

EVALUATING THE EFFECTS OF PRACTICE-BASED COACHING DELIVERED VIA
TEXT MESSAGE ON TEACHER USE OF PYRAMID MODEL PRACTICES

By

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CHAPTER 1

Introduction

Professional development (PD) is used to increase teacher implementation of recommended and evidence-based practices (Gregson & Sturko, 2007). Within the field of early childhood education, PD has been positively associated with improvements in classroom quality and child outcomes (Egert et al., 2018; Schachter et al., 2019). Research has shown, however, that didactic PD (e.g., one-time workshops, lectures) alone is not sufficient for increasing the sustained use of teacher practices (Zaslow et al., 2010). This type of PD often does not reflect the background knowledge and experiences of teachers or the context in which they teach (e.g., type of program, needs of children), making it difficult for teachers to generalize and apply the content being presented in one-time PD experiences (Schachter et al., 2019). In a review of the early childhood PD literature, Zaslow and colleagues (2010) found that PD is more effective when it links knowledge with practice, using strategies such as modeling and feedback, to result in change in teacher practice. Schachter et al. (2019) also reviewed early childhood PD literature and, based on models of PD that did and did not result in positive and long-term outcomes, suggested guidelines for choosing the content and format of PD. Content should focus on goals that address teacher-identified areas of need as well as practices that support the needs of children (Schachter et al., 2019). The format of PD should provide teachers with content knowledge and opportunities to practice in relevant contexts (e.g., teacher's classroom) and include opportunities for teachers to receive individualized feedback and to self-reflect on their practice (Schachter et al., 2019). Providing opportunities to practice new skills (i.e., teachers

being active participants in their learning) and feedback in addition to increasing knowledge is supported by principles of adult learning (Collins, 2004).

Coaching is an approach to ongoing PD that incorporates effective practices associated with change in teacher behavior (e.g., feedback, reflection, goal setting). Coaching, defined as “a relationship-based process led by an expert with specialized early learning and adult learning knowledge and skills...designed to build capacity for specific professional dispositions, skills, and behaviors and is focused on goal-setting and achievement for an individual or group” (NAEYC & NACCRRA, 2011, p. 11), has been shown to increase teacher use of a variety of teaching practices and promote both generalization and maintenance of targeted practices (e.g., Barton et al., 2013; Rakap, 2017). Based on several literature reviews (Artman-Meeker et al., 2015; Golden et al., 2020; Kraft et al., 2018; Stormont et al., 2015), characteristics of coaching vary across studies in terms of type (e.g., method of delivery), dosage (e.g., frequency of coaching sessions), and strategies used (e.g., feedback, live observation). In a review of the early childhood coaching literature, Artman-Meeker and colleagues (2015) identified the most commonly used coaching strategies to be performance feedback, intentional planning for practice between sessions, use of a manual, collaborative progress monitoring, and use of action plans.

One evidence-based model of coaching that has been used to increase teacher use of effective practices is Practice-Based Coaching (PBC; Snyder et al., 2015). PBC is a cyclical framework built around a collaborative partnership between the coach and coachee aimed at increasing teacher use of effective teaching practices. Coaching strategies identified by Artman-Meeker and colleagues (2015) are incorporated within the three key components of PBC: (a) shared goals and action planning, (b) focused observations, and (c) reflection and feedback. See Table 1 for a list of PBC studies and how the components have been implemented across studies.

Table 1*Summary of recent Practice-Based Coaching literature*

Article	Training	Practice-Based Coaching Components								
		Shared Goals and Action Planning	Focused Observations	Reflection	Feedback			Performance- Based	Generalization	Maintenance
					Supportive	Constructive				
Artman-Meeker et al., 2014	6-hr workshop training (live)	X (live)	X (video recording)		X (email)^	X (email)^				
Barton et al., 2016			X (live)		X (email)	X* (email)		X (live)	X (live)	
Barton et al., 2018			X (live)		X (email)	X* (email)		X# (live)	X (live)	
Barton et al., 2019		X+	X (live)		X (text)	X (text)		X# (live)	X (live)	
Barton et al., 2020	5-slide voice-over PowerPoint (email)		X (live)		X (email)	X (email)		X# (live)	X (live)	
Conroy et al., 2019	6-hr workshop training (live)	X (NR)	X (live)	X (NR)				X (NR)		
Conroy et al., 2015	6-hr training (live)	X (live)	X (live)	X (live)				X (live)		X (live)

Hemmeter et al., 2016	Three 6.5 hr workshops (live)	X (live)	X (live)	X (live)	X (live)	X (live)		X (live)
Krick Oborn & Johnson, 2015	Two, one-on-one, 2-hr workshop sessions (NR)		X (video recording)		X (email)	X (email)		X (video recording)
McLeod et al., 2019	One training per target practice (live)	X (live)	X (video recording)	X (email)	X (email)^	X (email)^	X (video recording)	X (video recording)
Snyder et al., 2018	14.9 hrs of workshop training (live)	X (live)	X (live)	X (live/email)			X (live/email)	X (video recording)
Sutherland et al., 2015	1-day group workshop (live)	X (live)	X (live)	X (live)			X (live)	X (live)

Note. Delivery method indicated in parentheses. * constructive feedback was only provided when the teacher did not use the target practice during the observation. # covert observations conducted in addition to generalization sessions. + goals were set with 2 participants when target practice use was low during intervention. ^feedback included clips from the recorded observations. NR = not reported. Blank cells indicate component was not present. Participants in Krick Oborn & Johnson, 2015 recorded themselves. Participants in McLeod et al., 2019 were recorded by another study participant. Video recordings in Artman-Meeker et al., 2014 and Snyder et al., 2018 were collected by research staff. Four studies reported the use of performance-based feedback. Supportive and constructive feedback meet the definition of performance-based feedback but since it was not specified in the studies, it is reported here as performance-based feedback.

PBC has been effective for increasing teacher use of multi-component interventions (e.g., Hemmeter et al., 2016; Sutherland et al., 2015; Snyder et al., 2018) as well as teacher use of individual practices (e.g., McLeod et al., 2019). In most studies examining the effectiveness of PBC (Conroy et al., 2019; 2015; Hemmeter et al., 2016; Snyder et al., 2018; Sutherland et al., 2015), coaching has been time and resource intensive with teachers receiving an average of 14.3 weekly coaching sessions (range 7-17). Across those studies, the reflection and feedback component of coaching was delivered during an in-person debriefing meeting (M = 35.25 mins; range 10-135 mins) which occurred after a live, focused observation (M = 83.35 mins; range 30-305 mins).

For some early childhood programs, the amount of time and personnel needed to implement PBC as examined previously might be prohibitive. There is not yet a body of evidence to support the use of PBC when delivered in more efficient ways. One way to increase the efficiency of PBC would be to implement it in a distance format (i.e., remote observation and/or remote coaching meetings). Schachter and colleagues (2019) suggested that distance coaching might minimize disruptions to the classroom, reduce scheduling challenges, and make coaching available to teachers in a wider geographical area. Only two studies (Artman-Meecker et al., 2014; McLeod et al., 2015) examined PBC implemented remotely to increase teacher use of targeted practices. In a group design study, Artman-Meecker et al. (2014) evaluated the effectiveness of PBC (i.e., action planning, observation, and feedback) via email, delivered following a one-day workshop, to increase teacher use of Pyramid Model practices. Following a training, during which teachers wrote action plan goals, teachers submitted video recorded observations of their use of the teaching practices and received supportive and constructive feedback via email. Emails did not include a specific reflection prompt. Action plans and

coaching focused on targeted Pyramid Model practices (e.g, implementing a class-wide visual schedule, providing transition warnings) while change in teacher practices was measured using a more general measure of Pyramid Model implementation (e.g., TPOT; Hemmeter et al., 2014). Artman-Meeker et al. (2014) reported positive but not statistically significant increases in teacher use of Pyramid Model practices. To further examine these findings, teachers were divided into two groups based on their participation in the intervention. Teachers with higher levels of participation, measured by response to feedback emails, showed greater growth in use of Pyramid Model practices (Artman-Meeker et al., 2014), although the difference between treatment and control groups was not statistically significant. McLeod and colleagues (2019) implemented the focused observation and reflection and feedback components of PBC remotely with two preservice teachers to increase their use of recommended practices (i.e., emotion labeling, descriptive praise, choice), using a multiple baseline design across behaviors. After developing action plans during live training sessions, participants recorded and uploaded observations. After viewing video recorded observations, coaches sent emails containing supportive and constructive feedback as well as a prompt for the teacher to reflect on her implementation of the target practice. A functional relation was present for both participants, and there was some evidence of generalization and short-term maintenance. With mixed results from studies implementing PBC components from a distance, additional research is needed to determine the effectiveness of PBC when implemented remotely.

In the broader early childhood (EC) coaching literature, distance coaching, in the form of providing performance-based feedback, has been used effectively to increase teacher use of targeted practices. Across the recent EC distance coaching literature (i.e., studies published since 2015), the feedback component of coaching has consistently been delivered via email (Barton et

al., 2016; 2020; Barton, Pokorski et al., 2018; Krick Oborn & Johnson, 2015) while the observation component has most commonly been conducted in-person (Barton et al., 2016; 2020; Barton, Pokorski et al., 2018). Studies using in-person observation and email feedback have included preservice (Barton et al., 2016) and in-service (Barton, Pokorski et al., 2018) teachers as well as teaching teams (Barton et al., 2020) and have focused on increasing teaching practices such as emotion labeling, promoting social interactions, and descriptive praise. Across studies, the email feedback included a request for teachers to respond as a measure of teacher contact with the intervention. Teacher responsiveness was variable across studies (range 57%-100%). Generalization and maintenance were measured in each of these studies (Barton et al., 2016; 2020; Barton, Pokorski et al., 2018). For most participants, results generalized across settings and maintained after coaching was removed. In two of the studies (Barton et al., 2016; Barton, Pokorski et al., 2018), covert observations were also conducted, with teacher use of target practices being variable and often lower than the level of practice use observed during live observation sessions. One study (Krick Oborn & Johnson, 2015) used a distance coaching format for both observation (i.e., submitted video recordings) and feedback (i.e., email) to increase home visitor use of caregiver coaching strategies (e.g., problem solving, demonstration, observing or data collection). There was some evidence of increased practice use, but none of the participants reached criterion of using at least 70% of caregiver coaching strategies in a session. Email feedback included a request for a response, but the home visitors only responded to 33%-66% of emails, indicating they may have had limited contact with the intervention. Krick Oborn and Johnson (2015) measured maintenance with results maintaining for only 33% of participants.

Recent literature provides some evidence that providing feedback via email is effective for increasing preservice and in-service teacher implementation of recommended practices.

Across studies, a reported limitation was a lack of teacher response to email feedback (Barton, Pokorski et al., 2018; Barton et al., 2020; Krick Oborn & Johnson, 2015). Investigating ways to increase teacher responsiveness and engagement in distance coaching is an important next step in developing effective methods for distance coaching. Only one study (McLeod et al., 2019) asked participants to respond with a reflection on their use of the target practice. Other studies asked teachers only to confirm the time for the next session with a simple yes or no response (Barton et al., 2016; 2020; Barton, Pokorski et al., 2018). Although McLeod and colleagues (2019) did not report rates of teacher responsiveness, engaging teachers in reflection rather than just a rote response (e.g., confirming an observation time), may lead to higher engagement with the coaching content. In addition to being a proxy for engagement with the intervention, prompting teachers to reflect on their teaching practices can increase their ability to identify and think critically about their use of quality teaching (Schachter et al., 2019).

Text messaging, an easily accessible technology (Smith, 2017) that is designed for short back and forth conversational exchanges, may support increased responsiveness. With 97% of Americans texting at least weekly, it is a well-known technology (Stroo & Shaw, 2018). In comparison to emails, text messages are more often opened (25% versus 98%), and response time is significantly shorter (average of 90 min versus 90 sec) (Stroo & Shaw, 2018), both statistics indicating text messaging may be an easier and more efficient way for teachers to engage with coaching.

Text messaging has been used in the parent training literature. Research has indicated that parents with higher engagement with an intervention tended to have more positive outcomes, in general, and particularly with high-risk families for whom engagement is often low (Bigelow et al., 2008). Text messaging, providing reminders and suggestions about how to use targeted

practices, has been used as a strategy to enhance typical home visiting and parenting intervention protocols, specifically to increase parent engagement (e.g., Bigelow et al., 2008; 2013; 2020; Carta et al., 2013). Although child outcomes were mixed, there is evidence that parents receiving text messages had higher engagement with the intervention and were more likely to complete the intervention than parents who did not receive text messages (Bigelow et al., 2013). Findings indicated that in most studies, parents receiving text messages used more of the targeted parenting strategies (Bigelow et al., 2008; 2020; Carta et al., 2013). Importantly, parents reported text messaging was a positive enhancement to the intervention (Bigelow et al., 2008; 2013; 2020).

In the early childhood teacher coaching literature, only one study (Barton et al., 2019) has looked at the effectiveness of text messaging as a mode of delivering feedback, in addition to live observation. Text message feedback was provided to preservice teachers to increase their use of practices such as redirections, emotion labeling, and play expansions. During the intervention condition, the text message included a positive greeting, a count and example of the participant's use of the target practice, feedback related to target practice use, a positive closing statement, and a request for a response to confirm the next session. A functional relation was present for three of the four participants. Both generalization and maintenance were measured. Overall, preservice teacher use of targeted practices was variable during generalization and maintenance sessions and was generally lower than practice use during intervention sessions. The social validity of the coaching component of the intervention was not measured.

Because low engagement with the intervention has been a potential barrier to improving practices in previous distance coaching research (Barton et al., 2016; 2020; Barton, Pokorski et al., 2018; Krick Oborn & Johnson, 2015) and that text messaging has successfully been used to

increase engagement in parent training studies (Bigelow et al., 2008; 2013; 2020; Carta et al., 2013), research on the effects of teacher coaching via text message is warranted. The global pandemic, which often decreased the ability of coaches to provide in-person coaching and increased teacher responsibilities (e.g., increased cleaning protocols), provided a context for exploring coaching methods that were likely to be effective from a distance but also efficient in terms of resources and teacher time, qualities that could also be useful for coaching outside of the context of a pandemic.

In the current study, all PBC components were delivered remotely, with the reflection and feedback components delivered via text message to expand the research on both the effectiveness of using text messaging as a delivery method for coaching teachers and ways to increase the efficiency of PBC. Central to the PBC framework are effective teaching practices. For the purposes of this study, the Pyramid Model practices (PM; Fox et al., 2003; Hemmeter et al., 2006; Hemmeter, Fox et al., 2021) were the target of coaching. Built on the foundation of an effective workforce, the PM offers three tiers of support. The first tier focuses on the implementation of universal practices related to nurturing and responsive relationships and high-quality, supportive environments. The second tier provides targeted supports to promote the development of social-emotional competencies for children at-risk. When needed, the third tier provides a framework for developing intensive and individualized interventions to address persistent challenging behavior (TACSEI, 2018). When implemented with fidelity, the implementation of the PM has been associated with improved classroom quality and positive child outcomes related to social skills and challenging behavior (Hemmeter et al., 2016; Hemmeter, Fox et al., 2021). Current research around the implementation of the PM indicates that professional development, typically workshop-style training, plus PBC has been effective

for increasing teachers' fidelity of implementation of the Pyramid Model practices (e.g., Fox et al., 2011; Hemmeter et al., 2016; Hemmeter, Fox et al., 2021).

