

A Tiered Approach to Teacher Learning: The Effects of Embedding Universal Coaching into a
Tiered Professional Development Model

Nathaniel A. Hoston

A dissertation
submitted in partial fulfillment of the
requirements for the degree of

Doctor of Philosophy

University of Washington

2022

Reading Committee:

Carol Davis, Chair

Janine Jones

Kathleen Artman-Meeker

Program Authorized to Offer Degree:

College of Education

© copyright 2022
Nathaniel A. Hoston

University of Washington

Abstract

A Tiered Approach to Teacher Learning: The Effects of Embedding Universal Coaching into a
Tiered Professional Development Model

Nathaniel A. Hoston

Chair of the Supervisory Committee:

Carol Davis

College of Education

Despite well-documented links to improvements in students' academics and behaviors, implementing and maintaining evidence-based practices (EBPs) within the classroom can be difficult for educators. While professional development can support teachers with the implementation of EBPs, traditional professional development activities can be ineffective, costly, and inefficient for addressing teachers' needs. Tiered professional development, a resource efficient professional development model that includes increasingly intensive support dependent on identified educator needs, can address barriers in professional development and EBP implementation. However, existing research on tiered professional development has shown inconsistent improvements in implementation of EBPs and lacks clear coaching protocols within its design. This study embedded a cycle of universal coaching within a tiered professional

development (TPD+) to increase the model's overall efficacy while maintaining the efficiency of the tiered professional development model. After participating in TPD+, all teacher participants increased their implementation rate of BSP. However, increased implementation of BSP did not significantly impact student behaviors. Future research should look further into coaching dosages and different iterations of TPD+ on teacher implementation of new behaviors.

Acknowledgements

I owe this dissertation to my advisor, Carol Davis. Thank you for being firm and patient. And thank you for teaching me when to push myself and when to take a break. I don't think I could have done this with anybody else.

Thank you to the people critical to my professional and academic development over the last 5 years: Katie Lewis, Kaetlin Miller, Cheri Simpson, Deron Woods, Christy Kehr, Audrey Gallagher, Jenny Gawronski, Beth Kelly, Elizabeth Saliba, Carlyn Mueller, Michael Mahoney, and my committee – Kathleen Artman-Meeker, Janine Jones, and Stephen Meyers.

Thank you to the folks who provided the life in work/life balance: Ed Rowe, Scott Collins, Travis Watt, Tamuka Chidyausiku, Sara Portesan (Rei and Kei), and Amanda Goffard. And thank you to my Hoop House family: Molly Cohen, Rose Connelly, Sean Dickenson, Laura Green, Mara Feingold-Link, Blair Mills, Siobhan Reddy-Best, Sandy Wood, and Kalie Yeagle. I am humbled by your continued support and unconditional love.

Finally, thank you to David Wang and Dane Nimako. A dissertation would not be long enough to express my gratitude for you two.

Dedication

This dissertation is for Hoop House, David, and Dane.

Table of Contents

List of Tables	viii
List of Figures	ix
Introduction.....	1
Review of the Literature	6
Methods	35
Results.....	50
Discussion.....	63
References.....	74
Appendix	89

List of Tables

Activities within Tiered Professional Development	25
Intervention Comparison of Existing Tiered PD Research and Present Study.....	32
Demographic Information for Teacher Participants	38
Demographic Information for Student Participants	39
Behavior Specific Praise Summary	51
Kay – Disruptions and On-Task Behaviors Summary.....	55
Nelle – Disruptions and On-Task Behaviors Summary.....	57
Travis – Disruptions and On-Task Behaviors Summary	58

List of Figures

Coaching Cycle.....	19
Intervention Timeline.....	44
Implementation of Behavior Specific Praise Across Interventions	54
On-Task Behavior Across Interventions.....	59
Disruptions Across Interventions.....	60

Chapter 1

Introduction

Implementing evidence-based practices (EBPs) can significantly positively impact student outcomes (Cook, 2015). EBPs are specific instructional practices established and supported by trustworthy research bodies. EBPs are linked to addressing and improving specific student behaviors and academics. Implementing behavior-specific praise (BSP), for instance, is linked to improving engagement and on-task behaviors, while increasing opportunities-to-respond (OTR) has been linked to improving general student behavioral outcomes (Ennis et al., 2020; Leahy et al., 2019). When implemented with fidelity, EBPs have the potential to address a range of opportunity gaps within education. Specifically, Benner and colleagues (2013) propose that implementing EBPs through a Multitiered System of Support (MTSS) could effectively address the opportunity gap of students with emotional and behavioral disorders. Additionally, Cook (2015) considered how EBPs are specifically well-suited for students in special education since "students with disabilities typically require the most effective instruction" (p. 270). Furthermore, Pitre (2014) outlined how EBPs can address and close opportunity gaps for African American students.

Despite the demonstrated importance of using EBPs, many teachers do not effectively implement or maintain these practices (Reinke et al., 2014). Consider that some teachers have not amassed the training to implement new practices with fidelity (Butler & Monda-Amaya, 2016). Higher implementation fidelity, the degree to which a teacher implements a practice as intended, is necessary to increase the efficacy of EBPs (Stains & Vickrey, 2017). However, several factors present barriers to the implementation fidelity of a practice. First, some scholars have looked to teachers' beliefs to explain the inadequate implementation of EBPs. Specifically,

teachers' past experiences might dissuade them from contextualizing and implementing new EBPs (Spillane, 2002). Additionally, a lack of interest or flexibility in implementing new EBPs has been identified as a possible barrier to implementation (Forman et al., 2009). When this occurs, to facilitate the implementation of EBPs, it is necessary to support teachers in building appreciation for EBPs by clearly explaining the impact of those practices on student and teacher achievement (Hornby et al., 2013).

Professional development, often conducted by school districts, is the primary method for teaching teachers about EBPs. Another significant barrier to implementing EBPs is an insufficient or ineffective professional development (Hornby et al., 2013). For instance, a lack of opportunities for professional development can prevent teachers from accessing EBPs. Meanwhile, disorganized professional development opportunities can add to the "noise" of support a teacher receives to improve classroom practices (Kennedy, 2016). Consider a district with two professional development opportunities to promote EBPs to address student elopement. If those training strategies were not aligned, teachers would receive conflicting messaging about practices, making it difficult for teachers to prioritize EBPs to implement in the classroom. Alternatively, consider that traditional professional development activities (i.e., one-shot workshops) are largely ineffective for supporting teachers in acquiring and implementing new EBPs (Fixsen et al., 2005). Often workshops do not allocate time for teachers to put into practice newly acquired EBPs, making long term implementation of those practices difficult.

Consultation or coaching as professional development can effectively support the implementation of new classroom practices by offering teachers opportunities to practice and receive feedback on new EBPs (Owens, Lo, & Collins, 2020). However, schools often do not allow time for the systematic delivery of coaching or consultation. Additionally, coaching can

cost more than six times traditional professional development activities, causing some schools to use coaching sparingly (Knight, 2012). To support teachers with implementing EBPs, finding and utilizing professional development opportunities that are resoundingly effective, practical, and efficient is necessary.

Professional Development Through a Multitiered System of Support

One way to address these barriers in teacher learning is by integrating a Multitiered System of Support (MTSS) framework into teacher professional development (Artman-Meeker et al., 2021; Gage, MacSuga-Gage, & Crews, 2017). Traditionally, MTSS is a "systemic, continuous-improvement framework in which data-based problem solving and decision making is practiced across all levels of the educational system for supporting students" (CDE, 2020). The framework consists of three tiers where, in the first tier, an entire school population is provided with the same resources (e.g., curriculum, professional development opportunities, strategies to support positive behavior) or general support. Based on continuous assessment, those needing extra support receive small group support in the second tier. Finally, a smaller population with specific or intensive needs receives individualized support with a third tier.

In 2011, Myers, Simonsen, and Sugai piloted a study on tiered professional development that suggested that MTSS could also be used to help teachers learn and implement new practices. Tiered professional development is a professional development model that includes increasingly intensive support dependent on identified educator needs. For Myers, Simonsen, and Sugai (2011), teachers were exposed to three increasingly intensive tiers of support within professional development. First, all teachers received instruction on the EBP behavior-specific praise. Teachers who struggled with delivering praise were provided self-management protocols to assess their efficacy in implementing this practice. Finally, the teachers who still expressed

difficulty delivering praise received multiple coaching cycles for the third most intensive support.

Tiered professional development commonly addresses teachers' needs through a workshop (tier 1), self-monitoring (tier 2), and intensive coaching (tier 3). Given the relatively nascent stages of research on tiered professional development, there are gaps within tiered professional development literature. First, some models of tiered professional development find little growth in teacher practice between the first and second tiers of support (Gage et al., 2018; Thompson, 2012). Additionally, coaching in tiered professional development often does not follow a systematic protocol, is not-defined, or lacks information on how coaching dosages impact the implementation of the tiered evidence-based practice. Continued research on tiered professional development needs to be completed.

Strengthening the Tiered Professional Development

This study tests a model of tiered professional development intended to improve the efficiency and efficacy of previously studied tiered professional development. Specifically, this study considers a tiered professional development that focuses on the first two tiers of three increasingly intensive tiers of support. Like previous research, this tiered professional development has a universal tier that enlists a shared workshop. In the second tier, teachers participate in a self-management intervention, yet research has not demonstrated significant changes in teacher behavior (Gage et al., 2018; Thompson, 2012). Unlike previous research, this study embeds one dose, or cycle, of coaching within the universal tier of support, ensuring that all teachers have an opportunity to practice, reflect, and receive feedback on newly learned evidence-based practices. Embedding an early universal coaching cycle could maintain the efficiency and adaptability of tiered professional development while potentially increasing the

maintenance of practices after the tiered professional development has finished. Finally, embedding a single cycle of coaching early within the model might limit the time teachers spend on professional development to acquire a new EBP. A professional development model with fewer coaching cycles might be more acceptable to teachers overwhelmed with conflicting responsibilities or outside stressors.

Chapter two provides a foundation for this study by reviewing the general history of professional development and synthesizing all experimental research on tiered professional development. The chapter concludes with a proposal on how coaching might strengthen the efficacy of tiered professional development, especially related to its ability to support teachers' maintenance of behaviors.

Chapter Two

Review of the Literature

Teachers can improve student behaviors and academics through adaptations in their classroom practice. Sointu and colleagues (2019) found that when teachers fostered positive relationships with students, those students had significantly higher grade point averages than other students. Additionally, Kim and Ko (2020) saw that teachers who sought to improve content knowledge saw more academic improvement in students than teachers who did not. Teachers who consistently implemented evidence-based practices saw improvements in student engagement, pro-social skills, academics, and general well-being (Oliver et al., 2011). The link between teacher behavior and student performance means that improving student behaviors requires improving teacher behaviors.

Professional development is an array of activities intended to increase teacher knowledge and improve educational practice (Desimone, 2011). This literature review encompasses professional development in three areas: 1) a general review of professional development and issues in implementation, 2) a general review of the coaching cycle, and 3) a systematic review and analysis of research on tiered professional development. This review ends with a proposed theory of change and research questions guiding this study.

Overview of Professional Development

The evolution and growth of professional development in the United States is primarily influenced by federal policy cycles that are often in response to growing political concerns (Cuban, 2013). The National Defense and Education Act in 1957 sought to improve the quality of teaching in math and sciences to catch up to the Soviet Union in the Cold War (Lieberman & Miller, 2015). In 1983, the National Commission on Excellence in Education published *A Nation*

at Risk in response to accelerated Japanese economic growth. They recommended that schools call upon experts to focus on curriculum reform and implementation. More recently, the No Child Left Behind Act of 2001 advocated for scientifically based staff development approaches. Schools respond to federal policy by prioritizing professional development and looking to outside experts to conduct training with teachers to meet the policy recommendations (Lieberman & Miller, 2015). Federal investments in professional development further affirm national support for professional development. For instance, the American Recovery and Reinvestment Act has provided 100 million dollars to enhance teacher quality (Long, 2015).

The federal government recognizes that professional development is critical for improving teacher quality and investing in the quality of teachers leads to student achievement (Darling-Hammond, 2000). Teacher quality refers to teacher characteristics, professional preparation characteristics, and teacher knowledge linked to student performance. In a seminal study, Sanders and Rivers (1996) found that the effect of teacher quality is both additive and cumulative, suggesting that high-quality teaching impacts student performance that can last for years. Additionally, they found that teacher quality correlates more with student achievement than a school's socioeconomic status or racial composition (Sander & Rivers, 1996). Improving teacher quality requires improving methods for professional development (Kent, 2004). Therefore, prioritizing professional development is not merely a political priority but necessary for improving teacher quality and student performance.

Schools have responded to policy recommendations and investments in ways that have shaped professional development models and, subsequently, teacher and student responses to that professional development. There is a plethora of activities available that schools engage in to improve teacher quality. However, professional development activities are not equally effective.

In 1987, Showers, Joyce, and Bennet identified effective professional development components. They found that professional development includes a presentation of theory, expert demonstration, practice opportunities, and trainers' feedback. Desimone (2009) and Darling-Hammond and others (2017) furthered these considerations by identifying five components of effective professional development. Effective professional development is content-focused, gives teachers an opportunity for active learning, is consistent with other professional development in the building, consistent over time, and incorporates collective participation. Below, common professional development activities are considered through these five components.

Workshops. Workshops consist of learning sessions that provide educators with concrete tools or strategies to improve staff processes, student performance, or well-being. They are often used to support the initial adoption of content for teachers, including evidence-based practices to support learning, the implementation of a new curriculum, tier 1 schoolwide support, or new school processes. Workshops could include guest speakers delivering a lecture, learning sessions facilitated by school-building administrators before the start of the school year, or teacher-led presentations or activities given schoolwide. While the form and content of a workshop can vary widely from school to school, the efficacy of a workshop often depends on its duration and accompanying professional development activities.

Single session or "one-shot" workshops have little effect on teacher performance (Yoon et al., 2007). Sustained and significant behavior improvement will likely result when a teacher has received 30 or more direct contact hours within a professional development, which can rarely occur through a single workshop (Yoon et al., 2007). As early as 1991, educational researchers have called for an end to the single-session workshop (Goldenberg & Gallimore, 1991). Goldenberg and Gallimore (1991) explicitly called for professional development activities that

encouraged instructional conversations between teachers and opportunities to practice newly learned skills.

Ongoing or periodic workshops are more effective than single-session workshops for improving teacher and student performance. This is partly due to the inclusion of opportunities to practice, and reflective conversations embedded within some workshops. Consider the Winning Beginning Learning Circles Initiative, a monthly ongoing professional development aimed at increasing educator and administrator knowledge of school readiness, social-emotional development, and data-driven strategies (Swaminathan et al., 2014). Sessions included monthly shared and reflective learning opportunities, content-tiered curricula, assessments, and individualized training. Through this initiative, kindergarten students of teachers participating in this study outperformed other students in terms of self and social awareness. Teachers' knowledge of social-emotional learning increased, and teachers found this professional development worthwhile (Swaminathan et al., 2014). In another study, preservice teachers in New York were provided continuous workshops on classroom management, diverse student learnings, working with parents, and new teacher survival (Hsu & Malkin, 2013). These workshops were primarily guided by teacher input, dilemmas, and needs. After the study, teachers improved content knowledge and confidence due to the workshop series.

When we consider the components of effective professional development, we see that single-session workshops are content-focused. However, they do not offer the same collaborative participation and practice opportunities as ongoing workshops or other professional development activities. Despite the prevalence of workshops, the ability to apply the knowledge acquired through single-session workshops to the classroom has remained difficult for educators (Cook &

Odom, 2013). Single-session workshops are not linked to sustained change in teacher knowledge or behaviors (Fixsen et al., 2005).

Professional Learning Communities. Professional Learning Communities (PLCs) are defined by Hipp and Huffman (2010) as a group of educators "working collectively and purposefully to create and sustain a culture of learning for all students and adults" (2010, p. 12). The broad aim of a PLC is to improve practice through teacher collaboration. Scholars have characterized PLCs as a group of educators having shared beliefs and values, supportive leadership, collective intentional learning, a shared personal practice, collective responsibility, and individual and group learning (Hord, 2008). PLCs often comprise a cross-disciplinary team of teachers who meet to discuss school-related issues or problems of practice. PLCs are commonly recognized as a dynamic and fluctuating professional development activity. Specifically, Jones and Thessin say, "The change process schools undergo as they engage in PLC work is ambiguous, fluid, dynamic, and organic—in fact, there is no clear delineation of the phases, and each PLC in a learning organization operates at various phases of the change process." (P. 206). This fluidity in PLCs leads to instructional change through opportunities for experimentation and exploration of intellectual curiosity (Bryk et al., 1999)

The fluid nature of the PLC contributes to its efficacy and favorability. PLCs are preferable to teachers over other professional development methods as they are less didactic (DuFour et al., 2005). Generally, teachers perceive PLCs favorably because they promote cohesion while also giving teachers the flexibility to build a knowledge base (Avidov-Ungar & Zion, 2019). Furthermore, implementing PLCs has been linked with improvements in teacher practice and student performance. For instance, some teachers who participated in PLCs saw an increase in the accessibility of instruction for English language learners (Slack, 2019). A

literature review on the efficacy of PLCs found that the introduction of a PLC resulted in a change in teacher practice across all studies (Vescio, Ross, & Adams, 2010). For each study, the type of resulting teaching change varied. For instance, a 2-year study on PLCs found that the PLC structure-guided teachers to be more student-focused (Dunne et al., 2000). Alternatively, a study on using PLCs to promote language art instruction found that teachers' focus changed from a deficit-focused lens to thinking more about concrete strategies for supporting students (Hollins et al., 2004). Well-structured PLCs are also linked to student growth. Specifically, because of a PLC, African American students showed significant academic gains for three consecutive years compared to peers in districts without the PLC structure (Hollins et al., 2004).

The evidence of the efficacy of PLCs is not resounding. Bryk, Camburn, and Louis (1999) posited that it is difficult to link PLCs and instructional practice. It is difficult to isolate the impacts of the PLC when a school is likely to implement multiple school improvement interventions at once. Additionally, because of the collaborative nature of the PLC, the efficacy of the PLC is dependent on several social factors, including group dynamics, school contacts, and school climate. Finally, some scholars have argued that there is no strong link between PLCs and student outcomes unless the study focuses on a specific feature or trait of student improvement (Stoll et al., 2006).

While PLCs provide collaboration and flexibility to practice, the PLC structure is sometimes challenging to implement. For one, a qualitative analysis found that PLCs are far more likely to occur with strong administrative leadership (Stoll et al., 2006). This is because the process of creating and sustaining the PLC can take incredible effort (Bolam et al., 2005). Furthermore, even with strong administrative leadership, some teachers have reflected that PLC scheduling is difficult (Slack, 2019).

As a standalone professional development activity, PLCs meet the criteria of many effective practices for PD. Specifically, PLCs are often content-focused, consistent with other professional development in the building through strong administrative support, consistent over time, and incorporate collective participation. However, PLCs do not actively encourage opportunities for active learning because it is limited to group interaction and not classroom practice. Outside the effective practices for PD, PLCs can be resource intensive, requiring time and flexibility of teachers.

Self-Management. Self-management, or self-monitoring, occurs when individuals manipulate and track their implementation of a skill (Cooper, Heron, & Howard, 2007; Skinner, 1953). Self-management requires the individual to establish a goal for implementing a behavior, tracking the behavior, and recording their performance of the behavior. Self-management strategies have been applied to both student and teacher behaviors within the classroom. For students, self-management has shown to be effective in improving positive behaviors for students with and without disabilities when used alone or as a part of a multicomponent intervention package (Sheffield & Waller, 2010). Specifically, self-management interventions have led to increased following directions, improvement in remaining on task, decreased off-task behaviors, and improved social skills.

Self-management strategies are also used as a standalone or part of multicomponent professional development activity for teachers. For Strasser and colleagues (2018), self-management consisted of bi-weekly checklists where teachers reported specific goals they had around developing classroom language skills. For Simonsen and colleagues (2014), self-management involved a brief training where teachers established goals related to classroom management, tracked those goals daily, and self-reported those goals back to the researchers.

Other researchers have employed self-monitoring cards to guide teacher interactions, video self-monitoring, and electronic tactile prompting using a smart watch (Bishop, Snyder, & Crow; 2015; Markelz et al., 2019; Martin, Drawsgow, & Halle, 2015).

Research has shown that some self-management is effective after a workshop cementing newly acquired practices. For instance, self-management strategies have been shown to increase implementation rates of behavior-specific praise and, subsequently, student academic engagement (Niwayama et al., 2020; Simonsen et al., 2014). While research has commonly considered self-management in behavior-specific praise, the method has been linked to improving other teachers' behavior. A study on the quality of language environments in a preschool class showed that children received more language learning opportunities when teachers self-managed (Strasser et al., 2018). In another study on embedding instructional practices in outdoor time, self-managing increased teacher interactions with students, and student engagement also increased during this time (Martin, Drasgow, & Halle, 2015). When paired with equity feedback, self-management can also decrease disparities in teacher delivery of the practice (Knochel et al., 2022).

