook et al., 2008; Cook & Odom, 2013). Even if teachers learn to recognize helpful evidence-based practices, there is little information available about how to adapt them to a specific classroom (Cook et al., 2003; Forman et al., 2013).

Inaccessibility of Research Findings

As the implementers of programs and interventions, teachers require access to the information necessary to identify appropriate evidence-based practices for their needs (Reinke et

al., 2011). Shonkoff and Bales (2011) suggest that there is a disconnect between the information scientists have and the way it is translated to the public. Research findings are generally shared through traditional methods including journal articles and presentations at specialized conferences (Cook et al., 2013). Since most teacher professional development in Nova Scotia is organized through regional centres for education and provided on pre-determined days, teachers rarely attend specialized conferences. If research findings are not clearly written, are difficult to interpret, or time-consuming to find, educators (e.g., teachers, administrators, and policymakers) are not likely to put in the effort to decipher them (Carnine, 1997). Carnine (1997) distinguishes between *accessibility* and *useability*. Accessibility refers to whether research findings are available to practitioners, while useability refers to whether evidence-based practices fit the needs of those intending to use them (Carnine, 1997). To effectively transmit research findings to non-scientists (e.g., teachers), the information must not only be concise and context-specific but must also resonate with educators (Cook at al., 2013).

Inadequate Training in Evidence-Based Practices

Once convinced to try an evidence-based practice, teachers need training in the proper implementation of that specific practice. Without adequate training in an evidence-based practice, teachers may not understand the importance of implementing a practice in its entirety, as designed, and as intended (Buchanan et al., 2009; Forman et al., 2012; Kratochwill & Shernoff, 2004). The reality is that teachers may not even be aware that they are not implementing evidence-based practices correctly. Hansen et al. (2014) found that, compared to observers, teachers over-reported the extent to which they properly delivered practices on fidelity measures. Seeing what they think is success or what they or their students like may also influence decisions about future directions for teachers. They may discontinue use of a practice if

they do not believe they are seeing results or if they do not feel they have access to implementation support (Kretlow & Bartholomew, 2010). In focus groups, most teachers reported having chosen pieces from different workshops and combining methods that they felt met the specific needs of their students rather than implementing a new practice in its entirety (Boardman et al., 2005). If this happens and a practice is not implemented as intended, it may not have the same effects as were shown during the research studies and could result in it being ineffective (Cook & Odom, 2013; Durlak, 2016; Forman et al., 2009; Lane et al., 2011).

Ineffective Professional Development

To provide adequate training, training over multiple days, combined with ongoing assistance and consultation after training, is necessary for appropriate implementation (Collaborative for Academic, Social, and Emotional Learning [CASEL], 2013; Forman et al., 2009; Forman et al., 2013). Specifically, teachers should have repeated practice in authentic contexts so that they can apply their training to their classroom-specific situations (Cook et al., 2003). Traditionally, teachers have been introduced to evidence-based practices through one-day in-services with little to no follow up (Goodnight et al., 2020). Without chances to practice their new skills or receive feedback (Wood et al., 2016), teachers may struggle to implement evidence-based practices as intended given the challenges they face in the context of a real classroom (Durlak, 2016). Additionally, the implementation of practices that are new to them may be difficult for teachers if it means they need to adapt their current routines and instructional approaches (Cook et al., 2008). Without support that is frequent and accessible, teachers may revert to previous practices they think have been successful (Cook et al., 2003). Adding to this is the fact that inadequate pre-service training in evidence-based practices is continuing to contribute to the large gap between what research has found, and the implementation of effective

practices in schools by teachers (State et al., 2019). Teachers need support in the form of professional development to effectively utilize evidence-based practices as they are more likely to adopt and sustain evidence-based practices when there is ongoing support and professional development (Cook et al., 2008).

Teacher Professional Development

Professional development includes both formal and informal learning activities (Imants & van Veen, 2010). Professional development is a process where teachers' knowledge is altered, their practice changed, and student learning influenced (Desimone, 2011; Kennedy, 2016; Yoon et al., 2007). Most importantly, it is a structured experience that aims to change teacher practice, with the goal of improving student outcomes (Darling-Hammond et al., 2017; Kraft et al., 2018; Kretlow & Bartholomew, 2010). Learning activities may be external to the school setting, or they may be job-embedded within the classroom (Darling-Hammond et al., 2017; Kretlow & Bartholomew, 2010). Benefits of professional development include increased content knowledge among teachers, an increased willingness to innovate, improved confidence, and increased skills in terms of day-to-day practice (Cordingley, 2015). To know if professional development is effective at changing teacher practice, traditional methods of teacher professional development must be considered and compared to what the evidence suggests makes professional development effective.

Traditional Teacher Professional Development

Traditionally in public schools, most teacher professional development has been of short duration and provided through one-day in-services or workshops (Bethune & Wood, 2013; Freeman et al., 2017; Garet et al., 2001; Kretlow & Bartholomew, 2010; Patton et al., 2015; Richardson, 2003; Shidler, 2009). Garet et al. (2001) define workshops as a structured event that

takes place outside of a teacher's classroom, involving a specialist who leads the attendees at scheduled times. Examples include courses, conferences, and institutes (Garet et al., 2001). These sessions are often criticized, as they often focus only on knowledge acquisition, are disconnected from other learning activities and initiatives, and have very little follow-up or support (Freeman et al., 2017; Garet et al., 2001; Kretlow & Bartholomew, 2010). They are often removed from the school context and are not aligned with what is already happening in the classroom (Patton et al., 2015; Richardson, 2003). This is problematic because the session typically happens outside of the teacher's classroom but is meant to change the teacher's behaviors inside the classroom (Kennedy, 2016). While easy to plan and requiring minimal time commitment (Darling-Hammond et al., 2017), research has shown that very little change in practice is evident after these types of learning activities (Darling-Hammond et al., 2009). Change is even less likely since teachers often have no support when it comes to implementation after the conference (West, 2019). Also worth noting is that just because teachers attend a mandatory session does not mean that they can be forced to learn anything, suggesting that any immediate changes may simply be temporary compliance (Kennedy, 2016). When professional development is viewed by teachers as too top-down and isolated from the school and classroom realities, it is usually unsuccessful (Buczynski & Hansen, 2010). As a result, stand-alone workshops are less likely to lead to meaningful and lasting changes in teacher practices (Gaikhorst et al., 2019; Rodgers et al., 2019).

Results of a study of kindergarten teachers indicated that in-services alone are not sufficient for helping all teachers implement new practices in their classrooms (Goodnight et al., 2020). Simply being a formal event does not mean that a structured seminar will necessarily be any more effective at changing teaching practice than an informal hallway discussion with a

colleague (Desimone, 2011). However, a structured seminar may still hold value in some contexts, including sharing initial information and steps in a teaching practice (Kretlow et al., 2012). What is important is that after receiving their initial training, teachers may need additional intensive learning, including the chance for feedback and coaching, to correctly implement practices (Goodnight et al., 2020). Learning is complex; therefore, it is important to focus on the specific features of a professional development activity that lead to effective teacher learning (Desimone, 2011).

Effective Teacher Professional Development

The way teacher learning is facilitated needs to be evidence-based just as it is expected that the practices teachers will implement for their students are evidence-based (Fallon et al. 2015). The problem is not necessarily the professional development material itself but, instead, the way it is typically delivered (Timperley & Alton-Lee, 2008). Since teacher learning can be thought of as a complex system rather than a single event, (Opfer & Pedder, 2011) it should be assumed that there are multiple dynamics (e.g., local knowledge, problems, routines, beliefs, aspirations), interacting to affect the learning outcomes (Opfer & Pedder, 2011). It cannot be discounted that teachers bring both past experiences and personal beliefs to teaching and learning (Opfer & Pedder, 2011). When surveyed about professional development, teachers reported that they found that the qualities of the activity were more important than the type of activity (Garet et al., 2001). Consensus among researchers suggests that effective professional development involves learning activities that are content-focused, allow for active learning, encourage collaboration, are coherent with standards and outcomes, and are ongoing or extended in duration (Darling-Hammond et al., 2017; Desimone, 2009; Desimone et al., 2002; Kraft et al., 2018; State et al., 2019).

Learning activities should be content-focused (Darling-Hammond et al., 2017; Desimone, 2009; Desimone et al., 2002; Kraft et al., 2018; State et al., 2019) because it is more effective to learn concrete instructional methods than it is abstract educational principles (Darling-Hammond, 2009). As a result, professional development activities should prioritize both teachers' knowledge of content (i.e., subject matter) and how students learn that content (Blank, 2013; Desimone et al., 2002; Desimone, 2011; Desimone & Pak, 2017).

Activities should allow for active learning rather than having teachers be passive recipients of information at workshops (Darling-Hammond et al., 2017; Desimone, 2009; Desimone et al., 2002; Desimone & Pak, 2017; Kraft et al., 2018; State et al., 2019). Professional development activities are more successful when teachers can discuss instructional practices and student learning (Desimone et al., 2002; Desimone & Pak, 2017; Kretlow & Bartholomew, 2010). Teachers should have opportunities to observe expert teachers, be observed themselves for feedback, reflect, give presentations, and analyze student work (Darling-Hammond & McLaughlin, 2011; Desimone, 2009; Desimone, 2011; Garet et al., 2001). The more teachers can engage in tasks like these, the more effective their learning activities will be (Darling-Hammond & McLaughlin, 2011; Garet et al., 2001). Teachers are better able to translate an evidence-based practice to their own instruction when learning activities actively involve them and are connected directly to their classrooms and their students (Blank, 2013; Darling-Hammond et al., 2017).

Effective professional development should afford teachers opportunities to collaborate with colleagues (Darling-Hammond et al., 2017; Desimone, 2009; Desimone et al., 2002; Kraft et al., 2018; State et al., 2019). Historically, teachers tend to work alone, have little time to plan lessons with colleagues, share instructional practices, or assess student learning collaboratively (Darling-Hammond, 2009). Research, however, has found that when teachers from the same

school, department, or grade level, collectively participate in learning activities and share their knowledge, professional development more effectively influences teaching practices (Darling-Hammond & McLaughlin, 2011; Desimone, 2009; Desimone et al., 2002; Gaikhorst et al., 2019; Opfer & Pedder, 2011). If given time for collaboration, teachers can discuss student needs across classes or grade levels, integrate what they have learned into their shared instructional context, and discuss the concepts and skills they have learned (Garet et al., 2001). When learning together, teachers create an interactive learning community and a shared responsibility where they feel they are collectively responsible for the learning process (Desimone, 2011; Gaikhorst et al., 2019). This allows teachers to transform their teaching rather than simply adding a new layer of knowledge, or a new practice, to what they already do (Darling-Hammond et al., 2017). Opfer and Pedder (2011) do note, however, that the Goldilocks Principle is in effect; too much collaboration is stifling, too little collaboration and teachers feel isolated. With just the right amount of collaboration, teachers are stimulated and feel supported by colleagues so they can learn (Opfer & Pedder, 2011).