The recent pandemic highlighted the need for providing support to teachers even when coaches are unable to observe or provide feedback in-person, leading to the need to evaluate coaching strategies that can be effectively utilized in a distance format. In this context, it is important to examine the effectiveness of coaching when both the observations and coaching are provided from a distance. The purpose of this study is to rigorously evaluate the effectiveness of delivering a coaching package, training plus PBC, via text message on teacher use of targeted Pyramid Model practices as a basis for an evidence-based practice. This study addressed several limitations and recommendations for future research presented in recent distance coaching studies by: (a) evaluating the use of text messaging, an immediate method for delivering feedback (Barton et al., 2016; 2019); (b) incorporating goal setting (Barton et al., 2020); (c) establishing the expectation that participants respond to prompts and embedding reflective prompts throughout the text exchange to engage teachers in a back and forth conversation (Barton et al., 2019; 2020; Krick Oborn & Johnson, 2015); (d) measuring procedural fidelity of training sessions as well as the text messaging protocol during the baseline and intervention conditions (McLeod et al., 2019); and (e) including an objective measure of social validity (i.e., masked raters evaluating teachers' practice). This study was designed to address the following research questions:

1. Is training plus Practice-Based Coaching (PBC) delivered via text message effective for increasing teacher use of Pyramid Model practices?
2. Do teachers' use of practices targeted through training and PBC delivered via text message generalize to activities in which coaching was not provided?

3. Do teachers maintain their use of Pyramid Model practices when coaching is removed?
4. Do teachers find the remote coaching package feasible, effective, and acceptable?

CHAPTER 2

Method

Participants and Implementers

After obtaining approval from the Institutional Review Board (IRB), three teachers were recruited for this study (Jessa, Elizabeth, and Stephanie) by contacting administrators of early childhood programs and soliciting nominations. Nominated teachers were contacted via email by the first author and provided with information about the study including a description of study procedures and participant responsibilities (e.g., set up iPad, record observations, respond to text messages). The first author explained that participation was voluntary and answered any questions the teacher had. Each participant was sent an electronic consent form to sign if they agreed to participate in the study. Teachers were eligible to participate in the study if: (a) they taught full-time in a preschool classroom where the majority of children were between the ages of three and five, (b) they were providing in-person instruction, (c) they had access to a reliable wireless internet connection in their classroom, (d) they had access to a device with a text messaging app, and (e) they self-identified at least four discrete Pyramid Model (Fox et al., 2003) practices, using a modified version of the Pyramid Model Implementation Checklist (see Appendix A), to target with coaching. Once consented, teachers completed three surveys: (a) a teacher demographic survey (Appendix B), (b) a classroom demographic survey (Appendix C), and (c) a technology survey (Appendix D). On the technology survey, all teachers reported being comfortable to very comfortable with technology, including Zoom and text messaging. They also reported that when not meeting face-to-face, texting was their most frequently used method of

communicating with coworkers. See Table 2 for teacher and classroom demographic information.

The primary researcher was a doctoral student in early childhood special education (ECSE). She held a Master's degree in ECSE and was a licensed teacher and Board Certified Behavior Analyst. The primary researcher conducted all teacher training sessions and coaching activities and served as the primary data collector on the dependent variable (i.e., teacher use of targeted PM practices). A master's student in Child Studies served as the secondary data collector. Procedural fidelity data on teacher training and coaching sessions were collected by two Master's students, one in Human Development Counseling (primary) and one in Child Studies (secondary).

Settings

This study occurred in three preschool classrooms across two states. Jessa and Elizabeth taught in Head Start classrooms in small rural towns in a southwestern state, and Stephanie taught in a university-based preschool program in a midwestern state. Jessa, Elizabeth, and Stephanie had 19, 13, and 11 children in their classrooms, respectively. The coaching component of the intervention, PBC delivered via text message, was delivered directly to the teacher's cell phone via a messaging application. Data collection observations occurred during typical classroom activities and routines via video recordings. During an initial overview training, prior to baseline data collection, teachers chose a primary activity and a generalization activity. Two teachers (i.e., Elizabeth and Stephanie) chose center time as their primary activity while Jessa chose small group as her primary activity. During small groups, Jessa would lead an academic activity (e.g., name writing, rhyming game, patterning) with four to six children. The other children in the class either worked independently with playdoh or completed academic games on

Table 2*Participants and Settings*

Participant	Age	Gender	Ethnicity	Years of experience	Level of Education	Teacher licensure	Classroom				
							Type of school	No. of children (no. with IEPs)	Age range (months) ^a	Baseline/intervention activity	Generalization activity
Jessa	43	F	Caucasian	6	BA Education	Early childhood + special education	Head Start	19 (7)	44-59	Small groups	Large group
Elizabeth	47	F	Caucasian	11	BA ^b Education	PreK-4 th grade	Head Start	13 (1)	42-63	Center time	Large group
Stephanie	48	F	Hispanic Caucasian	8	BA ^c Sociology	Birth-K	University-based lab school	11 (0)	28-40	Center time	Large group

Note. IEP = Individualized Education Plan.

^aAt the start of the study

^bGraduating with M.Ed in Special Education in May 2021

^cEnrolled in a Master's program in Interdisciplinary Early Childhood Education

an iPad. During center time in both Elizabeth and Stephanie's classrooms, children played independently or with peers in a variety of centers typical to preschool classrooms (e.g., block center, home-living center, puzzle center, writing center). In both classrooms, children were free to move between centers. The number of children permitted in each center was limited in Elizabeth's classroom but not in Stephanie's classroom. All three teachers chose large group as their generalization activity. In Jessa's room, children gathered as a large group on the rug to write or draw on whiteboards between breakfast and movement activities. In Elizabeth's classroom, large group consisted of attendance, a movement activity, and a shared writing activity. In Stephanie's classroom, large group consisted of a read aloud and an additional activity (e.g., song, movement activity, question of the day) that changed each day. Children and educational assistants were present during all data collection sessions. Due to the ongoing global pandemic, teachers reported the implementation of health and safety measures beyond what was typical in their classroom. Two of the teachers (Jessa and Stephanie) reported that adults in the classroom wore masks throughout the day, Stephanie reported that enrollment was limited, and all teachers reported an increase in hand washing and the sanitization of surfaces (e.g., tables) and materials.

Materials

Materials typically found in a preschool classroom, including but not limited to toys within play centers, child-sized tables and chairs, books, curriculum materials, and visual supports, were present in each classroom. Teachers were given an iPad, an iPad stand, and a Bluetooth microphone to facilitate remote data collection. Observations were recorded daily using Zoom (Yuan, 2012), and data collection occurred via recording. All training sessions were conducted and recorded using Zoom, and text messages between the coach and teachers were de-

identified and saved to a secure server and coded for fidelity. Researcher-created Excel spreadsheets were used to collect dependent variable and procedural fidelity data.

Response Definitions

During the initial Pyramid Model overview training, teachers were shown a modified version of the Pyramid Model Practices Implementation Checklist and chose four practices to target with coaching (see Appendix A). The Checklist was modified to include only discrete practices to ensure the practice use could be tallied. See Table 3 for response definitions and information about which practices were chosen by which teachers.

Data Collection

Data on teacher use of the targeted Pyramid Model practices were collected from 15-min video recordings using a timed event recording system (Yoder & Symons, 2010) and a researcher-created data spreadsheet. While watching the recorded observations, the primary data collector marked each occurrence of the targeted practices. Data on each target practice was collected and graphed daily and was used to make phase change decisions.

Information on the dosage of coaching was collected to provide a measure of how much time the intervention required of the coach and teacher. Dosage was measured by recording the amount of time the coach spent preparing the feedback (i.e., time to watch the recorded observation, time to prepare the text prompts and feedback statements) as well as the amount of time spent on the text message exchange. The time each text message (coach prompts and teacher responses) was sent was recorded to measure time spent on the text message exchange. The percent of response and reflection prompts responded to by the teacher was calculated as a measure of teacher responsivity to the intervention. In addition to texts occurring during a

Table 3

Target Practice Definitions

Definition	Selected
Rule reminders: verbal utterance, physical gesture, or visual aid directed toward a child(ren) with the purpose of (a) reminding the child(ren) of the posted classroom rules or expectations or (b) positively correcting a child’s behavior	---
Comments on appropriate behavior: verbal utterance directed toward a child(ren) acknowledging that child’s/group’s positive behavior by referring to a posted classroom rule or expectation	---
Choices: explicitly offering a child(ren) a choice between at least two things (e.g., activities, materials, centers, ways of completing a task)	Jessa Elizabeth Stephanie
Emotion words: verbal utterance including a positive (e.g., happy, excited, proud) or negative (e.g., sad, angry, frustrated) emotion word used to (a) describe a child or teacher’s current emotions, (b) describe how a situation may make someone feel, (c) as part of a discussion, or (d) as part of a play scheme	Jessa Elizabeth Stephanie
Positive, descriptive feedback on friendship, social, or emotional skills: a verbal statement directed towards a child(ren), acknowledging their use of a friendship, social, or emotional skill. The statement had to be both positive and include a specific statement about what the child did	Stephanie
Positive, descriptive feedback on engagement: a verbal statement directed towards a child(ren), acknowledging their engagement within an activity. The statement had to, be positive, include a description what the child was doing, and be focused on the child or group of children’s current engagement with peers, adults, an activity, or materials	Elizabeth
Positive, descriptive feedback on children’s skills or behaviors: a verbal statement directed towards a child(ren), acknowledging their skills or behavior. The statement had to be positive and include a description what the child was doing	---
Positive, descriptive feedback on children’s appropriate behavior, linked to the rules or expectations: a verbal statement directed towards a child(ren), acknowledging their appropriate behavior linked to a classroom rule or expectation. The statement had to be positive, include a description what the child was doing, and be linked to a classroom rule or expectation	---
Positive, descriptive feedback on following directions: a verbal statement directed towards a child(ren), acknowledging that they followed a direction. The statement had to be positive, include a description what the child was doing, and be delivered after the teacher provided a direction and the child(red) followed the direction	Jessa
Suggesting interactions between peers: a verbal statement directed towards a child(ren) that encouraged two or more children to play, complete an activity together, or engage in a conversation. The statement had to include a specific statement telling the child(ren) with whom they could interact and what they could do to initiate the interaction	Elizabeth
Prompting children to use a social skill: a specific verbal statement encouraging one or more children to use a social skill (e.g., working together, helping, solving a social problem). The statement must tell the child or children what they can do	Jessa Stephanie

Note. Definitions adapted from Golden et al., 2020

coaching session, texts about practice content sent by the coach or teacher outside of the text exchange were captured. However, texts about scheduling or other logistics that were sent outside the text exchange were not captured.

Experimental Design

A multiple baseline design (MB; Gast et al., 2018) across behaviors, and replicated across participants, was used to evaluate the effectiveness of training plus PBC delivered via text message on teacher implementation of Pyramid Model practices. Data were collected concurrently (both across behaviors and participants, with participants independent of one another), and the intervention was introduced in a time-lagged fashion across tiers for each participant. A MB design was chosen because the behaviors on which the teachers were being coached were likely to be non-reversible, meaning they weren't likely to return to baseline levels when the intervention was removed. The MB design did not require the intervention to be removed once it had been introduced in a tier as it would in an A-B-A-B withdrawal design. With the MB design, the intervention was introduced in a time-lagged manner across behaviors and allowed for the detection of potential threats to internal validity (e.g., history, maturation, adaptation, Hawthorne effect). Visual analysis was used to detect these threats. If threats had been detected, the plan was to continue in the current condition until data across all tiers were stable (Barton, Lloyd et al., 2018). Threats to internal validity were not detected. This design was chosen rather than a multiple probe design for two reasons. First, because data on all targeted behaviors were being collected within the same recording, data on all practices were coded during each observation. Secondly, the MB design is commonly used in similar studies evaluating the effectiveness of distance coaching to increase teacher use of targeted practices (e.g., Barton, Pokorski et al., 2018; McLeod et al., 2019).

Procedures

Pyramid Model Overview Training

Prior to beginning baseline data collection, teachers received a Pyramid Model overview training. The training included the use of a PowerPoint presentation with video and picture examples, as well as opportunities for discussion and questions. The purpose of the training was to provide teachers with an overview of the key components of the Pyramid Model (e.g., establishing classroom routines, having supportive conversations, teaching social-emotional skills). During the training, the coach reviewed study procedures, including how to set up the iPad and Bluetooth microphone as well as how to login to Zoom for observations. At the end of the training, teachers reviewed the adapted version of the Pyramid Model Practices Implementation Checklist. Teachers worked with the coach to choose four practices from the checklist to target with coaching. Practices were discrete, to allow each use of the practice to be tallied, and independent of one another (e.g., if the teacher chose prompting children to use social skills, they could not choose suggesting interactions between peers), to control for carry over effects. Teachers also chose the primary activity, during which daily observations occurred, as well as the generalization activity. When choosing the generalization activity, the coach informed the teachers that although coaching would focus on the primary activity, she would also occasionally check in on practice use during a different activity. Once the activities were chosen, the teacher decided where to place the iPad to best capture the chosen activities. Although the intention was to capture the teacher and children in the video, due to classroom setup and the use of a stationary iPad for recording, the teacher and children were not always in the frame, particularly in Elizabeth and Stephanie's classrooms. Finally, the teacher and coach determined a set time each day (i.e., 11:45am, 1pm, 1:35pm), that worked best with the teacher's

schedule, when the coaching text message exchange would occur, with the goal of completing the entire exchange within a 30 min window of time. The training ended with the coach confirming the day and time of the first baseline recording. Across teachers, the overview training took an average of 71 min (range 68-77).

Baseline

Following the Pyramid Model overview training, the baseline condition began. During baseline, teachers were instructed to continue teaching as they had prior to consenting to participate in this study; in other words, business as usual. Each day, during the designated activity, the teacher placed the iPad in the designated spot; logged in to the assigned Zoom meeting; and ensured the microphone was on, connected to the iPad, and attached to the teacher's shirt. Each teacher had a unique Zoom link for a recurring meeting that was set to automatically record to the cloud when they logged in. Video recordings of the observations were viewed by the coach (i.e., first author) daily. After each baseline session, the coach sent the teacher a generic text message consisting of (a) a positive greeting (e.g., "good afternoon," "Hi, I hope you've had a great day"), (b) a reminder about the next observation with a request for response (e.g., "Our next session will be snack time at 9:15 am tomorrow. Please confirm this time works for you."), and (c) a closing statement with an opportunity for the teacher to ask questions (e.g., "Great! Thank you so much and let me know if you have any questions."). After a minimum of five low and stable baseline data points across target practices, the intervention (i.e., training plus PBC delivered via text message) was introduced in the first tier. Throughout the study, data on all four target practices were collected from each observation. Visual analysis was used to assess the level, trend, and variability of baseline data. Which tier to intervene in first was determined by using visual analysis to assess in which tier the data were low and stable

or had a counter-therapeutic trend. Following the introduction of the intervention in each tier, data continue to be collected on non-intervened upon tiers to detect potential threats to internal validity.