Despite the links to teacher change, researchers have noted limitations to self-management as an intervention. Notably, some have called for an investigation of the individual components of self-management and maintenance of behaviors due to the intervention (Martin, Drasgow, & Halle, 2015). Years of experience, willingness to adapt or technology used for self-management might influence the initial implementation and maintenance of adopted behaviors (Markelz, Ridden, & Hooks, 2021). Furthermore, more insight is needed into the relationship between the intervention and student behaviors (Knochel et al., 2022). Current research on teacher self-management inconsistently links teacher behavioral change to student behavioral

change. Finally, some scholars have noted that self-management is better suited for simple interventions with simple technologies (Oliver, Wehby, & Nelson, 2015). Specifically, teachers can better reflect on behavior change when focused on a single behavior or task. Furthermore, teachers find the intervention more acceptable when self-management technology is easy to use. To that end, Markelz and colleagues (2019) found that tactile prompting through smart watches was easy and effective for self-monitoring. Specifically, when prompted by the watch, educators were reminded to implement specific praise. However, not all teachers would have access to expensive technologies to support behavior change.

In the context of professional development effective components, self-management provides educators opportunities to engage in time for self-reflection. A weekly self-assessment provided to a teacher encourages them to reflect on the implementation of a practice. Additionally, it can be designed to be consistent with other professional development activities within the building. For example, if a teacher attends a workshop on best practices for implementing opportunities-to-respond, they can conduct their self-management protocol for follow-up implementation. However, self-management is grounded in continuing teacher behaviors and not supporting teachers with learning new content (Simonsen et al., 2014). In other words, when a teacher is in a self-management protocol, they are not acquiring new skills but instead practicing skills already learned. Additionally, when adopted with fidelity, self-management also lacks collective participation. Specifically, in a self-management protocol, teachers work in silos to implement practices. In short, those engaging in only self-management practices are not necessarily acquiring new content, nor do they have opportunities to reflect without others when adopting new practices with their school community.

Coaching. Coaching can be defined as helping "educators make informed decisions about instruction and school organization that will lead teachers to teach in ways that help students gain a deep knowledge of subject matter so that they can bring that knowledge to bear on problems and questions that matter", and it is widely viewed as a critical component in developing teacher professional development and school change (Neufeld & Roper, 2003, p. 1). Coaching often occurs in person. Kissel and colleagues (2011), for instance, write that the coach might demonstrate an instructional practice in which the teacher watches and takes notes on EBP implementation. Many coaching models have turned to technology to increase the accessibility of performance-based feedback. Web-based or virtual coaching, for example, has been adopted in place of face-to-face interactions. In these programs, teachers receive feedback or consultation by videotaping and having a coach review those materials. MyTeachingPartner is one example and involves teachers recording their instruction and having consultants respond with virtual feedback. (Pianta et al., 2008). Bug-in-ear coaching is another technological-based coaching. In bug-in-ear, the educators will wear an earpiece during instruction, and the coach will deliver real-time performance feedback (Artman-Meeker et al., 2017). The strength of bug-in-ear coaching is that it offers immediate performance feedback to the educator.

The specific attributes or definitions of coaches can vary according to school, district, or researcher and often overlap between coaching types (Pas et al., 2014). Generally, coaching uses a collaborative partnership between a coach and teacher to identify specific areas of improvement and reflect on teachers' behaviors.

Coaching for Specific Skill Improvement. Some coaching primarily serves to improve targeted skills or classroom practices. Instructional coaches, for instance, often serve as school-based supports that assist teachers with embedding evidence-based practices into their instruction

(Knight, 2009). Desimone and Pak (2017) note that while instructional coaching is aligned with best practices in professional development, there is still little empirical evidence to support that instructional coaching improves teacher practice. Recent research has begun to link instructional coaching and improvements in practice. Specifically, instructional coaching has recently been linked to teacher improvements in evidence-based practices (Knight & Skyrtic, 2021). Like instructional coaching, practice-based coaching is linked to improvements in teacher implementation of evidence-based practices. Practice-based coaching (PBC), often used in early childhood settings, is nested within a collaborative partnership and follows a coaching cycle of meeting, observation, and feedback (Snyder, Hemmeter, & Fox, 2015). In PBC, the coach and teacher often identify specific feedback practices.

Reflective Problem-Solving. Denton and Hasbrouck look at coaching as a problem-solving model, wherein the coach and teacher collaboratively reflect on solutions to instructional concerns (2009). Peer coaching is an example of this and requires collaborative studying of the underlying concern with peer mentors (Joyce & Showers, 1981). Hooker (2013) identified these key characteristics of peer coaching: open lines of communication, non-evaluative coaching conversations, trust between coaching and teacher, and opportunities for reflection. Teachers who participate in peer coaching can use those conversations to solve issues (Murrihy, 2009). Teachers began to feel empowered through peer coaching conversations (Rice, 2019).

This is also true of cognitive coaching, which supports "mediating a practitioner's thinking, perception, beliefs, and assumptions toward the goals of self-directed learning and increased complexity of cognitive processing" (Costa & Garmston, 2002, p. 5). Coaches in a cognitive coaching model aim to contextualize their concerns within the feedback conversation. As a result, teachers who engage in behavioral change as a result of new understandings about

their position within education. Cognitive coaching has been found to support teachers in improving their sense of efficacy and forming a professional identity (Goker, 2020). This coaching method has been viewed favorably by teachers and coaches, who have noted that it fosters collegiality (Garmston & Linder, 1993).

Overlapping Activities within Coaching Models. Many responsibilities and skills of different coaching types overlap. Coaching for skill improvement or reflective problem-solving is often rooted in strong collaborative partnerships. In cognitive coaching, for instance, the coach and teacher reflect on teacher practice, while PBC uses the collaborative partnership to identify specific skills to improve. Both coaching that focus on specific skill improvement and reflective problem solving can also follow a coaching cycle (Scheeler et al., 2004). A coaching cycle refers to the process where the coach and teacher engage in a repetitive coaching loop that involves at least an observation and feedback session. For Knight (2007), an instructional coaching cycle could involve a "first conversation" or pre-conference to establish a specific skill for the coach to observe. This is followed by an observation and feedback session with additional rounds of coaching, if necessary. PBC is also rooted in the coaching cycle and follows goal setting, focused observation, reflection, and feedback. The next section will focus deeper on the coaching cycle.

The Coaching Cycle

The coaching cycle is a continuous series of activities that a coach follows when supporting a teacher in implementing classroom practices. Depending on the study and aim, the coaching might be implemented with different steps or considerations within the cycle. For instance, Baldinger's (2014) cycle involves a pre-meeting to establish goals, a classroom observation, and a post-feedback session. Similarly, Teeman (2014) uses a pre-conference to plan a lesson, followed by observation collaboratively, and a post-conference to assess the

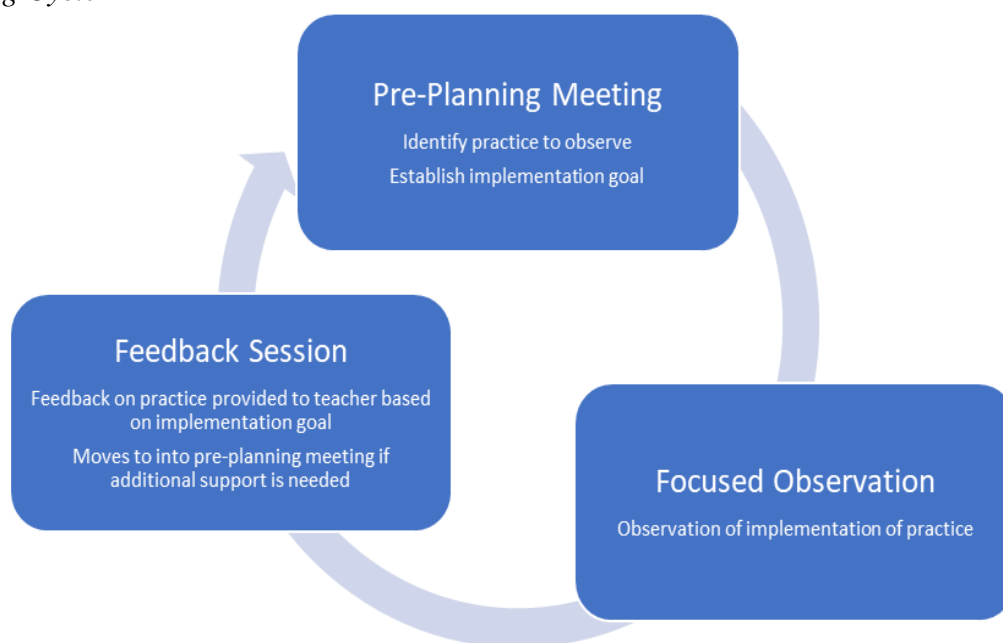
implementation of the lesson. Extended coaching cycles can include other steps. For instance, Gregory and colleagues (2017) followed a coaching cycle that involved the teacher recording instruction, the coach selecting clips for the teacher to review, the teacher reviewing the clips, the teacher and coach discussing the clips, and the coach sending back a written summary of the discussion. In the PBC framework, the coaching cycle involves shared goals and action planning, focused observation, reflection, and feedback. The activities are nested within a collaborative partnership and have improved teaching practices (Snyder, Hemmeter, & Fox, 2015). PBC is manualized and tested using a standardized protocol.

In most forms of the coaching cycle, there is an opportunity for goal setting in which the teacher identifies a practice to improve in frequency, duration, or quality. Setting goals in the coaching cycle is effective because it helps teachers prioritize time and motivate them to behavioral change (Cheatham & Ostriksy, 2013). After the teacher has set the goal, the coach monitors progress through a focused observation. A focused observation allows the coach to monitor the implementation of the practice (Kretlow & Bartholomew, 2010). Finally, there is an opportunity for reflection and feedback. Reflective conversation and performance feedback assist with productive problem solving while supporting the implementation of the practice in future observations (Barton et al., 2011). The study at hand uses shared components from these coaching activities to form a singular and unified coaching cycle (See Figure 1). This coaching cycle begins with a pre-planning meeting where the teacher and coach establish a time for the observation, a practice to observe, and an implementation goal for that practice. The cycle continues with a focused observation where the coach observes the teacher's implementation of the practice. Next, the coach provides the teacher feedback based on the observation, next steps

for future observation, and, if necessary, plans for an additional observation and feedback session.

Figure 1

Coaching Cycle



Effects of the Coaching Cycle. The coaching cycle has been linked to improvements in student and teacher outcomes. Specifically, in a study that compared PBC to workshops, participants grew significantly more in self-efficacy with coaching than participants who engaged in workshops alone (Garder-Neblett, De Marco, & Sexton, 2020). Moreso, PBC has been linked to teacher adherence, integrity, and the fidelity of those practices (McLoed, 2020; Sutherland et al., 2014, Sutherland et al., 2018). These results extend to students as well. Hemmeter and colleagues (2021) found significant improvements in pro-social behaviors for students whose teachers participated in PBC with the Pyramid Model.

The coaching cycle can aid teachers in implementing strategies that support students in academics and behavior and bridge newly learned information to sustained implementation of

EBPs (Denton & Hasbrouck, 2009; Kretlow & Batholomew, 2010; Kraft & Blazar, 2013). Knight and Skyrtic (2021), for instance, found that when teachers engaged in the cycle, they consistently met their pre-established goals. The coaching cycle has also been attributed to the increased maintenance and sustainability of practice (Teemant, 2014). Additionally, the implementation of the coaching cycle led to improvements in student standardized achievement tests (Gregory et al., 2017). Overall, this cycle of coaching has been viewed favorably by teachers. A mixed method study on the coaching cycle found that teachers appreciated the positive feedback from the coaching cycle and associated the coaching cycle with the growth of their practice (Hodges, Roy, Tyminski, 2018). Teachers have also seen this process as productive despite the steps or time it could take to complete the cycle (Gregory et al., 2017).

Issues with the Coaching Cycle. Despite the benefits of the coaching cycle, there are limits to coaching as a standalone professional development activity. Teachers from high-performing schools, for instance, have viewed coaching as superfluous, recommending that coaching should be tiered to teachers in need of additional support (Monroe & Marvin, 2020). Alternatively, teachers from low-performing schools who wanted more instructional coaching opportunities could not receive them because of a lack of coaching opportunities within their schools (Monroe & Marvin, 2020). Additionally, coaches must attempt to reconcile specific teachers' wants and needs with schoolwide initiatives (Colburn & Woulfin, 2012). Specifically, a coach might feel pressured to support a schoolwide instructional focus over a singular practice that a teacher is struggling with in the classroom. Furthermore, coaching is often seen as a solitary activity between the coach and teacher, limiting its efficacy (Desimone, 2009).

One of the most significant barriers to coaching is time- and resource-intensive (Knight, 2012). Frequent coaching requires consistent staff support and can cost six times more than other

professional development activities (Knight, 2014). Subsequently, coaching sometimes occurs infrequently as once or twice per year (Denton & Hasbrouck, 2009). Teachers need up to 30 direct contact hours before sustaining a new skill through any professional development activity (Yoon et al., 2017). With inconsistent coaching support, teachers may not be sustaining new skills through coaching alone. Knight and Skyrctic suggest that coaching can be an effective professional development while still being cost and resource effective if it were in an iterative and needs-based format (2021). This suggestion is, in part, the foundation of this study. Because of the general efficacy of coaching as professional development, it is necessary to think about how coaching can be used with teachers as needed and with fewer coaching cycles.

Tiered Professional Development

Literature has demonstrated that multicomponent professional development models are much more likely to increase desired teacher behaviors than single professional development activities. Multicomponent professional development models combine two or more activities without targeting or tiering support. For instance, the BEST in CLASS intervention utilized workshops and PBC to increase teachers' use of classroom management practices (Conroy et al., 2019). The BEST in CLASS intervention did not systematically tier those interventions for teachers who participated in 6 hours of workshops and 14 successive weeks of PBC. Despite their efficacy, multicomponent models still challenge schools in cost and lack of adaptability. It has been suggested that an effective multicomponent professional development model could be time intensive and costly because it does not adapt to teacher needs (Gage, MacSuga-Gage, & Crews, 2017). It is then necessary to consider how a multicomponent professional development model could adapt to meet teachers' needs while using fewer resources.

Studies have begun to enhance the efficiency of the multicomponent model by embedding it within a multitiered system of support (MTSS) framework. In public health, an MTSS uses assessment to determine interventions according to need. Often the assessment will determine if a person requires targeted or intensive support (Mrazek & Haggerty, 1994). The MTSS framework matches student needs with intensive educational intervention support (McIntosh & Goodman, 2016). Tiered professional development (TPD), a model of multicomponent professional development, seeks to address issues in professional development by using assessment to identify teacher needs and offering multiple types of PD (e.g., workshops, self-management, and coaching) in a continuum of supports (Grasley-Boy et al., 2021; Simonsen et al., 2014). A needs-based assessment within a TPD can make it less time and resource intensive than coaching alone. Additionally, unlike workshops, there are opportunities within the TPD for teachers to practice gained strategies with avenues for feedback. The following section gives an overview of TPD. It highlights promising examples of its efficacy and ways that TPD can improve teacher practice and student outcomes.

TPD is a model of multicomponent professional development that places professional development activities on the continuum of as-needed support as sometimes determined by a placement assessment (Grasely-Boy, Gage, & MacSuga-Gage, 2019). Research on TPD is relatively nascent, with the first empirically tested example of TPD occurring in 2011 (Myers, Simonsen, & Sugai). They describe three or more tiers of increasingly intensive support, relying on professional development activities common within existing school infrastructure. Generally, all teachers receive didactic, universal training or workshop in a skill in TPD. If the teacher does not meet an established response rate, they will receive a self-management intervention. Again, if

there is a lack of growth, they will move into a more intensive intervention, receiving coaching or performance feedback.

The TPD model has been used with varying professional development activities and tiers but might include a placement assessment, universal workshop, targeted self-management, and intensive coaching. Researchers have named a three-tiered model for supporting teachers in virtual learning (Vaill & Testori, 2012). In this study, college faculty were exposed to an institute (tier 1), workshop (tier 2), and general resources to support their practice (tier 3). Furthermore, researchers at the University of Washington support early childhood teachers in a tiered coaching model. In this model, coaches consider teachers' preferences, experiences, and current classroom practices in identifying if a teacher receives self-guided email-based coaching (tier 1), small group learning communities (tier 2), and individual practice-based coaching (tier 3) (Artman-Meeker et al., 2022).

A literature review conducted on TPD informs the scope and direction of this study. Despite those mentioned above and the well-documented use of TPD, this literature focuses on studies where TPD is the independent variable and includes a workshop and coaching or self-management support. Inclusion criteria also required that studies be published in peer-reviewed journals, using experimental design procedures wherein TPD (i.e., Professional development that included increasingly intensive supports dependent on identified educator need) was the independent variable, and with the teacher, participants working within a K-12 setting. Ten articles were included in the final review (see Appendix A for detailed information on each study included within this review).

Nine of the ten studies included in this review used a multiple baseline design to demonstrate effectiveness between the TPD and classroom management strategy. One study used

a multiple baseline design within a case study to demonstrate effectiveness, and another utilized an experimental group crossover design. Nine of the studies looked specifically at the impact of TPD on behavior-specific praise. At the same time, three studies also considered the impact of TPD on prompting or opportunities to respond. Seven studies focused on elementary schools, two on middle schools, and one on high school. Most of the studies identified their school as either a suburban or urban landscape, with two studies identifying the school as a title one school.

This review first summarizes data collected within the TPD model. Next, the review looks at specific activities used within TPD before assessing the general impact of these activities. The review ends by considering the existing gaps within TPD work.

Data Collection of Tiered Professional Development

Data Collection. All studies collected data on implementing behavior-specific praise (BSP), prompting, or opportunities-to-respond. All studies collected data through 15-minute direct observations where trained observers collected practice rates. Data on student behaviors were collected in six of the ten studies. Specifically, each study considered, with slight variation, student on-task or disruptive behaviors. On-task behavior was most commonly defined as active or passive participation in the classroom and was often observed on rotating individual students in one-minute intervals. Disruptive behaviors were behaviors that stopped or prevented instruction and were often recorded through rates.

Maintenance. Maintenance or follow-up results were highly variable within these studies. There was no maintenance phase for three studies, citing COVID-19, summer breaks, or teachers withdrawing from the study (Grasley-Boy et al., 2021; Simonsen et al., 2014; Thompson et al., 2012). Additionally, the researchers did not conduct a follow-up phase in the high school

replication study because of no noticeable impact on the intervention teachers within the TPD phase (Freeman et al., 2018). When teachers participated in follow-up, results were inconsistent. Two studies indicated deterioration during the maintenance phase and attributed that to rapid withdrawal or insufficient time spent with the intervention (Simonsen et al., 2017; Simonsen et al., 2020). Myers, Simonson, and Sugai (2011) saw variability during this phase, consistent with Gage, Grasley-Boy, and MacSuga-Gage's (2018) findings. They showed mixed results for maintenance criteria with one person below, one person above, and one person above but decreasing an established criterion rate for behavior-specific praise (Gage, Grasely-Boy, & MacSuga-Gage, 2018). It should be noted that Briere and colleagues found that BSP did sustain one month after intervention (2015). However, in their discussion, they called on for additional investigation into the durability of intervention.

Activities within the Tiered Professional Development

Each of the ten studies detailed a professional development modeled after a multitiered support system (Table 1). Accordingly, professional development exists within three tiers which might occur after a baseline assessment. After a baseline assessment, there is a universal tier where each participant receives shared training, a secondary tier individualized to the participant's needs, and a tertiary tier that involves intensive support for teachers not meeting an a priori requirement for implementing the instructional practice strategy (Grasley-Boy, Gage, & MacSuga-Gage, 2019).