Learning opportunities should be coherent, meaning they are consistent with the teacher's context, including the curriculum standards and student educational objectives in their jurisdiction (Darling-Hammond et al., 2017; Desimone, 2009; Desimone et al., 2002; Kraft et al., 2018; State et al., 2019). It is also important that the learning activity relate to the school's context, matching the population, school type, school needs, curriculum, and school improvement goals (Desimone & Pak, 2017; Gaikhorst et al., 2019; State et al., 2019). Having learning take place in teachers' classrooms (i.e., being job embedded), with students present, is a way to accomplish this (Darling-Hammond et al., 2017; Gaikhorst et al., 2019; State et al., 2019). Results of a longitudinal study and a national survey of teachers each suggest that

professional development is more likely to lead to enhanced knowledge and skills when related to other learning activities, so that teachers can build on their previous knowledge (Desimone et al., 2002; Garet et al., 2001). Teachers reported that when their professional development was connected to previous learning experiences, students' needs, and their own goals, they were more likely to change their practice (Darling-Hammond, 2009; Darling-Hammond & McLaughlin, 2011; Desimone, 2011; Desimone et al., 2002; Garet et al., 2001).

Finally, learning should be extended throughout the school year (Darling-Hammond et al., 2017; Desimone, 2009; Desimone et al., 2002; Kraft et al., 2018; State et al., 2019). When it comes to a new practice, learning should be continued over an extended period (i.e., the school year) to be properly incorporated into practice (Gaikhorst et al., 2019). This longer duration will allow teachers to try out new practices in their own classrooms, discuss the results with others, and receive feedback (Garet et al., 2001). To be efficient, this time needs to be well organized and purposeful (Guskey, 2003). Specifically, activities that were sustained over time and that involved a substantial number of contact hours with a coach have been found to have been the most successful (Gaikhorst et al., 2019; Garet et al., 2001).

Coaching

In place of traditional in-service methods, there is now a move toward professional development activities that involve networking, peer review, study groups, mentoring, and coaching (Darling-Hammond & McLaughlin, 2011; Garet et al., 2001). Teachers learn more effectively when learning activities are individualized and specific to their instructional needs (Goodnight et al., 2020). Coaching, then, can bridge the gap between the knowledge gained at isolated professional development events and the application of new skills in a classroom (Freeman et al., 2017). A coach is often thought of as someone with specialized knowledge and

experience who works with a classroom teacher to provide better services to students (Denton & Hasbrouck, 2009). Coaching generally involves the coach observing the teacher and then providing structured, constructive feedback to improve future teaching (Brock & Carter, 2017; Kraft et al., 2018; Kretlow et al., 2012; Rogers et al., 2019). Learning under the guidance of a coach is appreciated by teachers (Goodnight et al., 2020). In one study all 35 teacher participants reported taking a risk and trying a new strategy in their classroom because they felt comfortable doing so thanks to their coach (Vanderburg & Stephens, 2010).

Like their students, teachers learn by doing, sharing, and reflecting (Darling-Hammond & McLaughlin, 2011). According to current literature, professional development activities are most successful when teachers have opportunities to practice, get feedback, and discuss questions that come up as they implement new practices (Desimone & Pak, 2017; Kretlow & Bartholomew, 2010; Little & Housand, 2011; Rodgers et al., 2019). The benefit of coaches is that they can lead teachers through the learning process at their own pace and in their own classrooms, guiding and supporting as needed, and for a sustained period like a full school year (Denton & Hasbrouck, 2009; Shidler, 2009). This way, reflection is promoted, goals evolve as teachers learn, and professional development is moved from abstract concepts to concrete practices adapted for everyday challenges (Kretlow & Bartholomew, 2010; Reinke et al., 2014; Rodgers et al., 2019).

While each coaching relationship can be different, some key elements of coaching have been identified. Like effective professional development, effective coaching is typically individualized, time-intensive, sustained throughout the school year, context-specific, and focused on specific skills (Denton & Hasbrouck, 2009; Desimone & Pak, 2017; Kraft et al., 2018). When describing effective professional development, Patton et al. (2015) explained that regardless of who facilitates the activity, it is necessary that they guide, question, and listen,

rather than direct, show, and tell. Coaching fits this description well, allowing for individualization in the process. Coaching should also be time-intensive (Denton & Hasbrouck, 2009; Desimone & Pak, 2017; Kraft et al., 2018). In their study on coaching, Reinke et al. (2014) concluded that teacher implementation of new skills varied over time, evidence that coaching should be ongoing so that coaches can support the maintenance of skills until a high level of accuracy in implementation is achieved.

Some teachers will require more time than others to practice skills, which is why flexibility in duration and intensity is important (Bethune, 2017). To see significant effects on outcomes of student achievement, a minimum of 14 hours of professional development on one specific topic is recommended (Yoon et al., 2007). Other researchers have suggested anywhere from 20 to 100 contact hours with a coach are needed for lasting change (Blank, 2013; Desimone, 2011). Coaching could then be faded once the teacher acquires the targeted skills and is able to generalize those skills to other settings (Garbacz et al., 2015). In their study of kindergarten teachers, Goodnight et al. (2020) noted that coaches used a benchmark to determine which teachers needed more coaching, and when. Garbacz et al. (2015) suggest 80% of a pre-determined criterion, such as implementation accuracy, as appropriate for a benchmark, and that once accurate implementation is observed in three consecutive sessions, coaching could be faded. This criterion should be a collaboration between the coach and the teacher, as they can determine the criteria based on the teacher's current skills and classroom needs. It is important to note, however, that teachers in the Goodnight et al., (2020) study who met the benchmark and were deemed to not need coaching, thought that they would have found it helpful to receive feedback and check-ins about their correct use of strategies. It makes sense that while

benchmarks could help determine priorities for coaching, the option for coaching should be offered to anyone who wants it.

When working with a coach, it is important to keep the coaching content-specific (e.g., strategies to support students' social-emotional learning) and ensure that feedback is being provided. Both content-specific coaching and feedback are associated with improvements in teachers' instructional practices (Desimone & Pak, 2017; Scheeler et al., 2004; State et al., 2019) because they allow both teacher and coach to reflect on the specific content matter and practices to be implemented (Desimone & Pak, 2017; State et al., 2019). This is important because active engagement by teachers, repeated practice opportunities, follow up observations, and explicit feedback are critical features of effective coaching (Goodnight et al., 2020). To support lasting change in teacher instructional practices, feedback from coaches should be immediate, specific, positive, and corrective (Rodgers et al., 2019; Scheeler et al., 2004). Teachers who receive more feedback tend to maintain their implementation over time compared to those who receive little feedback (Reinke et al., 2014). It is important to note, however, that coaches also need training in giving feedback (Freeman et al., 2017). In their compilation of studies, Veenman and Denessen (2001) found that trained coaches had better feedback skills than those who were untrained. Also important is that the coach be in a non-evaluative role. Instead, they should aim to help teachers improve the implementation of specific practices (Freeman et al., 2017; Stormont et al., 2015; Vanderburg & Stephens, 2010).

The role of coach is somewhat flexible and can look different for each teacher. In Goodnight et al. (2020), teachers noted that they found demonstrations helpful, rather than just having a written explanation to go by. Therefore, coaches could model evidence-based practices for the teacher before class or during a live lesson, and then work with teachers to help them

apply these newly acquired skills (Freeman et al., 2017; Kraft et al., 2018; Kretlow & Bartholomew, 2010). Coaches could co-teach a lesson with a teacher, where the coach would model the practice and then support the teacher as they practice implementing the practice (Denton & Hasbrouck, 2009; Kretlow et al., 2012). Modeling a practice beforehand should reduce the number of errors a teacher might perform (Brock & Carter, 2017). For this to be effective, coaches must be familiar with the specific classroom context and these coaching interactions should be focused on specific goals, which differentiates coaching from two classroom teachers choosing to broadly co-teach (Cook et al., 2003; Shidler, 2009).

Another benefit to individual coaching is that coaches can be responsive to the unique needs of the individual teacher, the unique group of students, or the school (Darling-Hammond et al., 2017; Patton et al., 2015). Coaches can also consider the prior experiences and existing skills of the teacher to individualize their learning outcomes (Desimone & Pak, 2017; Garbacz et al., 2015). As frustrations with new practices arise or implementation becomes difficult for teachers, coaches can help navigate logistical barriers, ensuring evidence-based practices continue to be implemented rather than abandoned (Garbacz et al., 2015). Cordingley (2015) found that teachers, or schools on behalf of teachers, already seek the expertise of specialists to help scaffold learning as they implement new approaches. In this sense, coaching is a natural next step after consulting specialists and, additionally, it provides accountability in the accurate implementation of evidence-based practices (Russo, 2004).

Combinations of in-service training and side-by-side coaching have also been shown to be effective (Goodnight et al., 2020). Teachers have reported that a primary in-service was helpful in providing initial information but noted that it was the coaching that helped increase their confidence and allowed them to ask questions specific to their instructional practices and

their students (Kretlow et al., 2012). All nine teachers included in the Goodnight et al. (2020) study said they intended to continue using the evidence-based practices they had learned. In their review, Stormont et al. (2015) found that 86% of studies had positive findings in terms of coaching effectiveness, while the remaining 14% simply had neutral findings. Multiple studies (e.g., Bethune & Wood, 2013; Darling-Hammond, 2009; Goodnight et al., 2020; Kleickmann et al., 2016; Kretlow & Bartholomew, 2010), have found coaching to be effective in increasing teacher performance (i.e., accurate implementation) of desired evidence-based practices. Additionally, those receiving coaching are more likely to implement desired practices than those who received more traditional (e.g., one-time workshops) professional development (Darling-Hammond et al., 2017). Finally, students of teachers who received coaching demonstrated significantly better achievement than those students of teachers who had not been coached (Bethune & Wood, 2013; Kleickmann et al., 2016).