Intervention

Training. Following baseline in the first tier, the coach provided training on the first target practice and on the coaching process. The training was conducted remotely via Zoom and included the use of a PowerPoint presentation with seven components: (a) review of the study timeline; (b) review of the four chosen target practices; (c) definition of the first target practice including examples and non-examples how the use of the practice could be beneficial for children; (d) videos of examples and nonexamples of the target practice from the teacher's classroom; (e) creation of an action plan; (f) review of the coaching process; and (g) confirmation of the upcoming video recording schedule. Teachers were given several opportunities throughout the training to ask questions. The action plan developed by the teacher and the coach included (a) the target practice, (b) steps for implementing the practice, and (c) supports (e.g., resources, materials) the teacher needed to implement the practice. The action plan included any supports the coach would provide. During the training on the first target practice, the coach used mock text message exchanges to introduce the text messaging procedures. When the texts would be delivered and when and how the teacher was expected to respond, including the 5-point Likert-type scale (1=never used, 5=used consistently) the teachers used to reflect on their use of target practices (e.g., "on a scale of 1 to 5, how did you do with offering explicit choices today?"), were reviewed. During subsequent training sessions, the coach reminded the teachers about the texting procedures. This training process was repeated for each tier. The first training session for each teacher was longer (avg. 49 min, range 32-62 min) as

more time was spent introducing the text exchange. Training sessions two through four were shorter (avg. 29 min, range 20-51 min).

Coaching. The independent variable in this study was training plus PBC delivered via text message. The three main components of PBC (i.e., action planning, focused observations, and reflection and feedback) were implemented. Action planning occurred during the training. Focused observations occurred daily when the teacher logged in to the assigned Zoom meeting during the chosen activity. The reflection and feedback component of PBC occurred via text message (see Table 4 for definitions of reflection and feedback components). During intervention, the text message exchange between the coach and the teacher consisted of the three components present during baseline: (a) a positive greeting, (b) a reminder about the next observation with a request for response, and (c) a closing statement with an opportunity for the teacher to ask questions. Four additional components around reflection and feedback were added to intervention text messages: (a) a general reflection prompt (e.g., “reflecting on today’s session, on a scale of 1 to 5, how do you feel about your use of emotion words?”), (b) a supportive feedback statement (e.g., “Today I observed you using 4 different emotion words, 2 more than yesterday! You labeled your own emotion when checking the schedule when you said “I’m so excited it stopped raining and we can go outside for recess!”), (c) a constructive feedback statement (e.g., “When you were asking the children to share what they did over the weekend, that would have been a great time to use emotion words.”), and (d) a constructive reflection prompt (e.g., “How do you think you could have incorporated emotion words during that activity?”). Teachers were expected to respond a total of three times during the text message exchange. If a teacher did not respond to one of the prompts requiring a response by either providing the requested information or indicating they needed more time to respond, within 20

Table 4

Reflection and Feedback Definitions

Definition	Examples	Non-Examples
<p>Positive Greeting: This opens the coaching sessions and sets a positive tone for the conversation. This statement will be brief and may or may not include the teacher’s name. This statement can be sent as a stand-alone text or as that start of the general reflection prompt. The positive greeting must occur before the use of other coaching strategies.</p>	<ul style="list-style-type: none"> • Good afternoon! • Hi Anna! • Hey Julie, [general reflection prompt]. 	<ul style="list-style-type: none"> • Beginning the text exchange with a general reflection prompt • Beginning the text exchange with supportive or constructive feedback
<p>General Reflection Prompt: This is designed to prompt the teacher to reflect on his/her overall use of the target practice during a session. The teacher is prompted to respond with a rating, on a scale of 1-5, of his/her practice use. The prompt must include reference to the Likert-type scale AND to the target practice.</p>	<ul style="list-style-type: none"> • Reflecting on today’s session, on a scale of 1 to 5, how do you feel about your use of emotion words? • Using the 1 to 5 scale, how did you do with giving positive, descriptive feedback? 	<ul style="list-style-type: none"> • How did today go? <i>[no reference to the scale or target practice]</i> • Reflecting on today’s session, how do you feel about your use of emotion words? <i>[no reference to the scale]</i> • Using the 1 to 5 scale, how did you do today? <i>[no reference to the target practice]</i>
<p>Supportive Feedback: Providing descriptive praise about a teacher’s implementation of the targeted practice. Supportive feedback must be positively stated and include a statement of what the teacher did, specifically related to the target practice. The statement of what the teacher did may be a specific example of how s/he used the target practice or the number of times the teacher used the target practice or a combination of both.</p>	<ul style="list-style-type: none"> • When Jax walked in you said ‘I see your smile, you’re happy this morning.’ • Today I observed you using 4 different emotion words, 2 more than yesterday! I heard you say angry, frustrated, proud, and happy. • You labeled your own emotion when checking the schedule when you said “I’m so excited it stopped raining and we can go outside for recess!” 	<ul style="list-style-type: none"> • When the children are at the snack table, you could suggest they turn to a peer and tell them what they did last night. <i>[this is constructive, not supportive]</i> • You only gave two choices today, that’s less than yesterday. <i>[not positively stated]</i> • You did such a great job today! <i>[does not include a statement about what the teacher did, specifically related to the target practice]</i>

Constructive Feedback: Offering constructive suggestions or supports for improving teacher use of target practices. Suggestions or supports might focus on when or how to use the target practice. Constructive feedback should always include suggestions or support for improving implementation of target practices.

- When you were asking the children to share what they did over the weekend, that would have been a great time to use emotion words.
- After reminding the children use walking feet, you can comment on their appropriate behavior “I see you using your walking feet!”

- Today you gave three statements of positive, descriptive feedback! *[supportive, not constructive feedback]*
- You need to provide children with more choices. *[does not include support for improving implementation]*

Constructive Reflection Prompt: This is designed to prompt the teacher to reflect on how s/he could use the target practice more or differently in the future. The prompt must be open-ended (i.e., not a yes/no question) and include a reference to the target practice.

- How do you think you could have incorporated emotion words during that activity?
- When two children are playing near each other, how could you prompt them to use a friendship skill?
- Tell me one way you could suggest an interaction between children during snack.

- How could you do that more tomorrow? *[no reference to the target practice]*
- Do you think you could try giving positive feedback when children are engaged during small group? *[yes/no rather than open-ended]*

Session Reminder: This is a statement intended to remind the teacher of the next session and to give the teacher an opportunity to communicate a conflict with the next scheduled session (e.g., teacher will be out, school assembly). The statement must include the activity, start time, and a request for the teacher to confirm the time works for him/her.

- Our next session will be snack time at 9:15am tomorrow. Please confirm this time works for you.
- I’m looking forward to watching tomorrow’s session, circle time at 10am. Please confirm that time works for you.

- Our next session will be tomorrow at 9:15am. *[no reference to the activity and no request for confirmation]*
- Can’t wait for tomorrow’s session! *[no reference to the activity or time and no request for confirmation]*
- See you tomorrow for small groups. Please confirm! *[no reference to the time]*

Closing statement: This statement is intended to mark the end of the coaching session and provide teachers with an opportunity to ask any additional questions or seek additional support. This statement must include a positive closing and offer additional support.

- Thank you! Do you have any questions about what I’ll be observing tomorrow?
- Thanks for your time today! Do you have questions about the next observation?

- Bye! *[no offer of additional support]*
 - Anything else I can help with? *[no closing statement]*
-

min of the text being sent, the same text was sent again. If the teacher did not respond to the repeated request after 20 min, the coach continued to the next step in the text sequence. The same procedure was followed for each response prompt. Teacher responses to prompts within the 20-min window were captured within the procedural fidelity data. Across teachers, this procedure was used a total of seven times (within 8% of all text exchanges). When there were more than four days between sessions (e.g., spring break, school cancellation due to inclement weather), teachers received an additional reminder text the morning of the first session after the break. The text included a reminder to record a session that day as well as a reminder of the current target practice. Across teachers, each text message exchange during intervention took an average of 16 minutes (range 4-66).

To prepare for the coaching session, the coach watched each teacher's recording. Although observations were done remotely from a recording, the coach watched the teacher's video straight through without pausing or re-watching, to most closely match live coaching observations. Notes about teacher use of the target practices and opportunities for additional use were taken. After watching the video, the coach wrote a supportive feedback statement, a constructive feedback statement, and a constructive reflection prompt. Those statements were then used in the text message exchange with the teacher. The coach re-watched each video to collect data that were graphed and used to make phase change decisions.

Fading. When a new target practice was introduced, the previously targeted practice entered a fading phase. During Fading, teachers were reminded to continue using previously coached practices but the focus of the reflection and feedback shifted to the new target practice. When applicable, the coach provided feedback around or prompted the teacher to reflect on how the current target practice could be used together with a previously coached practice. For

example, if a teacher was working on providing positive, descriptive feedback around children's use of friendship, social, or emotional skills and had previously worked on prompting children to use social skills, a constructive feedback statement such as "after you prompt children to share the blocks, you can follow up with descriptive feedback about the sharing – you are sharing the blocks with Lana, that's very kind!" to connect the two practices.

Maintenance

Maintenance data were collected in the primary data collection activity across teachers and target behaviors one, two, and three weeks after the completion of intervention in all four tiers. Maintenance data were also collected once (i.e., 33%) in the secondary activity. Similar to baseline, the coach sent a text message with a positive greeting, a reminder about the next session, and a closing statement with an opportunity to ask questions. Maintenance differed from Fading in that teachers were not prompted to reflect on their teaching and the coach did not provide feedback on any of the target practices. When a teacher moved from intervention to maintenance, once intervention was complete in all four tiers, the coach informed her that the coaching portion of the study was complete but the coach would check in once a week for three weeks to observe their use of the four target practices. Similar to intervention, when there was a gap between observations (i.e., more than four days between sessions), the coach sent a reminder text the morning of the session. The text included a reminder to record an observation and the four target practices.

Generalization

Generalization data were collected in a secondary activity for a minimum of 33% (range 33-60%) of primary observations across teachers, target behaviors, and conditions. Generalization sessions were recorded using the same procedures used for primary observation

sessions. During all conditions (i.e., baseline, intervention, fading, maintenance), a reminder about the generalization session was included with the reminder for the next observation in the regular text message exchange (e.g., “Tomorrow we have two sessions, 9 am during large group and 10:15 am during centers. Please confirm those times still work for you.”).

Social Validity

Social validity data were collected in two ways, through participant report and masked raters. Prior to baseline, participants completed the teacher demographic survey which included prompts assessing their experience with being coached and their comfort level with technology in general and using technology as a source of professional development. At the conclusion of the intervention, teachers completed a survey assessing their comfort level with technology in general and as a source of professional development, the same prompts they responded to prior baseline. In addition, the survey included questions about the feasibility, effectiveness, and acceptability of the coaching package (e.g., setting up the iPad, receiving feedback via text message) (see Appendix E).

In addition to teacher report, masked raters were consented to rate teacher use of specific Pyramid Model practices as well as general implementation of the Pyramid Model. Each rater was randomly assigned to one of the study participants and asked to watch one randomly selected baseline session and one randomly selected intervention session from the final tier for their assigned participant. For each video, raters were asked to rate teacher use of 12 specific Pyramid Model practices (e.g., positive, descriptive feedback; use of emotion words; conversations with children) including all of the practices teachers did and could have chosen to target with the coaching intervention as well as other similar Pyramid Model practices. Raters also rated the overall tone of teacher-child interactions, the teacher’s use of positive and

supportive social-emotional teaching practices, and how effective the teacher was at implementing Pyramid Model practices.

Interobserver Agreement

Interobserver agreement (IOA) data were collected for a minimum of 50% (range = 50-66.7%) of sessions across participants, target behaviors, and conditions using a 5-s agreement window. IOA was calculated using the point-by-point method where the total number of agreements was divided by the number of agreements plus disagreements and then multiplied by 100 (Ledford et al., 2018). Prior to beginning data collection, data collectors trained to reliability across all target practices using videos from nonparticipating classrooms. The first author (primary data collector) trained the secondary data collector on the response definitions and the measurement system. Prior to collecting data in study classrooms, data collectors reached 90% reliability on each target practice on three practice videos. During study data collection, reliability of 80% or greater was considered acceptable. When IOA fell below 80%, data collectors met to review the operational definitions and discussed disagreements from the previous reliability session before resuming data collection. IOA data across participants and conditions are presented in Table 5. Average IOA across participants, behaviors, and conditions was 92.13% (range across teachers was 90.4%-93.26%).

Procedural Fidelity

Procedural fidelity (PF) data were collected for 100% of teacher training sessions. All sessions were video-recorded, and data were collected by a Master's student and calculated using the gross method, dividing the number of total indicators by the number correctly implemented indicators and multiplying by 100 (Ledford et al., 2018). Prior to collecting PF data, the primary

Table 5*Interobserver Agreement*

Participants	Baseline		Intervention		Generalization		Maintenance	
	Average (Range)	% of sessions	Average (Range)	% of sessions	Average (Range)	% of sessions	Average (Range)	% of sessions
Jessa	100	60	93.2 (79-100)	60	91.3 (73-100)	58	90.3 (81-100)	67
Elizabeth	91.7 (88-100)	60	91.5 (72-100)	60	88.8 (58-100)	58	87.4 (85-90)	67
Stephanie	97.2 (91-100)	60	92.6 (85-97)	57	89.9 (63-100)	58	96.8 (96-98)	67

and secondary coder were trained to reliability across all PF components. The first author trained the data collectors on the operational definitions and measurement system. Data collectors reached 90% reliability on three practice sessions before coding study data. During initial PM overview trainings, PF was assessed on eight components: (a) providing an overview of the current study; (b) introducing each of the three tiers of the PM, including examples of practices and materials; (c) introducing the adapted Pyramid Model Implementation Checklist and how teachers would use it to choose their target practices; (d) asking the teacher if they had questions; (e) prompting the teacher to choose 4 target practices and the primary and generalization activities; (f) choosing a set time each day for the text message exchange to occur; (g) setting a time and date for the first baseline session; and (h) reviewing data collection protocol (e.g., how to login in to zoom, how to connect the microphone), including where in the classroom to place the iPad (see Appendix F). For training sessions on individual target practices, PF was assessed on seven components: (a) reviewing the purpose of the study, including the study timeline; (b) reminding the teacher of the four chosen practices; (c) introducing the target practice; (d) providing examples and non-examples of the target practice, including the use of videos from the teacher's previous sessions; (e) writing an action plan; (f) reviewing the coaching process; and (g) answering any questions (see Appendix G). PF across all teacher trainings was 94.6% (range 85.7-100%) and IOA of training PF was 94.9% (range 92.9-100%).