Table 1

Activities within Tiered Professional Development

<i>Study</i>	<i>Assessment for Placement</i>	<i>Tier 1</i>	<i>Tier 2</i>	<i>Tier 3</i>
--------------	---------------------------------	---------------	---------------	---------------

Briere et al., 2015	No assessment	Workshop	Self-Monitoring/Self-Management	No Intervention
Gage, MacSuga-Gage, & Crews, 2017	No assessment	Workshop	Self-Monitoring/Self-Management	Coaching (Cyclical Feedback Sessions)
Myers, Simonsen, & Sugai, 2011	No assessment	Workshop	Coaching (Consultation with Primary Researcher)	Coaching (Cyclical Feedback Sessions)
Simonsen et al., 2017	No assessment	Workshop	Self-Monitoring/Self-Management	No Intervention
Freeman et al., 2018	No assessment	Workshop	Self-Monitoring/Self-Management	Coaching (Daily Emails)
Gage, Grasley-Boy, MacSuga-Gage, 2018	No assessment	Workshop	Coaching (Emailed Visual Performance Feedback)	No Intervention
Simonsen et al., 2014	Universal Screening	Workshop	Self-Monitoring/Self-Management	Coaching (Data Driven Consultation)
Simonsen et al., 2020	No assessment	Workshop	Self-Monitoring/Self-Management	No Intervention
Grassley-Boy et al., 2021	No assessment	Workshop	BSP training with Email feedback	No Intervention
Thompson et al., 2012	No assessment	Workshop	Self-Monitoring/Self-Management	Coaching (Peer Coaching)

Assessment for Placement. Appropriate interventions based on need are identified through a universal assessment of targeted practice. Only Simonsen and colleagues (2014) named the universal assessment in their study. They noted that a TPD model could benefit from a process that would place teachers into professional development, which reflects the process

with the Tiered Coaching Model (Artman-Meeker et al., 2022). No study indicated that the universal assessment data was used to inform placement within tiered supports. More specifically, the results from the universal assessment did not change staff placement with workshops, self-management/self-monitoring interventions, or coaching support. Grassley-Boy and colleagues noted this limitation, saying "there is a need to conduct baseline assessments before any Tier 1 training to have a better understanding of teacher skills before implementing MTS-PD" (2021).

Tier 1. Each intervention began with a universal workshop. This universal workshop either occurred schoolwide (Myers, Simonsen, & Sugai, 2011) or was given to participants individually (Gage, MacSuga-Gage, & Crews, 2017). These workshops relied on similar protocols for teaching classroom practices. This included 1) defining the practice, 2) providing rationale and supporting research for using the practice, 3) giving examples and non-examples of the practice, and 4) noting critical features of the practice.

Tier 2. After participants in all reviewed studies finished the universal assessment and received training on classroom management practice, they entered a more intensive form of professional development support. For most studies, self-management or self-monitoring training occurred to help teachers to estimate their current practice, set a goal, identify a reinforcer for meeting their goal, and find a system for documenting their goal. After the training on self-management occurred, teachers recorded their usage of specific praise daily. Finally, participants received weekly or daily scripted email or text prompts in response to the reported teacher self-management data.

Tier 3. A second, more intense intervention (tier 3 supports) sometimes occurred for teachers who did not respond to self-management. This intervention only occurred in four of the

ten studies. Coaching varied per study with few consistencies. For Thompson and colleagues (2012), teacher participants sat with a coach and reviewed a video observation. After reviewing the video, the coach would have the participant reflect on what they noticed in the video and brainstorm strategies for improving BSP. For Myers, Simonsen, and Sugai (2011), teachers received in-person or email feedback after in-person observations. The feedback included a hard copy of the feedback, prompts about goals, and verbal praise. These sessions lasted two to five minutes. For Simonsen and colleagues (2014), it required that teachers meet with a behavior coach who reviewed their current performance based on self-collected data and develop a plan for addressing two to three "critical areas for improvement" (p. 183, Simonsen et al., 2014). For some studies, this tier was understudied because teachers made the adequate change following tier 2 support. For instance, in one study, only one participant required coaching (Freeman et al., 2018). Alternatively, for Grassley-Boy and colleagues (2021), all teachers met the established rate of implementation of the practice, so no teachers advanced to tier 3 support.

Outcomes Tiered Professional Development

Eight studies showed a functional relationship between components of the TPD and behavior-specific praise (BSP), while two showed a functional relationship between TPD and prompts. Gage, Grasley-Boy, and MacSuga-Gage (2018) implemented a TPD with a one-on-one training session and visual performance feedback. They saw a functional relationship between the TPD and the implementation of BSP. One study found a functional relationship between targeted professional development with self-management and email prompts and implementation of BSP (Simonsen et al., 2017). However, they found that implementation of BSP decreased during follow-up observations. Gage, Grasley-Boy, and MacSuga-Gage (2020) found that teachers demonstrated statistically significant increases in their specific praise and prompts rates.

However, these changes were not maintained during the follow-up phase. Simonsen and colleagues (2020) looked at the impact of a TPD with brief training, email prompts, and self-management on implementing opportunities to respond. They did not see a significant increase in opportunities to respond to the intervention. One study found no functional relationship between a TPD that utilized a workshop, self-management, and email feedback on teacher implementation of BSP (Freeman et al., 2018). This result was partly attributed to TPD in a previously untested setting (i.e., high school).

Three studies showed little growth in teacher practice after the initial workshop. This was evident to Gage and colleagues (2017). They saw that all teachers moderately improved implementation after the workshop's introduction but did not grow significantly until the self-management intervention was introduced. In another study, teachers improved after the universal training but did not grow significantly until the ongoing consultation sessions (Myers et al., 2011). This is also seen in Thompson's study (2012) that determined that teachers would only move to a more intensive intervention if they did not improve by 50 percent in implementation rates. All teachers moved to intensive support after the workshop because they did not meet adequate growth.

Student outcomes were a secondary variable in half of the studies. For one study, there appeared to be a strong correlation between increased student engagement and decreased off-task behaviors, with students being on task for nearly 95% of intervals after the intervention (Simonsen et al., 2020). Three studies showed little or no student progress due to the TPD intervention. Grassley-Boy and colleagues (2021) observed only slight decreases in off-task behaviors in both classes. This was also true for Gage, Grasley-Boy, and MacSuga-Gage (2018), who found that there will only slight decreases in off-task behaviors for students. Alternatively,

one study saw that student rates remained the same between conditions (Simonsen et al., 2014). For Myers, Simonsen, & Sugai (2011), a downward trend concerning student behavior was observed, but no functional relationship was detected. In addition, there were high levels of variability of engagement data during maintenance observations (Myers, Simonsen, & Sugai, 2011). Gage, MacSuga-Gage, and Crews (2017) called for continued investigation into the impact of TPD on student behaviors because of the lack of consistent behavioral trends.

Eight of the studies reported on social validity. Generally, TPD was an acceptable intervention in all reporting studies. Three studies used the Intervention Rating Profile-15 (IRP-15), three studies used some variation of the Targeted Professional Development Acceptability Rating Profile - 15 (TPD-AQ), and two studies did not report how they assessed social validity. One study named that they did a post-study intervention questionnaire. Additionally, three studies extrapolated on teachers' perceptions of the intervention. First, teachers liked that the strategies within the TPD were generally easy to implement (Myers, Simonsen, & Sugai, 2011). Second, while teachers found the intervention acceptable, some noted that the intervention felt superfluous without students expressing behavioral concerns (Simonsen et al., 2017). Finally, some teachers preferred feedback through text instead of email, citing that feedback through text was more readily accessible (Grasley-Boy et al., 2021).

Gaps in Tiered Professional Development

Research on TPD has shown that while it is a promising model for supporting teachers in increasing positive classroom practices, there are opportunities to strengthen its model.

Inadequate Growth After Workshops. The literature review revealed inconsistent growth of practice after the universal workshop. Workshops often lack an opportunity to practice newly learned skills and have little impact on changing teacher behaviors (Yoon et al., 2007). An

adaptation to the workshop that provides teachers with a chance for practice might decrease the need for teachers to move to tier 2 or 3 of the TPD model. Subsequently, the professional development model would continue to be effective and efficient.

Standardizing Coaching. There are inconsistencies between the coaching literature and its use in TPD. When used in TPD studies as a tier 3 support, the coaching was inconsistent in process and dosing. Coaching within TPD took the form of emailed performance feedback, one-on-one in-person instructional coaching, and virtual consultation. However, no study outlined a clear process for coaching. Additionally, there were discrepancies in dosage for coaching within the TPD. For 6 of the studies, dosing ranged from 2 to more than 12. The dose of the coach often remained in the 5 to 9 range. 4 of the studies have no available data on the coaching process or dosing. Still, we know that coaching and the coaching cycle are linked with positive changes in implementation rates and fidelity of new classroom-based practices (McLoed, 2020; Sutherland et al., 2014, Sutherland et al., 2017). We also know that high coaching cycles can strain school resources (Barrett & Pas, 2020). Future research on TPD should consider embedding fewer coaching cycles in the framework to maintain coaching efficacy.

Embedding Coaching within Tiered Professional Development

It is worth considering the impact of a coaching cycle within tier one of a TPD model (See Table 2). Namely, coaching cycles (e.g., practice-based coaching) are well-researched, evidence-based, and systematized coaching models. Generally, embedding a standard coaching cycle into a TPD model ensures that the coaching intervention will follow a systematic procedure. Besides recent research on the Tiered Coaching Model (Artman-Meeker et al., 2022), embedding a coaching cycle within a TPD has not been done consistently or with k-12 populations. A TPD would benefit from a more consistent, evidence-based coaching process.

Standardizing Coaching with Tiered Professional Development. Coaching in TPD literature is inadequately defined and lacks essential information on the dosage of coaching. However, coaching literature on the coaching cycle has more apparent protocols for implementing the cycle. Subsequently, research on TPD that embeds coaching would offer insight into the exact benefits of the role of coaching within TPD. Additionally, the historically high dosing of coaching challenges a notion of resource efficiency in the TPD model. It is necessary to consider how fewer coaching cycles within the TPD framework would impact the efficacy of newly learned practices. Workshops are more effective with opportunities to practice, and a coaching cycle provides that practice. However, no study has tested the effect of embedding one dose in coaching with the first, universal tier of the TPD model. Embedding a standardized coaching protocol within the universal intervention within TPD addresses multiple issues. First, it ensures that coaching does not stress the school system. Next, it ensures that the model of coaching with the TPD is consistent. Finally, it can expand the literature on the coaching cycle to highlight the potential efficacy of minimal dosages of coaching in implementing evidence-based practice.

Table 2

Intervention Comparison of Existing Tiered PD Research and Present Study

	Thompson (2011)	This Study
Tier 1	Workshop	Workshop & One Cycle of Coaching
Tier 2	Self-Monitoring/Self-Management	Self-Monitoring/Self-Management
Tier 3	Intensive Coaching	

Addressing Maintenance Issues within Tiered Professional Development. Maintenance of strategies is under-researched within the literature on the coaching cycle. Conroy et al. (2014) found that increased behavior-specific praise was maintained for teachers after the practice-based coaching intervention. Still, there is not enough existing literature to successfully argue that a coaching cycle with TPD will improve issues in maintenance. By exploring the coaching cycle within this study, the impact of universal coaching within the TPD on the implementation and maintenance of EBPs can be broadly considered.

Theory of Change and Research Questions

Teacher behaviors are connected to student performance. When teachers consistently use evidence-based practices in the classroom, students are more likely to show improvement in academics and behaviors. Therefore, it is critical to support teachers in implementing those practices. Acquiring and implementing evidence-based practices are historically difficult for teachers, so exposing them to practical and effective professional development activities is necessary. Multicomponent professional development activities are more effective than single professional development activities for improving teacher practices (Lorio & Woods, 2020). Within multicomponent professional development activities, ongoing coaching is more effective than workshops for improving teacher practices. While promising, ongoing coaching is resource intensive, and there is little data on the coaching dosage necessary to improve teaching practice. This study attempts to address those issues through iterating a TPD by embedding a cycle of coaching model early within its framework and measuring its impact on implementation and maintenance.

Tiered Professional Development with Cyclical Coaching. TPD has the potential to provide a continuum of services to teachers. However, research on TPD has shown insignificant

data on behavior maintenance, which could be attributed to a lack of sufficient coaching structures within its model. A TPD with a stronger coaching protocol might lead to better maintenance of interventions.

Coaching as a Tier 1 Intervention. Coaching is an effective coaching model for improving teachers' use of classroom management practices. It has yet to be explored in tier 1 intervention in a TPD. Coaching often requires frequent cycles to promote behavioral change, which is resource intensive. By offering one session of coaching as universal support with TPD, it is possible that we could increase and maintain rates of newly learned practices.

Overall, this study seeks to show that TPD can offer teachers a continuum of support as they learn and practice a new evidence-based practice. I hypothesize that embedding one cycle of coaching within tier 1 of a TPD model is an effective and acceptable way to strengthen implementation outcomes (i.e., rate of behavior and maintenance of the behavior) of TPD. The research questions guiding this study are:

1. What are the effects of embedding universal coaching into a tiered professional development model on teacher implementation rates of an evidence-based practice?
2. What are the effects of a tiered professional development model on student engagement?
3. Do teachers find this model of professional development acceptable and feasible?

Chapter 3

Methods

This chapter describes the protocols used to determine the relationship between a tiered professional development model with one dose of universal cyclical coaching (TPD+) and behavior-specific praise (BSP) implementation rate. This study utilized a multiprobe, multiple-baseline design across three elementary teacher–focal student dyads to answer the following research questions: 1) What are the effects of embedding a universal cycle of coaching into a tiered professional development model (TPD+) on rates of teacher implementation of an evidence-based practice? 2) What are the effects of the tiered professional development model (TPD+) on student engagement? 3) Do teachers find this model of professional development acceptable and feasible?

Experimental Design

A multiprobe, multiple-baseline design was used to determine a functional relationship between TPD+ and both 1) the implementation rate of BSP and 2) the rate of student engagement (i.e., student on-task behaviors and disruptions). In a multiple baseline design, the intervention is introduced sequentially across participants (Kennedy, 2005), and a multiprobe design means that data is collected intermittently as well as immediately before and after the introduction of each intervention (Kennedy, 2005). This multiprobe design is intended to avoid teacher stress that continual observations throughout the study might cause. Using this design, each teacher participated in three phases: baseline, workshop/coaching (Intervention A), and self-management (Intervention B). Each participant received a minimum of five probes within each phase. Following the self-management phase, each teacher filled out a System Usability Scale (SUS;

Brooke, 1996) and an adapted Intervention Rating Profile (IRP; Carter & Wheeler, 2019) to assess the acceptability and feasibility of TPD+ and BSP, respectively.

Setting and Participants

This study was conducted in three classrooms in a single elementary school within a large school district in the Pacific Northwest. The school district served over 25,000 students, employing nearly 1,600 classroom teachers. The participating elementary school served over 500 students in pre-K through 6th grade. Eighty percent of students at this school were ethnic minorities, and 75% of students qualified for free and reduced lunch. The elementary school's improvement plan for the 2021–2022 school year prioritized professional development programs to improve student pro-social skills, math proficiency, and reading fluency. The school began at 9:10 every morning and ended at 3:55 on Monday, Tuesday, Thursday, and Friday afternoons and at 1:55 on Wednesdays.

Recruitment. Recruitment began after receiving institutional review board exemptions from the University of Washington and the participating school district. Two elementary schools within the school district were identified through a recommendation from the Director of Student Services. After emailing the administrative support at both schools, an assistant principal from one of the schools replied with interest in the study. No response was received from the other school. After the study procedures were explained to the assistant principal, she identified three interested teachers. An individual meeting between the primary researcher and each teacher was scheduled to 1) provide an overview of the study (see Appendix B), 2) answer questions about the study, 3) identify possible focal students, 4) have the teacher sign a consent form (see Appendix C), and 5) schedule an initial observation. Following these meetings, each participant was observed during whole-group instruction. These observations assessed selection criteria to

determine if the teacher would be a good fit for the study. The selection criteria gauged if 1) the teacher provided instruction in a manner conducive to BSP and 2) that the teacher employed low baseline levels of BSP (i.e., less than two BSP per 15 minutes).

Each teacher participant then selected one ideal focal student from their classroom. Each teacher was encouraged to select a student who had concerning behaviors and had shown moderate to low levels of class engagement during whole-group instruction. Teachers were asked to think of engagement as on-task behaviors and frequency of disruptions. The students' guardians were contacted to obtain permission for student participation. Then the teacher participants met with their respective focal students to obtain student consent to participate (see Appendix E).

Teacher and Student Dyads. Three elementary school general education teacher–focal student dyads were chosen for this study. Each participating teacher 1) provided complete whole group classroom instruction at least once daily, 2) had approval from their principal, 3) had low initial rates of BSP implementation, and 4) expressed interest in participating in this study. Observations occurred when teachers delivered whole-group instruction in settings where they had noticed higher levels of disruptions and relatively low levels of on-task behaviors. Within the dyads, teachers were the primary participants, while students were secondary participants.

Below are descriptions of the teacher and student dyads. Further demographic data for teachers are included in Table 3. Demographic data for focal students is provided in Table 4. Pseudonyms are used for all teacher and student participants.

Martha and Kay. Martha is a 2nd grade White female teacher who had taught for one year. She taught Kay, a mixed-race 8-year-old female. Kay was chosen because Martha noticed she had some off-task behaviors which included getting under her desk or playing with supplies

at her desk. Observations occurred in the afternoon during phonics instruction. During this time, Kay normally sat at the back of the classroom.

April and Nelle. April is a mixed-race female kindergarten teacher with 3 years of teaching experience. She taught Nelle, a 6-year-old Black student. April chose Nelle because while she was often on-task in classroom instruction, she was frequently disruptive. For instance, the teacher noted that Nelle would often repeatedly interrupt instruction to interject what she knew about a subject. Observations occurred during phonics. During observations, Nelle was seated on the floor in front of the classroom with a small group of students. The rest of the students were seated at the desks.

Reilly and Travis. Reilly is a White female 4th grade teacher. She taught Travis, a 10-year-old Black student. Travis was chosen because the teacher noted a lack of on-task behaviors. Namely, Travis would often wander around the classroom during instruction. Reilly did not mention concerns about disruptions. Observations occurred in the morning while Reilly delivered social-emotional learning lessons. The entire class sat in the group at the front of the classroom.

Table 3

Demographic Information for Teacher Participants

Teacher	Age	Gender	Race	Years Teaching	Grade	Certification
Martha	25	F	White	1	2	Elementary Education
April	34	F	Mixed Race - African American/Asian/Caucasian	3	K	Elementary Education
Reilly	36	F	White	9	4	Elementary

Education

Note. Information obtained from teacher participants.

Table 4*Demographic Information for Student Participants*

Student	Teacher	Age	Grade	Gender	Ethnicity
Kay	Martha	8	2	F	Mixed Race
Nelle	April	6	K	F	Black
Travis	Reilly	10	4	M	Black

Note. Student information obtained from Skyward.

Variables

Independent Variable. The independent variable in this study was TPD+, which is a tiered professional development model closely modeled after research conducted by Gage, Grasley-Boy, and MacSuga-Gage (2018), consisting of a workshop or didactic instruction in tier 1 and self-monitoring in tier 2. In the current study, TPD+ included one coaching cycle in the first tier. That is, in TPD+, all teachers received didactic instruction on BSP and one coaching cycle within 24 hours of the didactic instruction, which served as tier 1 support. The second tier consisted of a self-management intervention.

Dependent Variables. The primary dependent variable in this study was the rate of implementation of BSP. The secondary dependent variable was duration of student engagement, which was measured as on-task behaviors and disruptions. On-task behaviors and disruptions were chosen as proxies for student engagement to align with current research on tiered professional development (Simonsen et al., 2020). Data was also collected on the social validity of TPD+ and BSP.

Rates of Behavior-Specific Praise. BSP is a tier-one instructional practice that occurs when a positive statement is directed toward a student or group of students that acknowledges the desired behavior. A literature review found that when BSP was implemented with fidelity, students increased on-task behavior and decreased inappropriate behavior (Royer et al., 2018). Both targeted (focused on one student) and general (focused on the entire classroom) BSP have been linked to improvements in class-wide behaviors such as (Royer et al., 2018). See Appendix F for definitions including examples and non-examples.

For a BSP to be recorded, the teacher had to address the entire class with specific positive feedback or praising the focal student. Examples include: "Thank you, class, for continuing to work on your worksheets," "Great job at showing your work on the problem set," and "I appreciate the effort you showed in math today." Non-examples of BSP include "Good work today" and "Do not run in the hallway." The first non-example lacks specificity, while the second addresses a negative behavior rather than a positive one.

Student Engagement – On-Task Behavior. On-task behaviors were verbal or motor behaviors appropriate to the learning situation. Examples included responding to a teacher's request or prompt, facing the teacher, looking at the teacher, or engaging with peers or materials as directed by the teacher. A non-example is any activity where the student is doing a task unrelated to the teacher's lesson. For instance, a non-example could be if a student is reading a book while the class is working on math.