Coaching is particularly appealing because it can take place during the regular school day, directly in classrooms (Darling-Hammond et al., 2017; Garet et al., 2001). This is ideal since the main goal of coaching is to help teachers implement evidence-based practices in contextually appropriate ways in their own classrooms (Garbacz et al., 2015; Stormont et al., 2015). Regardless of whether the coach is supporting the teacher for interventions aimed at the whole class or a specific student, being present in the classroom setting and available for the teacher in multiple situations is key (Garbacz et al., 2015). For example, coaches can also support teachers outside of the classroom space as well, including in unstructured situations in the hallway (Vanderburg & Stephens, 2010). In any scenario, it is important that the coach be familiar with the specific classroom they are supporting.

Freeman et al. (2017) suggest that coaches should be current school personnel so that internal capacity is built. Additionally, a strong connection between the classroom, the school, and the school district can be fostered. Effective coaches have prior coaching experience and are familiar with school-based interventions (Garbacz et al., 2015). They have good interpersonal skills, can collaborate, and are also culturally sensitive (Garbacz et al., 2015). Some school districts have begun having teachers fill full-time coaching roles within their district (Macias, 2017). This is the case in Nova Scotia's Regional Centres for Education, where learning support teachers are assigned to support teachers in math and literacy. (Government of Nova Scotia, 2020). Learning support teachers are considered experienced and skilled teachers, whose role it is to provide direct, collaborative support to both classroom teachers and students (Government of Nova Scotia, 2020). Currently, no role of learning support teacher exists for social-emotional learning (Government of Nova Scotia, 2020).

Social-Emotional Learning

Utilizing coaches to support the professional development of teachers is already a practice in Nova Scotia Regional Centres for Education (Government of Nova Scotia, 2020), but what is currently missing is a coaching role to support teachers in teaching social-emotional learning. It is now understood that academic and social-emotional skills are not distinct domains, but instead are very much interrelated (Balfanz, 2019; Oberle et al., 2016). For example, Elias (2019) explains that when students go to school, they put many things in their lockers in the morning. What does not go in are contextual worries, like what happened on the way to school, what might be waiting for them after school, their impression of their academic abilities, and concerns about peer relationships. These worries do not stop at the front door or the locker; instead, they follow students into the classroom and can influence learning. The reality is that all

learning, including academic learning, is typically a social endeavour for children and adolescents, where they collaborate with teachers, peers, and their families (Durlak et al., 2011). To learn with and from others, a person needs to be able to recognize social cues and communicate appropriately (Balfanz, 2019).

Multiple definitions of social-emotional learning (e.g., Balfanz, 2019; Domitrovich et al., 2017; Elias, 2019; Greenberg et al., 2003) refer to the process of learning about emotions, social skills, positive relationships, and healthy decision-making. These are considered skills that will support success in school as well as in adulthood. These skills allow for healthy choices and the development of healthy relationships (Abrahams et al., 2019; Domitrovich et al., 2017; Greenberg et al., 2017). There has been a shift in schools away from reactively identifying skill deficits and offering related interventions, toward a preventative approach where social-emotional competencies are universally taught to all students (Abrahams et al., 2019). This shift proactively supports students because social-emotional practices have been associated with increased prosocial skills, less emotional distress, better attitudes about the self and others, and improved academic performance (Buchanan et al., 2009; Durlak et al., 2011; Hunter et al., 2018). Students with stronger social-emotional skills are better integrated in the classroom and therefore, are better able to focus on their academic tasks (Oberle et al., 2016). Additionally, academic success is improved by addressing some of the underlying causes of behavior, since students with social-emotional deficits are sometimes disruptive to the classroom environment (Buchanan et al., 2009).

Social-emotional learning is now commonly taught in schools, both through classroom programming and school-wide strategies like policies and practices for school climate (Oberle et al., 2016). However, this focus on teaching social-emotional learning in schools is occasionally

controversial. It is sometimes argued that schools should focus on academics and leave social-emotional learning to families, religious groups, and social groups (Balfanz, 2019). This is often grounded in the concern that allocating time for social-emotional learning will take away from a teacher's time to teach academics, and as a result, negatively influence a student's academic achievement (Forman et al., 2009; Hunter et al., 2018; Oberle et al., 2016). Countering the argument that teaching social-emotional skills will take away from teaching academics, Hunter et al. (2018) found no significant differences between the post-intervention academic skills of those students in a social-emotional learning instruction condition compared to those in a control group. Students in this study were in grades 1 and 2 which is important to recognize because Hunter et al. (2018) noted that while social and emotional skills are understood to improve right away, academic improvement related to bolstered social-emotional skills is more distal.

Bolstering the fact that social-emotional learning allows for improvements in academic performance, a meta-analysis of social-emotional practices for students from kindergarten to grade 12, concluded that academic performance improved after social-emotional interventions (Durlak et al., 2011). Similar findings were found a few years later in a follow-up meta-analysis by Taylor et al. (2017), when it was found that improved academic results held across all demographic groups at follow-up (i.e., between 56 weeks and 195 weeks, depending on the study). These same two meta-analyses showed that students also had lower levels of emotional distress (i.e., internalized mental health issues including depression, anxiety, and stress), and fewer conduct problems (Durlak et al., 2011; Taylor et al., 2017). Social-emotional learning is an example of how to prevent the mental, emotional, and behavioural disorders that negatively affect well-being and therefore, the economy (O'Connell et al., 2009).

It is important that students have access to emotionally safe conditions within their school that are developmentally appropriate for learning (Elias, 2019). Social-emotional practices can benefit a classroom since they help create a safe and caring environment, improve classroom management, and promote whole-school community-building activities (Durlak et al., 2011). Students develop in the context of their families, schools, and communities (O'Connell et al., 2009). Since social-emotional skills are best fostered in social contexts, schools are prime locations for intervention, and many schools already have some sort of social-emotional learning program or intervention in place (Oberle et al., 2016). In their 2009 study, Buchanan et al. (2009) found that 45% of teachers reported currently implementing some sort of social-emotional program in their classroom. Often, mental health problems arise during a child's school years (Canadian Psychological Association, 2014) and schools also have access to almost all students for a significant amount of time each day (Crean & Johnson, 2013; Domitrovich et al., 2017; Oberle et al., 2016). This makes them prime locations to offer interventions for social-emotional learning (O'Connell et al., 2009). These interventions could be either universal (i.e., for the benefit of all students) or targeted to individual or small groups of students (Domitrovich et al., 2017).

Classroom teachers, specialists, and other school personnel are usually the ones to implement universal interventions for social-emotional learning (Goodnight et al., 2020; Reinke et al., 2011). With the implementation of Nova Scotia's Inclusive Education Policy in 2020, using evidence-based practices to support students' social-emotional well-being is now a responsibility of teachers, in collaboration with other professionals (Government of Nova Scotia, 2020). Half of social-emotional learning practices implemented at the classroom level are delivered by the teacher (e.g., Buchanan et al., 2009; Durlak et al., 2011). When not delivered by

the teacher, social-emotional learning programs are commonly implemented by other school personnel, including the school counsellor, school psychologist, administrator, educational assistant, or school social worker (Buchanan et al., 2009). In studies included in the Durlak et al. (2011) meta-analysis, classroom teachers were effective on six out of six outcomes measured; however, when programming was delivered by non-school personnel, including university researchers or outside consultants, they were only effective on three of six outcomes measured. Based on this evidence, equipping classroom teachers with both the knowledge and skills to effectively implement social-emotional learning practices is important.

A teacher's beliefs about their competence in teaching social-emotional learning can influence their ability to teach those skills (Collie et al., 2012). Learning to teach new social-emotional skills can be stressful for teachers in the short-term, but once their confidence increases, they are likely to experience less stress and greater job satisfaction in the long-term (Collie et al., 2012). Specifically, the more comfortable teachers felt at implementing social-emotional learning practices, the less stress they felt in relation to dealing with student behavior (Collie et al., 2012). Teachers surveyed in Collie et al., (2012) also reported that as their comfort in implementing social-emotional learning practices increased, so did their perception of the quality of their teaching and their enjoyment of teaching. As such, it is important for school administrators and policy makers to support teachers in their professional development in this area (Collie et al., 2012).

The Potential Role of School Psychologists

The role of social-emotional learning coach fits well within an MTSS model to meet the professional development needs of teachers. What remains to be determined is who would fill the role of coach. One option is that expert teachers could be identified and developed into

mentors and coaches with a particular expertise (Darling-Hammond et al., 2017) in social-emotional learning. The creation of such a role is feasible since the role of mentor and coach already exists in Nova Scotia Regional Centres for Education (Government of Nova Scotia, 2020). Another option for the role of social-emotional learning coach would be school psychologists since they are trained in supporting a range of academic and behavior needs (Loftus-Rattan et al., 2021). Additionally, their training as scientist-scholar-practitioners (Canadian Psychological Association, 2014) would allow them to help bridge the gap between research and classroom level implementation.

In their report on effective teacher professional development, Darling-Hammond et al. (2017) noted that effective coaches included different specialists, including specially trained master teachers, instructional leaders, researchers, and university faculty. In a survey of elementary principals in the Netherlands, respondents felt that internal expertise (i.e., someone who already works in the school), was important and ensured a better fit with their specific school context (Gaikhorst et al., 2019). When coaching functions are integrated into the roles of existing school personnel, it helps create a strong alignment between the Regional Centre for Education, the school, and the classroom (Freeman et al., 2017). Having school psychologists who are already part of the school community (Canadian Psychological Association, 2014) in the role of coach could help give the coach some credibility with teachers. This might be more effective and sustainable as compared to using an external specialist with little knowledge or understanding of the school context (Darling-Hammond et al., 2017).

If school psychologists were to act as coaches to support teachers in implementing social-emotional learning practices (Reinke et al., 2011), it would require a shift from their current role. This has already started in some schools where school psychologists are no longer seen as

gatekeepers to specialized services but instead as change agents who can encourage and support the implementation of proactive, evidence-based practices (Forman et al., 2012; Loftus-Rattan et al., 2021). School psychologists qualify to be social-emotional learning coaches because school psychology training covers child and adolescent development, consultation skills, and how to be critical consumers of research (Loftus-Rattan et al., 2021). School psychologists are well trained to help select appropriate, evidence-based practices to meet the needs of the student, teacher, and school. They can even provide further professional development on what it means to be evidence-based as well as how to find information about and implement evidence-based practices (Reinke et al., 2011). As such, they can help facilitate high fidelity classroom-level implementation of evidence-based practices (Berliner, 2020).