PF was also collected on 100% of text message exchanges, across all participants, behaviors, and conditions. Fidelity was assessed on six indicators: (a) positive greeting, (b) general reflection prompt, (c) supportive feedback statement, (d) constructive feedback statement, (e) constructive reflection prompt, (f) reminder about the next session with a request for response, and (g) closing statement with an opportunity for the teacher to ask questions (see

Appendix H). Only indicators a, f, and g were expected to be included in text message exchanges that occurred during baseline and maintenance conditions. Data on teacher responsiveness to reflection prompts were collected on three of the indicators: b, e, and f, to track their engagement with the intervention. IOA on fidelity were collected by a secondary observer for a minimum of 33% of training sessions (range = 33-50%) and text message exchanges across teachers (range = 60-66.7%), behaviors, and conditions. PF and IOA on PF were calculated using the point-by-point method (Ledford et al., 2018). PF of text message exchanges across teachers averaged 99.1% (range 98.7-99.5%) and IOA of text message PF averaged 98.1% (range 96.2-99.1%). See Table 6 for additional PF data.

Table 6

Procedural Fidelity

		Jessa			Elizabeth			Stephanie		
Trainings	PM Overview N=1	92.86			92.86			100		
	Target Practice N=4	94.64			94.37			94.37		
		BL N=5	Int N=20	Maint N=3	BL N=5	Int N=20	Maint N=3	BL N=5	Int N=21	Maint N=3
Coaching Session Text Message Components	Positive Greeting	100	100	100	100	100	100	100	100	100
	General Reflection Prompt*	100	100	100	100	100	100	100	100	100
	Supportive Feedback*	100	100	100	100	100	100	100	100	100
	Constructive Feedback*	100	100	100	100	100	100	100	95	100
	Constructive Reflection Prompt*	100	100	100	100	100	100	100	100	100
	Session Reminder	100	100	100	100	90	100	100	100	100
	Closing Statement	80	100	100	100	95	100	100	100	100
	Coach responded to all teacher questions [^]	N=1 100	N=5 100	NA	N=2 100	N=6 100	N=1 100	NA	N=2 100	N=1 100
Total		97.14	99.55	100	100	98.12	100	100	99.32	100
Teacher Responsivity to Texts	Teacher responded to all prompts w/in 20 min	60	90	100	100	90	100	100	100	100
	Teacher responded to all prompts	100	100	100	100	100	100	100	100	100

Note. Data are presented as percentages across sessions within the condition. *Indicates intervention components and were not intended to occur in baseline and maintenance sessions. [^] N indicates the number of sessions in which the teacher asked questions.

CHAPTER 3

Results

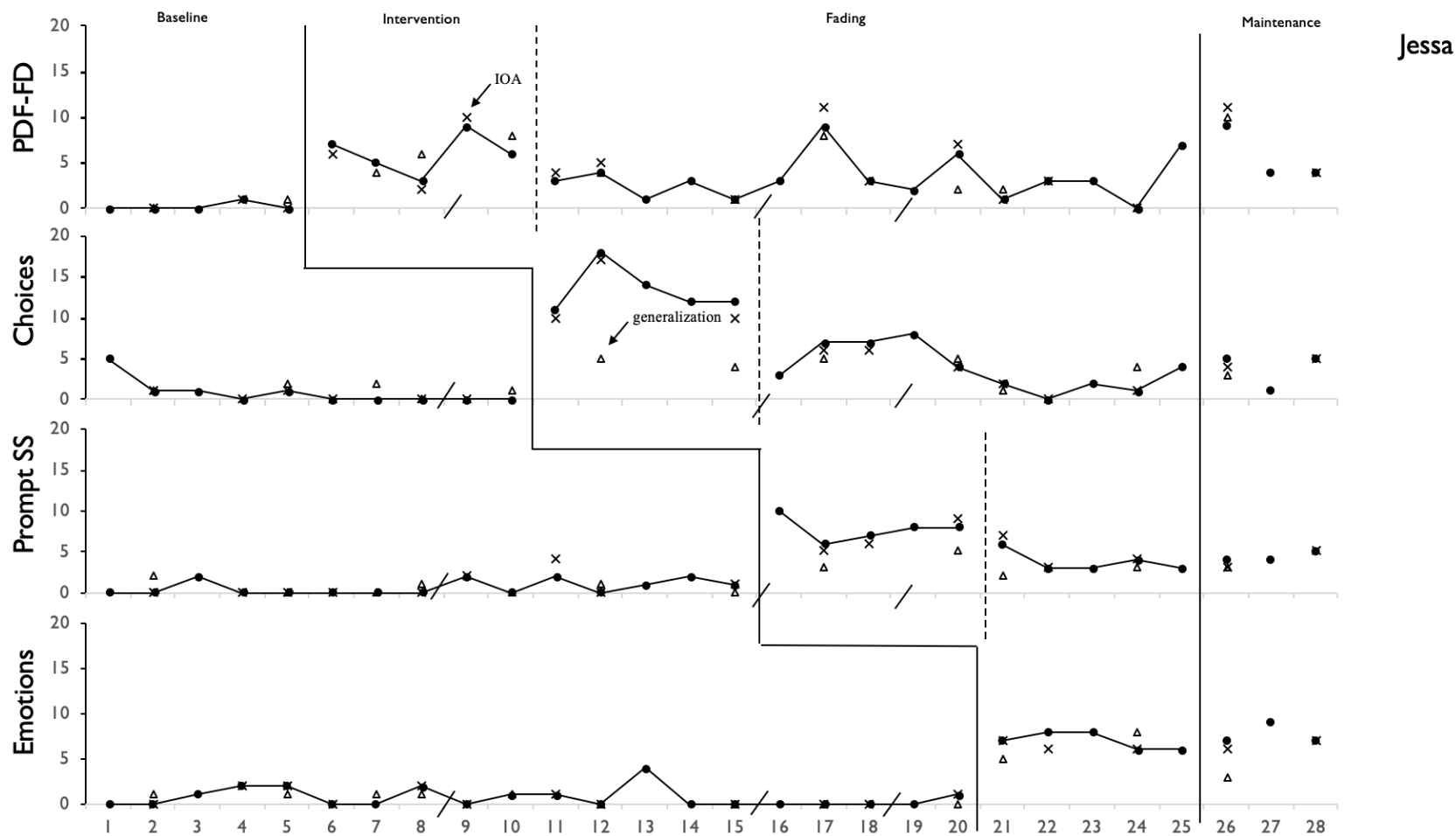
Training plus Practice-Based Coaching (PBC), delivered via text message, was effective for increasing teacher use of targeted Pyramid Model (PM) practices, as presented in Figures 1 to 3. Data for each participant were graphed daily, and visual analysis was used to make phase change decisions and evaluate the effectiveness of training plus PBC, delivered via text message, on teacher use of PM practices. Data aggregated across target practices are presented in Figure 4. Results are presented and discussed by participant.

Jessa

Data were low and stable across all tiers in the baseline condition (see Figure 1). With the introduction of the intervention, training plus PBC delivered via text message, there was an immediate shift in level in Jessa's use of positive, descriptive feedback about children following directions. After the first intervention session, there was a decreasing trend until the fourth session, at which point practice use increased. Overall, all intervention data points were above baseline levels with Jessa using an average of 5.8 (range = 3-8) feedback statements per intervention session. Once data were stable in the first tier, the training and coaching was provided on the second target practice, providing explicit choices. There was an immediate shift in level and trend with the introduction of the intervention in the second tier with the teacher providing an average of 13.4 (range = 11-18) choices per session. An immediate shift in level and trend was also observed with the introduction of the intervention in the third and fourth tiers with Jessa providing an average of 7.8 (range = 6-10) prompts for children to use social skills and using an average of 7 (range = 6-8) emotion words per session, respectively.

Figure 1

Jessa's Use of Targeted Pyramid Model Practices



Note. Use of targeted PM practices during baseline, intervention, fading, and maintenance (1, 2, and 3 weeks) sessions is shown. Triangles indicate generalization data. Xs indicate IOA data. Dashed lines on the x-axis indicate a break in sessions greater than three days. Training occurred between the final baseline data point and the first intervention data point in each tier. PM = Pyramid Model; PDF-FD = positive, descriptive feedback around children following directions. SS = social skills.

With the introduction of the intervention in each subsequent tier, previously targeted practices entered a fading phase where teachers were reminded to continue using the previous practice, but coaching focused on the newly introduced practice or how the current target practice could be used in combination with previously targeted practices. Although variable, Jessa continued using all of the practices during the fading phase with average practice use ($M = 3.62$) remaining above average baseline levels ($M = 0.73$) for all practices.

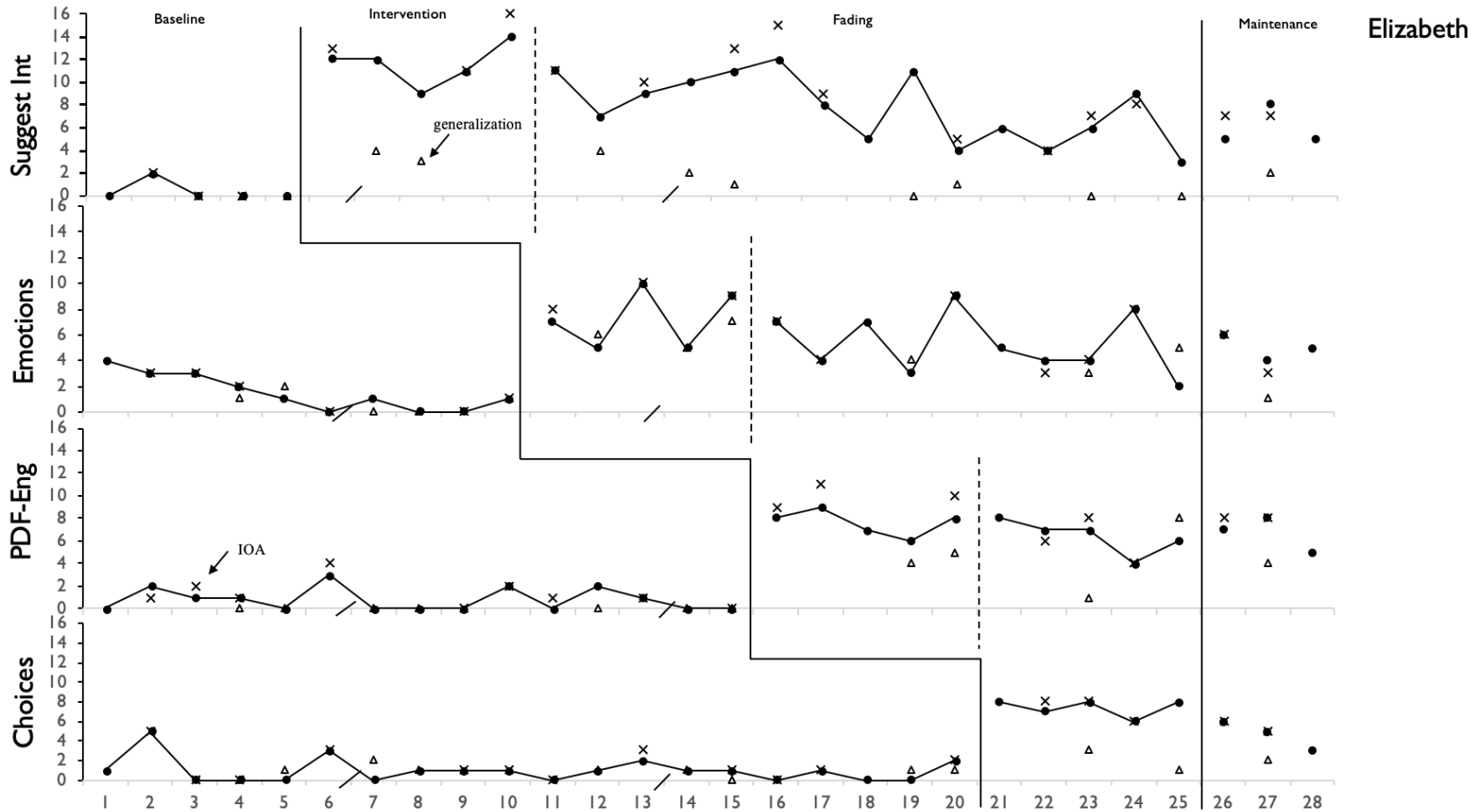
Once intervention was completed in all four tiers, the maintenance condition began. During maintenance, the teacher was reminded of her four target practices but did not receive feedback on their practice use or specific instructions to use the practices. For Jessa, overall practice use maintained across tiers up to 3 weeks after coaching was withdrawn. As shown in Figure 1, there was a functional relation for Jessa.

Elizabeth

Data were low and stable across tiers throughout the baseline condition (see Figure 2). In all tiers, there was an immediate shift in level and trend with the introduction of training plus coaching, demonstrating a functional relation. Elizabeth used an average of 11.6 (range = 9-14) suggestions for peer interactions, 7.2 (range = 5-10) emotion words, 7.6 (range = 6-9) positive descriptive feedback statements around children's engagement, and 7.4 (range = 6-8) explicit choices per intervention session. Elizabeth's use of emotion words was variable during the intervention condition although all data points were above the highest baseline point. Overall practice use remained high even when the focus of coaching shifted to a new practice, and Practice use maintained above baseline levels 1, 2, and 3 weeks after coaching ended.

Figure 2

Elizabeth's Use of Targeted Pyramid Model Practices



Note. Use of targeted PM practices during baseline, intervention, fading, and maintenance (1, 2, and 3 weeks) sessions is shown. Triangles indicate generalization data. Xs indicate IOA data. Dashed lines on the x-axis indicate a break in sessions greater than three days. Training occurred between the final baseline data point and the first intervention data point in each tier. PM = Pyramid Model; Int = interactions; PDF-Eng = positive, descriptive feedback around children's engagement.

Stephanie

Data were low and stable for all target practices throughout the baseline condition (see Figure 3). With the introduction of the intervention in each tier, there was an immediate shift in the level of Stephanie's practice use. With the first target practice, prompting children to use social skills, after an immediate increase in the first intervention session, practice use decreased but remained well above baseline levels throughout the intervention condition ($M = 7.4$, range = 5-12). In the second and third tiers, providing explicit choices ($M = 6.6$, range = 6-9) and using emotion words ($M = 7$, range = 4-9), respectively, practice use increased for two consecutive sessions and then stabilized. Data in the fourth tier (positive, descriptive feedback around children's use of friendship, social, or emotional skills) immediately increased and remained stable throughout the intervention condition ($M = 8$, range = 7-9). Across tiers, practice use was variable during the fading phase but remained above baseline levels with the exception of one data point in tier 3. With some variability (i.e., prompting children to use social skills, use of emotion words), practice use maintained above baseline levels 1, 2, and 3 weeks after coaching ended. There was a clear functional relation for Stephanie (see Figure 3).