Student Engagement – Disruptions. Disruptions were defined as any behavior that interrupted the teacher from instructing or student from classwork. Examples of disruptions included making loud noises, yelling, throwing objects, or repeatedly leaving or entering the classroom in a way that stopped instruction or stopped at least one student from engaging in their

classwork. The behaviors were not mutually exclusive to on-task behaviors. A student could be on-task and disruptive. For example, a student could yell repeatedly to answer a question that a teacher posed in a lesson. That yelling would be on-task (i.e., following the lesson) but disruptive (i.e., preventing the teacher from continuing the lesson without redirection).

Procedures

Baseline. Teachers engaged in their regular daily classroom activities during the baseline condition observations. Whole class instruction remained as typically provided. No professional development or changes to classroom practice occurred during this phase, and all data were collected during whole-group instruction. Between 5 and 11 observations occurred for each participant in the baseline phase (See Figure 2 for intervention timeline). Teachers moved to the next intervention when 1) they had at least five observations within phase, and 2) their data stabilized.

Intervention A – Workshop and Coaching. The workshop was delivered before the start of the school day with a one-on-one virtual BSP workshop (See Appendix G). The workshop script was the same for all teacher participants. The workshop lasted between 7 and 10 minutes for each of the participants. It began with the trainer providing an overview and rationale for using BSP in the classroom. Next, the trainer provided examples and non-examples of BSP and provided 2 opportunities to practice BSP by saying their own examples of BSP. Teachers had the opportunity to ask questions about BSP, but no questions were asked during the workshop. The workshop ended by establishing a time for a coaching observation and a teacher-selected goal for BSP implementation rates.

The coaching observation occurred on the day of the workshop and lasted 15 minutes. The coaching observation occurred during whole-group instruction and focused on teachers' uses

of BSP in the classroom. The coach used a coaching organizer paper-based tool to guide their observation and subsequent feedback for the teacher (ibestt - University of Washington). The coaching organizer tool is divided into three sections: Planning, Observation, and Feedback. Each section has guidelines for completing each section (see Appendix H). During the observation, the teacher recorded implementation of BSP, focal student response, what went well during the observation, possible improvements to BSP, and barriers to implementation in a coaching organizing tool. As per the tool, the coach identified the practice to observe (i.e., behavior-specific praise), the time of day that the observation occurred, if and how often the practice was observed, and focal student response to the practice. The coach also noted what went well and what could be improved when implementing the practice. After school on the day of the workshop and coaching observation, a telephone feedback session occurred. The phone conversations range from 7-15 minutes. During this feedback conversation, the coach reviewed positive and corrective feedback with the participant. The coach followed the coaching organizing tool to complete the observation. Specifically, the coach reviewed positive and corrective feedback using data from the observation. If the teacher inconsistently implemented BSP with the observation, the coach modeled appropriate ways to deliver BSP. The coach and teacher identified next steps. For all teachers, their next step was to continue implementing BSP. No additional coaching observations were scheduled.

No observation probes occurred between the workshop and the coaching feedback session; data collection began again on the first school day after the coaching feedback session. After the workshop and coaching, the researcher delivered no further professional development (e.g., additional workshops) until the self-management intervention.

Intervention B – Self-Management. Teachers were introduced to the self-management intervention at the end of the day on the last day of the workshop/coaching phase. To introduce the teachers to the intervention, the trainer conducted a 5-minute one-on-one phone call. During the phone call, the trainer provided the teacher with a rationale and description of the self-management procedures. The trainer gave a rationale to teachers why self-management interventions support teachers in implementing practice, explained that teachers would receive a one-item survey three times weekly asking them to reflect on practice, verbally told teachers what their current implementation rate for BSP was, and had each teacher establish a goal around BSP. Finally, following this phone call, the trainer emailed written directions for BSP as well as a graphic representation of the teacher's use of BSP during Intervention A. This was followed by an email with the same information provided in the phone call (see Appendix I). The self-management intervention consisted of the teachers being asked to complete a survey in which they were asked to reflect on their use of BSP by answering a question from an online survey ("From 1 to 5, how well did you implement behavior-specific praise today?"). The survey was sent to the participants on Mondays, Wednesdays, and Fridays after the school day. Teachers rated their implementation of BSP on a scale from 1 to 5 (1 being low implementation and 5 being high).

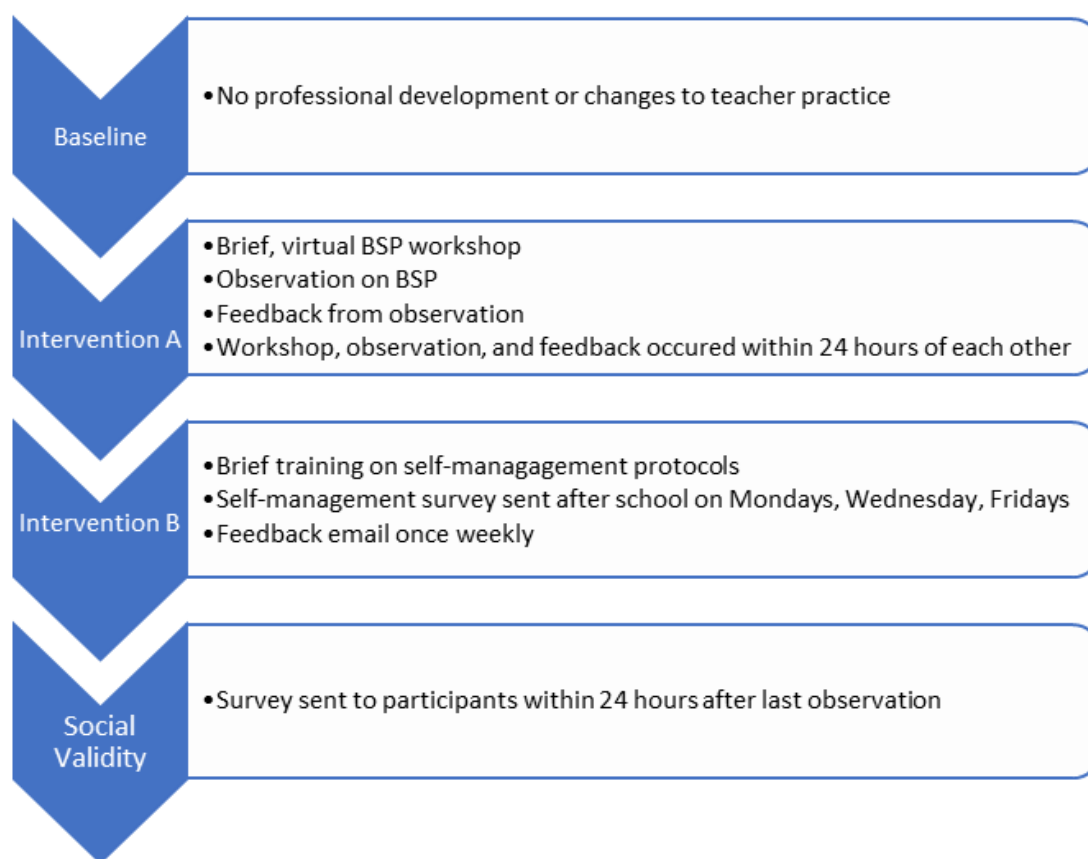
Each weekend during this phase, teachers were sent a scripted performance feedback email based on the received self-management data that included 1) a greeting, 2) an updated graph of their BSP, and 3) an affirmation of their self-management protocol (e.g., "Great work continuing to monitor your implementation rates"). All teachers received this email regardless of how many times they had filled out the survey. All the teachers were expected to fill out all self-

management forms, and during the study, they filled them out with 100% fidelity, meaning that they filled out each survey they received.

Social Validity. Following the self-management phase, the researcher assessed the social validity of TPD+ and BSP. All teachers received an online survey with questions from the SUS and the IRP. The teachers finished filling out the form within 24 hours of receiving the form.

Figure 2

Intervention Timeline



Data Collection

Observation data were collected in person in the teachers' classrooms during whole-group instruction. For this study, whole-group instruction was defined as teacher-supported instruction

involving read-aloud, demonstrations, lectures, and teacher-assigned group activities in which the shared goal is learning together. Teacher participants were asked to identify an instructional time when they felt the class was most off-task or disengaged. For each observation, the observer(s) sat in the back of the classroom at a pre-designated spot assigned by the teacher. The researcher aimed for 15-minute observation periods, following previous observation systems used in research on tiered professional development (Gage et al., 2018; Myers et al., 2011). Additionally, as Marshall (2013) outlined, new insights from observations tend to level off after 15 minutes. BSP and disruptions were measured using a frequency count. On-task behaviors were measured using a momentary time sample. All data were collected using a paper-based observation log (see Appendix J). The log is divided into 15 intervals where the observer can record teacher and student behaviors. Frequency of BSP and disruptions were collected by data collectors. Each instance of BSP and disruption (as defined in the *Student Behavior* portions in the following section) was noted within the interval it occurred. In addition, a continuous disruptive behavior (e.g., yelling) would be counted once at its initiation and then re-counted once per minute at the top of the minute (e.g., A student yelling continuously from minute 1:30 to minute 2:15 would accrue two disruption marks). All observers were notified at the intervals by a bright timer indicator on an iPhone. Additionally, the log also has space to capture other notes during the observation. On-task behaviors were measured using momentary time sampling, in which the observation is divided into 30-second intervals, and the researcher marks the behavior's occurrence only if it is occurring at the end of the interval. Data collection observations occurred two to four times weekly over 12 weeks, and participants were observed between 23 to 28 instances.

Two observers were trained to assist with data collection by documenting occurrences of five key elements of the study: 1) teacher implementation of BSP, 2) classroom on-task and disruptive behaviors, 3) fidelity of the researcher to the workshop, 4) fidelity of the researcher to coaching protocols, and 5) fidelity to the self-management protocol. Observer training began with a 30-minute didactic session in which observers received an overview of the study, the operational definitions of each BSP and on-task behaviors, and checklists for the BSP workshop, self-monitoring, and coaching protocols. This session concluded with a practice observation using a YouTube video of whole-group instruction the momentary time sample data collection sheet and timer. Following this training, observers viewed two more videos of a teacher delivering whole-group instruction. Interrater reliability was achieved with no additional training required. Specifically, there was between an 86-95% agreement with the primary scorer.

The researcher assessed the acceptability and feasibility of TPD+ using the System Usability Scale (SUS, Brooke, 1996) and BSP using an adapted Intervention Rating Profile (IRP, Carter & Wheeler, 2019). Social validity denotes the social importance and acceptability of an intervention or treatment (Schwartz & Baer, 1991). The SUS and IRP both assess the acceptability, appropriateness, perceived effectiveness, and usability of a system or intervention by inviting respondents to rank their level of agreement with provided statements according to a five-point Likert-like scale (ranging from 1, "strongly disagree," to 5, "strongly agree"). Examples of statements to be ranked include: "This would be acceptable intervention for my student's problem behavior," and "This intervention should prove effective for improving the student's problem behavior." See Appendix K for a complete social validity survey.

Interobserver Agreement

Interobserver Agreement (IOA) was calculated by one of the trained observers for at least 30% of the observations of each participant, dependent variable, and condition. IOA assessment was conducted in person over the entire study to identify and correct observer drift, with a target agreement rate across observations of 90%. For BSP and disruptions, IOA was assessed using a gross agreement calculation of $(\# \text{ of agreements} / (\# \text{ of agreements} + \# \text{ of disagreements})) \times 100$. An agreement for an interval was scored if both observer 1 and observer 2 recorded the same number of BSP (or disruptions) within that interval. For on-task behaviors which were collected using a momentary time sample (interval 30 seconds), the point-by-point agreement was calculated as follows: $(\# \text{ of intervals of agreements} / (\# \text{ of agreements} + \# \text{ of disagreements})) \times 100$.

Procedural Fidelity

Each of the two interventions delivered to teacher participants required checklists for gathering data on procedural fidelity. Three checklists were used to capture components in workshop, coaching, and self-management (see Appendix L). The checklists outlined the procedures and associated tasks for each component. The workshop checklist had four tasks: 1) Stated objectives, 2) Provided rationale for behavior-specific praise, 3) provided examples and non-examples of behavior-specific praise, and 4) provided an opportunity to practice behavior-specific praise. The self-management checklist had five tasks: 1) Gave overview and rationale for self-management practices, 2) Reviewed procedures for tracking their chosen classroom practice, 3) Presented the participant with their current BSP data, 4) Had participant establish new goals for practice, and 5) provided handout on self-management. The coaching feedback checklist had 3 tasks: 1) Reviewed positive feedback, 2) Reviewed negative feedback, and 3) Identified steps to improve BSP. One of the two observers used the checklists during in-person observation of the task to ensure fidelity of each procedure.

Procedures for Data Analysis

The overall per-minute BSP rate for an observation was calculated by dividing the total number of BSP occurrences by 15 minutes (or the total observation time), while the number of intervals of on-task behaviors was converted to a percentage by dividing the number of intervals a student was marked as on-task by the total number of intervals. Disruptive behaviors were converted to rate by dividing the total number of disruptions in an observation period by the total number of minutes in the observation. Visual analysis protocols established by the What Works Clearinghouse (2010) were used to identify functional relationships between teachers' implementations of BSP and student behaviors. They helped establish whether there were predictable baselines, attempted to identify patterns of within-phase data, compared data within each phase with adjacent or similar phases, and considered all the data to determine whether there were at least three demonstrations of an effect over three different points within a graph.

When analyzing data within and across phases, six features of effects of single-case design were looked at to help determine functional relationships: 1) level, 2) trend, 3) variability, 4) immediacy of the effect, 5) overlap, and 6) consistency of data patterns across similar phases (Kennedy, 2005). Specifically, the level, trend, and variability within phases were used to determine the mean score within a phase, the slope of a best-fitting line, and the range of the best-fitting line, respectively. Across phases, the immediacy of the effect, overlap, and consistency was determined by looking at how immediate an effect was, the proportion of data that overlapped between phases, and the consistency of patterns between phases.

An ongoing visual analysis occurred throughout the study to establish whether and when a teacher should move on to the subsequent intervention. Ongoing analysis of implementation fidelity and IOA assessment also occurred throughout the study. Finally, descriptive statistics

were used to assess the social validity of the intervention: generally, scores between 4 and 5 were considered indicative of a positive view of the intervention.

Chapter 4

Results

This chapter reports the results from the implementation of tiered professional development plus in three elementary school classrooms. Results are presented in four sections aligning with the research questions. The first section details teacher implementation of behavior-specific praise (BSP), which is followed by a section on student disruptions and on-task behaviors. Next, social validity data is presented. This chapter ends with interobserver agreement and intervention fidelity data.

Teacher Implementation of Behavior Specific Praise

April. April's implementation of BSP was stable across baseline with an average rate of .01 BSP per minute (range: 0 -.06) and very little variability. In baseline, BSP was observed once in 5 observations. April was introduced to intervention A after observation 5, and her implementation of BSP increased to an average rate of .2 BSP (range: .13-.26). Implementation of BSP was slightly variable with a descending trend. There was no decrease in implementation of BSP after spring break, which occurred between days 13 and 14. Following the 14th observation, April was introduced to Intervention B where her average BSP increased to .34 BSP (range: .13-.53). After Intervention B, implementation of BSP was variable with a slightly decreasing trend. Within the self-management intervention, there was a slight drop in implementation of BSP by the 18th observation. On this date, the classroom experienced technical difficulties, which resulted in April diverting attention away from instruction and towards troubleshooting technology issues. See Table 5 and Figure 3.

There was immediacy of effect from baseline to Intervention A, and from Intervention A to Intervention B. Additionally, the percent nonoverlapping data (PND) from baseline to

Intervention A was 100%. However, the PND decreased to 42% from Intervention A to Intervention B. This occurred despite an increased average of BSP within Intervention B.

Table 5

Behavior Specific Praise Summary

<u>April</u>						
Phase	Mean	Range	Trend	Variability	PND	IE
Baseline (BL)	.01	0-.06	Decreasing	Stable	N/A	N/A
Intervention A (IA)	.2	.13-.26	BL: Increasing IA: Decreasing	Variable	100%	Observed
Intervention B (IB)	.34	.13-.53	BL: Increasing IB: Decreasing	Variable	42%	Observed
<u>Martha</u>						
Phase	Mean	Range	Trend	Variability	PND	IE
Baseline	0	0-0	Flat	Stable	N/A	N/A
Intervention A	.14	0-2.6	BL: Increasing IA: Flat	Variable	92%	Observed
Intervention B	.23	2-2.6	BL: Increasing IB: Increasing	Variable	0%	Observed
<u>Reilly</u>						
Phase	Mean	Range	Trend	Variability	PND	IE
Baseline	.05	0-.13	Flat	Stable	N/A	N/A
Intervention A	.82	.66-1.2	BL: Increasing IA: Decreasing	Stable	100%	Observed
Intervention B	1.09	.86-1.3	BL: Increasing IB: Decreasing	Variable	20%	Observed

Martha. During baseline, Martha's implementation of BSP was stable with a rate of 0 BSP (Range: 0-0), which indicates no variability and a flat trend. Intervention A (workshop followed by one-session of coaching) was introduced immediately before the 9th observation. During Intervention A, Martha's implementation of BSP increased to an average rate of .14 per minute (range: .13-.26) and was variable with a flat trend. Martha's implementation of BSP decreased immediately following a weeklong break in instruction (i.e., spring break), as indicated by a graph break in between day 13 and 14. After the implementation of Intervention B (Self-Management) in observation 22, Martha's implementation of BSP increased to an average rate of .23 BSP (range: .2-.26). The trend was less variable and was ascending.

There was immediacy of effect from baseline to Intervention A, and from the Intervention A to Intervention B. Furthermore, the percentage of non-overlapping data points (PND) from baseline to Intervention A was 92%. However, despite an increased average of BSP in the Intervention B, there was a 0% PND from Intervention A to Intervention B.

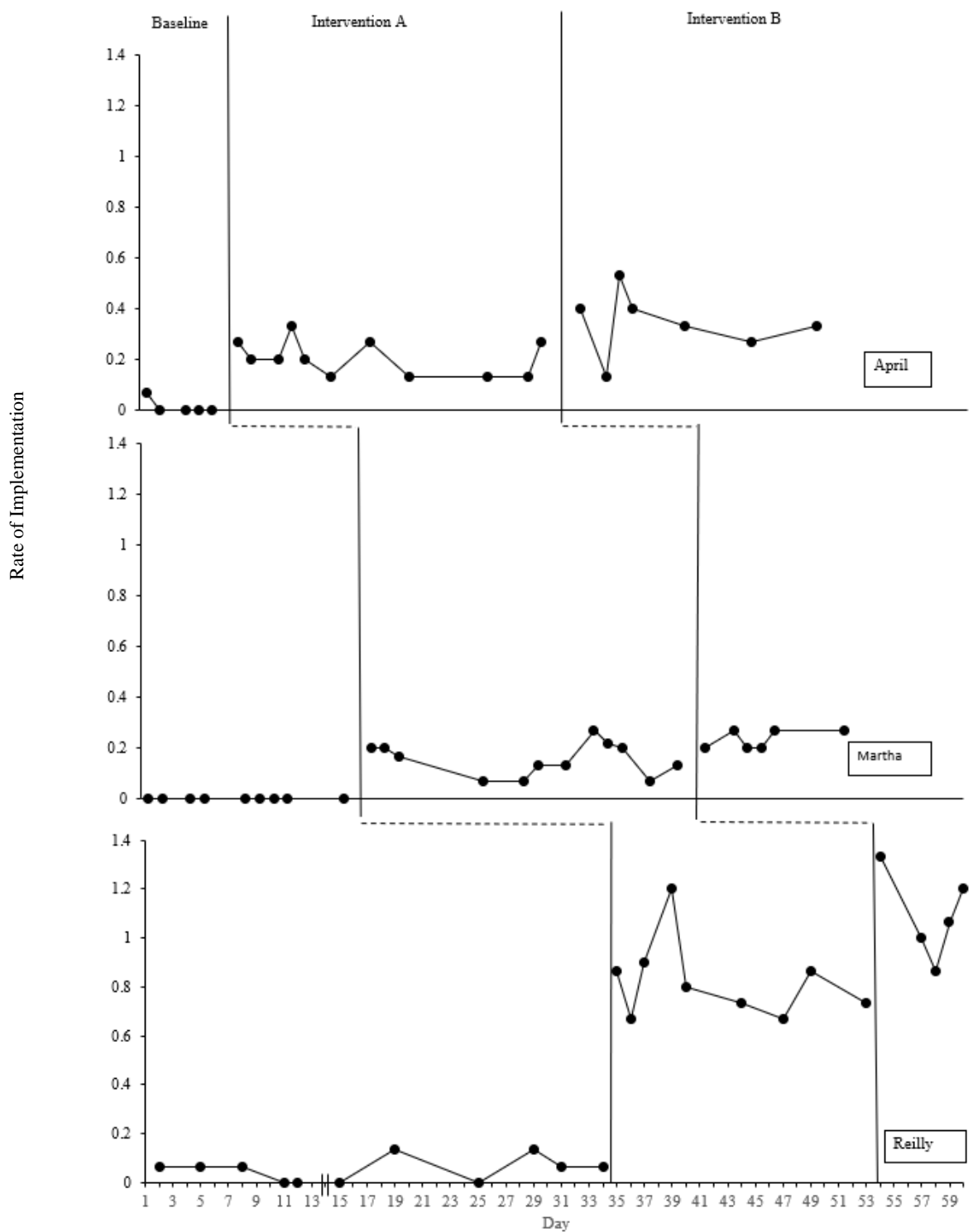
Reilly. In baseline, Reilly average rate of implementation for BSP was .05 (range: 0 -.13) with a stable and flat trend. Within baseline, Reilly implemented BSP 5 out of the 11 observations. After Reilly participated in Intervention A after observation 11, her implementation of BSP increased to an average of .82 (range .66-1.2). Data in this phase were stable and had a descending trend. When Reilly entered Intervention B following observation 20, her average rate of BSP increased to 1.09 (range: .86-1.3). There was a variable and decreasing trend during this phase. Spring Break occurred for Reilly during baseline between observation 7 and 8.