While having school psychologists in the role of coach may sound ideal, adding a time-intensive coaching role to their responsibilities might not be a realistic or effective use of a specialized resource. One solution, for which an MTSS model is perfect, would be to target the expertise of school psychologists to more specialized situations (i.e., Tier 3) and for school psychologists to mentor coaches who can work at Tiers 1 and 2. This would then require the identification of experienced teachers who could perform the role of coach in collaboration with school psychologists.

CHAPTER 2: AN MTSS MODEL FOR TEACHER PROFESSIONAL DEVELOPMENT

The province of Nova Scotia has introduced a Multi-Tiered System of Support (MTSS) model which now focuses on the use of evidence-based practices to support both student well-being and academic achievement (Government of Nova Scotia, 2019). Given this new focus on student well-being, teachers in Nova Scotia require professional development about evidence-based social-emotional learning. Just as it is expected that students are taught using evidence-based practices, teacher professional development should also be evidence-based. This thesis outlines an MTSS model for the professional development of teachers in social-emotional learning. Given that coaching is an effective model of professional development (Desimone & Pak, 2017; Scheeler et al., 2004; State et al., 2019), the objective of this chapter is to construct a model that will organize the who, what, when, and how of coaching (Freeman et al., 2017).

Multi-Tiered Systems of Support

An MTSS model is a preventative model for service delivery in that it aims to increase the skills of all students in addition to providing effective early intervention for struggling students (August et al., 2018; Kearney & Graczyk, 2020; Loftus-Rattan et al., 2021). Interventions are organized according to three responsive tiers (August et al., 2018; Kearney & Graczyk, 2020). Establishing an MTSS model for teacher professional development would be a natural transition for Regional Centres for Education in Nova Scotia since there is already a variation of this for students following the implementation of the Inclusive Education Policy in 2020. The Inclusive Education Policy establishes a focus on student well-being alongside academic achievement (Government of Nova Scotia, 2020). Since each school is its own diverse environment (Cook et al., 2003; Cook & Odom, 2013; Kratochwill & Shernoff, 2004), including

differences in grade levels, community type (i.e., urban versus rural), size of staff, and needs of students, an MTSS model allows for flexibility in interventions (Kearney & Graczyk, 2020).

It is important to remember that MTSS is a model rather than a scripted program or standard set of criteria (Gamm et al., 2012; Stoiber & Gettinger, 2016). Marquez et al. (2016) note that changing teaching practice is not an event but rather an ongoing process that requires continuous training, modeling, monitoring, practice, and feedback. The strength of an MTSS model lies in the fact that, if properly implemented, it is self-repeating, self-correcting, and ongoing in terms of supporting decision-making (Gamm et al., 2012). This is possible because decisions within an effective MTSS model are made based on data (Eagle et al., 2015; Freeman et al., 2017). Additionally, following data allows for the fluid movement of teachers and students between tiers, as their needs change (August et al., 2018). In the same way, data can inform interventions for students, the collection and interpretation of data through an MTSS model could support the professional development needs of teachers.

Evidence-Based Practices

An effective MTSS model also relies on the use of evidence-based practices, so long as they are implemented as intended (Eagle et al., 2015; Freeman et al., 2017). For example, when properly implemented, evidence-based social-emotional learning practices have been associated with positive student outcomes, but those that were poorly implemented, did not (Durlak, 2016). When using evidence-based practices, teachers can be confident that they are supporting their students' needs as best they can (Cook et al., 2008; Timperley & Alton-Lee, 2008). Given the importance of proper implementation, educating teachers on the necessity of using evidence-based practices, and how to properly implement them, is key (Brock & Carter, 2017). Implementation is a critical link between research and instructional practice (Cook & Odom,

2013), but the quality of implementation can be affected by changes made by the teacher, the specific needs of the students, and a lack of support in the school for maintenance of the practice (CASEL, 2013; Durlak, 2016; Stormont et al., 2015).

Although the importance of evidence-based practices is clear, there can be several barriers to adequate implementation. Teachers are tasked with managing a wide range of student needs and conditions in their classrooms, and these can vary greatly from lab and clinic conditions under which a lot of research is conducted (Buczynski & Hansen, 2010; Cook & Odom, 2013; Forman et al., 2013; Timperley & Alton-Lee, 2008). To be able to identify evidence-based practices best suited to their unique situation, teachers need to be critical consumers of research (Boardman et al., 2005; Cook et al., 2003; Kratochwill & Shernoff, 2004). Unfortunately, research findings are often not easily accessible to teachers as they are often presented at specialized conferences or published in academic journals to which teachers do not have access (Carnine, 1997; Cook et al., 2013; Denton et al., 2003). Without adequate training in the importance of proper implementation, teachers may make changes or discontinue use of a practice if they do not see quick results (Kretlow & Bartholomew, 2010). When they think they are being asked to make frequent and mandated changes to their instructional practices without access to the research behind the change, teachers often become frustrated (Boardman et al., 2005). As they balance immense workloads (Darling-Hammond et al., 2017; Reinke et al., 2014), teachers who do want to implement evidence-based practices are further limited when there are changes in staff, particularly amongst administrators, and support for an evidence-based practice may not be maintained (Durlak, 2016; Denton et al., 2003; Greenberg et al., 2003). It has been found that teachers' practice, and not their professional background (i.e., education level, years of experience), is the best predictor of student outcomes (Goodnight et al., 2020;

Shidler, 2009; State et al., 2019). As such, access to effective, evidence-based professional development is sometimes a barrier to the implementation and maintenance of evidence-based practices in schools (Buchanan et al., 2009).

Teacher Professional Development

Teachers have typically been introduced to new instructional practices through one-day in-services (Bethune & Wood, 2013; Freeman et al., 2017; Garet et al., 2001; Goodnight et al., 2020; Kretlow & Bartholomew, 2010; Patton et al., 2015; Richardson, 2003; Shidler, 2009). Sessions of short duration like these are usually solely focused on knowledge acquisition and are disconnected from teachers' actual classrooms (Freeman et al., 2017; Garet et al., 2001; Kretlow & Bartholomew, 2010). These sessions usually take place outside of the teacher's school and are not often aligned with what is already happening in an individual teacher's classroom (Kennedy, 2016; Patton et al., 2015; Richardson, 2003). As a result, these types of workshops rarely lead to meaningful or lasting change in teacher practice (Darling-Hammond et al., 2009; Gaikhorst et al., 2019; Rodgers et al., 2019).

Effective Teacher Professional Development

While in-service sessions can be valuable for sharing initial information (Kretlow et al., 2012), the research is clear as to which characteristics teacher professional development activities should have to lead to changes in teacher practice. Professional development activities should be content-focused, allow for active learning, encourage collaboration, be coherent with standards and outcomes, and be ongoing throughout the school year (Darling-Hammond et al., 2017; Desimone, 2009; Desimone et al., 2002; Kraft et al., 2018; State et al., 2019). Professional development activities should focus on content knowledge as it is more effective to learn concrete solutions instead of abstract principles (Blank, 2013; Darling-Hammond, 2009;

Desimone et al., 2002; Desimone, 2011; Desimone & Pak, 2017). Teachers are better able to translate research findings to their classrooms when they have opportunities to be active participants in learning (e.g., observing others, receiving feedback on their own practice, giving presentations, analyzing student work), rather than being passive recipients of information at a workshop (Blank, 2013; Darling-Hammond et al., 2017; Desimone et al., 2002; Desimone & Pak, 2017; Kretlow & Bartholomew, 2010). They learn best when they have opportunities to collaborate with others, specifically from their same school, grade level, or department (Darling-Hammond & McLaughlin, 2011; Desimone, 2009; Desimone et al., 2002; Gaikhorst et al., 2019; Opfer & Pedder, 2011). This way, teachers can integrate what they have learned within their shared instructional context (Garet et al., 2001). When learning is embedded in a teacher's daily context, they learn best because they can practice their new skills over multiple authentic opportunities (Campana, 2014; Darling-Hammond et al., 2017; Desimone & Pak, 2017; Gaikhorst et al., 2019; Opfer & Pedder, 2011; Scheeler et al., 2006; State et al., 2019). Finally, learning should be supported over an extended period (i.e., the school year) to be properly incorporated into teaching practice and maintained over time (Gaikhorst et al., 2019). This way, teachers can try new practices in their specific context and get feedback on how it went (Garet et al., 2001).

Coaching

Coaching for teachers has become a way to fill the gap between knowledge gained at isolated in-service sessions and the application of those skills in a real classroom context (Freeman et al., 2017). Coaching makes sense since teachers learn best when their professional development activities are individualized and specific to their instructional needs (Goodnight et al., 2020). Like students, teachers learn by doing, sharing, and reflecting (Darling-Hammond &

McLaughlin, 2011). Coaches can lead teachers through an ongoing and personalized learning process, all while meeting the characteristics of effective professional development (Denton & Hasbrouck, 2009; Shidler, 2009).

The characteristics of effective coaching are like those of effective professional development. Coaching should be individualized, time-intensive, sustained over the school year, context-specific, and focused on specific skills (Denton & Hasbrouck, 2009; Desimone & Pak, 2017; Kraft et al., 2018). Coaches can be responsive to the needs of the teacher and their unique group of students (Darling-Hammond et al., 2017; Patton et al., 2015). Some teachers will require more time and support to practice new skills, which is why flexibility in duration within an MTSS model is important (Bethune, 2017). Coaching can then be gradually faded as each teacher acquires and accurately implements their new skills (Garbacz et al., 2015). Feedback from coaches should be immediate, specific, positive, and corrective but also non-evaluative (Freeman et al., 2017; Scheeler et al., 2004; Stormont et al., 2015; Vanderburg & Stephens, 2010). This means that it is important for coaches to be trained in giving high quality feedback (Freeman et al., 2017; Veenman & Denessen, 2001). Multiple studies (e.g., Bethune & Wood, 2013; Darling-Hammond, 2009; Goodnight et al., 2020; Kleickmann et al., 2016; Kretlow & Bartholomew, 2010), have found coaching to be effective in supporting teachers' accurate implementation of evidence-based practices, particularly because it can take place directly in teachers' classrooms, during the school day (Darling-Hammond et al., 2017; Garet et al., 2001).