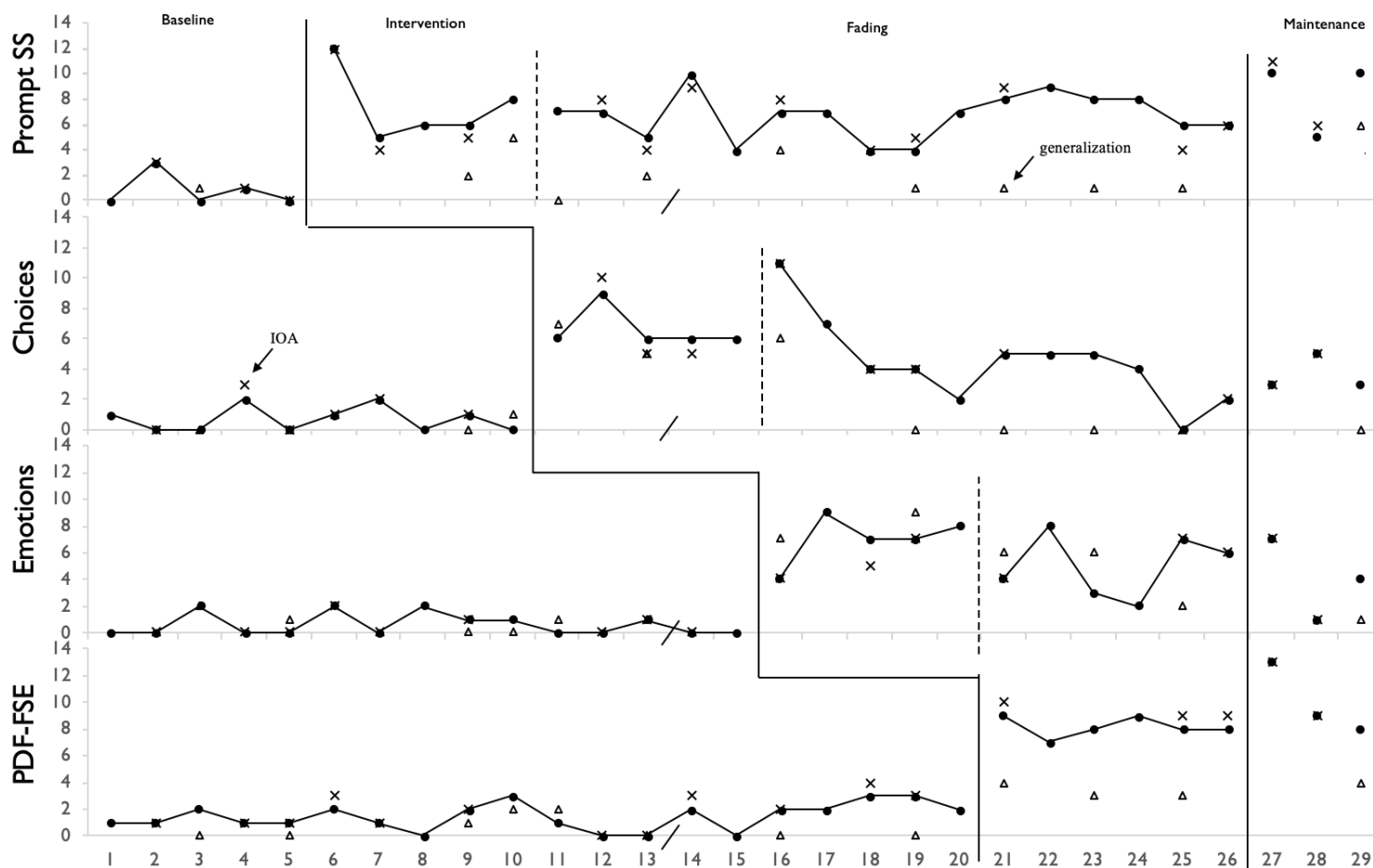
Generalization

Generalization data are presented (open triangles) on the primary graphs (Figures 1-3). Across teachers, practice use during generalization baseline sessions was low, with teachers averaging less than one use of a practice per session ($M = 0.56$, range = 0-2). There was an overall increase in practice use, across all three teachers, in generalization sessions during the intervention condition with teachers averaging 4.82 (range = 1-9) uses of the target practices per session. Compared to intervention, practice use decreased in generalization sessions during the

Figure 3

Stephanie's Use of Targeted Pyramid Model Practices

Stephanie



Note. Use of targeted PM practices during baseline, intervention, fading, and maintenance (1, 2, and 3 weeks) sessions is shown. Triangles indicate generalization data. Xs indicate IOA data. Dashed lines on the x-axis indicate a break in sessions greater than three days. Training occurred between the final baseline data point and the first intervention data point in each tier. PM = Pyramid Model; SS = social skills; PDF-FSE = positive, descriptive feedback around children's use of friendship, social, or emotional skills.

fading ($M = 3.03$, range = 0-9) and maintenance ($M = 3.25$, range = 0-10) conditions across teachers. However, with the exception of Stephanie's use of choices during maintenance, average practice use in the generalization activity was higher than baseline sessions during fading and maintenance.

Combined Use of Practices

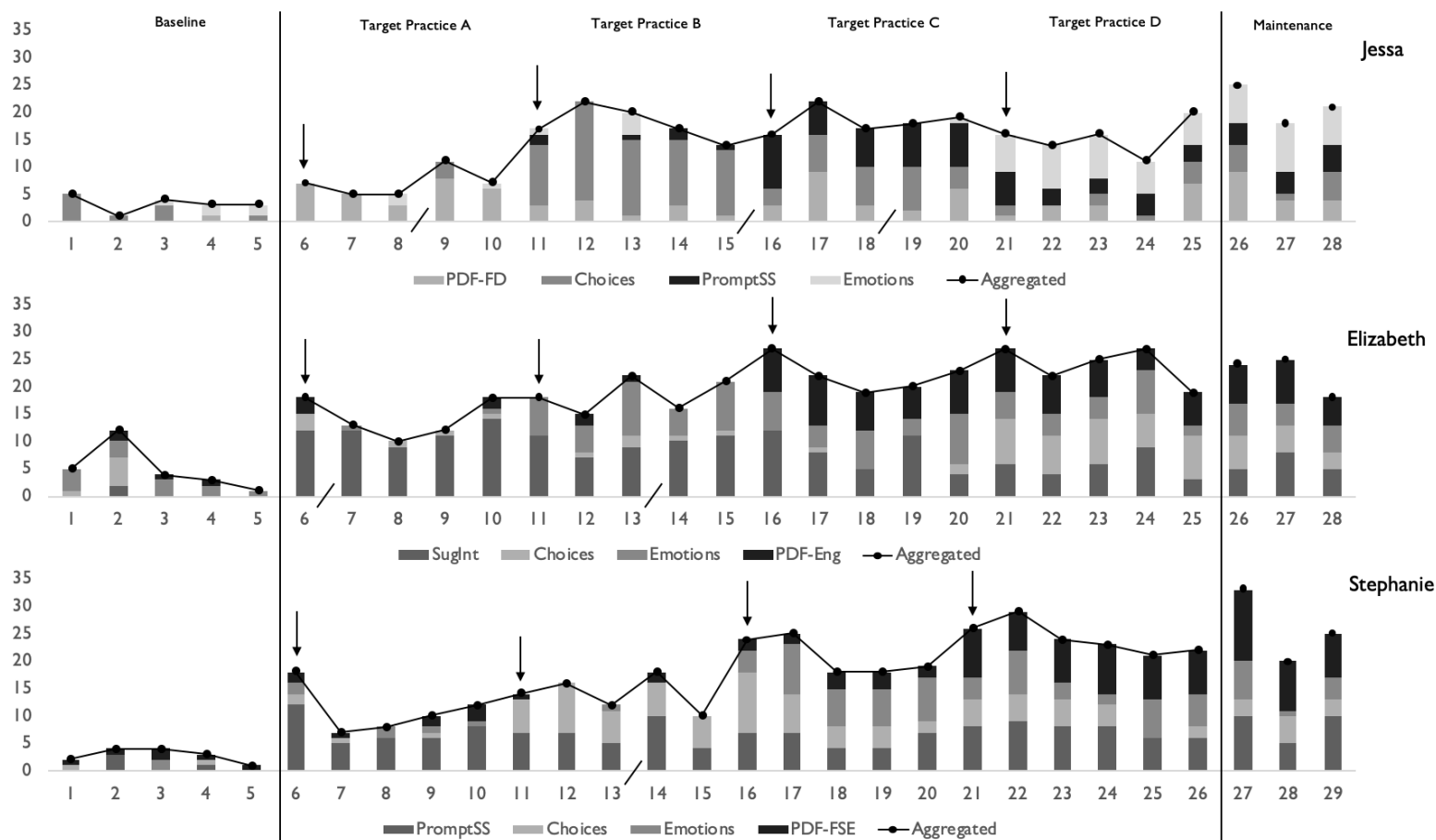
Combined, or total, use of practices within a session are presented for all teachers in Figure 4. In the bar graph, each target practice is represented by a different shade of grey. Although individual practice use tended to decrease in the fading phase, combined use of practices increased significantly and remained high throughout the study. Jessa used an average of 3.2 practices per baseline session and 14.7 per intervention session. Elizabeth used an average of 5 practices per baseline session and 19.7 per intervention session. Stephanie used an average of 2.8 practices per baseline session and 17.8 per intervention session. With the exception of three sessions (Jessa sessions 22 and 24, Stephanie session 25), once coaching was introduced on a target practice, each teacher used each practice in all subsequent intervention, fading, and maintenance sessions. See Table 7 for a breakdown of practice use across teachers and conditions.

Coaching Dosage

Data on the coaching process (i.e., teacher training, coaching session preparation, coaching sessions) were collected to understand the efficiency of the training plus PBC, delivered via text message, intervention. See Table 8 for a breakdown of coaching dosage across participants. The average length of training sessions across teachers was 52.88 min which included a longer Pyramid Model overview training ($M=71.67$, range=69-77) and four target

Figure 4

Combined Use of Targeted Pyramid Model Practices Within a Session Across Teachers



Note. Combined use of targeted PM practices, across teachers, during baseline, Tier 1, Tier 2, Tier 3, Tier 4, and maintenance (1, 2, and 3 weeks) sessions are shown. Triangles indicate generalization data. Shades of gray in the bar graph indicate teacher use of each target practice within a session. Arrows indicate the introduction of a new target practice. PM = Pyramid Model; PDF-FD = positive, descriptive feedback around children following directions; SS = social skills; SugInt = suggest interactions; PDF-Eng = positive, descriptive feedback around children’s engagement; PDF-FSE = positive, descriptive feedback around children’s use of friendship, social, or emotional skills.

Table 7*Combined Practice Use*

	Jessa	Elizabeth	Stephanie
Baseline	3.2 (1-5)	5 (1-12)	2.8 (1-4)
Intervention (overall)	14.7 (5-22)	18.9 (10-27)	17.57 (7-29)
Target Practice A	7 (5-11)	14 (10-18)	11 (7-18)
Target Practice B	18 (14-20)	18.4 (16-22)	14 (10-18)
Target Practice C	18.4 (16-22)	19.8 (16-22)	20 (15-25)
Target Practice D	15.4 (11-20)	23.4 (19-27)	24 (21-29)
Maintenance	21.33 (18-25)	22 (18-25)	24.67 (19-30)

Note. Data are presented as M(range). Data for Intervention includes use of practices in the fading condition.

Table 8*Coaching Dosage*

		Jessa		Elizabeth		Stephanie		Total	
Training	PM Overview (min) (N=1)	77		69		69		71.67*	
	Target Practice (N=4)	43.75 (22-62)		31.25 (22-52)		27.25 (20-32)		34.08^ (20-62)	
		Baseline/Maint N = 8	Intervention N = 20	Baseline/Maint N = 8	Intervention N = 20	Baseline/Maint N = 8	Intervention N = 21	Baseline/Maint N = 24	Intervention N = 61
Coach Preparation	Observation (min)	16.63 (15-20)	17.25 (15-22)	16.75 (15-21)	18.25 (16-22)	18 (15-22)	18.42 (15-24)	17.13 (15-22)	17.97 (15-24)
	Reflection and Feedback (min)	1	8.45 (4-15)	3 (1-5)	11.35 (5-17)	2.25 (1-4)	11.86 (6-18)	3 (1-5)	10.55 (4-18)
Coaching Session	Duration (min)	5 (1-21)	19 (7-66)	9 (2-14)	20 (4-47)	6 (2-10)	9 (4-24)	6.67 (1-21)	16 (4-66)
	Coach Texts (number)	2.87 (2-6)	9.5 (6-17)	3.33 (2-8)	7.6 (6-10)	2.8 (2-4)	7.27 (6-9)	3 (2-8)	8.12 (6-17)
	Teacher Texts (number)	2.33 (1-4)	7.15 (4-18)	2.7 (2-6)	4.5 (3-9)	1.6 (1-4)	4.13 (3-6)	2.21 (1-6)	5.26 (3-18)
Total Intervention Time#		10hr 43min (643)		9hr 56min (596)		6hr 15min (375)		8hr 58min (538)	

Note. All training and coaching data are presented as M(range). Total Intervention Time is the total time a teacher spent in training and coaching sessions during the intervention condition. * N=3. ^N=12. # Presented as Hours (min).

practice trainings ($M=34.08$, range=20-62). Data were collected on five components of the coaching process: (a) time the coach spent watching the focused observation, (b) time the coach spent preparing for the reflection and feedback, (c) the duration of the coaching session (i.e., text exchange), (d) the number of texts the coach sent within a coaching session, and (e) the number of texts the teacher sent within a coaching session. Across teachers and conditions, the coach (first author) spent an average of 17.97 min (range=15-24) watching the focused observation and 10.55 min (range=4-18) preparing the reflection and feedback. Across teachers and conditions, coaching sessions (i.e., text message exchanges) were 16 min (range=4-66) in duration with the coach sending an average of 8.12 (range=6-17) texts and the teacher sending an average of 5.26 (range=3-18) texts. For all teachers, the average duration of and number of texts sent within coaching sessions was higher in intervention than the baseline and maintenance conditions. All three teachers responded to 100% of texts in which a response was requested (i.e., session reminder across all conditions; general reflection prompt and constructive reflection prompt in the intervention condition). See Table 7 for additional information about teacher responsivity within the text message exchanges.