There was an immediacy of effect from both baseline to the Intervention A and from Intervention A to Intervention B. Additionally, there was 0% PND from baseline to Intervention

A and 20% PND from Intervention A to Intervention B. Despite descending trends within the two interventions, Reilly saw an ascending trend in implementation of BSP throughout the entire study, going from an average to .05 BSP in baseline to 1.09 BSP in Intervention B.

Figure 3

Rate of Implementation of Behavior Specific Praise Across Interventions



Note: Hash marks indicate a one week break for spring break consistent across participants.

Student Disruptions and Engagement Behaviors

Kay (Martha). During baseline, Kay was on-task on average 90% of the intervals (range: 73%-100%). There was some variability and an upward trend within this phase. After Intervention A, no immediacy of effect was observed with Kay. During this intervention, Kay's average on-task behaviors rose to 93% of intervals (range 57%-100%), had little variability, with a flat trend across the phase. After Martha began Intervention B, Kay's average on-task behaviors stayed at 93% (82%-100%). There was a slight ascending trend within this phase and there was little variability. There was a flat trend of on-task behaviors throughout the baseline and both interventions. See Table 6, Figure 4, and Figure 5.

Kay averaged .025 disruptions per observation during baseline (range: 0-.13). There was little variability and a descending trend during this phase. After her teacher, Martha, participated in Intervention A, Kay's average disruption decreased to .005 (range: 0-.06). There was a downward trend, and the variability was stable. Once Martha participated in Intervention B, Kay's mean disruptions increased to .011 (range: 0-.06). The trend line was flat during Intervention B. There was no immediacy of effect between any of the phases. Additionally, there was 0% of non-overlapping data from baseline to Intervention A and from Intervention A to Intervention B. Despite the overlapping data, there was a downward trend across all phases.

Table 6

Kay – Disruptions and On-Task Behaviors Summary

<u>Disruptions</u>						
Phase	Mean	Range	Trend	Variability	PND	IE
Baseline (BL)	.025	0-.13	Decreasing	Stable	N/A	N/A
Intervention A (IA)	.005	0-.06	BL: Decreasing IA: Decreasing	Stable	0%	Not Observed

Intervention B (IB)	.011	0-.06	IA: Decreasing IB: Flat	Stable	0%	Not observed
---------------------	------	-------	----------------------------	--------	----	-----------------

On-Task Behaviors

Phase	Mean	Range	Trend	Variability	PND	IE
Baseline	.9	.73-1	Increasing	Stable	N/A	N/A
Intervention A	.93	.57-1	BL: Flat IA: Flat	Stable	0%	Not Observed
Intervention B	.93	.82-1	BL: Flat IB: Increasing	Stable	0%	Not observed

Nelle (April). For on-task behaviors, Nelle was engagement on average of 63% (range:50-80%) during baseline. During this phase, she showed a descending and stable trend. After April participated in Intervention A, Nelle's average on-task behavior was 62% (range: 0-90%). There was a slight ascending trend within this phase and the trend was variable. After April entered the Intervention B, Nelle's on-task behavior increased to 80% with a stable and ascending trend. There was no immediacy effect observed across phases. Additionally, the PND from baseline to Intervention A was 0% and Intervention A to Intervention B was 33%. Finally, there was an ascending trend of on-task behaviors across all the phases of the study for Nelle. See Table 7, Figure 4, and Figure 5.

During baseline, Nelle averaged .213 disruptions per observation (range: 0-.33). Disruptions were variable with an ascending trend. After April participated in Intervention A, Nelle's disruptions decreased to an average of .175 (range: 0-.33). However, Nelle's disruptions were still variable with a descending trend. Her disruptions decreased further when April participated in Intervention B, in which Nelle had an average of .1 (range: 0-2) disruptions with variable but flat trend. There was no immediacy of effect between any of the phases. Across all

phases there was a descending trend, however, there was 0% non-overlapping data from baseline to Intervention A and from Intervention A to Intervention B.

Table 7

Nelle – Disruptions and On-Task Behaviors Summary

<u>Disruptions</u>						
Phase	Mean	Range	Trend	Variability	PND	IE
Baseline (BL)	.213	0-.33	Increasing	Variable	N/A	N/A
Intervention A (IA)	.174	0-.33	BL: Decreasing IA: Decreasing	Variable	0%	Not Observed
Intervention B (IB)	.1	0-.2	BL: Decreasing IB: Flat	Variable	0%	Not observed
<u>On-Task Behaviors</u>						
Phase	Mean	Range	Trend	Variability	PND	IE
Baseline	.63	.5-8	Decreasing	Stable	N/A	N/A
Intervention A	.62	0-.9	BL: Increasing IA: Decreasing	Variable	0%	Not Observed
Intervention B	.80	.53-1	BL: Increasing IB: Increasing	Stable	33%	Not observed

Travis. Travis was on task for an average of 98% of the time during baseline (range: 93-100). There was a flat, stable trend during this phase. During Intervention A, the mean stayed at 98% (range 90-100). The trend was slightly ascending but was stable. The PND from baseline to Intervention A was 12.5% and there was no immediacy of effect observed. There was no immediacy of effect observed from Intervention A to Intervention B, and the PND was 33%. In Intervention B, Travis was on task 95% of the time (range: 86-100). There was a flat trend,

however the data was variable. From baseline to the self-management intervention, there was a slightly descending trend in on-task behaviors. See Table 8, Figure 4, and Figure 5.

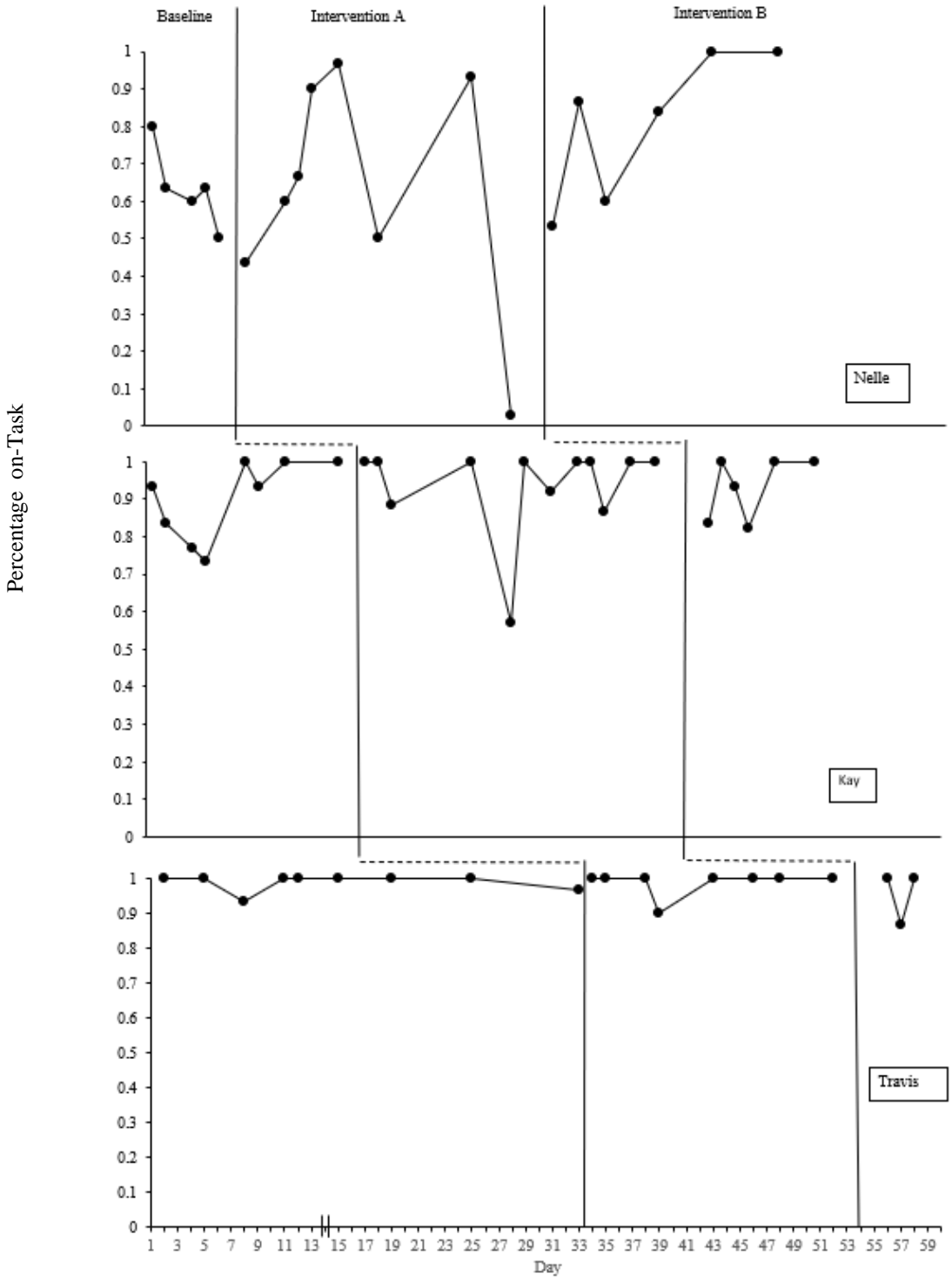
In baseline, Travis averaged .059 disruptions (range: 0-.26). Disruptions were variable in a descending trend. During Intervention A, disruptions increased to an average of .091 (range: 0-.46). The disruptions in this phase were variable with an ascending trend. Additionally, the PND from baseline to Intervention A was 12.5% with no immediacy of effect observed. In Intervention A, Travis average of disruptions decreased to .06 (range: 0-.13). Despite the decrease in mean, there was an increasing trend and the data in this phase were variable. There was no immediacy of effect observed in this phase. Across all phases there was a flat trend.

Table 8
Travis – Disruptions and On-Task Behaviors Summary

<u>Disruptions</u>						
Phase	Mean	Range	Trend	Variability	PND	IE
Baseline (BL)	.059	0-.26	Decrease	Somewhat variable	N/A	N/A
Intervention A (IA)	.091	0-.46	BL: Increase IA: Increase	Somewhat variable	12.5%	Not Observed
Intervention B (IB)	.06	0-.13	BL: Flat IB: Increase	Somewhat variable	0%	Not observed
<u>On-Task Behaviors</u>						
Phase	Mean	Range	Trend	Variability	PND	IE
Baseline (BL)	.98	.93-1	Flat	Stable	N/A	N/A
Intervention A (IA)	.98	.9-1	BL: Flat IA: Increase	Stable	12.5%	Not Observed
Intervention B (IB)	.95	.86-1	BL: Slight Decrease IB: Flat	Variable	33%	Not observed

Figure 4

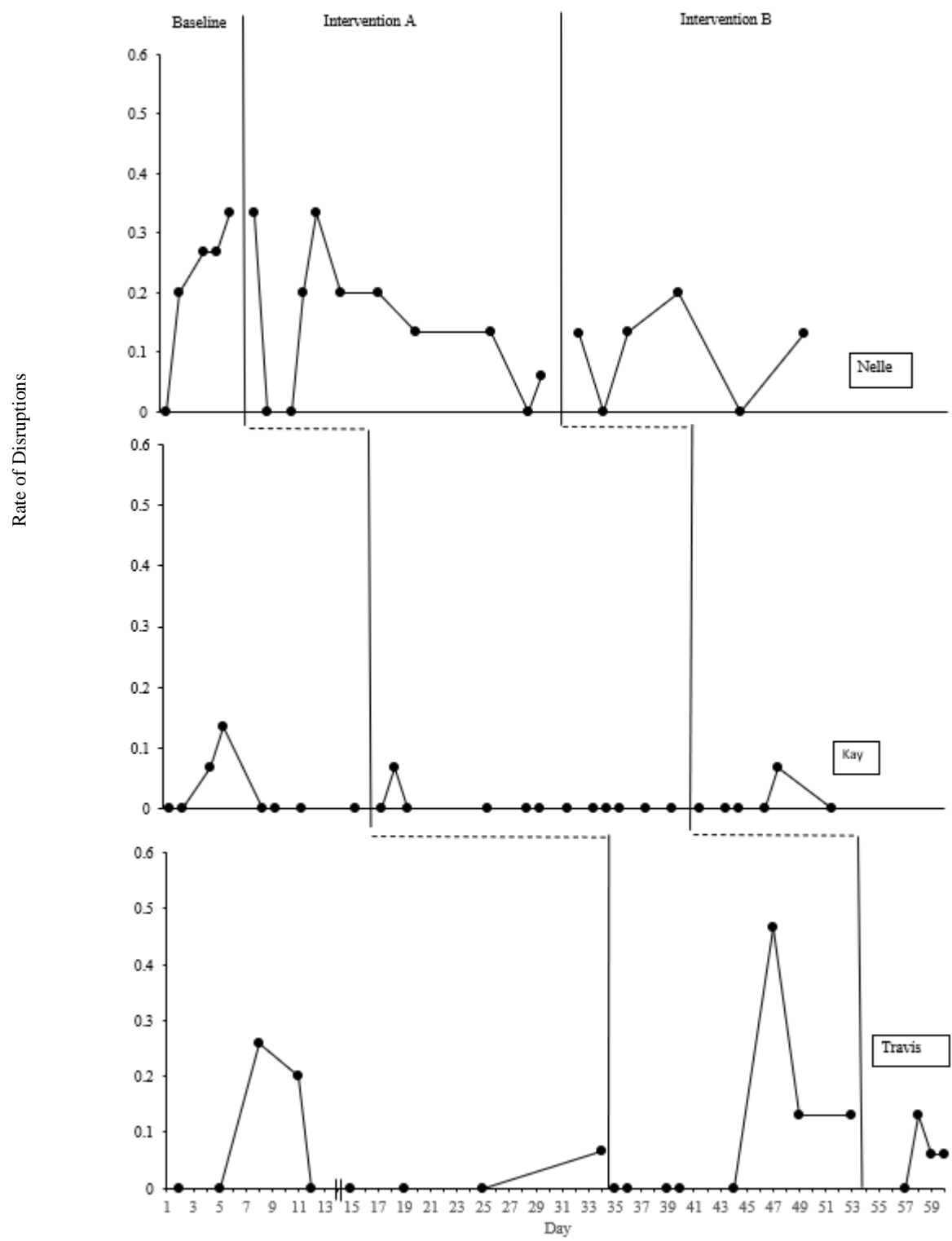
On-Task Behavior Across Interventions



Note: Hash marks indicate a one week break for spring break consistent across participants.

Figure 5

Rate of Disruptions Across Interventions



Note: Hash marks indicate a one week break for spring break consistent across participants.

Social Validity

Social validity was assessed using an adapted System Usability Scale (SUS, Brooke, 1996) and an adapted Intervention Rating Profile (IRP, Carter & Wheeler, 2019). For both, participants ranked the questions on a scale of 1 to 5 (with 1 being strongly disagree and 5 being strongly agree). The SUS was used to assess the acceptability and feasibility of using TPD+ while the IRP was used to assess the acceptability and feasibility of using BSP. Average ratings were gathered for each question.

The participants indicated that “they would like to use this model of professional development” with an average rating of 4.66. Additionally, they found that this professional development was easy to follow ($x=5$) and not unnecessarily complex ($x=1$). In addition, they thought that this professional development is easy to learn ($x=5$), and they would imagine that “most people would learn to use this professional development quickly” ($x=5$). Participants noted, however, that they would need some support to be able to participate in this professional development ($x=2.6$) and that they only felt moderately confident in participating in this professional development ($x=3.6$).

For BSP, participants noted that they are likely to use BSP because it requires few technical skills to learn ($x=4.3$) and that it requires little training to pick up ($x=4.3$). All teachers agree that it is practical for the time it takes to implement BSP ($x=5$) and that BSP is not disruptive to other students ($x=4.3$). The participants generally agreed that this intervention would be beneficial for the child. However, there was only moderate agreement that BSP should “prove effective in changing the child’s problem behavior.”

Interobserver Agreement and Intervention Fidelity

Interobserver agreement (IOA) occurred for more than 30% of observations across all phases and participants. IOA was calculated for teacher implementation of BSP, student disruptions, and student on-task behaviors. A mean count-per-interval was calculated for both BSP and disruptions, while an exact count-per-interval was calculated for on-task behaviors. The percentage agreement for BSP was 96.5% (range: 80-100) for April, 96.1 (Range: 86-100) for Martha, and 91% (range: 80-100) for Reilly. The percentage agreement for disruptions was 96.5% (range: 86-100) for Travis, 97.38 (range 86-100) for Nelle, and 95.75 (range: 80-100) for Kay. The percentage agreement for on-task behaviors was 100% for Travis, 95.75 (range: 80-100) for Nelle, and 98.44 (range: 93-100) for Kay. Early within the study, the lead researcher addressed a misunderstanding with one of the trained observers regarding BSP data collection. The trained observer denoted nonverbal praise statements as BSP until the lead researcher clarified that only verbal BSP would count towards the observation total.

Implementation fidelity was collected throughout the study for both interventions. The workshop and the self-management protocols were aided using a script while the coaching protocol was supported through a checklist. Each intervention was recorded or observed by a trained observer who used the script or the checklist to ensure implementation fidelity. Across all interventions and participants implementation fidelity was 100%.

Chapter 5

Discussion

This study used a multi-probe across participants design to evaluate the efficacy of a tiered professional development model that incorporated a universal coaching session (TPD+). TPD+ is a modified version of tiered professional development in which teacher participants are provided with a workshop and coaching session for behavior specific praise (BSP) in the first tier followed by a self-management protocol for maintaining the BSP implementation. The study sought to answer the following questions: 1) What are the effects of embedding one cycle of universal coaching into tier 1 (after workshop) of a tiered professional development model (TPD+) on teacher implementation rates of an evidence-based practice? 2) What are the effects of a tiered professional development model on student engagement? 3) Do teachers find this model of professional development acceptable and feasible?

Findings from this study indicate that a tiered professional development with a universal single dose of coaching can improve implementation of BSP for teachers. Specifically, the study found that three elementary school teachers improved implementation of BSP when they participated in a workshop and a single dose of coaching on BSP, which occurred within 24 hours of each other. Additional improvements in performance for all teachers were seen after teachers participated in a self-management intervention where they monitored their own implementation of BSP using a simple one-item survey. All three teachers had favorable views of TPD+ and viewed BSP as an acceptable EBP for students. These findings address the call for additional research into tiered professional development and adds to the literature on coaching dosages.

Despite the success of TPD+ on changing teacher behavior, increased rates of BSP in the classroom had little impact on student on-task behaviors and disruptions. These findings serve in contrast to existing research on BSP, which has shown increased student engagement after exposure to BSP (Oliver et al., 2011). This chapter provides a discussion of these findings through these themes: 1) Tiered Professional Development Plus on Teacher Behaviors, 2) Targeted Professional Development Plus on Student Behaviors, and 3) Social Validity of Tiered Professional Development Plus. The chapter concludes with limitations from the study and implications for future research.

Tiered Professional Development Plus on Teacher Behaviors. This study incorporated one-dose of universal coaching into a tiered professional development model, which resulted in significant improvements in teacher implementation of BSP. In baseline, each teacher showed consistently low implementation rates of BSP but increased to 4-12 BSP per minute. Existing research on tiered professional development has shown only moderate improvement in targeted practices after the universal workshop. Of the 8 of the 10 studies in the literature review that showed data for participants, 18 out of the 30 participants showed minimal, gradual, or inconsistent growth after the workshop. These findings echo existing research on the inefficacy of workshops as a singular professional development for improving teacher practice (Yoon, 2007). A tiered professional development with universal workshops is potentially ineffective because it lacks the opportunity for teachers to practice and receive feedback on newly learned behaviors (Gage et al., 2017). Coaching is an opportunity to practice and receive feedback on new behaviors. However, existing research on coaching largely looks at multiple cycles of coaching which can be expensive and time intensive (Knight, 2014).