Social-Emotional Learning

Regional Centres for Education in Nova Scotia already have coaches for teacher professional development (e.g., with teaching math and literacy), but not to support the implementation of evidence-based practices in social-emotional learning (Government of Nova

Scotia, 2020). With a focus on student well-being in addition to academic development (Government of Nova Scotia, 2020), teachers should also have access to a social-emotional learning coach. Social-emotional learning can be understood as the process of learning about emotions, social skills, positive relationships, and healthy decision-making (Balfanz, 2019; Domitrovich et al., 2017; Elias, 2019; Greenberg et al., 2003). Essentially, the skills that support success in school and adulthood (Balfanz, 2019; Domitrovich et al., 2017; Elias, 2019; Greenberg et al., 2003). These are important skills because they have been associated with increased prosocial skills, less emotional distress, better attitudes about the self and others, and improved academic performance (Buchanan et al., 2009; Durlak et al., 2011; Hunter et al., 2018). For example, students with stronger social-emotional skills can better focus on their academics because some of the underlying causes of disruptive behaviour have been addressed through social-emotional learning (Abrahams et al., 2019; Buchanan et al., 2009; Domitrovich et al., 2017; Greenberg et al., 2003; Oberle et al., 2016).

Schools are ideal locations for increasing the social-emotional skills of students because almost all children are present for a significant amount of time each day (Crean & Johnson, 2013; Domitrovich et al., 2017; Kearney & Graczyk, 2020; Oberle et al., 2016). Classroom teachers are most often the ones to implement Tier 1 social-emotional interventions (Goodnight et al., 2020; Reinke et al., 2011), and they are generally effective in that implementation (Durlak et al., 2011). Since the use of evidence-based practices to support student social-emotional well-being is now mandated in Nova Scotia through the Inclusive Education Policy (Government of Nova Scotia, 2020), and given the potential influence strong social-emotional skills can have, it is imperative that teachers know how best to support social-emotional learning in students.

The Potential Role of School Psychologists

School psychologists could make ideal social-emotional learning coaches since they are trained in consultation skills, being critical consumers of research, and supporting academic development and social-emotional learning (Loftus-Rattan et al., 2021). School psychologists could support teachers in the selection of evidence-based practices appropriate for the teacher's unique classroom situation (Reinke et al., 2011). They could also help translate research to everyday situations while supporting implementation integrity (Berliner, 2020). While having school psychologists as social-emotional learning coaches may seem ideal, adding a time-intensive role like that of coach to their responsibilities might not be an effective use of resources. Following an MTSS model, it would be more logical for school psychologists to help train experienced teachers as coaches in social-emotional learning for Tier 1 and Tier 2 interventions and for school psychologists to become involved with the classroom teacher at the Tier 3 level.

A Multi-Tiered System of Support for Teacher Professional Development

The MTSS model proposed here is not a direct support for students. Instead, it is intended to mirror the MTSS model already in place for supporting students in Nova Scotia. To best support students with their social-emotional learning, teachers need to know which evidence-based practices are effective for the unique needs of their students (Stoiber & Gettinger, 2016). It has been established that instruction is the best predictor of student achievement (Desimone & Long, 2010), so by focusing on developing the knowledge and skills of teachers in the specific area of instruction, students should be better supported. The MTSS model proposed here would support teachers in their professional development in evidence-based practices for social-emotional learning, while following characteristics of effective professional development. It

would be comprised of three tiers that would be responsive, efficient, and effective (State et al., 2019). The goal of this MTSS model is to support teachers in developing their knowledge and skills related to social-emotional learning, so that they can better support their students' social-emotional well-being, therefore, this model does not identify any one social-emotional learning program to be used for instruction.

Tier 1 Universal Professional Development

Identifying the system-wide learning need for teachers is the first step to establishing an MTSS model (Mason et al., 2019). There is now an expectation that teachers support student social-emotional well-being (Government of Nova Scotia, 2020), and yet classroom teachers receive very little, if any, training in that even though they are the professionals spending the most significant time with students (McIntosh et al, 2014). Tier 1 is the foundation for prevention (Weist et al., 2018) through universal instruction. As such, the goal of Tier 1 professional development would be to establish knowledge of evidence-based practices across the teaching staff (Dorado et al., 2016). Research is continuously evolving and to be sure educators have access to current evidence-based practices, it is imperative that teachers receive quality and effective professional development (Fuchs & Vaughn, 2012). In the Nova Scotia MTSS model for teacher professional learning, all teachers would receive universal, evidence-based training (Fletcher & Vaughn, 2009) in social-emotional learning, specifically, what knowledge and skills all teachers need to support their students. Sometimes students with internalizing struggles associated with mental health difficulties like depression, anxiety, or trauma response, may present in a less observable way and may therefore be less likely to be identified (McIntosh et al., 2014; Weist et al., 2018). With training, teachers would be more capable of identifying students who may be struggling so that those students can then receive

their own Tier 2 or Tier 3 interventions (Weist et al., 2018). For example, when teachers receive psychoeducation about trauma-related stress, they are better equipped to recognize student misbehavior as stemming from student trauma, rather than making assumptions about oppositional or defiant behavior (Eyal et al., 2019). This may prevent teachers from reacting with practices that may be triggering for the student who has experienced trauma and, instead, allow the teacher to create a supportive, safe space for that student (Chafouleas et al., 2016).

This Tier 1 training could be developed by school psychologists and encompass several topics including, but not limited to, an understanding of social-emotional learning, the naming and regulating of emotions, positive class management strategies (e.g., contingent positive reinforcement, specific praise), anxiety, depression, and trauma response. It would be developed as an online module to which teachers can have repeated access, whenever and wherever. This way teachers can refer to it as needed, and new teachers who join the school part way through the year can also access the training (Gamm et al., 2012). The training could be made publicly available in the interest of educating interested families or other educators, but it should be made clear that the training is intended for teachers and would therefore be tailored to the background knowledge of classroom teachers.

Tier 2 Coaching

A successful MTSS model recognizes that a one-sized-fits-all online professional development session would not be sufficient professional development for all teachers, and that ongoing support for implementation would be needed (Gamm et al., 2012). Tier 2 would entail further support for those teachers who need more guidance, or those teachers with difficult situations in their classrooms, who require more intensive and specialized strategies. It would also be useful for these Tier 2 coaches to occasionally check in with all teachers to ensure that

accurate implementation is continuing (Bethune, 2017). This could be done as a check-in conversation, or a benchmark assessment could be created to suit progress monitoring needs. In this way, the MTSS model would be responsive to individual needs and best utilize limited resources. In their survey of elementary principals in the Netherlands, Gaikhorst et al. (2019) recorded one principal explaining that differentiation in teacher learning is just as important as is it is with children. Those teachers who need further support could receive guidance from a trained coach. Tier 2 coaches would work with the teacher to identify a specific instructional practice to target, relevant to their classroom needs (Darling-Hammond et al., 2017). For example, in one study (Goodnight, Wood, & Thompson, 2020), after an initial training session and a benchmark assessment, teachers who showed they needed further support received coaching. After a period of coaching support (i.e., an individual pre-conference, one side-by-side coaching session, and an individual feedback meeting), the benchmark was reassessed and no teacher fell below the criterion (Goodnight, Wood, & Thompson, 2020).

Data-driven decision-making is a core element to any MTSS model (Sugai & Horner, 2009). Nova Scotia schools already have Teacher Support Teams who collaborate to determine the best ways to support the needs of teachers and students (Government of Nova Scotia, 2019). Teacher Support Team meetings would be an ideal occasion to review data on the implementation of evidence-based practices in social-emotional learning, hear requests for support, and determine any movement between tiers of support for teachers. These teams include school-based personnel such as administrators, learning support teachers, and often school psychologists and speech-language pathologists. For the Teacher Support Team to function properly within an MTSS model, it would be important for the core members of this team to be

trained on data collection, continuous progress monitoring, and using data to inform their decision-making process (Marquez et al., 2016).

This development of school staff competencies necessitates an intentional selection of the staff to provide this ongoing professional development and support, including the coaching (Eagle et al., 2015). Nova Scotia Regional Centres for Education already have leadership roles in Learning Support Teachers (Government of Nova Scotia, 2020). Some Learning Support Teachers work at the district level, while others are attached to specific schools (Government of Nova Scotia, 2020). Currently, these are limited to academic subject domains such as literacy and math (Government of Nova Scotia, 2020). A position of Learning Support Teacher for social-emotional learning with coaching responsibilities could be added. This is in-line with the recommendation by Darling-Hammond et al. (2017) that expert teachers be identified and trained for the role of coach in their area of expertise. Coaches should not just be strong and experienced teachers, but they should also be experts in their content area, in this case, social-emotional learning (Mason et al., 2019). A teacher with training related to social-emotional learning would be an appropriate candidate. It is imperative that these coaches also receive training in the delivery of effective professional development and coaching. Veenman and Denessen (2001) found that coaches who had been trained were able to provide better feedback than those who had not been trained. Additionally, these Learning Support Teacher coaches would need comprehensive training in the process of the MTSS model, data collection, continuous progress monitoring, and data-informed decision-making (Mason et al., 2019).

It would be important for the teacher to work with the coach to determine appropriate goals as not all teachers requiring Tier 2 support will necessarily have the same needs. This way, individual needs could be identified, and the intervention targeted to the teacher's unique needs

(Mason et al., 2019). It is likely that teachers would also perceive individualized training as more relevant and engaging (Marquez et al., 2016). The period of support given by the coach could be agreed to throughout the process as some teachers may require more support than others. It is important that the coaching process follow a three-step process whereby the coach and teacher engage in a pre-observation or pre-coaching meeting to review instructions and determine goals. This would then be followed by an observation or coaching session and conclude with a post-coaching feedback meeting (Bethune & Wood, 2013; Garbacz et al., 2015; Jarvius, 2020). The goal of the coaching experience would be to reinforce the skills at implementing evidence-based practices learned during the Tier 1 professional development (Mason et al., 2019). Additionally, any further support required based on the unique needs of that teacher could be delivered. By having the option for coaches to meet with teachers on-site at their school or to connect with them virtually, teachers would be directly supported as they turn theoretical information from the Tier 1 module into practical application in their classrooms (Dorado et al., 2016). Coaches could model, encourage, and reinforce the evidence-based practices as needed (Dorado et al., 2016).