Social Validity

Social validity was assessed in two ways: teacher report and masked ratings. At the conclusion of the study, teachers completed a survey, rating on a scale of one to five, the effectiveness and feasibility of the intervention. All three teachers rated text-based coaching, including the daily reflection component, as highly effective and feasible ($M=4.83$, range 4-5; scale of 1 to 5). Jessa commented that the coach “was very responsive when I had questions or wasn’t sure about something.” Elizabeth said “the coaching was very constructive and did not focus on what I did wrong but praised what I did good [sic]” and “I have never been the type to

reflect and give answers because I worried that there was a wrong answer. The text-based coaching helped me to reflect because [the coach] asked appropriate questions that weren't so broad but more specific." Stephanie expressed that "this is an easy and effective way to coach" and that "the daily reminders of different ways I could incorporate the strategies really helped me keep it foremost in my mind."

In addition to teacher report, masked raters were randomly assigned to one teacher. The raters viewed randomly selected baseline and intervention videos for that teacher and rated teacher use of Pyramid Model practices (see Appendix I). A total of 24 masked raters, eight per teacher, participated in this study. The majority of raters were female (96%), Caucasian (96%), and held at least a Master's degree (96%). All raters had been trained on the PM, all but one (96%) had been trained to reliability on the TPOT, and all raters had conducted a TPOT observation in a classroom setting. See Table 9 for additional demographic information.

Table 10 provides a breakdown of ratings across indicators, teachers, and conditions (i.e., baseline and intervention). Practices that were targeted with coaching are shaded in grey. Across all participants, teacher use of PM practices was rated higher in the intervention video (avg.=3.65, range 2-4.63) compared to the baseline video (avg.=1.43, range 1-2.5). On average, the difference in ratings between practice use in baseline and intervention was greater for practices targeted through coaching (average increase in rating = 2.38) compared to other Pyramid Model practices not specifically targeted with coaching (average increase in rating = 2.07). These data may indicate that training plus PBC, delivered via text message, is most effective for increasing practices specifically targeted with coaching but can also lead to increased use of practices related to those targeted through coaching. Across teachers, masked raters also rated overall teacher use of positive and supportive social-emotional teaching

Table 9*Social Validity Rater Demographics*

	Teacher Rated		
	Jessa	Elizabeth	Stephanie
Gender			
Female	100	87.5	100
Male	0	12.5	0
Age [^]	36.63	39.38	34.86
Race/Ethnicity			
Black or African American	0	12.5	0
White or Caucasian	100	87.5	100
Level of Education			
Bachelor's Degree	0	0	12.5
Master's Degree	62.5	37.5	62.5
Doctorate Degree	25	62.5	25
Other	12.5	0	0
Current Position			
Professor	12.5	37.5	25
Educational Consultant	25	12.5	25
Teacher (EC, PreK, SPED)	12.5	12.5	12.5
Soc-Em Coordinator or Coach	12.5	0	12.5
BCBA	12.5	12.5	0
Doctoral Student	0	12.5	12.5
Other	25	12.5	12.5
Trained on the Pyramid Model (PM)			
Yes	100	100	100
No	0	0	0
Familiarity with the PM*	4.75 (4-5)	4.5 (4-5)	4.57 (4-5)
Implemented the PM			
Yes	37.5	25	57.1
No	62.5	75	42.9
Coached teachers to implement the PM			
Yes	87.5	75	71.4
No	12.5	25	28.6
Trained to reliability on the TPOT			
Yes	100	100	85.7
No	0	0	14.3
Conducted a TPOT observation			
Yes	100	100	100
No	0	0	0
Support program-wide PM implementation			
Yes	62.5	25	71.4
No	37.5	75	28.6

Note. n = 8 raters per teacher. Data are presented as percentages unless otherwise noted.

[^]average. *average (range), rating scale of 1 to 5 (*1 = little, 3 = somewhat, 5 = very well*).

Table 10*Social Validity Rating*

Pyramid Model Practices	Jessa		Elizabeth		Stephanie	
	BL	Int	BL	Int	BL	Int
The teacher provides positive, descriptive feedback about children's engagement in an activity or following directions.	1.38 (1-2)	4.13 (3-5)	1.63 (1-2)	4.13 (3-5)	1.57 (1-3)	4 (4-5)
The teacher provides positive, descriptive feedback to children about their use of friendship, social, or emotional skills.	1	2 (1-3)	1	3.63 (2-5)	2 (1-3)	4.57 (3-5)
The teacher provides children with opportunities to make explicit choice.	1.38 (1-2)	3.63 (2-5)	1.38 (1-2)	3.5 (2-4)	1.86 (1-3)	3.14 (1-5)
The teacher uses emotion words.	1.63 (1-2)	4.5 (4-5)	2.25 (2-3)	4.13 (3-5)	1.71 (1-3)	4.57 (3-5)
The teacher models or labels own emotions or talks about what they do when they are feeling a certain emotion.	1	3.75 (2-5)	1.25 (1-3)	2.25 (1-4)	1.14 (1-2)	2.86 (1-5)
The teacher encourages children to play or work together by suggesting a way to interact.	1.25 (1-2)	2.88 (1-5)	1.13 (1-2)	4.38 (3-5)	1.29 (1-3)	4.71 (3-5)
The teacher prompts children to use social skills.	1.75 (1-3)	3.13 (2-5)	1	3.75 (1-5)	1.14 (1-2)	4.14 (2-5)
The teacher has brief conversations with children.	2.13 (1-3)	3.88 (3-5)	2.38 (1-4)	4.63 (4-5)	2.71 (2-4)	4.71 (4-5)
The teacher has extended and comfortable conversations with children about their interests or ideas.	1.13 (1-2)	2.75 (2-4)	1.38 (1-2)	4 (3-5)	1	4.14 (2-5)
The teacher uses naturally occurring opportunities to teach social or emotional competencies.	1.5 (1-3)	3.25 (2-5)	1.5 (1-2)	3.38 (2-4)	1.71 (1-3)	4.29 (2-5)
The teacher explicitly teaches or prompts individual children how to initiate or respond to their peers.	1.63 (1-2)	2.5 (1-4)	1.13 (1-2)	4.25 (3-5)	1.14 (1-2)	3.29 (2-5)
The teacher validates children's emotions by labeling them and helping children talk about their emotions.	1.13 (1-2)	3.63 (3-5)	1.13 (1-2)	2.5 (1-4)	1.14 (1-2)	2.71 (1-4)
Overall, how would you rate this teacher's use of positive and supportive social emotional teaching practices?	1.38 (1-2)	3.5 (3-4)	1.38 (1-2)	4 (3-5)	1.71 (1-3)	4.43 (3-5)
How effective do you think the teacher was at implementing Pyramid Model practices? *	1.38 (1-2)	3.38 (2-4)	1.25 (1-2)	4 (3-5)	1.57 (1-2)	4.29 (3-5)
Rate the overall tone of the interactions between the teacher and children. ^	1.75 (1-2)	4.13 (4-5)	1.88 (1-2)	4.5 (3-5)	2.86 (2-3)	4.86 (4-5)
Which video demonstrates a higher proficiency of Pyramid Model practice use?	0%	100%	0%	100%	0%	100%

Note. Grey highlights indicate practices targeted through coaching. Unless otherwise noted, practice use rated on 5-point Likert-type scale (1=never, 3=sometimes, 5=often). *Rating scale (1=not effective, 3=somewhat effective, 5=very effective). ^Rating scale (1=negative, 3=neutral, 5=positive)

practices (avg. 3.92), overall effectiveness at implementing PM practices (3.83), and overall tone of interactions between the teacher and children (avg. 4.5) higher in the intervention video than the baseline video (avg. 1.46, 1.38, and 2.17 respectively), providing evidence that coaching teachers to implement targeted PM practices can effect more general changes in teacher use of positive teaching practices. When asked to identify the video that demonstrated a higher proficiency of PM use, all raters chose the intervention video.

CHAPTER 4

Discussion

The purpose of this study was to evaluate the effectiveness of training plus Practice-Based Coaching (PBC), delivered via text message, on teacher use of targeted Pyramid Model (PM) practices. A functional relation between training plus PBC, delivered via text message, was demonstrated for all three participants. Across teachers, practice use maintained following the withdrawal of the coaching intervention in all four tiers and there was some evidence of practice use generalizing across settings. On average, teachers increased their use of a targeted practice with 34 min of training and 81.6 min of coaching (average of 5.1 coaching sessions per target practice, average of 16 min per coaching session) per practice, providing evidence that PBC, delivered via text message, is an efficient method of coaching teachers to use targeted PM practices. This study extends the literature around the effectiveness of PBC as well as the use of text messaging as a coaching approach.

Previous research has demonstrated that PBC is an effective coaching approach for increasing teacher use of individual practices (e.g., McLeod et al., 2019) as well as multi-component interventions (e.g., Hemmeter et al., 2016; Snyder et al., 2018). Within that literature, PBC was most often delivered in-person with teachers receiving extensive training (over 18 hrs) and coaching (average of 91-124 min of observation and 30-44 min of coaching each week for 10-16 weeks) (Hemmeter et al., 2016; Hemmeter, Fox, et al., 2021). In two studies, PBC was implemented remotely (Artman-Meeker et al., 2014; McLeod et al., 2019). In both of those studies, video recordings were collected by outside observers (i.e., research staff, other study participants) and coaching was delivered via email. In the present study, focused observations

were recorded by the teacher, and the coaching component was delivered via text message. This adds evidence to the distance coaching literature, demonstrating that PBC can be delivered completely remotely, with teachers recording the observation and receiving coaching via text message.

In addition to the difference in the delivery method of PBC (i.e., text message rather than email or in-person), the current study also included a reflection prompt as a way of increasing the likelihood that teachers would engage with the intervention. A reflection component was not included within the email protocol used by Artman-Meaker and colleagues (2014). Teacher participation in the coaching process, measured by teacher responsiveness to coaching emails, was reported to be low and variable. McLeod et al. (2019) did include a reflection component, and did not report participant responsiveness to emails. In the current study, which included a reflection prompt, teachers responded to 100% of reflection and response prompts and increased their use of targeted practices with minimal training (avg. 34 min per practice) and coaching (avg. 81.6 min per practice).

In the early childhood coaching literature, only one study (Barton et al., 2019) has examined the effects of providing feedback, a component of PBC, via text message on teacher use of targeted practices. Following a live observation, participants received feedback, via text messaging, around their use of the target practice. A functional relation was demonstrated for three of the four participants with some evidence of generalization and maintenance of practice use. All participants in the Barton et al. (2019) study were pre-service teachers. The current study adds evidence to support the effectiveness of coaching via text message and extends the literature by providing evidence of the effectiveness of coaching via text message with in-service teachers.

In addition to evaluating the effectiveness of training plus PBC, delivered via text messaging, this study sought to address several limitations and recommendations reported in the recent distance coaching literature. First, this study included a goal setting (i.e., action planning) component, as suggested by Barton et al. (2019), in which participants worked with the coach to set a goal (i.e., increased use of the target practice), define steps for implementing the practice (e.g., specific children to focus on when suggesting peer interactions, specific social skills to prompt), and identify supports needed to facilitate implementation of the practice. Barton et al. (2019) incorporated goal setting with two participants as a modification when feedback alone did not sufficiently increase teacher use of target practices. Once a goal was set, an increase in teacher use of the target practice was observed. Authors recommended that future studies examine the effectiveness of goal setting in conjunction with other coaching components. In the current study, goal setting was incorporated prior to the teacher implementing each target practice. None of the participants required modifications to increase their use of the target practices which may indicate that goal setting prior to coaching supports teacher implementation of targeted practices. Goal setting (i.e., writing an action plan around the target practice) prior to coaching may support the teacher's initial use of the target practice by situating the implementation of the target practice into a familiar context for the teacher. That may help to make the connection between the information presented in a training (e.g., generic examples of practice use) and how the practice could fit specifically into the individual teacher's daily routines.

Second, this study addressed low levels of engagement with coaching interventions (i.e., responsiveness to coaching emails or texts) reported in previous studies (Artman-Meeker et al., 2014; Barton et al., 2016; 2020; Barton, Pokorski et al., 2018; Krick Oborn & Johnson, 2015).

During the initial overview training, the coach set the expectation that teachers respond to prompts within the text message exchange. This expectation was reviewed during each subsequent training session. To increase the likelihood of teachers responding to the prompts and thus accessing the intervention, teachers chose the time each day when they would typically be available to read and respond to text messages for the coaching session (i.e., text exchange). Responsiveness was 100% across all teachers, conditions, and response prompts. This level of responsiveness indicates that teachers were consistently contacting the coaching component of the intervention and were active participants in the coaching partnership, a foundational aspect of PBC.

Finally, this study included measures of procedural fidelity (PF) across all study components (i.e., training, text messages) and conditions (i.e., baseline, intervention, maintenance), as suggested by McLeod et al. (2019). PF is a measure of the extent to which intervention components are implemented when and how they are planned. PF provides internal validity of a study as well as information about the feasibility of the intervention, by indicating that intervention components could be implemented as intended and only when (e.g., baseline, intervention) they were planned (Ledford & Wolery, 2013). In this study, the PF (avg. 94.62%) data indicate that training sessions were consistently delivered as intended across teachers. PF data of text message exchanges across teachers and conditions (avg. 99%) indicate that coaching components (e.g., positive greeting, constructive feedback, reflection prompt) were delivered when they were intended to be (e.g., session reminder in all conditions, supportive feedback only in the intervention condition) and not delivered when they were not intended to be (e.g., reflection prompts were not delivered during the baseline condition). An objective measure of social validity (i.e., masked raters) was also included, to provide additional evidence of the

effectiveness of the intervention and acceptability of the outcomes, while also addressing another recommendation by McLeod and colleagues (2019). Measures of social validity provide information about the feasibility, acceptability, effectiveness, and social significance of an intervention (Barton, Meadan-Kaplansky et al., 2018). Subjective measures of social validity are important as they measure participant perspectives of the importance of the intervention or outcomes but such measures may not be sensitive to behavior change and can also introduce a risk of bias (e.g., participants respond favorably to please the interventionist) (Barton, Meadan-Kaplansky et al., 2018). Objective measures of social validity are likely to be less biased and may be more sensitive to changes in behavior as the rater is unfamiliar with the condition, intervention, or purpose of the study (Barton, Meadan-Kaplansky et al., 2018). In the current study, masked raters watched randomly selected baseline and intervention videos and rated teacher use of target and related practices, the overall tone of teacher-child interactions, and teacher use of positive behavior support practices, and indicated which video showed a higher proficiency of PM practice use. These data provide evidence that the intervention, training plus PBC, delivered via text message, led to socially acceptable, or valid, outcomes as raters consistently rated teacher use of targeted and related practices as well as the overall use of PM practices higher in the intervention video.