Teacher improvements within this study could be linked to the opportunity for educators to immediately practice the new behaviors. When educators have a chance to implement a new practice, they are more likely to implement that practice with fidelity in the future (Killion, 2012). Furthermore, when educators received feedback and adjustments on that practice, they were better equipped to implement the practice with fidelity. For the participants in this study, they had opportunities to practice the new skill and receive feedback and get adjustments on the newly learned practice within 24 hours of receiving basic instruction on the practice (i.e., workshop).

Additionally, this study shows that embedding a universal coaching cycle within a tiered professional development model is an effective means for ensuring that educators have access to the 4 out of 5 components of effective professional development. As described in chapter 2, effective professional development is content-focused, gives teachers an opportunity for active learning, is consistent with other professional development in the building, is consistent over time, and incorporates collective participation (Darling-Hammond, 2017; Desimone, 2009). While the components of TPD+, universal coaching, workshop, and self-management, provide consistent opportunities for content-focused active learning, TPD+ lacks collective participation. Collective participation, opportunities for teachers to reflect and engage in a practice with fellow teachers, can positively affect teacher performance (Garet et al., 2001). Without collective participation, educators miss opportunities to reflect communally in a practice and further contextualize newly learned practices (Vescio, 2010).

While all teachers in this study improved in implementation of BSP after the workshop and coaching intervention, it should be noted that all teachers began at lower implementation rates of BSP compared to other tiered professional development research. Notably, Martha and

April implemented no more than 1 BSP during the baseline phase. Participants in previous tiered professional development research implemented BSP at a higher baseline rate, which could explain the low or gradual increases in BSP after the introduction of the intervention. Gage, Graseloy-Boy and MacSuga (2018) noted that the range of growth in BSP might be tied to the range of experiences and education. In this study, the teachers with less baseline BSP were relatively new to the classroom. In lieu of this difference in baseline performance, TPD+ might be well suited for new teachers or teachers unfamiliar with an evidence-based practice.

A notable finding within this study is that for many participants, after either intervention was introduced, they immediately increased in implementation of BSP followed by a downward trend within that intervention phase. These within-phase downward trend might indicate a lack of durability within the intervention. The school year ended before maintenance or follow up observations could occur, so maintenance data was not collected to determine durability of the intervention. However, these specific results highlight a need to continue considering how TPD+ has the capacity to maintain behaviors after the intervention is removed.

Gage and colleagues (2017) proposed that introducing an opportunity to practice a new skill after the workshop might improve maintenance of the intervention. While this study added coaching to the workshop to allow for teachers to practice this skill, it is unclear if this intervention impacted maintenance. In retrospect, there were methodological barriers that might explain the within-phase downward trend and a potential lack of durability of TPD+ on new teacher behaviors. Specifically, there was no plan within this study for fading the self-management support (i.e., removal of tiered supports), and researchers have suggested that a removal of supports within a tiered professional development model can hinder its maintenance (Simonsen et al., 2020). Removing supports slowly can prevent ratio strain (Simonsen et al.,

2017). Additionally, there have been calls to keep teachers in interventions longer (Simonsen et al., 2017). Future research on TPD+ should consider maintaining longer interventions (i.e., self-management) and/or a slow removal of supports to facilitate the durability of the intervention. For example, researchers could fade the self-management intervention from 3 times a week to once a week after several weeks of intervention.

Targeted Professional Development Plus on Student Behaviors. Student behavior moderately improved throughout the study but a functional relationship between student behaviors and TPD+ could not be determined. Both Kay and Nelle had a moderate decrease in disruptions throughout the study, while Travis slightly increased in disruptions. Only Nelle had a moderate increase in engagement, while Travis and Kay's engagement remained flat. For all student participants, behavior changes were gradual with no immediacy of effect detected when the intervention was introduced. The variability in results supports that a functional relationship between the implementation of BSP within TPD+ and student engagement or disruptive behaviors cannot be determined.

The findings from this study do not reflect current research on the implementation of BSP, which have been shown to lead to positive improvements in student performance (Oliver, Wehby, Reschly, 2011). Notably, an increase in BSP has been linked to increased on-task behaviors and a decrease in disruptions (Ennis et al., 2020). For instance, in a study following four teachers' use of BSP, classwide behaviors improved with an immediacy of effect when teachers began to implement BSP (Eaves et al., 2021). Observation data within the study at hand did not discern between classwide delivery of BSP (e.g., "Great job, class, staying your seats") and individual delivery of BSP (e.g., "Great job, Marcos, for staying in your seat") as we were concerned about increasing the overall implementation of BSP. For instance, while Martha

increased her implementation of BSP, she might not have necessarily directed her BSP towards Kay who maintained on-task behaviors. Still, the delivery of classwide BSP has also been linked to individual student improvements in behavior (Wills et al., 2019). This is because classwide praise can direct individual students to appropriate behaviors.

Other research on improving BSP through professional development has yielded similar results on student behavior to TPD+. For instance, in a study on the impact of self-management in the increase of BSP, students improved engagement gradually as a result of the implementation of a BSP-focused self-management intervention (Niwayama et al., 2020). They noted that limited observation data on who received BSP made it difficult to establish a functional relationship between BSP and student behaviors. Similar to this study on TPD+, there was no record of what students were receiving BSP. Tiered professional development research has also shown moderate to no impact on student behaviors (Gage et al., 2017). Gage and Colleagues (2017) suggested that when targeting the most at-risk students, BSP did not often meet the needs of those students. Teachers were asked to identify students with behavioral concerns for TPD+. It is possible that BSP did not meet the needs of the students within this study.

Social Validity of Tiered Professional Development Plus

Social validity helps ascertain if an intervention was acceptable and usable to its participants (Schwartz & Baer, 1991). While the focus of this study was the efficacy of the TPD+ model, how favorable an intervention amongst its participants can determine how well the intervention would be delivered with fidelity in the future. Social validity was gathered using surveys and assessed both the acceptability and usability of the TPD+ model and the practice BSP. In other words, data were collected to determine how the teachers felt about participating in

this professional development as well as how the teachers felt implementing BSP. The teacher participants viewed TPD+ favorably. Specifically, they found that the model was easy to follow, not complex, and they believed that other participants would be satisfied participating in this model. The results correspond with other research on tiered professional development, which found that teachers considered this PD acceptable and accessible (Grasely-Boy et al., 2020). Teachers may have found TPD+ to be acceptable in part due to its relative efficiency compared to other professional development. The workshop and coaching intervention took a combined total of 45-60 minutes for the workshop, coaching observation, and feedback session combined. The self-management intervention relied primarily on frequent but short surveys. Through TPD+ the teacher participants saw high instructional growth with minimal one-on-one professional development contact. Teachers from this study, however, noted that they might need support participating in the model. This highlights a need for facilitative support in order to implement and maintain the TPD+ model.

Teachers found that BSP could be a moderately effective intervention for improving student behaviors. Interestingly, the teachers thought that BSP improved the focus student's behavior despite there not being a functional relationship between BSP and student engagement within this study. This aligns with previous research on BSP wherein the teacher perception of behavior improved despite students' behavior not dramatically improving (Knochel et al., 2022). This discrepancy, however, might speak to a teacher's willingness to continue supporting or implementing a practice despite it not being readily effective. This is critical as some behavior changes are a result of gradual or incremental growth. Finally, it is possible that teachers within this study would have viewed the practice more favorably if there was a stronger conceptual fit between the practice and classroom, which was noted by Simonsen (2014). For example, a

teacher from this study might have viewed the practice more favorably if they got to choose the practice.

Limitations

There are several factors which limit the scope and generalizability of this study. First, while participants were willing and excited to participate in the study, the introduction of an in-person observer could have impacted implementation rates of BSP. The teacher could have associated the observer with the implementation of the new practice. As the observer entered the classroom, the teacher would have been reminded to implement BSP, which would have inflated implementation rates. In addition, this study was conducted in an applied setting (i.e., a public school, while school was in session, during a pandemic) and as such, used a single case design to evaluate the initial investigation of the modification of TPD. While single case design is appropriate for this purpose, professional development as is experienced by school districts would need to explore larger sample sizes to further strengthen the overall effect of those who are most impacted by effective professional development – teachers and students.

Next, observations collected data on rate of BSP, but no data on who the BSP was directed towards or quality of BSP. More data on the type of implementation could provide insight into the relationship between BSP quality and student behaviors. More specifically, if the teacher were asked to implement BSP to the focal student or if the researcher were tasked with collecting data on who the BSP was delivered to, then there would have been stronger evidence to support the claim that BSP within a TPD+ led to growth in positive student behavior in the focal student.

Finally, an assumption of tiered professional development is that only teachers who need professional development will receive professional development. In this case, if after the

workshop/coaching intervention the teacher was performing at a high rate of BSP, they would discontinue the study because they have met an established requirement for BSP implementation. This would more closely resemble a multi-tiered system of support in that only teachers who needed more intensive support to implement BSP would receive those supports. Considering that all teachers received all levels of interventions, the tiered professional development model presented in this study is not a true tiered system. Future research should consider variations of the TPD within the single-case design using larger sample sizes. Not only would this allow for opportunities to test exiting procedures with participants to better replicate a tiered system, but it would give an opportunity to explore different dosages of coaching within the model.

Implications

Results from this study lend themselves to furthering research on coaching cycles and tiered professional development models. Namely, a single dose of coaching working in conjunction with a workshop was effective for improving teacher practice. Therefore, this study paves a pathway for future research to look at low dosages of coaching cycles. Next, this study adapted a tiered professional development model by embedding a different professional development activity within it. As tiered professional development models gain more traction, it is necessary to consider how the activities within the model are placed and the intensity of those activities. Future research on tiered professional development should continue to consider variations of tiered professional development. The model, for instance, could be strengthened by adding a professional learning community component. For instance, future tiered professional development research could consider opportunities for shared reflective learning as with the Tiered Coaching Model (Meeker-Artman et al., 2022). In this model, some participants have the opportunity to be coached in small groups. This shared coaching and reflective practice brings in

an element of effective professional development that TPD+ lacked. Additionally, future models of tiered professional development should consider how data is used to make decisions about placement within tiers.

While sometimes inefficient or ineffective, traditional professional development activities continue to be used in schools in part because they are familiar and are intertwined into existing school systems. TPD+ has immediate applied applications and is well-suited for placement in a school's professional development rotation. TPD+ has the capacity to save school resources with its application with little stake on teacher development. This tiered professional model was an efficient way to improve teacher practice without straining resources or time. Variations of tiered professional development can be adapted to a school's needs and continue to improve practice. Since TPD+ is comprised of familiar and well-established activities, there is the potential that it would be well-received in new school environments.

Summary

Teachers must learn and practice new evidence-based practices in the classroom despite barriers to accessing professional development. Some of those barriers include resource intensive professional development and the fatigue of coming back to education after the pandemic. This study evaluated TPD+, which is a model of tiered professional development that used one dose of coaching following a universal workshop. This study found that TPD+ led to improvements in the implementation of BSP over 12 weeks and was viewed favorably by teacher participants. However, the increase in BSP did not lead to consistent improvements in student behavior. Future studies should continue looking at variations of TPD+ as well as strengthen methodology around collecting data on BSP. Implicit in these findings is that TPD+ is an effective, efficient,

and financially sustainable professional development model that is suitable for immediate school application.

References

- Artman-Meeker, K., Fettig, A., Barton, E., Penney, A., & Zeng, S.n. (2015). Applying an evidence-based framework to the early childhood coaching literature. *Topics in Early Childhood Special Education, 35*(3), 183-196.
- Artman-Meeker, K., Fettig, A., Cunningham, J. E., Chang, H.-C., Choi, G., & Harbin, S. (2022). Iterative design and pilot implementation of a tiered coaching model to support socio-emotional teaching practices. *Topics in Early Childhood Special Education, 42*(2), 124–136. <https://doi.org/10.1177/02711214211050122>
- Artman-Meeker, K., Hemmeter, M., & Snyder, P.. (2014). Effects of distance coaching on teachers' use of pyramid model practices: A pilot study. *Infants and Young Children, 27*(4), 325-344.
- Artman-Meeker, K., Rosenberg, N., Badgett, N., Yang, X., & Penney, A. (2017). The effects of bug-in-ear coaching on pre-service behavior analysts' use of functional communication training. *Behavior Analysis in Practice, 10*(3), 228–241. <https://doi.org/10.1007/s40617-016-0166-4>
- Avidov-Ungar, O., & Konkes Ben Zion, R. (2019). The characteristics and perceptions of teachers engaged in leading professional communities. *Teacher Development, 23*(3), 325-344.
- Baldinger, E. M. (2014, April). Learning together: Looking for learning in coach-teacher interactions. *In Conference paper, National Council of Teachers of Mathematics Research Conference, New Orleans, LA.*
- Barton, E. E., Kinder, K., Casey, A. M., & Artman, K. M. (2011). Finding your feedback fit:

- Strategies for designing and delivering performance feedback systems. *Young Exceptional Children*, 14(1), 29-46.
- Benner, G. J., Kutash, K., Nelson, J. R., & Fisher, M. B. (2013). Closing the achievement gap of youth with emotional and behavioral disorders through multi-tiered systems of support. *Education and Treatment of Children*, 36(3), 15-29.
- Bishop, C. D., Snyder, P. A., & Crow, R. E. (2015). Impact of video self-monitoring with graduated training on implementation of embedded instructional learning trials. *Topics in Early Childhood Special Education*, 35(3), 170-182.
- Blachowicz, C. L., Buhle, R., Ogle, D., Frost, S., Correa, A., & Kinner, J. D. (2010). Hit the ground running: Ten ideas for preparing and supporting urban literacy coaches. *The Reading Teacher*, 63(5), 348-359.
- Bolam, R., McMahon, A.J., Stoll, L., Thomas, S.M., Wallace, M., Greenwood, A.M., Hawkey, K., Ingram, M., Atkinson, A., & Smith, M.C. (2005). *Creating and Sustaining Effective Professional Learning Communities*.
<http://https://www.education.gov.uk/publications/eOrderingDownload/RR637-2.pdf>
- Briere, D. E., Simonsen, B., Sugai, G., & Myers, D. (2015). Increasing new teachers' specific praise using a within-school consultation intervention. *Journal of Positive Behavior Interventions*, 17(1), 50–60. <https://doi.org/10.1177/1098300713497098>
- Brock, M. E., & Beaman-Diglia, L. E. (2018). Efficacy of coaching preschool teachers to manage challenging behavior. *Education and Treatment of Children*, 41(1), 31-48.
- Brooke, J. (1996). SUS-A quick and dirty usability scale. *Usability evaluation in industry*, 189(194), 4-7.
- Bryk, A., Camburn, E., & Louis, K. S. (1999). Professional community in Chicago elementary

- schools: Facilitating factors and organizational consequences. *Educational administration quarterly*, 35(5), 751-781.
- Butler, A., Monda-Amaya, L. (2016). *Preservice teachers' perceptions of challenging behavior. Teacher Education and Special Education*, 39, 276–292.
doi:10.1177/0888406416654212
- Carter, S. L., & Wheeler, J. J. (2019). *The social validity manual: Subjective evaluation of Interventions*. Academic Press.
- Cheatham, G.A., & Ostrosky M.M. (2013) Goal setting during early childhood parent-teacher conferences: A comparison of three groups of parents, *Journal of Research in Childhood Education*, 27:2, 166-189, DOI: 10.1080/02568543.2013.767291
- Coburn, C. E., & Woulfin, S. L. (2012). Reading coaches and the relationship between policy and practice. *Reading research quarterly*, 47(1), 5-30.
- Colorado multi-tiered system of supports (COMTSS)*. CDE. (n.d.). Retrieved July 1, 2022, from <https://www.cde.state.co.us/mtss>
- Cook, B. G. (2015). How should evidence-based practices be determined. *Enduring issues in special education: Personal perspectives*, 266-284.
- Cook, B. G., & Odom, S. L. (2013). Evidence-based practices and implementation science in special education. *Exceptional children*, 79(2), 135-144.
- Cooper J.O, Heron T.E, Heward W.L. *Applied behavior analysis (2nd ed.)* Upper Saddle River, NJ: Pearson; 2007
- Conroy, M. A., Sutherland, K. S., Vo, A. K., Carr, S., & Ogston, P. L. (2014). Early childhood teachers' use of effective instructional practices and the collateral effects on young children's behavior. *Journal of Positive Behavior Interventions*, 16(2), 81–92.

- Costa, A. L., & Garmston, R. J. (2002). *Cognitive coaching: A foundation for renaissance schools*.
- Cuban, L. (2013). *Inside the black box of classroom practice: Change without reform in American education*. Harvard Education Press.
- Darling-Hammond, L. (2000). Teacher quality and student achievement. *Education policy analysis archives*, 8, 1.
- Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Learning Policy Institute.
- Denton, C. A., & Hasbrouck, J. A. N. (2009). A description of instructional coaching and its relationship to consultation. *Journal of Educational and Psychological Consultation*, 19(2), 150-175.
- Desimone, L.M. (2011). A primer on effective professional development. *Phi delta kappan*, 92(6), 68-71.
- Desimone, L.M., & Pak, K. (2017). Instructional coaching as high-quality professional development. *Theory Into Practice*, 56, 12-3.
- Dille, K. B., & Røkenes, F. M. (2021). Teachers' professional development in formal online communities: A scoping review. *Teaching and Teacher Education*, 105, 103431.
- DuFour, R., DuFour, R., & Eaker, R. (2005). PLC?. *On common ground: The power of professional learning communities*. Bloomington, IN: Solution Tree.
- Dunne, F., Nave, B., & Lewis, A. (2000). Critical Friends Groups: Teachers Helping Teachers to Improve Student Learning. *Phi Delta Kappa International Research Bulletin*. 28.
- Eaves, A. E., Radley, K. C., Dufrene, B. A., Olmi, D. J., & Bernard, L. E. (2021). A comparison

- of two group contingencies on teachers' use of behavior-specific praise. *Journal of Behavioral Education*, 30(2), 226–246. <https://doi-org.offcampus.lib.washington.edu/10.1007/s10864-020-09366-6>
- Ennis, R. P., Royer, D. J., Lane, K. L., & Dunlap, K. D. (2020). The impact of coaching on teacher-delivered behavior-specific praise in Pre-K–12 settings: A systematic review. *Behavioral Disorders*, 45(3), 148-166.
- Fallon, L. M., & Kurtz, K. D. (2019). Coaching Teachers to Implement the Good Behavior Game: A Direct Training Approach. *Teaching Exceptional Children*, 51(4), 296–304. <https://doi-org.offcampus.lib.washington.edu/10.1177/0040059918808765>
- Fixsen, D., Naoom, S., Blase, K., Friedman, R., Wallace, F. (2005). Implementation research: A synthesis of the literature. Tamps, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, National Implementation Research Network.
- Forman, Olin, S. S., Hoagwood, K. E., Crowe, M., & Saka, N. (2008). 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>
- Freeman, J., Kowitt, J., Simonsen, B., Wei, Y., Dooley, K., Gordon, L., & Maddock, E. (2018). A high school replication of tiered professional development for classroom management. *Remedial and Special Education*, 39(3), 144–157. <https://doi.org/10.1177/0741932517719547>
- Fullerton, E. K., Conroy, M. A., & Correa, V. I. (2009). Early childhood teachers' use of specific praise statements with young children at risk for behavioral disorders. *Behavioral Disorders*, 34, 118–135
- Gage, N. A., Grasley, B. N. M., & MacSuga, G. A. S. (2018). Professional development to

- increase teacher behavior-specific praise: A single-case design replication. *Psychology in the Schools*, 55(3), 264–277. <https://doi-org.offcampus.lib.washington.edu/10.1002/pits.22106>
- Gage, N. A., Macsuga-Gage, A. S., & Crews, E. (2017). Increasing teachers' use of behavior-specific praise using a multitiered system for professional development. *Journal of Positive Behavior Interventions*, 19(4), 239–251. <https://doi-org.offcampus.lib.washington.edu/10.1177/1098300717693568>
- Gardner-Neblett, N., de Marco, A., & Sexton, S. (2020). 'at first I wouldn't talk so much...': Coaching and associated changes in language-supportive self-efficacy among infant/toddler educators. *Early Education and Development*. <https://doi-org.offcampus.lib.washington.edu/10.1080/10409289.2020.1823769>
- Garmston, R., Linder, C., & Whitaker, J. (1993). Cognitive coaching: Two teachers perspectives. *Educational Leadership*, 51(2), 57-61.
- 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>
- Göker, S. D. (2020). Cognitive coaching: a powerful supervisory tool to increase teacher sense of efficacy and shape teacher identity. *Teacher Development*, 24(4), 559-582.
- Goldenberg, C., & Gallimore, R. (1991). Changing teaching takes more than a one-shot workshop. *Educational Leadership*, 49(3), 69-72
- Grasley-Boy, N., Gage, N. A., & MacSuga-Gage, A. S. (2019). Multitiered Support for