Selecting coaches who would lead by example and promote the value of evidence-based practices and data-driven decisions would be imperative for the success of this MTSS model (Eagle et al., 2015). These coaches would require training themselves (Eagle et al., 2015) and should receive ongoing support and coaching to effectively support teachers (Eagle et al., 2015). Simply selecting someone to be a coach and then designating them as available to teachers is not enough (Darling-Hammond et al., 2017). Jarvius (2020) noted that effectiveness has been most observed in models where the instructional coaches themselves received feedback on their coaching. Tier 2 coaches should follow the model of a pre-coaching meeting with their own mentor to set instructions and establish goals. This would be followed by a coaching session,

eventually ending with a feedback meeting (Bethune & Wood, 2013; Garbacz et al., 2015; Jarvius, 2020). School psychologists would be well suited to mentor Tier 2 coaches because school psychologists are well versed in evidence-based practices and data-driven decision making in social-emotional learning (Eagle et al., 2015).

Tier 3 Specialized Coaching

Tier 3 interventions are highly specialized, intensive, and individualized (Stoiber & Gettinger, 2016). The MTSS model presented here would be similar with a school psychologist becoming involved at the Tier 3 level. School psychologists are experts in social-emotional learning, data-based decision-making, the use of evidence-based practices, and being critical consumers of research (Loftus-Rattan et al., 2021; Stoiber & Gettinger, 2016). They may be able to provide more specific strategies than the Tier 2 coaches would have access to or are familiar with. School psychologists consult research regularly and can bridge the gap between researchers, journal articles, and teachers. In this way, school psychologists can support teachers and coaches as they navigate the implementation of evidence-based practices as intended by the researchers and developers, so that chosen practices also work for the unique set of students.

The need for Tier 3 involvement from a school psychologist could be decided through the examination of data at a Teacher Support Team meeting. It would be expected that the teacher had already engaged with the Tier 2 coach in a coaching capacity over time (i.e., they had followed the process previously outlined of goal setting, observation, feedback). If further guidance was required, the teacher and coach could request further support through the Teacher Support Team. If it were to be decided that Tier 3 is appropriate, the school psychologist could either consult with the teacher and coach, or the school psychologist could go into the classroom to support directly through observations and coaching. Like Tier 2 coaching expectations, school

psychologists should engage in professional development in coaching. They should also follow a pre-determined format like the Tier 2 coach, whereby the teacher, coach, and school psychologist identify specific goals, followed by coaching sessions, and finally they would all participate in a post-coaching feedback meeting (Bethune & Wood, 2013; Garbacz et al., 2015; Jarvius, 2020).

Evidence of Effectiveness

It will be important to know if this model is effective. This means that evidence of effectiveness will need to be collected so that it can be evaluated. Near the end of each school year would be an appropriate time to do so as it would help inform whether the model should continue in the upcoming year, or if any changes should be made. An electronic survey could be developed for teachers to respond to at the end of the school year, after they had engaged with a coach. All teachers who worked with a coach would be asked to complete the survey regardless of the number of contact hours they had with their coach. The survey should determine approximately how many contact hours were logged between the teacher and coach (i.e., Tier 2), and contact hours between the teacher, coach, and school psychologist (i.e., Tier 3). This would help inform the time commitment for both the coach and the school psychologist, to better plan their availability in the upcoming year. The teacher should also be asked for their impressions of the effectiveness of the coaching relationship. Questions should be formed based on the components of effective professional development (i.e., content-focused, allows for active learning, collaborative, coherent, extended in duration). The purpose of this survey would be to evaluate the effectiveness of the MTSS coaching model and not the effectiveness of individual coaches. This data collection would be part of the Tier 2 coach's responsibilities.

Since the Nova Scotia Inclusive Education Policy is system-wide, so too should social-emotional coaching support for Nova Scotia teachers. Where this proposed MTSS model would

be new, time should be allotted at the end of the first year for coaches and school psychologists to gather virtually from across the province to discuss successes and challenges. It would be ideal if they had the data from the surveys to discuss as well so that they could then adjust the model for the upcoming year. Additionally, this model can be introduced system-wide since each coaching relationship will differ slightly, based on the individual needs of each teacher. The general model will be the same across the province, with flexibility for individual needs worked in by design.

How MTSS Could Benefit School Psychologists

With the recent implementation of the MTSS model for supporting both student well-being and academics in Nova Scotia, Regional Centres for Education are encouraging school psychologists to support schools through consultations and interventions at the Tier 1 and 2 levels. This differs from traditional expectations where school psychologists were sometimes primarily expected to complete psycho-educational assessments which are now considered a Tier 3 service under MTSS models. While it may appear that this proposed MTSS model keeps school psychology services at the Tier 3 level, it expands the ways in which school psychologists can support schools. This way, school psychologists can assist with Tier 1 and 2 interventions indirectly, which is important because there are not enough school psychologists to effectively provide Tier 1 and 2 interventions to everyone who needs it. Through this model, school psychologists would work directly with teachers and Tier 2 coaches in classrooms and elsewhere as needed. While specialized psycho-educational assessments would remain part of their responsibilities, school psychologists would now be able to better share the wide range of competencies they have, including, but not limited to, consulting on best practices, suggesting context-specific classroom routines and strategies, and mentoring teachers on class-wide

interventions. Since this MTSS model is designed to support the professional development of teachers so that they may best support their students' social-emotional well-being, the implementation of this model should mean that the social-emotional needs of most students are met at the Tier 1 and 2 levels. That would mean that students have access to the supports they need earlier, and while their needs are less intense.

Psycho-educational assessments are generally considered a Tier 3 service since they are individual and require extensive specialization to be completed. Recognizing that school psychologists have a variety of competencies and supporting their expansion of services beyond primarily completing psycho-educational assessments is important so that Regional Centres for Education can effectively utilize the specialized training that school psychologists have. The proposed MTSS model for teacher professional development is a model that should do that. For example, this model not only encourages, but builds in consultation between school psychologists, teachers, and Tier 2 coaches. Since consultation is one of the core competencies expected of psychologists in Nova Scotia, this focus on consultation is logical. Additionally, school psychologists are also trained in supervision and as such, are well-suited to support Tier 2 coaches. The proposed MTSS model also recognizes this competency and attempts to incorporate it as well.

Through this proposed MTSS model, school psychologists should be able to help equip teachers with knowledge and skills necessary to support their students' social-emotional well-being, directly in the classroom. This model would also allow school psychologists, who are specialists in social-emotional learning, more opportunities to share their knowledge and skills directly with teachers, rather than primarily consulting with school-based teams (e.g., teams made up of administrators, learning support teachers, and sometimes invited classroom teachers).

If Nova Scotia teachers have access to effective professional development in social-emotional learning, their students should be well-supported at the classroom level. If the social-emotional needs of most students are well-supported through their teachers, there should be fewer students who need more individualized and intensive interventions. The goal of this proposed MTSS model is that because of its implementation, Nova Scotia teachers will have access to the knowledge, skills, and on-going support to meet the social-emotional needs of their students.

References

Abrahams, L., Pancorbo, G., Primi, R., Santos, D., Kyllonen, P., John, O. P., & De Fruyt, F. (2019). Social-emotional skill assessment in children and adolescents: Advances and challenges in personality, clinical, and educational contexts. *Psychological Assessment, 31*(4), 460–473. https://doi.org/10.1037/pas0000591

August, G. J., Piehler, T. F., & Miller, F. G. (2018). Getting "SMART" about implementing multi-tiered systems of support to promote school mental health. *Journal of School Psychology, 66*, 85–96. https://doi.org/10.1016/j.jsp.2017.10.001

Balfanz, R. (2019). An integrated approach fosters student success. *Education Next*, *19*(3), 68, 70, 72, 74.

Berliner, D. C. (2002). Comment: Educational research: The hardest science of all. *Educational Researcher*, *31*(8), 18–20. https://doi.org/10.3102/0013189X031008018

Berliner, D. C. (2020). Teachers' analyses of educational research as a source of professional development. *Impact*, *10*, 54-56.

Bethune, K. S. (2017). Effects of coaching on teachers' implementation of tier 1 school-wide positive behavioral interventions and support strategies. *Journal of Positive Behavior Interventions*, *19*(3), 131–142. https://doi.org/10.1177/1098300716680095

Bethune, K. S., & Wood, C. L. (2013). Effects of coaching on teachers' use of function-based interventions for students with severe disabilities. *Teacher Education and Special Education*, *36*(2), 97–114. https://doi.org/10.1177/0888406413478637

Blank, R. K. (2013). What research tells us: Common characteristics of professional learning that leads to student achievement. *Journal of Staff Development*, *34*(1), 50-53.

Boardman, A. G., Argüelles, M. E., Vaughn, S., Hughes, M. T., & Klingner, J. (2005). Special education teachers' views of research-based practices. *The Journal of Special Education*, *39*(3), 168–180. https://doi.org/10.1177/00224669050390030401

Brock, M. E., & Carter, E. W. (2017). A meta-analysis of educator training to improve implementation of interventions for students with disabilities. *Remedial and Special Education*, *38*(3), 131–144. https://doi.org/10.1177/0741932516653477

Buchanan, R., Gueldner, B. A., Tran, O. K., & Merrell, K. W. (2009). Social and emotional learning in classrooms: A survey of teachers' knowledge, perceptions, and practices. *Journal of Applied School Psychology*, *25*(2), 187–203. https://doi.org/10.1080/15377900802487078

Buczynski, S., & Hansen, C. B. (2010). Impact of professional development on teacher practice: Uncovering connections. *Teaching and Teacher Education*, *26*(3), 599–607. https://doi.org/10.1016/j.tate.2009.09.006

Campana, J. (2014). Learning for work and professional development: The significance of informal learning networks of digital media industry professionals. *International Journal of Training Research*, *12*(3), 213–226. https://doi.org/10.1080/14480220.2014.11082043

Canadian Psychological Association. (2014). *School psychology: An essential public service in Canada. A position paper.* Author. https://cpa.ca/docs/File/Sections/EDsection/School_Psychology_TFpaper_Aug2014_Final.pdf

Carnine, D. (1997). Bridging the research-to-practice gap. *Exceptional Children*, *63*(4), 513-521.

Chafouleas, S. M., Johnson, A. H., Overstreet, S., & Santos, N. M. (2016). Toward a blueprint for trauma-informed service delivery in schools. *School Mental Health, 8*, 144–162. https://doi.org/10.1007/s12310-015-9166-8

Collaborative for Academic, Social, and Emotional Learning. (2013). Effective social and emotional learning programs: Preschool and elementary school edition. Collaborative for Academic, Social, and Emotional Learning.

Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and social–emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of Educational Psychology*, *104*(4), 1189–1204. https://doi.org/10.1037/a0029356

Cook, B. G., Cook, L., & Landrum, T. J. (2013). Moving research into practice: Can we make dissemination stick? *Exceptional Children*, *79*(2), 163–180. https://doi.org/10.1177/001440291307900203

Cook, B. G., Landrum, T. J., Tankersley, M., & Kauffman, J. M. (2003). Bringing research to bear on practice: Effecting evidence-based instruction for students with emotional or behavioral disorders. *Education and Treatment of Children, 26*(4), 345 – 361.

Cook, B. G., & Odom, S. L. (2013). Evidence-based practices and implementation science in special education. *Exceptional Children, 79*(2), 135–144. https://doi.org/10.1177/001440291307900201

Cook, B. G., Tankersley, M., Cook, L., & Landrum, T. J. (2008). Evidence-based practices in special education: Some practical considerations. *Intervention in School and Clinic*, *44*(2), 69–75. https://doi.org/10.1177/1053451208321452

Cordingley, P. (2015). The contribution of research to teachers' professional learning and development. *Oxford Review of Education*, *41*(2), 234–252. https://doi.org/10.1080/03054985.2015.1020105

Crean, H. F., & Johnson, D. B. (2013). Promoting Alternative Thinking Strategies (PATHS) and elementary school aged children's aggression: Results from a cluster randomized trial. *American Journal of Community Psychology*, *52*(1–2), 56–72. https://doi.org/10.1007/s10464-013-9576-4

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*, Learning Policy Institute. https://learningpolicyinstitute.org/sites/default/files/product-files/Effective_Teacher_Professional_Development_REPORT.pdf

Darling-Hammond, L., & McLaughlin, M. W. (2011). Policies that support professional development in an era of reform. *Phi Delta Kappan*, *92*(6), 81–92. https://doi.org/10.1177/003172171109200622

Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad.* National Staff Development Council. https://learningforward.org/wp-content/uploads/2017/08/status-of-professional-learning-phase-1-technical-report.pdf

Denton, C. A., & Hasbrouck, J. (2009). A description of instructional coaching and its relationship to consultation. *Journal of Educational and Psychological Consultation*, *19*(2), 150–175. https://doi.org/10.1080/10474410802463296

Denton, C. A., Vaughn, S., & Fletcher, J. M. (2003). Bringing research-based practice in reading intervention to scale. *Learning Disabilities Research and Practice*, *18*(3), 201–211. https://doi.org/10.1111/1540-5826.00075

Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher*, *38*(3), 181–199. https://doi.org/10.3102/0013189X08331140

Desimone, L. M. (2011). A primer on effective professional development. *Phi Delta Kappan*, *92*(6), 68–71. https://doi.org/10.1177/003172171109200616

Desimone, L. M., & Long, D. (2010). Teacher effects and the achievement gap: Do teacher and teaching quality influence the achievement gap between Black and White and high-and low-SES students in the early grades? *Teachers College Record*, *112*(12), 3024-3073. http://professional development.tcrecord.org/PrintContent.asp?ContentID=16047

Desimone, L. M., & Pak, K. (2017). Instructional coaching as high-quality professional development. *Theory Into Practice*, *56*(1), 3–12. https://doi.org/10.1080/00405841.2016.1241947

Desimone, L. M., Porter, A. C., Garet, M. S., Yoon, K. S., & Birman, B. F. (2002). Effects of professional development on teachers' instruction: Results from a three-year longitudinal study. *Educational Evaluation and Policy Analysis*, *24*(2), 81–112. https://doi.org/10.3102/01623737024002081

Domitrovich, C. E., Durlak, J. A., Staley, K. C., & Weissberg, R. P. (2017). Social-emotional competence: An essential factor for promoting positive adjustment and reducing risk in school children. *Child Development*, *88*(2), 408–416. https://doi.org/10.1111/cdev.12739

Dorado, J. S., Martinez, M., McArthur, L. E., & Leibovitz, T. (2016). Healthy Environments and Response to Trauma in Schools (HEARTS): A whole-school, multi-level, prevention and intervention program for creating trauma-informed, safe and supportive schools. *School Mental Health*, *8*(1), 163-176. https://doi.org/10.1007/s12310-016-9177-0

Durlak, J. A. (2016). Programme implementation in social and emotional learning: Basic issues and research findings. *Cambridge Journal of Education*, *46*(3), 333–345. https://doi.org/10.1080/0305764X.2016.1142504

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405–432. https://doi.org/10.1111/j.1467-8624.2010.01564.x

Eagle, J. W., Dowd-Eagle, S. E., Snyder, A., & Gibbons Holtzman, E. (2015). Implementing a Multi-Tiered System of Support (MTSS): Collaboration between school psychologists and administrators to promote systems-level change. *Journal of Educational and Psychological Consultation, 25*(2–3), 160–177. https://doi.org/10.1080/10474412.2014.929960

Elias, M. J. (2019). What if the doors of every schoolhouse opened to social-emotional learning tomorrow: Reflections on how to feasibly scale up high-quality SEL. *Educational Psychologist, 54*(3), 233–245. https://doi.org/10.1080/00461520.2019.1636655

Elliott, J. C. (2017). The evolution from traditional to online professional development: A review. *Journal of Digital Learning in Teacher Education, 33*(3), 114–125. https://doi.org/10.1080/21532974.2017.1305304

Eyal, M., Bauer, T., Playfair, E., & McCarthy, C. J. (2019). Mind-body group for teacher stress: A trauma-informed intervention program. *The Journal for Specialists in Group Work, 44*(3), 204-221. https://doi.org/10.1080/01933922.2019.1634779

Fallon, L. M., Collier-Meek, M. A., Maggin, D. M., Sanetti, L. M. H., & Johnson, A. H. (2015). Is performance feedback for educators an evidence-based practice? A systematic review and evaluation based on single-case research. *Exceptional Children, 81*(2), 227–246. https://doi.org/10.1177/0014402914551738

Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., Wallace, F. (2005). Implementation research: A synthesis of the literature. Tampa, FL: University of South Florida. https://nirn.fpg.unc.edu/sites/nirn.fpg.unc.edu/files/resources/NIRN-MonographFull-01-2005.pdf

Fletcher, J. M., & Vaughn, S. (2009). Response to intervention: Preventing and remediating academic difficulties. *Child Development Perspectives*, *3*(1), 8. https://doi-org.ezproxy.msvu.ca/10.1111/j.1750-8606.2008.00072.x

Forman, S. G., Fagley, N. S., Chu, B. C., & Walkup, J. T. (2012). Factors influencing school psychologists' "willingness to implement" evidence-based interventions. *School Mental Health*, *4*(4), 207–218. https://doi.org/10.1007/s12310-012-9083-z

Forman, S. G., Olin, S. S., Hoagwood, K. E., Crowe, M., & Saka, N. (2009). Evidence-based interventions in schools: Developers' views of implementation barriers and facilitators. *School Mental Health*, *1*(1), 26–36. https://doi.org/10.1007/s12310-008-9002-5

Forman, S. G., Shapiro, E. S., Codding, R. S., Gonzales, J. E., Reddy, L. A., Rosenfield, S. A., Sanetti, L. M. H., & Stoiber, K. C. (2013). Implementation science and school psychology. *School Psychology Quarterly*, *28*(2), 77–100. https://doi.org/10.1037/spq0000019

Freeman, J., Sugai, G., Simonsen, B., & Everett, S. (2017). MTSS coaching: Bridging knowing to doing. *Theory Into Practice*, *56*(1), 29–37. https://doi.org/10.1080/00405841.2016.1241946

Fuchs, L. S., & Vaughn, S. (2012). Responsiveness-to-intervention: A decade later. *Journal of learning disabilities*, *45*(3), 195-203. https://doi.org/10.1177/0022219412442150

Gaikhorst, L., März, V., du Pré, R., & Geijsel, F. (2019). Workplace conditions for successful teacher professional development: School principals' beliefs and practices. *European Journal of Education*, *54*(4), 605–620. https://doi.org/10.1111/ejed.12366

Gamm, S., Elliott, J., Halbert, J. W., Price-Baugh, R., Hall, R., Walston, D., Uro, G., & Casserly, M. (2012). Common Core State Standards and Diverse Urban Students: Using Multi-Tiered Systems of Support. *Council of the Great City Schools*.

Garbacz, S. A., Lannie, A. L., Jeffrey-Pearsall, J. L., & Truckenmiller, A. J. (2015). Strategies for effective classroom coaching. *Preventing School Failure: Alternative Education for Children and Youth*, *59*(4), 263–273. https://doi.org/10.1080/1045988X.2014.942835

Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal*, *38*(4), 915–945. https://doi.org/10.3102/00028312038004915

Goodnight, C. I., Wood, C. L., & Thompson, J. L. (2020). Effects of in-service and coaching to increase teachers' use of research-based strategies in beginning reading. *Preventing School Failure: Alternative Education for Children and Youth*, *64*(1), 67–76. https://doi.org/10.1080/1045988X.2019.1680944

Government of Nova Scotia. (2019). *Multi-tiered system of supports: Quick guide*, https://professional development.ednet.ns.ca/psp/files-psp/docs/mtssquickguideen.pdf

Government of Nova Scotia. (2020). *Inclusive Education Policy*, https://professional development.ednet.ns.ca/docs/inclusiveeducationpolicyen.pdf

Greenberg, M. T., Weissberg, R. P., O'Brien, M. U., Zins, J. E., Fredericks, L., Resnik, H., & Elias, M. J. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist*, *58*(6–7), 466–474. https://doi.org/10.1037/0003-066X.58.6-7.466

Guskey, T. R. (2003). What makes professional development effective? *Phi Delta Kappan*, *84*(10), 748–750. https://doi.org/10.1177/003172170308401007

Hansen, W. B., Pankratz, M. M., & Bishop, D. C. (2014). Differences in observers' and teachers' fidelity assessments. *The Journal of Primary Prevention*, *35*(5), 297–308. https://doi.org/10.1007/s10935-014-0351-6

Hunter, L. J., DiPerna, J. C., Hart, S. C., & Crowley, M. (2018). At what cost? Examining the cost effectiveness of a universal social–emotional learning program. *School Psychology Quarterly*, *33*(1), 147–154. https://doi.org/10.1037/spq0000232

Imants, J., & van Veen, K. (2010). Teacher learning as workplace learning. *International Encyclopedia of Education, (7),* 569–574. https://doi.org/10.1016/B978-0-08-044894-7.00657-6

Jarvius, E. (2020). Coaching up at every level. *Leadership, 49*(4), 24-27.