In addition to being effective, training plus PBC, delivered via text message, was also efficient and feasible. All participants rated text-based coaching and the reflection component as effective and feasible. All teachers reported that the distance coaching procedures (i.e., setting up the iPad and microphone, joining the Zoom meeting, receiving coaching via text message) were feasible. A key to the feasibility may have been the teacher's ability to choose when during the day to receive coaching as one teacher reported "we set a time that was convenient for me and

did not take away from my students.” This study also required minimal time from teachers and coaches. Teachers spent an average of 538 min (range 375-643 min) engaged in training and coaching sessions during the intervention condition. The coach spent an average of 5 hr 11 min per teacher on coaching, including watching observation videos (avg. 6 hr 6 min; avg. 18 min per session), preparing feedback (avg. 3 hr 35 min; avg. 11 min per session), and engaging in the text message exchange (avg. 5 hr 30 min; avg. 20 min per session). In Artman-Meeker et al. (2014), coaches spent an average of 120 min per session reviewing the observation and preparing feedback emails. Barton and colleagues (2016) reported coaches engaged in 15 min of observation and 10 to 20 min of feedback preparation per session. Observation and feedback preparation time was not reported in other distance coaching articles in the early childhood literature. Compared to the studies in which these data were reported, the intervention implemented in the current study was as or more efficient than similar interventions (Barton et al., 2016, Artman-Meeker et al., 2014, respectively). The current study is the first in the early childhood distance coaching literature to report the amount of time teachers and coaches spent engaged in the debriefing component (i.e., text message exchange). The limited amount of time required by the teacher and the coach to affect change in teacher practice indicates the training plus PBC, delivered via text message, package is efficient and feasible, particularly for coaches or teachers with limited time.

Implications for Practice

Previous literature has established that PBC is an effective method for increasing teacher use of recommended practices but there is a need to explore coaching dosage and how to make coaching more efficient (e.g., Conroy et al., 2019; Snyder et al., 2018). The current study provides evidence of the effectiveness and efficiency of training plus PBC, delivered via text

message, for increasing teacher use of targeted PM practices. With an average of only 34 min of training and 81.6 min of coaching per target practice, all participating teachers increased and maintained their use of all targeted practices. The amount of support teachers received was considerably less than the support provided in the current PM implementation and PBC literature (e.g., Conroy et al., 2019; Fox et al., 2011, Hemmeter et al., 2016, Hemmeter, Fox, et al., 2021, Snyder et al., 2018). Data from this study indicate that a package of training plus PBC, delivered via text message, could be an effective and efficient way to provide professional development and deliver coaching to teachers around targeted PM practices. For coaches who are responsible for supporting many teachers, having efficient ways, such as text messaging, to provide that support might make their coaching caseload more feasible. Having an effective remote training and coaching package could also allow coaches to reach teachers in a wider geographical area where it may not always be feasible to observe or coach in-person.

In addition to being efficient, based on teacher feedback from this study, text messaging as a mode of coaching may be more comfortable for some teachers. Text messaging is intended to be conversational, like face-to-face coaching meetings, but could give teachers an opportunity to process the feedback and reflection prompt and organize their thoughts before responding. When asked about the feasibility of engaging in daily reflection about her teaching practice, Elizabeth reported that “if I needed more time for reflection I could tell [my coach] I needed time to think about it and she was good with that. I could seriously and thoughtfully reflect without worrying about having to get her a quick response.”

As a field, we are building an evidence base of effective approaches (e.g., self-coaching, peer coaching, email feedback, coaching via text message) to deliver coaching to teachers (e.g., Artman-Meeker et al., 2014; Barton et al., 2019; Golden et al., 2021; Snyder et al., 2018).

Additional research is needed to replicate findings from these studies with teachers with varying characteristics (e.g., entry level skills, teacher beliefs) to build a strong evidence base for the use of different approaches to coaching. This will be important to understanding for whom and for what teaching practices different approaches to coaching are effective so we can begin to match coaching delivery methods and dosage levels to teacher skills and coaching needs.

Limitations and Future Research

While this study was both effective and efficient, there are several limitations and recommendations for future research to consider. First, because all components of the study were done remotely, it was not feasible to conduct a TPOT observation to gain information about changes in teachers' overall use of PM practices. As seen in previous studies (e.g., Golden et al., 2021; Hemmeter et al., 2015), coaching teachers to implement targeted PM practices might increase their overall implementation of the PM, as measured by the TPOT. These data could provide additional support for the efficiency of the coaching intervention if generalization of the implementation of targeted practices to other related practices was observed (e.g., if coaching focused on increasing the frequency of labeling children's emotions, the teacher may also increase the frequency of labeling their own emotions). In the current study, ratings of teacher use of PM practices by masked raters provided some evidence that overall PM implementation increased from pre to post intervention. Masked raters, all of whom had been previously trained on the PM, consistently rated teacher use of PM practices specifically targeted by coaching and those related to target practices higher in intervention (avg. 3.51, scale of 1 to 5) than baseline (avg. 1.44). All raters indicated the intervention video showed a higher proficiency of PM implementation. While these ratings provided some information about overall PM use, this measure is not a systematic and reliable tool for measuring change in PM implementation. The

researcher-created rating form used in this study was also narrow in scope, only assessing teacher use of practices targeted or those closely related to practices targeted with coaching. The TPOT would provide more robust data about teacher implementation of PM practices and would allow for comparison of outcomes between this study and others using the TPOT as an outcome measure.

Pre-study TPOT scores would have also provided descriptive information about each classroom and the strengths and areas of need of each teacher. Anecdotally, Jessa had fewer universal practices in place (e.g., developmentally appropriate activities, strategies for promoting engagement, clear behavior expectations), and children in her classroom engaged in higher rates of challenging behavior, in comparison to the other two classrooms. Having systematic data about teacher use of prevention and promotion strategies could provide a better description of each classroom. That information would help coaches understand which teachers would benefit most from specific approaches to coaching as well as which target practices might be most meaningful and beneficial for individual teachers based on their current skills and teaching practices. Teachers needing support with foundational practices (e.g., teaching behavior expectations, developing clear routines, overall classroom management) may need more intensive (e.g., more frequent, longer, in person) coaching than teachers who are working to implement or refine more specific practices (e.g., labeling emotions, providing positive descriptive feedback).

Additionally, although coaching may increase teacher use of targeted practices, if they don't have those foundational practices in place, the implementation of the target practices might not be as effective or efficient. Anecdotally, Jessa's need for support beyond the scope of the present study was evident in her tendency to talk about individual children and their academic

and behavioral needs within the coaching text message exchanges. This tendency resulted in Jessa averaging more texts per coaching session (7.15) than Elizabeth (4.5) and Stephanie (4.13). While Jessa was increasing her use of the targeted practices, she was often asking for support around managing behavior or maintaining child engagement. For example, in response to a reflection prompt about what choices she could provide to an individual child, Jessa sent a string of texts describing her difficulty with getting the child to comply with directions and engage in the small group setting. These tangential conversations might indicate that she would have benefited from more intensive coaching or coaching that focused on foundational practices. These practices are more difficult to observe via video, and coaching focused on these practices might need to be conducted in person.

Future research should include the collection of pre and post TPOT data to provide systematic information about changes in teacher implementation of the PM. In addition, collecting TPOT data before and after coaching could be an important component in understanding which teachers most benefit from PBC delivered via text message, which could lead coaches to be able to match teachers to a coaching approach based on their individual needs. For example, could teachers with greater needs around foundational skills, like Jessa, benefit from additional coaching or from in-person coaching sessions to establish consistent routines or implement management strategies before engaging in distance coaching to target more discrete practices?

A second limitation was related to the use of technology. Each teacher had one stationary iPad they used to record observation sessions. Depending on the movement of the teachers and children in the classroom, the teacher was not always visible. The microphone allowed the teacher to be heard but actions were not always observable. This may have meant some targeted

practices were not counted as they could not be scored without seeing what the teacher was doing in addition to what she was saying. For example, if a teacher was providing a choice and pointed to the choices rather than verbally labeling them, that would not be counted as the observer wasn't able to see what the teacher was doing.

A third limitation was the lack of a child outcome measure. Because of the use of a single stationary camera, teachers and children were not always visible during the recording, prohibiting the collection of data on child outcomes (e.g., rates of challenging behavior, levels of engagement, use of social-emotional skills). Research on coaching approaches should consistently include measures of child behavior change to understand how coaching teachers to implement PM practices impacts child outcomes. Across the coaching literature, there is a lack of measurement of child outcomes (Artman-Meecker et al., 2015; Golden et al. 2020; Kraft et al., 2018). Arguably, positive child outcomes are the ultimate goal of coaching so consistently measuring the impacts of coaching on child outcomes is an essential next step. In studies reporting child outcome measures, there is some evidence that coaching results in positive child behavior change (e.g., Conroy et al., 2015; Hamre et al., 2012; Hemmeter, Fox, et al., 2021) but additional research is needed to build support for the effect of coaching on child outcomes.

Two additional areas for future research revolve around coaching dosage and generalization of target practice use. Future research on using text messaging to deliver PBC could look at decreasing the frequency of observations and coaching sessions to see if the intervention is as effective with less frequent coach support. With few exceptions due to teacher absences or school breaks, focused observations and coaching sessions in the current study were conducted daily. Although this intervention was not time intensive, it may not be feasible for coaches in the field to provide daily coaching to all teachers on their caseload.

Finally, in this study, while there was some evidence that targeted practices generalized to settings in which coaching was not provided, generalization data were variable and considerably lower than data in the primary activity across all teachers. Because no feedback was provided in the generalization setting, the teachers may not have made the connection that they were appropriately using the target practices in that setting. For example, when Elizabeth was working on suggesting interactions between peers, she added opportunities for children to partner during large group (i.e., the generalization activity). When the focus of coaching moved to the next target practice, Elizabeth did not continue embedding opportunities for children to interact with their peers. Future research should explore efficient ways for systematically programming for generalization. Support could look like simply writing an action plan goal related to implementing the target practice in the generalization setting or embedding general reflection prompts around the use of the target practice in the generalization context. This level of support would be minimal compared to the coaching provided in the primary activity but might lead to more consistent, generalized outcomes.

Conclusion

The purpose of this study was to extend the literature around Practice-Based Coaching and coaching via text message by examining the effectiveness of training plus PBC, delivered via text message, on teacher use of PM practices. Results indicate that training plus PBC, delivered via text message, is an effective and efficient coaching method for increasing teacher use of PM practices. Results maintained up to three weeks after coaching was completed, and there was some evidence of generalization to un-targeted contexts. Future research should continue examining the effectiveness of text messaging as a mode for delivering coaching to build a bank of effective coaching practices that can be matched to the skills, characteristics, and

needs of teachers; the type of practices being targeted with coaching (e.g., individual teaching practices, multi-component interventions); and other characteristics of the coaching context (e.g., caseloads, distance to teachers, access to technology).

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Appendix A

Pyramid Model Implementation Checklist

Pyramid Model Practices Implementation Checklist: Adapted

Choose 4 practices to target with coaching.

- Provide rule reminders
- Provide children with opportunities to make choices
- Use a variety of emotion words

Provide positive, descriptive feedback on (choose only 1):

- children's use of friendship, social, or emotional skills
- children's engagement
- children's skills or behaviors
- children's appropriate behavior, linked to rules or expectations
- children following directions

Choose only 1:

- Suggest interactions between peers
- Prompt children to use a social skill

Notes and Ideas:

Adapted from:



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Appendix B

Teacher Demographic Survey

Please complete the survey below.

Thank you!

Teacher ID

Gender

- Female
 Male
 Other

Age (years)

What race(s) or ethnicity(s) do you identify as (check all that apply)

- American Indian or Native American
 Asian Black or African-American
 Hispanic or Latino Native Hawaiian or
Other Pacific Islander White or Caucasian
 Other

Describe 'other'

What is the highest level of education you have completed?

- Less than high school
 High school or GED
 Associate's degree
 Bachelor's degree
 Master's degree
 Doctorate degree
 Other

Describe 'other'

Area of degree

Are you licensed?

- Yes
 No

Area of license

Years of experience working with 3-5 year olds

Are you familiar with the Pyramid Model?

- Yes
 No

Have you attended a Pyramid Model training?

- Yes
 No

When was the training?

Who provided the training?

How long was the training?

Have you received coaching within the classroom?

- Yes
 No

When did you receive coaching (approximate year)?

How long did you receive coaching (weeks)?

How frequently did you receive coaching in a typical week (times per week)?

Who provided coaching within your classroom?

For what area(s) did you receive coaching support?

Have you received distance coaching (e.g., email or text feedback, zoom debriefs)?

- Yes
 No

What type of distance coaching did you receive (e.g., text, email, zoom)?

When did you receive distance coaching (approximate year)?

How long did you receive distance coaching (weeks)?

How frequently did you receive coaching in a typical week (times per week)?

Who provided the distance coaching?

For what area(s) did you receive distance coaching?

Have you received coaching around Pyramid Model practices?

- Yes
 No

When did you receive coaching around Pyramid Model practices (approximate year)?

How long did you receive coaching around Pyramid Model practices (weeks)?

Who provided coaching around Pyramid Model practices?

Which Pyramid Model practices were coached on?

Aside from this study, are you currently receiving any kind of coaching?

- Yes
 No

Please describe the coaching you are currently receiving (e.g., who provides, how often, topic, method).

How comfortable are you with receiving feedback about your teaching?

- 1 - not at all
 2
 3 - so so
 4
 5 - very comfortable

How comfortable are you with reflecting on your teaching practice?

- 1 - not at all
 2
 3 - so so
 4
 5 - very comfortable

How comfortable are you with technology such as tablets?

- 1 - not at all
 2
 3 - so so
 4
 5 - very comfortable

How comfortable are you with text messaging?

- 1 - not at all
 2
 3 - so so
 4
 5 - very comfortable

How often do you text?

- Never
 Once a week
 Once a day
 Several times a day
 Throughout the day

How comfortable are you with using technology as a source of professional development?

- 1 - not at all
 2
 3 - so so
 4
 5 - very comfortable

Comments

Appendix C

Classroom Demographic Survey

Please complete the survey below.

Thank you!

- 1) Teacher ID _____

- 2) Total number of children _____

- 3) Number of girls _____

- 4) Number of boys _____

- 5) Youngest child (months) _____

- 6) Oldest child (months) _____

- 7) Number of children who are Dual Language Learners _____

- 8) Number of children who have IEPs _____

- 9) Number of children without an IEP who receive support services _____

- 10) Number of children who have a severe language delay _____

- 11) Number of children who have a formal behavior plan _____

- 12) Number of adults typically in the classroom _____

- 13) List health and safety procedures put in place in your classroom due to the pandemic

Appendix D
Technology Survey

Please complete the survey below.

Thank you!

Teacher ID _____

Do you have access to wireless internet on a daily basis at home? Yes No

Do you have access to wireless internet at work on a daily basis? Yes No

Check the devices that you use regularly (several days a week) (select all that apply)

- Laptop computer
- Desktop computer
- Tablet or iPad
- Smart phone
- None of the above

How comfortable are you with email?

- 1 - very uncomfortable
- 2 - somewhat uncomfortable
- 3 - never done it, but want to learn
- 4 - done it, but not an expert
- 5 - really comfortable

How comfortable are you with texting?

- 1 - very uncomfortable
- 2 - somewhat uncomfortable
- 3 - never done it, but want to learn
- 4 - done it, but not an expert
- 5 - really comfortable

How comfortable are you watching videos on a device?