- Classroom Management Professional Development. *Beyond Behavior*, 28(1), 5–12.
<https://doi-org.offcampus.lib.washington.edu/10.1177/1074295618798028>
- Grasley-Boy, N. M., Gage, N. A., Reichow, B., MacSuga-Gage, A. S., & Lane, H. (2020). A conceptual replication of targeted professional development to increase teachers' behavior-specific praise. *School Psychology Review*, 1-15.
- Gregory, A., Ruzek, E., Hafen, C. A., Mikami, A. Y., Allen, J. P., & Pianta, R. C. (2017). My teaching partner-secondary: A video-based coaching model. *Theory into practice*, 56(1), 38-45.
- Hemmeter, M. L., Fox, L., Snyder, P., Algina, J., Hardy, J. K., Bishop, C., & Veguilla, M. (2021). Corollary child outcomes from the Pyramid Model professional development intervention efficacy trial. *Early Childhood Research Quarterly*, 54, 204–218. <https://doi-org.offcampus.lib.washington.edu/10.1016/j.ecresq.2020.08.004>
- Hemmeter, M. L., Snyder, P. A, Fox, L., & Algina, J.. (2016). Evaluating the implementation of the pyramid model for promoting social-emotional competence in early childhood classrooms. *Topics in Early Childhood Special Education*, 36(3), 133-146.
- Hipp, K. K., & Huffman, J. B. (2010). Demystifying the concept of professional learning communities. *Demystifying professional learning communities: School leadership at its best*, 11-21.
- Hodges, T. E., Roy, G. J., & Tyminski, A. M. (2018). Looking Back, Looking Ahead: Celebrating 40 Years.
- Hollins, E., McIntyre, L., DeBose, C., Hollins, K., & Towner, A. (2004). Promoting a

- self-sustaining learning community: Investigating an internal model for teacher development. *International Journal of Qualitative Studies in Education*, 17, 247-264. 10.1080/09518390310001653899.
- Hooker, T. (2013). Peer coaching: A review of the literature. *Waikato Journal of Education*, 18(2).
- Hord, S. M. (2008). Evolution of the professional learning community. *The Learning Professional*, 29(3), 10.
- Hornby, G., Howard, J., & Atkinson, M. (2013). *Controversial issues in special education*. Routledge.
- Hsu, A., & Malkin, F. (2013). Professional development workshops for student teachers: An issue of concern. *Action in Teacher Education*, 35(5-6), 354-371.
- Ibestt. (2022, June 18). *Coaching Organizer*.
<https://www.education.uw.edu/ibestt/behaviorcoaching/>
- Jones, C. M., & Thessin, R. A. (2015). A review of the literature related to the change process schools undergo to sustain PLCs. *Planning & Changing*, 46.
- Joyce, B. R., & Showers, B. (1981). Transfer of training: The contribution of “coaching”. *Journal of Education*, 163(2), 163-172.
- Kennedy, C. H. (2005). *Single-case designs for educational research* (Vol. 1). Boston: Pearson/A & B.
- Kennedy, M. (2016). How Does Professional Development Improve Teaching? *Review of Educational Research*, 86(4), 945-980.
- Kent, A. M. (2004). Improving teacher quality through professional development. *Education*, 123 (3).

- Killion, J. (2012). Coaching in the K-12 context. *The SAGE handbook of mentoring and coaching in education*, 273-295.
- Kim, I., & Ko, B. (2020). Content knowledge, enacted pedagogical content knowledge, and student performance between teachers with different levels of content expertise. *Journal of Teaching in Physical Education*, 39(1), 111-120.
- Kissel, Brian & Mraz, Maryann & Algozzine, Bob & Stover Kelly, Katie. (2011). Early Childhood Literacy Coaches' Role Perceptions and Recommendations for Change. *Journal of Research in Childhood Education*. 25. 288-303.
10.1080/02568543.2011.580207.
- Knight, D. S. (2012). Assessing the cost of instructional coaching. *Journal of Education Finance*, 38(1), 52–80.
- Knight, D. S., & Skrtic, T. M. (2021). Cost-effectiveness of instructional coaching: Implementing a design-based, continuous improvement model to advance teacher professional development. *Journal of School Leadership*, 31(4), 318-342.
- Knight, J. (2007). *Instructional Coaching : A Partnership Approach to Improving Instruction*. Corwin Press.
- Knight, J. (2008). *Coaching: Approaches and perspectives*. Corwin Press.
- Knochel, A. E., Blair, K.-S. C., Kincaid, D., & Randazzo, A. (2022). Promoting equity in teachers' use of behavior-specific praise with self-monitoring and performance feedback. *Journal of Positive Behavior Interventions*, 24(1), 17–31. <https://doi-org.offcampus.lib.washington.edu/10.1177/1098300720951939>
- Kraft, M. A., & Blazar, D. L. (2013). Improving Teacher Practice: Experimental Evidence on Individualized Teacher Coaching. *Society for Research on Educational Effectiveness*.

- 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.
- Leahy, L. R. F., Miller, F. G., & Schardt, A. A. (2019). Effects of teacher-directed opportunities to respond on student behavioral outcomes: A quantitative synthesis of single-case design research. *Journal of Behavioral Education, 28*(1), 78-106.
- Lieberman, A., & Miller, L. (2015). Teachers as professional: Evolving definitions of staff development. In L. E. Martin, S. Kragler, D. J. Quatroche, & K.L. Bauserman (Eds.), *Handbook of Professional Development in Education: Successful models and practices, prek-12. essay*, The Guilford Press.
- Long, R. (2015). Federal Investments in Professional Development: What do 50 Years of Experience Tell Us About What It Takes to Make a Difference. In L. E. Martin, S. Kragler, D. J. Quatroche, & K. L. Bauserman (Eds.), *Handbook of Professional Development in Education: Successful models and practices, prek-12. essay*, The Guilford Press.
- Lorio, C. M., & Woods, J. J. (2020). Multi-component professional development for educators in an Early Head Start: Explicit vocabulary instruction during interactive shared book reading. *Early Childhood Research Quarterly, 50*, 86-100.
- Markelz, A. M., Taylor, J. C., Kitchen, T., Riccomini, P. J., Catherine Scheeler, M., & McNaughton, D. B. (2019). Effects of tactile prompting and self-monitoring on teachers' use of behavior-specific praise. *Exceptional Children, 85*(4), 471-489.
- Markelz, A., Riden, B., Floress, M. T., Balint-Langel, K., Heath, J., & Pavelka, S. (2022).

- Teachers' use of specific, contingent, and varied praise. *Journal of Positive Behavior Interventions*, 24(2), 110–121. <https://doi-org.offcampus.lib.washington.edu/10.1177/1098300720988250>
- Martin, C. A., Drasgow, E., & Halle, J. W. (2015). Training teachers to enhance the play skills of young children with developmental disabilities during outdoor time by embedding instructional interactions. *Journal of Early Intervention*, 37(4), 247-269.
- McIntosh, K., & Goodman, S. (2016). *Integrated multi-tiered systems of support: Blending RTI and PBIS*. Guilford Publications.
- McLeod, R. H. (2020). Supporting preservice teachers to implement systematic instruction through video review, reflection, and performance feedback. *Early Childhood Education Journal*, 48(3), 337–343. <https://doi-org.offcampus.lib.washington.edu/10.1007/s10643-019-01001-y>
- Monroe, R. L., & Marvin, S. (2020). Perceptions of instructional coaches and teachers on the barriers of multi-level instructional coaching in higher performing vs. lower performing elementary schools in Tennessee. *Journal of Education and Training Studies*, 8(7).
- Mrazek, P. G., Haggerty, R. J. (Eds.). (1994). *Reducing risks for mental disorders: Frontiers for preventive intervention research*. National Academy Press.
- Murrihy, L. R. (2009). *Coaching and the growth of three New Zealand educators: a multi-dimensional journey* (Doctoral dissertation, The University of Waikato).
- Myers, D.M., Simonsen, B., & Sugai, G. M. (2011). Increasing teachers' use of praise with a response-to-intervention approach. *Education & Treatment of Children*, 34(1), 35-59.
- Neufeld, B., & Roper, D. (2003). Coaching: A strategy for developing instructional capacity.
- Niwayama, K., Maeda, Y., Kaneyama, Y., & Sato, H. (2020). Increasing teachers'

- behavior-specific praise using self-monitoring and a peer teacher's feedback: the effect on children's academic engagement. *Preventing School Failure*, 64(4), 271–280.
<https://doi-org.offcampus.lib.washington.edu/10.1080/1045988X.2020.1749978>
- Oliver, R., Wehby, J., & Reschly, D. J. (2011). Teacher classroom management practices: Effects on disruptive or aggressive student behavior. *Campbell Systematic Reviews*, 4, 1–55.
- Owens, Lo, Y., & Collins, B. C. (2020). Using tiered coaching and bug-in-ear technology to promote teacher implementation fidelity. *The Journal of Special Education*, 54(2), 67–79.
<https://doi.org/10.1177/0022466919852706>
- Pas, E. T., Bradshaw, C. P., & Cash, A. H. (2014). Coaching classroom-based preventive interventions. In *Handbook of school mental health* (pp. 255-267). Springer, Boston, MA.
- Pianta, Mashburn, A. J., Downer, J. T., Hamre, B. K., & Justice, L. (2008). Effects of web-mediated professional development resources on teacher–child interactions in pre-kindergarten classrooms. *Early Childhood Research Quarterly*, 23(4), 431–451.
<https://doi.org/10.1016/j.ecresq.2008.02.001>
- Pitre, C. C. (2014). Improving African American student outcomes: Understanding educational achievement and strategies to close opportunity gaps. *Western Journal of Black Studies*, 38(4), 209.
- Reinke, 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>
- Rice, G. (2012). Formative dialogues in teaching: Nonthreatening peer coaching. *Journal of Chiropractic Education*, 26(1), 62-67.

- Royer, Lane, K. L., Dunlap, K. D., & Ennis, R. P. (2019). A systematic review of teacher-delivered behavior-specific praise on K–12 student performance. *Remedial and Special Education, 40*(2), 112–128. <https://doi.org/10.1177/0741932517751054>
- Sanders, W. L., & Rivers, J. C. (1996). Cumulative and residual effects of teachers on future student academic achievement.
- Scheeler M.C., Ruhl K.L., & McAfee J.K (2004).. Providing performance feedback to teachers: a review. *Teacher Education and Special Education. 27*:396–407.
doi:10.1177/088840640402700407
- Schwartz, I. S., & Baer, D. M. (1991). Social validity assessments: Is current practice state of the art?. *Journal of applied behavior analysis, 24*(2), 189-204.
- Shannon, D. K., Snyder, P. A., Hemmeter, M. L., & McLean, M. (2021). Exploring coach–teacher interactions within a practice-based coaching partnership. *Topics in Early Childhood Special Education, 40*(4), 229-240.
- Sheffield, K., & Waller, R.. (2010). A review of single-case studies utilizing self-monitoring interventions to reduce problem classroom behaviors. *Beyond Behavior. 19*.
- Showers, B., & Joyce, B. (1996). The evolution of peer coaching. *Educational leadership, 53*, 12-16.
- Showers, B., Joyce, B., and Bennett, B. (1987). Synthesis of research on staff development: A framework for future study and a state-of-the-art analysis. *Educational Leadership 45* (3): 77–87.
- Simonsen, B., Freeman, J., Dooley, K., Maddock, E., Kern, L., & Myers, D. (2017). Effects of tiered professional development on teachers’ specific praise rates. *Journal of*

- Positive Behavior Interventions*, 19(1), 37–47. <https://doi-org.offcampus.lib.washington.edu/10.1177/1098300716637192>
- Simonsen, B., Freeman, J., Myers, D., Dooley, K., Maddock, E., Kern, L., & Byun, S. (2020). The effects of tiered professional development on teachers' use of empirically supported classroom management practices. *Journal of Positive Behavior Interventions*, 22(1), 3–14. <https://doi-org.offcampus.lib.washington.edu/10.1177/1098300719859615>
- Slack, A. (2019). The power of professional learning: Using PLCs to enhance accessibility of instruction for English learners. *International Journal of Teacher Leadership*, 10(2), n2.
- Snyder, P. A., Hemmeter, M. L., & Fox, L. (2015). Supporting implementation of evidence-based practices through practice-based coaching. *Topics in Early Childhood Special Education*, 35(3), 133–143. <https://doi-org.offcampus.lib.washington.edu/10.1177/0271121415594925>
- Snyder, P., Hemmeter, M. L., McLean, M., Sandall, S., McLaughlin, T., & Algina, J. (2018). Effects of professional development on preschool teachers' use of embedded instruction practices. *Exceptional Children*, 84(2), 213–232. <https://doi-org.offcampus.lib.washington.edu/10.1177/0014402917735512>
- Snyder, P., Hemmeter, M. L., Meeker, K. A., Kinder, K., Pasia, C., & McLaughlin, T. (2012). Characterizing key features of the early childhood professional development literature. *Infants and Young Children*, 25(3), 188–212.
- Sointu, E. T., Savolainen, H., Lappalainen, K., & Lambert, M. C. (2017). Longitudinal associations of student–teacher relationships and behavioural and emotional strengths on academic achievement. *Educational Psychology*, 37(4), 457–467.
- Skinner, B. F. (1953). Some contributions of an experimental analysis of behavior to psychology

- as a whole. *American Psychologist*, 8(2), 69.
- Spillane, J. P. (2002). Local theories of teacher change: The pedagogy of district policies and programs. *Teachers college record*, 104(3), 377-420.
- Stains, & Vickrey, T. (2017). Fidelity of Implementation: An overlooked yet critical construct to establish effectiveness of evidence-based instructional practices. *CBE Life Sciences Education*, 16(1), rm1-. <https://doi.org/10.1187/cbe.16-03-0113>
- Stoll, L., Bolam, R., McMahon, A., Wallace, M., & Thomas, S. (2006). Professional learning communities: A review of the literature. *Journal of educational change*, 7(4), 221-258.
- Sugai, G. (2014). Multitiered support framework for teachers' classroom-management practices: Overview and case study of building the triangle for teachers. *Journal of Positive Behavior Interventions*, 16(3), 179-190.
- Sutherland, K. S., Conroy, M. A., McLeod, B. D., Algina, J., & Wu, E. (2018). Teacher competence of delivery of BEST in CLASS as a mediator of treatment effects. *School Mental Health: A Multidisciplinary Research and Practice Journal*, 10(3), 214–225. <https://doi-org.offcampus.lib.washington.edu/10.1007/s12310-017-9224-5>
- Sutherland, K. S., Conroy, M. A., Vo, A., & Ladwig, C. (2015). Implementation integrity of practice-based coaching: Preliminary results from the BEST in CLASS efficacy trial. *Grantee Submission*, 7(1), 21–33.
- Strasser, K., Mendive, S., Vergara, D., & Darricades, M. (2018). Efficacy of a self-monitoring tool for improving the quality of the language environment in the preschool classroom. *Early Education and Development*, 29(1), 104-124.
- Swaminathan, S., Byrd, S. W., Humphrey, C. M., Heinsch, M., & Mitchell, M. J. (2014).

- Winning beginnings learning circles: Outcomes from a three-year school readiness pilot. *Early Childhood Education Journal*, 42(4), 261-269.
- Teemant, A. (2014). A mixed-methods investigation of instructional coaching for teachers of diverse learners. *Urban education*, 49(5), 574-604.
- Thessin, R. A., & Starr, J. P. (2011). Supporting the growth of effective professional learning communities districtwide. *Phi Delta Kappan*, 92(6), 48-54.
- Thompson, M.T., Marchant, M., Anderson, D., Prater, M.A., & Gibb, G.. (2011). Effects of tiered training on general educators' use of specific praise. *Education & Treatment of Children*, 35(4), 521-546.
- Vaill, A. L., & Testori, P. A. (2012). Orientation, mentoring and ongoing support: A three-tiered approach to online faculty development. *Journal of Asynchronous Learning Networks*, 16(2), 111-119.
- Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and teacher education*, 24(1), 80-91.
- Wills, H. P., Caldarella, P., Mason, B. A., Lappin, A., & Anderson, D. H. (2019). Improving student behavior in middle schools: Results of a classroom management intervention. *Journal of Positive Behavior Interventions*, 21(4), 213–227. <https://doi-org.offcampus.lib.washington.edu/10.1177/1098300719857185>
- Yoon, K. S., Duncan, T., Wen-yu Lee, S., Scarloss, B., & Shapley, K. (2007). Reviewing the evidence on how teacher professional development affects student achievement (No. 033; Issues & Answers, p. 62). National Center for Education Evaluation and Regional Assistance.

Appendix A

Review of Tiered Professional Development Research

Reference	Design	Participants/Grades	Primary Research Question	IV	DV	Outcome/Findings	Design of PD	Notes on Coaching
Briere et al., 2015	Multiple Baseline	3 Female Teachers, Grades Pk-3	What effects does a within-school consultative approach have on the new teachers' rates of specific praise statements during teacher directed instruction?	Within school consultative Intervention	Specific Praise Rates	Functional relationship between consultative feedback and teachers' increased use specific praise	1. Training on Behavior-Specific Praise, 2. Self-Monitoring with Consultation	Consultants provided explicit feedback, discussed strategies for improvement, and set specific goal for teacher in the following week. Consultants did not observe teachers.
Gage, MacSuga-Gage, & Crews, 2017	Multiple Baseline	4 general education teachers in k-5 classrooms	Is there an increase in teachers' use of behavior-specific praise following tier 1 or tier 2 of MTS-PD and teachers' use of BSP?	Didactic Training (tier 1) and Visual Performance Feedback (tier 2)	Teachers' use of praise; Student Behavior	Tier 1 did not increase teacher use of BSP; Tier 2 increased teacher use of BSP	1. Universal PD (overview of BSP, evidence of value, guidance on how to implement - self-monitoring use golf-counter), and 2. One-on-one coaching with visual performance feedback via email.	Reviewed BSP, reviewed visual data of implementation, and set a goal. Use self-monitoring data,

Myers, Simonsen, & Sugai, 2011	Multiple Baseline	4 White Female Teachers, Fifth Grade Inclusion, 7th Grade Self-Contained, 6th Grade General Education, 7th Grade General Education	What is the relationship between teachers' use of praise and an RTI approach?	RTI approach to PD	Teachers' use of praise; Student Behavior	Relationship between RTI and teacher's rate of praise; downward trend in student problem behaviors	1. SWPBIS training, 2. Brief consultation with researcher, and 3. Feedback sessions	Performance feedback in quick 2-5 minute sessions; no procedural fidelity information
Simonsen et al., 2017	Multiple Baseline	6 Female teachers; Grades: k-5	Is there a functional relation between the implementation of TPD and teachers' use of specific praise?	Implementation of TPD	Teachers' use of BSP	Functional relationship between TPD and an increase in BSP	1. Training on BSP and 2. Developed Self-Management Plan	No coaching intervention
Freeman et al., 2018	Multiple Baseline	4 teachers (2 female; 2 male); Grades 7-12	Is there a function relationship between the tiered professional development model, implemented in the high school setting, and teachers' use of specific praise?	tiered Professional Development model	Teachers' use of BSP	Data did not support a functional relationship	1. Explicit training on specific praise, 2. Self-Management training and implementation, 3. Daily email with performance feedback	Coaching occurred through email; called for more intensive feedback and coaching phase - possibly before self-management

Gage, Grasley-Boy, MacSuga-Gage, 2018	Multiple Baseline	4 Female Teachers; Grades 1-2	Is there a functional relationship between one-on-one didactic skill training followed by ongoing emailed VPF and teachers' use of BSP?	tiered Professional Development	Teachers' use of praise; Student Behavior	Functional relationship between the tiered professional development and teachers' increased use of behavior-specific praise; Little change was observed in student behaviors	1. One-on-One training, 2. Emailed visual performance feedback	Calls for research to investigate using school coaches to implement visual performance feedback
Simonsen et al., 2014	Case Study; Multiple Baseline	4 Female Teachers; Grades 5-8	Not indicated	MTS Framework	Teachers' use of specific praise	Showed potential relationship between implementation of MTS and BSP	1. Universal training and screening, 2. Self-Management and progress monitoring, 3. Data-Driven Consultation	Coach sends performance feedback in tier 2; In tier 3, coaching action plan and give performance feedback; Tier 3 coaching was not present

Simonsen et al., 2020	Experimental Crossover Design	11 teachers; Grades k-5	Does TPD increase teachers' use of specific trained classroom management practices?	tiered Professional Development	Implementation of classroom management practices; Student behavior	Teachers increased prompts and specific praise rates; Teachers did not significantly increase rates of opportunities to respond; Training effects did not maintain when teachers switched to a new skill	1. Skill-focused training, 2. Self-Monitoring on Skill	Did not embed a coaching intervention; Spoke to how expensive coaching is
Grasley-Boy et al., 2021	Multiple Baseline	3 Female Teachers; Grades k-5	Does email and texted visual performance feedback increase elementary teachers' use of behavior-specific praise?	Visual Performance Feedback	Teachers' use of Behavior Specific Praise	Functional relationship between performance feedback and teachers' increased use of BSP	1. Tier 1 training, 2. BSP training with emailed/texted performance feedback.	Occurred through text/email. Not needed for tier 3.