Kearney, C. A., & Graczyk, P. A. (2020). A multidimensional, multi-tiered system of supports model to promote school attendance and address school absenteeism. *Clinical child and family psychology review*, *23*(3), 316-337. https://doi.org/10.1007/s10567-020-00317-1

Kennedy, M. M. (2016). How does professional development improve teaching? *Review of Educational Research*, *86*(4), 945–980. https://doi.org/10.3102/0034654315626800

Kleickmann, T., Tröbst, S., Jonen, A., Vehmeyer, J., & Möller, K. (2016). The effects of expert scaffolding in elementary science professional development on teachers' beliefs and motivations, instructional practices, and student achievement. *Journal of Educational Psychology*, *108*(1), 21–42. https://doi.org/10.1037/edu0000041

Kraft, M. A., Blazar, D., & Hogan, D. (2018). The effect of teacher coaching on instruction and achievement: A meta-analysis of the causal evidence. *Review of Educational Research*, *88*(4), 547–588. https://doi.org/10.3102/0034654318759268

Kratochwill, T. R., & Shernoff, E. S. (2004) Evidence-based practice: Promoting evidence-based interventions in school psychology. *School Psychology Review, 33*(1), 34-48. https://doi.org/10.1080/02796015.2004.12086229

Kretlow, A. G., & Bartholomew, C. C. (2010). Using coaching to improve the fidelity of evidence-based practices: A review of studies. *Teacher Education and Special Education, 33*(4), 279–299. https://doi.org/10.1177/0888406410371643

Kretlow, A. G., Cooke, N. L., & Wood, C. L. (2012). Using in-service and coaching to increase teachers' accurate use of research-based strategies. *Remedial and Special Education, 33*(6), 348–361. https://doi.org/10.1177/0741932510395397

Lane, K. L., Jolivette, K., Conroy, M., Nelson, C. M., & Benner, G. J. (2011). Future research directions for the field of E/BD: Standing on the shoulders of giants. *Education and Treatment of Children*, *34*(4), 423–443. https://doi.org/10.1353/etc.2011.0029

Little, C. A., & Housand, B. C. (2011). Avenues to professional learning online: Technology tips and tools for professional development in gifted education. *Gifted Child Today*, *34*(4), 18–27. https://doi.org/10.1177/1076217511415383

Loftus-Rattan, S. M., Wrightington, M., Furey, J., & Case, J. (2021). Multi-tiered system of supports: An ecological approach to school psychology service delivery. *Teaching of Psychology*, 1-9. https://doi.org/10.1177/00986283211024262

Low, S., Smolkowski, K., Cook, C., & Desfosses, D. (2019). Two-year impact of a universal social-emotional learning curriculum: Group differences from developmentally sensitive trends over time. *Developmental Psychology*, *55*(2), 415–433. https://doi.org/10.1037/dev0000621

Macias, A. (2017). Teacher-led professional development: A proposal for a bottom-up structure approach. *International Journal of Teacher Leadership*, *8*(1), 76-91.

Marquez, B., Vincent, C., Marquez, J., Pennefather, J., Smolkowski, K., & Sprague, J. (2016). Opportunities and challenges in training elementary school teachers in classroom management: Initial results from classroom management in action, an online professional development program. *Journal of Technology and Teacher Education*, *24*(1), 87-109. http://professional development.editlib.org/p/150825/

Mason, E. N., Benz, S. A., Lembke, E. S., Burns, M. K., & Powell, S. R. (2019). From Professional Development to Implementation: A District's Experience Implementing Mathematics Tiered Systems of Support. *Learning Disabilities Research & Practice*, *34*(4), 207-214. https://doi.org/10.1111/ldrp.12206

McIntosh, K., Ty, S. V., & Miller, L. D. (2014). Effects of school-wide positive behavioral interventions and supports on internalizing problems: Current evidence and future directions. *Journal of Positive Behavior Interventions*, *16*(4), 209-218. https://doi.org/10.1177/1098300713491980

Noell, G. H., Witt, J. C., Slider, N. J., Connell, J. E., Gatti, S. L., Williams, K. L., Koenig, J. L., Resetar, J. L., & Duhon, G. J. (2005). Treatment implementation following behavioral consultation in schools: A comparison of three follow-up strategies. *School Psychology Review*, *34*(1), 87–106. https://doi.org/10.1080/02796015.2005.12086277

O'Connell, M. E., Boat, T., & Warner, K. E. (2009). Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities. The National Academies Press. https://professional development.ncbi.nlm.nih.gov/books/NBK32775/

Oberle, E., Domitrovich, C. E., Meyers, D. C., & Weissberg, R. P. (2016). Establishing systemic social and emotional learning approaches in schools: A framework for schoolwide

implementation. *Cambridge Journal of Education*, *46*(3), 277–297. https://doi.org/10.1080/0305764X.2015.1125450

Organisation for Economic Co-Operation and Development (OECD). (2021). *PISA: Programme for International Student Assessment*, https://professional development.oecd.org/pisa/

Opfer, V. D., & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of Educational Research*, *81*(3), 376–407. https://doi.org/10.3102/0034654311413609

Patton, K., Parker, M., & Tannehill, D. (2015). Helping teachers help themselves: Professional development that makes a difference. *NASSP Bulletin*, *99*(1), 26–42. https://doi.org/10.1177/0192636515576040

Reinke, W. M., Stormont, M., Herman, K. C., & Newcomer, L. (2014). Using coaching to support teacher implementation of classroom-based interventions. *Journal of Behavioral Education*, *23*(1), 150–167. https://doi.org/10.1007/s10864-013-9186-0

Reinke, W. M., Stormont, M., Herman, K. C., Puri, R., & Goel, N. (2011). Supporting children's mental health in schools: Teacher perceptions of needs, roles, and barriers. *School Psychology Quarterly*, *26*(1), 1–13. https://doi.org/10.1037/a0022714

Richardson, V. (2003). The dilemmas of professional development. *Phi Delta Kappan*, *84*(5), 401-406. https://doi.org/10.1177/003172170308400515

Rodgers, W. J., Kennedy, M. J., VanUitert, V. J., & Myers, A. M. (2019). Delivering performance feedback to teachers using technology-based observation and coaching tools. *Intervention in School and Clinic*, *55*(2), 103–112. https://doi.org/10.1177/1053451219837640

Russo, A. (2004). School-based coaching. *Harvard Education Letter*, *20*(4), 1-4.

Scheeler, M. C., McAfee, J. K., Ruhl, K. L., & Lee, D. L. (2006). Effects of corrective feedback delivered via wireless technology on preservice teacher performance and student behavior. *Teacher Education and Special* Education, *29*(1), 12-25.

Scheeler, M. C., Ruhl, K. L., & McAfee, J. K. (2004). Providing performance feedback to teachers: A Review. *Teacher Education and Special Education*, *27*(4), 396–407. https://doi.org/10.1177/088840640402700407

Shidler, L. (2009). The impact of time spent coaching for teacher efficacy on student achievement. *Early Childhood Education Journal*, *36*(5), 453–460. https://doi.org/10.1007/s10643-008-0298-4

Shonkoff, J. P., & Bales, S. N. (2011). Science does not speak for itself: Translating child development research for the public and its policymakers. *Child Development*, *82*(1), 17–32. https://doi.org/10.1111/j.1467-8624.2010.01538.x

State, T. M., Simonsen, B., Hirn, R. G., & Wills, H. (2019). Bridging the research-to-practice gap through effective professional development for teachers working with students with emotional and behavioral disorders. *Behavioral Disorders*, *44*(2), 107–116. https://doi.org/10.1177/0198742918816447

Stoiber, K. C., & Gettinger, M. (2016). Multi-tiered systems of support and evidence-based practices. In *Handbook of response to intervention* (pp. 121-141). Springer, Boston, MA. https://doi.org/10.1007/978-1-4899-7568-3_9

Stormont, M., Reinke, W. M., Newcomer, L., Marchese, D., & Lewis, C. (2015). Coaching teachers' use of social behavior interventions to improve children's outcomes: A review of the literature. *Journal of Positive Behavior Interventions*, *17*(2), 69–82. https://doi.org/10.1177/1098300714550657

Sugai, G., & Horner, R. H. (2009). Responsiveness-to intervention and school-wide positive behavior supports: Integration of multi-tiered system approaches. *Exceptionality, 17*(4), 223–237. https://doi.org/10.1080/09362830903235375

Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Development, 88*(4), 1156–1171. https://doi.org/10.1111/cdev.12864

Timperley, A., & Alton-Lee, A. (2008). Reframing teacher professional learning: An alternative policy approach to strengthening valued outcomes for diverse learners. *Review of Research in Education, 32*(1), 328–369. https://doi.org/10.3102/0091732X07308968

U.S. Department of Education. (2021). *Every Student Succeeds Act (ESSA)*, https://professional development.ed.gov/essa?src=rn

Vanderburg, M., & Stephens, D. (2010). The impact of literacy coaches: What teachers value and how teachers change. *The Elementary School Journal*, *111*(1), 141–163. https://doi.org/10.1086/653473

Veenman, S., & Denessen, E. (2001). The coaching of teachers: Results of five training studies. *Educational Research and Evaluation, 7*(4), 385–417. https://doi.org/10.1076/edre.7.4.385.8936

Weist, M. D., Eber, L., Horner, R., Splett, J., Putnam, R., Barrett, S., ... & Hoover, S. (2018). Improving multitiered systems of support for students with "internalizing" emotional/behavioral problems. *Journal of Positive Behavior Interventions*, *20*(3), 172-184. https://doi.org/10.1177/1098300717753832

West, J. J. (2019). From the conference to the classroom: Elevating short-term professional development for lifelong learning. *General Music Today, 33*(1), 24–28. https://doi.org/10.1177/1048371319840651

Whitehurst, G. J., R. (2019). A prevalence of "policy-based evidence-making." *Education Next*, *19*(3), 68, 71, 73, 74.

Wood, C. L., Goodnight, C. I., Bethune, K. S., Preston, A. I., & Cleaver, S. L. (2016). Role of professional development and multi-level coaching in promoting evidence-based practice in education. *Learning Disabilities*, *14*(2), 159-170.

Yoon, K. S., Duncan, T., Lee, S. W. -Y., Scarloss, B., & Shapley, K. L. (2007). *Reviewing the evidence on how teacher professional development affects student achievement.* Regional Education Laboratory Southwest. https://ies.ed.gov/ncee/edlabs/projects/project.asp?ProjectID=70