- 1 - very uncomfortable
- 2 - somewhat uncomfortable
- 3 - never done it, but want to learn
- 4 - done it, but not an expert
- 5 - really comfortable

How comfortable are you with recording videos on a device?

- 1 - very uncomfortable
- 2 - somewhat uncomfortable
- 3 - never done it, but want to learn
- 4 - done it, but not an expert
- 5 - really comfortable

How comfortable are you with uploading videos?

- 1 - very uncomfortable
- 2 - somewhat uncomfortable
- 3 - never done it, but want to learn
- 4 - done it, but not an expert
- 5 - really comfortable

How comfortable are you with Zoom or video conferencing?

- 1 - very uncomfortable
- 2 - somewhat uncomfortable
- 3 - never done it, but want to learn
- 4 - done it, but not an expert
- 5 - really comfortable

What is your overall comfort with technology?

- 1 - I really prefer not to use it
- 2
- 3 - I use it, but need a lot of assistance
- 4
- 5 - I love it and use it all the time

With whom do you text? (select all that apply)

- Significant other
- Children
- Friends
- Co-workers
- Parents
- Extended Family
- Other

Describe 'other'

When not meeting face-to-face, how do you most frequently communicate with co-workers?

- Email
- Text
- Phone call
- Written notes
- Other

Describe 'other'

Appendix E

Teacher Social Validity Post-Study Survey

Please complete the survey below.

Thank you!

Teacher ID

How comfortable are you with receiving feedback on your teaching practice?

- 1 - not at all
- 2
- 3 - somewhat
- 4
- 5 - very comfortable

How effective was text-based coaching for changing your use of the targeted practices?

- 1 - not at all
- 2
- 3 - somewhat
- 4
- 5 - very effective

Comments regarding the effectiveness of text-based coaching

How feasible was text-based coaching?

- 1 - not at all
- 2
- 3 - somewhat
- 4
- 5 - very feasible

Comments regarding the feasibility of text-based coaching

How likely are you to seek out coaching in the future to change your practice?

- 1 - not at all
- 2
- 3 - somewhat
- 4
- 5 - very likely

How comfortable are you with reflecting on your teaching practice?

- 1 - not at all
- 2
- 3 - somewhat
- 4
- 5 - very comfortable

How effective was the reflection component of coaching for changing your practice?

- 1 - not at all
- 2
- 3 - somewhat
- 4
- 5 - very effective

Comments regarding the effectiveness of reflection

How feasible was engaging in daily reflection on your practice?

- 1 - not at all
- 2
- 3 - somewhat
- 4
- 5 - very feasible

Comments regarding feasibility of reflection

How comfortable are you with technology such as tablets and text messaging?

- 1 - not at all
- 2
- 3 - somewhat
- 4
- 5 - very comfortable

How comfortable are you with using technology as a source of professional development?

- 1 - not at all
- 2
- 3 - somewhat
- 4
- 5 - very comfortable

How feasible was the distance coaching package (setting up the iPad and microphone, joining the Zoom meeting, receiving coaching via text message)?

- 1 - not at all
- 2
- 3 - somewhat
- 4
- 5 - very feasible

Comments regarding the feasibility of distance coaching

Do you have any additional comments or suggestions you would like to share with the research staff?

- Yes
- No

Additional comments or suggestions

Appendix F

Procedural Fidelity Form – Pyramid Model Overview Training

Teacher ID: _____ Session Date: _____
 Date fidelity completed: _____ Fidelity coder ID: _____
 Reliability: Yes No Reliability coder ID: _____

Session Components	Rater Score
Target Activity Components	
1. Trainer provides an overview of the study	Yes / No
2. Trainer shows a Pyramid Model Overview video	Yes / No
3. Trainer introduces Tier 1 of the Pyramid Model, including examples of practices AND materials	Yes / No
4. Trainer introduces Tier 2 of the Pyramid Model, including examples of practices AND materials	Yes/No
5. Trainer introduces Tier 3 of the Pyramid Model, including examples of practices AND materials	Yes/No
6. Trainer introduces the adapted Pyramid Model Implementation Checklist (PMIC), including how teacher will use it to select target practices	Yes/No
7. Teacher chooses four target practices	Yes/No
8. Teacher chooses an activity during which daily data collection will occur	Yes/No
9. Teacher chooses an activity during which generalization data will be collected	Yes/No
10. The trainer reviews the data collection protocol including how to turn on the iPad, how to login in to the zoom meeting, how to turn on and connect the microphone	Yes/No
11. The trainer and teacher decide where in the classroom to place the iPad during primary AND generalization data collection sessions	Yes/No
12. The trainer and teacher choose a time when the text message exchange will occur	Yes / No
13. The trainer and teacher set a time AND date for the first baseline session	Yes/No
14. The trainer answers teacher questions throughout	Yes/No
Percentage of correctly implemented session components:	

Appendix G

Procedural Fidelity Form – Target Practice Training

Teacher ID: _____ Session Date: _____
 Date fidelity completed: _____ Fidelity coder ID: _____
 Reliability: Yes No Reliability coder ID: _____

Session Components	Rater Score
Target Activity Components	
1. Trainer reviews the purpose of the study	Yes / No
2. Trainer reviews the study timeline	Yes / No
3. For trainings 2, 3, and 4, the trainer shares data on the teacher's use of previously coached practices	Yes / No
4. Trainer reminds the teacher of the four chosen target practices	
5. Trainer introduces the target practice by naming and defining the practice	Yes/No
6. Trainer at least provides 2 examples of the target practice	Yes/No
7. Trainer provides at least 2 non-examples of the target practice AND explains why they are non-examples	Yes/No
8. Trainer shows 2 video clips of the target practices	Yes/No
9. Trainer shows 2 video clips where the target practice was not used and has the teacher identify how the practice could have been used	Yes/No
10. The trainer and teacher write an action plan that includes a goal, the context or setting, at least 1 step for implementing, and supports the teacher needs for implementation, if any	Yes/No
11. Trainer reviews the coaching process, including telling the teacher when texts will be sent AND when the teacher is expected to respond	Yes/No
12. Trainer provides video/coaching reminders including the length of observations, a reminder to continue using previously coached on practices (if applicable), AND a reminder to respond to prompts during the text message exchange	Yes/No
13. The trainer answers teacher questions throughout	Yes/No
Percentage of correctly implemented session components:	

Appendix H

Procedural Fidelity Form – Coaching Session

Teacher ID: _____ Session Date: _____
 Target Activity: _____ Target Practice: _____
 Date fidelity completed: _____ Fidelity coder ID: _____
 Reliability: Yes No Reliability coder ID: _____

Coaching Components	Rater Score
1. Text included a positive greeting	Yes / No
2. Text included a general reflection prompt	Yes / No
3. Text included a supportive feedback statement	Yes / No
4. Text included a constructive feedback statement	Yes / No
5. Text included a constructive reflection prompt	Yes / No
6. Text included a session reminder	Yes / No
7. Text included a closing statement	Yes / No
8. At some point during the exchange, the coach responded to all teacher questions	Yes / No / NA
Teacher Responsivity	Rater Score
9. Teacher responded to the general reflection prompt	Yes / No / NA
10. Teacher responded to the constructive reflection prompt	Yes / No / NA
11. Teacher responded to the session reminder	Yes / No / NA
12. Teacher responded to each prompt within 20 min of prompt being sent	Yes / No
Percentage of correctly implemented session components:	

Note: Answers to coaching components 2-5 will vary according to the condition being run (i.e., baseline, intervention, maintenance). Procedural fidelity percentages will reflect correctly administered/withheld components according to the session condition.

Appendix I

Social Validity Form – Masked Raters

Teacher ID: _____

Rater ID: _____

Thank you for participating in this study, your support is greatly appreciated! Please begin by completing the following demographic information and then follow the instructions for watching and rating two videos.

Demographic Information:

What is your gender? Male Female Choose not to specify

Age (years): _____

What race(s) or ethnicity(s) do you identify as (select all that apply):

- American Indian or Native American
- Asian
- Black or African American
- Hispanic or Latino
- Native Hawaiian or Other Pacific Islander
- White or Caucasian
- Other (please describe): _____

What is the highest level of education you have completed?

- Less than high school
- High school or GED
- Associate's degree
- Bachelor's degree
- Master's degree
- Doctorate degree
- Other (please describe): _____

What is your current position? _____

Have you been trained on the Pyramid Model? _____

How well do you know the Pyramid Model?

5 Very well	4	3 Somewhat	2	1 Little
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Have you implemented the Pyramid Model in a classroom? _____

Have you coached teachers to implement the Pyramid Model in their classroom? _____

Have you been trained to reliability on the TPOT? _____

Have you done a TPOT observation in a classroom? _____

Have you worked with a program to implement the PM program-wide? _____

Video Rating

In the Box folder shared with you via email, there are two videos. Please watch Video 1 and complete the first set of questions. Then watch the Video 2 and answer the second set of questions. After watching both videos, complete the third set of questions.

Question Set 1:

Watch Video 1 and respond to the following prompts. Items 1-12 will ask you to rate the teacher's use of a specific teaching practice. Items 13-14 will ask you to rate the teacher's overall use of Pyramid Model practices.

1. The teacher provides positive, descriptive feedback focused about children's engagement in an activity or task (e.g., "you are building such a tall tower", "I see you taking your time coloring that picture") or following directions (e.g., the teacher asks children to sit at the table and then says, "Michael, thank you for sitting down right away.").

5 often	4	3 sometimes	2	1 never

2. The teacher provides positive, descriptive feedback to children about their use of friendship, social, or emotional skills (e.g., "I see friends working together;" "you calmed your body down and are ready to play;" "thank you for helping Austin find his water bottle.").

5 often	4	3 sometimes	2	1 never

3. The teacher provides children with opportunities to make explicit choices (e.g., "do you want to use blue, yellow, or pink paint?" "you can play in blocks or dramatic play?"). *Note: Statements or academic questions with a correct answer (e.g., "is this an upper or lowercase letter?" "did you draw a cat or a dog?") do not count as choices.*

5 often	4	3 sometimes	2	1 never

4. The teacher uses emotion words. Emotions could be positive (e.g., happy, proud, excited) or negative (e.g., scared, frustrated, angry).

5 often	4	3 sometimes	2	1 never

5. The teacher models or labels own emotions or talks about what they do when they are feeling a certain emotion.

5 often	4	3 sometimes	2	1 never

6. The teacher encourages children to play or work together by suggesting a way to interact (e.g., “You could play with George in blocks;” “work together to finish the puzzle;” “ask Grayson if he wants to play;” “tell Mattias about your trip to the park.”).

5 often	4	3 sometimes	2	1 never

7. The teacher prompts children (e.g., “take a deep breath to calm your body;” “could you share the playdoh tool with Jamaya;” “you can ask your friend for a turn”) to use social skills (e.g., share, trade, play/work with a peer, use a calm down strategy, talk to a peer).

5 often	4	3 sometimes	2	1 never

8. The teacher has brief conversations with children.

5 often	4	3 sometimes	2	1 never

9. The teacher has extended and comfortable conversations with children about their interests or ideas.

5 often	4	3 sometimes	2	1 never

10. The teacher uses naturally occurring opportunities to teach social or emotional competencies.

5 often	4	3 sometimes	2	1 never

11. The teacher explicitly teaches or prompts individual children how to initiate or respond to their peers.

5 often	4	3 sometimes	2	1 never

12. The teacher validates children’s emotions by labeling them and helping children talk about their emotions.

5 often	4	3 sometimes	2	1 never

13. Overall, how would you rate this teacher’s use of positive and supportive social emotional teaching practices?

5 high	4	3 medium	2	1 low

14. How effective do you think the teacher was at implementing Pyramid Model practices?

5 very effective	4	3 so-so	2	1 not effective

Question Set 2:

Watch [Video 2](#) and respond to the following prompts. Items 1-12 will ask you to rate the teacher’s use of a specific teaching practice. Items 13-14 will ask you rate the teacher’s use of general practices.

1. The teacher provides positive, descriptive feedback focused about children’s engagement in an activity or task (e.g., “you are building such a tall tower”, “I see you taking your time coloring that picture”) or following directions (e.g., the teacher asks children to sit at the table and then says, “Michael, thank you for sitting down right away.”).

5 often	4	3 sometimes	2	1 never

2. The teacher provides positive, descriptive feedback to children about their use of friendship, social, or emotional skills (e.g., “I see friends working together;” “you calmed your body down and are ready to play;” “thank you for helping Austin find his water bottle.”).

5 often	4	3 sometimes	2	1 never

3. The teacher provides children with opportunities to make explicit choices (e.g., “do you want to use blue, yellow, or pink paint?” “you can play in blocks or dramatic play?”). *Note: Statements or academic questions with a correct answer (e.g., “is this an upper or lowercase letter?” “did you draw a cat or a dog?”) do not count as choices.*

5 often	4	3 sometimes	2	1 never

4. The teacher uses emotion words. Emotions could be positive (e.g., happy, proud, excited) or negative (e.g., scared, frustrated, angry).

5 often	4	3 sometimes	2	1 never

5. The teacher models or labels own emotions or talks about what they do when they are feeling a certain emotion.

5 often	4	3 sometimes	2	1 never

6. The teacher encourages children to play or work together by suggesting a way to interact (e.g., “You could play with George in blocks;” “work together to finish the puzzle;” “ask Grayson if he wants to play;” “tell Mattias about your trip to the park.”).

5 often	4	3 sometimes	2	1 never

7. The teacher prompts children (e.g., “take a deep breath to calm your body;” “could you share the playdoh tool with Jamaya;” “you can ask your friend for a turn”) to use social skills (e.g., share, trade, play/work with a peer, use a calm down strategy, talk to a peer).

5 often	4	3 sometimes	2	1 never

8. The teacher has brief conversations with children.

5 often	4	3 sometimes	2	1 never

9. The teacher has extended and comfortable conversations with children about their interests or ideas.

5 often	4	3 sometimes	2	1 never

10. The teacher uses naturally occurring opportunities to teach social or emotional competencies.

5 often	4	3 sometimes	2	1 never

11. The teacher explicitly teaches or prompts individual children how to initiate or respond to their peers.

5 often	4	3 sometimes	2	1 never

12. The teacher validates children's emotions by labeling them and helping children talk about their emotions.

5 often	4	3 sometimes	2	1 never

13. Overall, how would you rate this teacher's use of positive and supportive social emotional teaching practices?

5 high	4	3 medium	2	1 low

14. How effective do you think the teacher was at implementing Pyramid Model practices?

5 very effective	4	3 so-so	2	1 not effective

Question Set 3:

After watching **BOTH** videos, please respond to the following prompt:

Rate the overall tone of the interactions between the teacher and children in video 1.

5 positive	4	3 neutral	2	1 negative

Rate the overall tone of the interactions between the teacher and children in video 2.

5 positive	4	3 neutral	2	1 negative

Which video demonstrates a higher proficiency of Pyramid Model practice use?

- Video 1
- Video 2