Thompson et al., 2012	Multiple Baseline	3 White Female teachers; Grades k-5	What is the relationship between an RtI approach to teacher training and the frequency with which general education teachers implemented behavior-specific praise?	Video Self-Monitoring, Peer Coaching	Teachers' use of Behavior Specific Praise	Increased rates of BSP tier 2 and 3 interventions; On-Task behaviors improved for three students	1. Faculty training meeting, 2) Video self-monitoring, 3) Peer coaching	Sent emails giving specific praise; Offered a variety of interventions to participants to improve practice
-----------------------	-------------------	-------------------------------------	--	--------------------------------------	---	--	---	--

Appendix B

Study Overview Provided to School



Overview of Tiered Professional Development Study

Tier 1 practices are sometimes difficult to implement with fidelity. While different professional development activities (e.g., coaching, workshops) are effective for increasing fidelity of practices, they are often resource intensive. **This study seeks to test an efficient model of tiered professional development for improving the implementation of an evidence-based practice (EBP).** In this study, 4-6 participants will participate in two tiers of a multi-tiered system of support for teachers in professional development. In this model, they will participate in:

- One 1-hour workshop and one coaching session (tier 1),
- Self-monitoring (tier 2)

Expectations, Timeframe, Benefits

Participants in this study will participate in 1 hour of professional development over the course of three months. They will be eligible for 5+ clock hours for this time. Specific expectations include:

- **Observations:** An observer will do 15-minute observations one to three times weekly during the duration of the study. Teachers do not need to prepare for these observations. The observer will collect both teacher and student data.
- **Self-Monitoring:** Participants will be asked to track their own progress in implementing an EBP.
- **Workshop and Coaching:** Participants will attend a 20 minute Teams workshop explaining the study and the EBP. Participants will engage in one coaching cycle focused on the EBP.

The timeframe for the study will be as follows:

- **End of February:** 4-10 Fifteen-Minute Observations
- **February 15th - Early March:** Workshop and Coaching
- **March:** Self-Monitoring of Skills and 4-8 Observations
- **May:** 3-5 Additional Observations

Benefits:

- Clock hours
- Guaranteed Coaching and Intensive Student Support

Considerations or Next Steps

- Are there any questions?
- Are there any teachers who might be interested in participating?
- If so, how would you like to proceed with recruitment?

Appendix C

Teacher Consent Form

Topic: Coaching and Tiered Professional Development

Investigator: Nathaniel Hoston (720-469-7231)
Faculty Advisor: Carol Davis, Ph.D. (206-221-5043)

Investigator's Statement

I am asking you to be in a research study that I am completing as part of my doctoral coursework at the University of Washington. The purpose of this consent form is to give you all the information you will need to help you decide whether or not to be in the study. Please read the form carefully. You may ask questions about the purpose of the research, what I would ask you to do, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When all your questions have been answered, you can decide if you want to be in the study or not. This process is called "informed consent." I will give you a copy of this form for your records.

PURPOSE OF THE STUDY

The purpose of this study is to find out the impact of different types of professional development on your instructional practices. Through this study, you will engage in one workshop, two brief 1-on-1 trainings, observation and coaching feedback cycles. Your input in this study will help us identify the best way to train and support teachers in implementing evidence-based practices.

PROCEDURES

If you choose to be in this study, I will schedule a 60-minute workshop with you in January. During this workshop, I will outline all procedures for this study. After this initial training, I work with you to identify time in which I can come and observe your classroom practice. I will observe your classroom for short 15-minute intervals to collect data on your classroom practices. As you progress through the study, you will be exposed to two other types of professional development. The first will be self-management, where you are asked to track your own instructional goals. The second will be coaching where I will give you feedback on your instructional goal.

RISKS, STRESS, OR DISCOMFORT

Some people feel that providing information for research is an invasion of privacy. Some people feel self-conscious when notes are taken, or interviews are recorded.

BENEFITS OF THE STUDY

During this study, you will learn about new strategies to support your classroom practice. Additionally, you are eligible for counting these as clock hours.

OTHER INFORMATION

Taking part in this study is voluntary. You may refuse to participate, and you are free to withdraw from this study at any time without penalty or loss of benefits to which you are otherwise entitled. Information about you is confidential. I will assign you a pseudonym and code the study information. I will keep the link between your name and the pseudonym code in a separate, secured location until the study is complete. Then I will destroy the information

linking your information to the pseudonym. If the results of this study are published or presented, I will not use your name, or any other identifying information.

I may want to re-contact you for future related studies. Please indicate below whether you give me permission to re-contact you. Giving me permission to re-contact you does not obligate you in any way.

Signature of investigator	Printed Name	Date
---------------------------	--------------	------

Participant's statement

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later on about the research, I can ask the investigator listed above. I will receive a copy of this consent form.

- I give permission for the researcher to re-contact me to clarify information.
 I do NOT give permission for the researcher to re-contact me to clarify information.
- I do NOT give permission for the researcher to use me in this study.
 I give permission for the researcher to use me in this study.

Signature of participant	Printed Name	Date
--------------------------	--------------	------

Appendix D

Topic: Coaching and Tiered Professional Development

Investigator: Nathaniel Hoston (720-469-7231)
Faculty Advisor: Carol Davis, Ph.D. (206-221-5043)

Investigator's Statement

I am asking that your child be in a research study that I am completing as part of my doctoral coursework at the University of Washington. The purpose of this consent form is to give you all the information you will need to help you decide whether or not you want your child to be in this study. Please read the form carefully. You may ask questions about the purpose of the research, what data I will be collecting, and the possible risks and benefits, your child's rights as a volunteer, and anything else about the research or this form that is not clear. When all your questions have been answered, you can decide whether or not you want your child to participate. This process is called "informed consent." I will give you a copy of this form for your records.

PURPOSE OF THE STUDY

The purpose of this study is to find out the impact of different types of professional development on teacher instructional practices. Through this study, your child's teacher will engage in one workshop, two brief 1-on-1 trainings, observation and coaching feedback cycles. I will be identifying the impact of those practices on student behavior. While I am observing how the teacher practices change, I will also observe how well students are engaged in class.

PROCEDURES

If you want your child to be a part of this study, you and your child will not be required to change any behavior. I will observe the classroom 2-3 times weekly over 6-8 weeks – 15 minutes at a time. During these observations, I will mark down student on-task and off-task behavior as it relates to teacher instruction. This information will only be used in the study, be kept anonymous, and will **never** be used to inform discipline or punishment.

RISKS, STRESS, OR DISCOMFORT

Some people feel that providing information for research is an invasion of privacy. Some people feel self-conscious when notes are taken, or interviews are recorded.

BENEFITS OF THE STUDY

The hope is that research can help uncover better ways for teachers to instruct students. By participating in this study, your child will help us learn how a teacher's behavior impacts learning.

OTHER INFORMATION

Taking part in this study is voluntary. You may refuse to participate, and you are free to withdraw from this study at any time without penalty or loss of benefits to which you are otherwise entitled. Your child may also refuse to participate, and is free to withdraw from this study. Information about your child is confidential. I will assign them a pseudonym and code the

study information. I will keep the link between your child's name and the pseudonym code in a separate, secured location until the study is complete. Then I will destroy the information linking your information to the pseudonym. If the results of this study are published or presented, I will not use your child's name, or any other identifying information.

I may want to re-contact you for future related studies. Please indicate below whether you give me permission to re-contact you. Giving me permission to re-contact you does not obligate you in any way.

Signature of investigator	Printed Name	Date
---------------------------	--------------	------

Parent/Guardian's Statement

This study has been explained to me. I volunteer my child to take part in this research. I have had a chance to ask questions. If I have questions later on about the research, I can ask the investigator listed above. I will receive a copy of this consent form

- I do NOT give permission for the researcher to use my child in this study.
 I give permission for the researcher to use my child in this study.

Signature of Parent	Printed Name	Date
---------------------	--------------	------

Appendix E
Student Consent Form

Topic: Coaching and Tiered Professional Development

Investigator: Nathaniel Hoston (720-469-7231)
Faculty Advisor: Carol Davis, Ph.D. (206-221-5043)

Teacher Script (Teacher may adapt)

Over the next two months, I will be participating in a program that will help me teach you better. I hope that this will help make class more fun and engaging. A researcher named Mr. Hoston will observe how well the class is responding to this program.

The researcher will be collecting data on my practices. He will be in here two to three times a week for fifteen minutes at a time.

Mr. Hoston and I was hoping that he could also observe your engagement in class. This means he will want to see if you are on-task, off-task while he is in the classroom. However, no matter how you behave – you will not get in trouble for what he observes while he is in the classroom.

If at any point this makes you feel uncomfortable or you don't want him to observe you any more, you can tell me and he will stop.

Do you have any questions?

Can Mr. Hoston observe and record your behavior in class?

Signature of investigator	Printed Name	Date
---------------------------	--------------	------

- Student gave verbal permission
 Student gave written permission (Below)
 Student dissented or did not give permission

Signature of Student	Printed Name	Date
----------------------	--------------	------

Signature of Teacher	Printed Name	Date
----------------------	--------------	------

Appendix F

Operationalized Definitions: Behavior-Specific Praise, On-Task Behaviors, Disruptive Behaviors

Behavior Specific Praise – Behaviors

A prompt that informs the student (class or individual) of specific behavior, either social or academic, that teacher wants to see continued and replicated by praised student or classmates (Conroy et al., 2009)

A BSP must be specific, concerning a student or classroom actions, directed at a student or classroom, and concern actions that the teacher wants the students to continue doing.

Example	Non-Example
Class, thank you for all pushing in your seats today.	Push in your seats
I like how Tony raised his hand to ask to go to the bathroom.	Don't interrupt instruction to ask to go to the bathroom
I appreciate how the whole class worked quietly on the assignment.	Good work

Student Engagement – On-Task Behaviors

On-task behaviors are verbal or motor behaviors that are appropriate to the learning situation

Example	Non-Example
Sitting, focusing on the teacher	Working on assignments unrelated to current classroom task
Taking notes while the teacher is talking	Talking to a peer while teacher is lecturing
Completing a task/action that the teacher request	Not working or responding when the teacher has given the class a prompt
Quietly working on assignments as directed by teacher	Sleeping or head down on desk

Listening to the teacher while not facing the teacher	
---	--

Student Engagement - Disruptive Behaviors

Disruptions are any off-task behavior that could or does interrupt the teachers or students

Example	Non-Example
Yelling or making noises that interrupt other students	Yelling or making noises in response to a teacher request
Throwing objects	Repetitive behaviors that don't interrupt instruction
Repeatedly leaving or entering the classroom	
Talking to peers when not instructed to	
Getting out of seat when not instructed to	

Appendix G

Virtual Training for BSP

Behavior Specific Praise

•••

University of Washington

1

Agenda

- Overview and Definition of Behavior Specific Praise
- Examples and Non-Examples of Behavior Specific Praise
- Review of Research Supporting Behavior Specific Praise
- How to Implement Behavior Specific Praise

2

Definition

Behavior-specific praise is a positive statement directed toward a student or group of students that acknowledges a desired behavior in specific, observable, and measurable terms (Conroy et al., 2009)

3

Overview

Behavior specific praise requires:

1. A praise statement
2. Observable action

Example: Thank you for putting away your seats

4

Examples and Non-Examples

Example	Non Example
Class, thank you for all pushing in your seats today.	Push in your seats.
I like how Tony raised his hand to ask to go to the bathroom.	Don't interrupt instruction to ask to go to the bathroom.
I appreciate how the whole class worked quietly on the assignment.	Good work!

5

Review of the Research

- Highly effective to increase positive behavior and decrease problem behavior
- Most effective when delivered more often than reprimand data
- Some research recommend 6 praise statements per 15 minute period

6

How to Implement

- Continue to praise students (e.g., thanks, great job, good work)
- Add concrete actions for continued success (e.g., thanks for pushing in you chair, great job clearly reciting the vowel sounds...)

7

Appendix H

Coaching Organizer Tool



Teacher:	Coach:	Student:	
Planning Meeting			
Schedule time for observation:		What practice (focus) will you observe?	
Does the teacher know the practice? <input type="radio"/> Yes <input type="radio"/> No (If no, see coaching activities)			
How will you coach the teacher during the planning meeting?			
<input type="checkbox"/> Modeling <input type="checkbox"/> Role play <input type="checkbox"/> Discussion <input type="checkbox"/> Practice <input type="checkbox"/> Problem-solving			
What steps need to happen before the teacher can implement the intervention?			
Observation			
What practice (focus) will you observe?			
During what time of the day or what activity will you observe?			
Did you see the practice? (list steps to the plan or practice)	Yes	No	What was the student's response?
1.	<input type="radio"/>	<input type="radio"/>	
2.	<input type="radio"/>	<input type="radio"/>	
3.	<input type="radio"/>	<input type="radio"/>	
4.	<input type="radio"/>	<input type="radio"/>	
5.	<input type="radio"/>	<input type="radio"/>	
What coaching activities did you use during the observation?			
<input type="checkbox"/> Modeling <input type="checkbox"/> Role play <input type="checkbox"/> Discussion <input type="checkbox"/> Practice <input type="checkbox"/> Problem-solving			
What is working well?		What needs improvement?	
List any barriers:			

Coaching Organizer
BEHAVIOR COACHING BASICS

Feedback Meeting (done in person)		
What practice did you observe?		
	Teacher strengths and things to improve	What was the student's response?
Positive Feedback		
Corrective Feedback		
What coaching activities did you use during the feedback session? <input type="checkbox"/> Modeling <input type="checkbox"/> Role play <input type="checkbox"/> Discussion <input type="checkbox"/> Practice <input type="checkbox"/> Problem-solving		
What are the next steps? <input type="checkbox"/> Continue coaching on same practice with new observation <input type="checkbox"/> Begin coaching on a new practice <input type="checkbox"/> Teacher is confident in the practice		Schedule next planning meeting or observation

Paull, Instructional Behavior Support and Team Techniques ... www.paull.net

Self-Management Materials

Self-Monitoring Behavior Specific Praise

Overview: Self-monitoring is a strategy that some teachers use to create and monitor goals around practices they would like to implement in the classroom. Research has shown that when a teacher is self-monitoring, they show an increase implementation of the skills they are monitoring (Grasley-Boy et al., 2021). In fact, self-monitoring has also been linked to improvements in student behaviors (Simonsen et al., 2017). This handout will serve to support you as you are self-monitoring behavior specific praise.

Steps:

Three times a week:

- You will receive a Teams message on Mondays, Wednesdays, and Fridays asking you to reflect on your numerical and reasonable goal around monitoring behavior-specific praise
- Rate yourself on a scale from 1-5 using the survey

Follow-Up: Once weekly, you will receive feedback on the data tracking tool. The feedback will be in the form of the email, and will let you know how much progress you've made towards your goal.

Duration: This part of the study will last 2-5 weeks.

Contact: If you have any questions during this part of the study, please reach out to me at nhoston@uw.edu or 720-469-7231.

Template for Email - Self-Monitoring

Dear <<Teacher Name>>,

Thank you for collecting data on your implementation of behavior specific praise. <<Statement of praise>>. Your goal is <<goal>> and last week you had an average of <<average rating from prior week>>.

To meet your goal, try <<statement highlighting an opportunity for growth>>.

Continue the strong work!

-Nathan

Appendix J

Observation Log

Observation Log				
Observer Name:				
Teacher ID:	Date:	Time of Observation:		
Teacher Notes:	Praise Statements	BSP	Disruptions	On Task?
	0-1:			
	1-2:			
	2-3:			
	3-4:			
	4-5:			
	5-6:			
	6-7:			
Student Notes:	7-8:			
	8-9:			
	9-10:			
	10-11:			
	11-12:			
	12-13:			
	13-14:			
	14-15:			
	Total:	Total:	Total:	

Other notes:

Appendix K

Social Validity Survey Questions

System Usability Scale – Adapted from Brooke

*For use for the System of Tiered Professional Development Model

Prompt	Strongly Disagree				Strongly Agree
I think that I would like to use this model of professional development.	1	2	3	4	5
I found the professional development unnecessarily complex.	1	2	3	4	5
I thought the professional development was easy to follow.	1	2	3	4	5
I think that I would need support to be able to participate in this professional development.	1	2	3	4	5
I found the various functions in this professional development were well integrated.	1	2	3	4	5
I would imagine that most people would learn to use this professional development very quickly.	1	2	3	4	5
I would imagine that most people would learn to use this professional development very quickly.	1	2	3	4	5
I found the professional development very cumbersome.	1	2	3	4	5
I felt very confident participating in the professional development.	1	2	3	4	5
Teachers are likely to use behavior specific praise because it requires few technical skills	1	2	3	4	5

Intervention Rating Profile - Adapted from Carter and Wheeler (2019)

*For use on the skill Behavior Specific Praise

	Strongly Disagree				Strongly Agree
Teachers are likely to use behavior specific praise because it requires few technical skills	1	2	3	4	5
Teachers are likely to use behavior specific praise because it requires little training to implement effectively	1	2	3	4	5
Most teachers would find behavior specific praise suitable for the behavior problem described	1	2	3	4	5

Most teachers would find behavior specific praise appropriate for behavior problems in addition to the one described	1	2	3	4	5
Behavior specific praise would be appropriate for use <i>before</i> making a referral	1	2	3	4	5
Behavior specific praise would not be difficult to implement in a classroom with 30 other students	1	2	3	4	5
Behavior specific praise is practical in the amount of time required for parent contact	1	2	3	4	5
Behavior specific praise is practical in the amount of time required for contact with school staff	1	2	3	4	5
Behavior specific praise is practical in the amount of time required for record keeping	1	2	3	4	5
Behavior specific praise is practical in the amount of out-of-school time required for implementation	1	2	3	4	5
Behavior specific praise would not be disruptive to other students	1	2	3	4	5
It would not be difficult to use behavior specific praise and still meet the needs of other students	1	2	3	4	5
Behavior specific praise should prove effective in changing the child's problem behavior	1	2	3	4	5
This would be an acceptable intervention for the child's problem behavior	1	2	3	4	5
Behavior specific praise would not result in negative side effects for the child	1	2	3	4	5
Behavior specific praise would not result in risk to the child	1	2	3	4	5
Behavior specific praise would not be considered a "last resort"	1	2	3	4	5
Overall, Behavior specific praise would be beneficial for the child	1	2	3	4	5
I would be willing to use Behavior specific praise in the classroom setting	1	2	3	4	5

Appendix L
Procedural Fidelity Checklists

Workshop Checklist
Baseline Training

Interventionist ID:		Date:	
Participant ID:		Session #:	
Universal Training		Observer ID:	
Task:		Completed?	
1. Stated Objectives	Yes		No
2. Rationale for Behavior Specific Praise	Yes		No
3. Examples and non-examples of Behavior Specific Praise	Yes		No
4. 3-5 Opportunities to practice Behavior Specific Praise	Yes		No
Total	/4		
Session Notes:			

Self-Monitoring Checklist

Interventionist ID:		Date:	
Participant ID:		Session #:	
Coaching Feedback		Observer ID:	
Task:		Completed?	
1. Gave overview and rationale for self-management practices	Yes	No	
2. Reviewed procedures for tracking their chosen classroom practice	Yes	No	
3. Presented the participant with their current BSP data	Yes	No	
4. Had participant establish new goals for practice	Yes	No	
5. Provided handout on self-management	Yes	No	
Total	/5		
Session Notes:			

Coaching Checklist

Interventionist ID:		Date:	
Participant ID:		Session #:	
Coaching Feedback		Observer ID:	
Task:		Completed?	
1. Named practices observed	Yes	No	
2. Provided Positive Feedback	Yes	No	
3. Provided Corrective Feedback	Yes	No	
4. Modeled, Role-Played, Discussed, Practiced, or Problem Solved support	Yes	No	
5. Identified Next Steps	Yes	No	
Total	/5		
Session Notes:			