



# A unidimensional model of emotion-focused teaching in early childhood

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## Abstract

Modeling, responding, and instructing have all been investigated as ways in which adults promote children's emotional competence, but they have largely been investigated separately. To facilitate the development of effective professional development models which promote teachers' engagement in emotion-focused teaching, it is important to understand whether and how these practices are different manifestations of a common underlying construct and the extent to which they build on one another. Rasch models using 1606 observations of 47 preschool teachers using the EMOTION TEaching Rating Scale (EMOTERS) indicated that these teaching practices are all different expressions of the same emotion-focused teaching construct. Modeling practices generally were observed more frequently, instructing practices less frequently, and responding practices in the middle. This hierarchical arrangement can inform efforts to improve teachers' emotion-focused teaching and benefit the positive social-emotional classroom environment.

**Keywords** Early childhood · Emotion-focused teaching · Positive classroom environment · Rasch modeling · Social · Emotional learning · Teacher effectiveness

## Introduction

Teachers play an important role in students' emerging social and emotional skills. Through their interactions with students, teachers promote important skills such as being able to express and regulate emotions consistent with the social norms and expectations of local context, interact positively with peers, and engage meaningfully in learning tasks. Especially in early childhood, learning is a social and emotional process (Zins et al., 2007) and, therefore, teachers' emotion-focused teaching practices are critical to students' academic and social success. In particular, the ways in which teachers instruct students about emotions, respond to students' emotions, and express their own feelings in the classroom all contribute to students' emerging understanding of their own and others' feelings—key contributors to positive social-emotional

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classroom environments and children's social and academic school readiness (Denham et al., 2012). However, existing measures of early childhood classrooms use global frameworks (e.g., Harms et al., 2014; Pianta et al., 2008) and reveal small associations between teaching practices and students' social and emotional outcomes (Hamre et al., 2013).

In light of limited evidence of associations between global measures of classroom quality and positive child outcomes, researchers have increasingly called for more domain-specific measurement to help to elucidate specific beneficial teaching practices (Gordon et al., 2013; Anderson & Phillips, 2017), especially in the realm of supporting children's social and emotional development. In response to this call, we developed the EMOTion TEaching Rating Scale (EMOTERS, Zinsser et al., 2019), an observational measure of preschool teachers' emotion-focused teaching practices that is grounded in the emotion socialization theoretical frame and captures teachers' modeling of, responding to and instructing about emotions. Prior studies using this instrument have treated these practices as distinct (Gordon et al., 2021; Curby et al., 2022) but, to holistically promote the development of teachers' emotion-focused teaching skills, it is important to consider whether these practices function as part of a unitary construct. The purpose of the present study was to theoretically and empirically explore these alternate conceptualizations of these practices using the EMOTERS instrument.

## Observations of emotion-focused teaching in preschool classrooms

Given the increasing attention to the critical role that teachers and schools play in supporting students' social-emotional development, there is a need for domain-specific measurement strategies that can be used to guide and evaluate classroom practice. Observational measures have long been used in supporting teachers' development at all ages and grade levels (e.g., Campbell, 2014). Although there is some evidence that observed instances of domain-general teaching (e.g., conceptual development) are associated with specific learning outcomes (e.g., mathematical reasoning, Carr et al., 2019), effects are small and inconsistent (e.g., Burchinal, 2018; Guerra-Rosada et al., 2021; Hamre et al., 2013; Mashburn et al., 2008). To date, however, when measures are specified to focus on teaching practices promoting students' social-emotional learning, they tend to be tied to specific curricula or programming, such as fidelity measures used in the Pyramid Model implementation (e.g., Hemmeter et al., 2018).

The EMOTERS was developed to provide a domain-specified but curriculum-agnostic measure of emotion-focused teaching. Building on a theoretical framework of emotion socialization originally developed for parents (Eisenberg et al. 1998), the EMOTERS targets three primary means by which adults socialize students' emotional competence: how they express their own feelings (Modeling); how they respond to students' expressions of emotions (Responding); and how they talk about emotions and give students information about emotions (Instructing). In addition to these socialization processes occurring in homes, there is growing evidence that they occur in early childhood classrooms as well (Curby et al., 2022; Denham et al., 2012).

## Modeling

Modeling includes emotional expressions by the teacher that are visible to children. In this way, teachers act as emotional models to students and can contribute to students' social-emotional development. Observational learning from adult models is at the core of many foundational theories in child development, such as Bandura's social learning theory (1972) and social referencing (Campos & Stenberg, 1981). Thus, adult emotional displays, whether intentional or not, can implicitly teach students the basic features of emotions, the appropriateness of expressions of emotions, the situations which can evoke certain emotions, the reactions and consequences that typically follow emotional displays, and emotion regulation strategies. Modeling encompasses multi-model forms of emotional expression, including facial (e.g., smiles), verbal (e.g., "I'm so glad to see you!"), and non-verbal expressions (e.g. laughter). Each of these channels conveys information that children utilize in the identification of a teacher's emotional state. Over time, the ability to accurately interpret such expressions across modalities is associated with children's general social-emotional adjustment (Neves et al., 2021). Modeling can happen throughout the day and as part of teachers' normal interactions with children. Teachers could display excitement about an upcoming field trip or frustration when a child spills milk at lunch time. These displays can be intentional or unintentional, but they all convey information to children.

## Responding

Responding describes adults' encouraging or discouraging reactions to students' displays of emotion. Whenever children are expressing emotions, teachers have the opportunity to respond in ways that encourage or discourage the expression and convey information about the value and acceptability of those feelings. A teacher might encourage children's exuberance by playing dance music during a morning transition and clapping along as they jump and wiggle. Alternatively, she could discourage similar expressions of excitement when they're walking in the hallway to go outside and admonishing children for not using their 'inside voices'. In this way, teachers' responses can validate and support the child's emotion (e.g., by saying "it's okay to feel sad") or invalidate the child's emotion (e.g., by saying "you're overreacting"). Both validating and invalidating responses can influence the child's current emotional expression and condition their expressions over time (Miltenberger & Crosland, 2014). Reactions can also give students insight into how adults perceive various emotions as valid or warranted in certain contexts.

## Instructing

Instructing occurs when a teacher explicitly provides information about emotions (Denham et al., 2012), including providing labels for feelings, information about how feelings can be expressed or experienced physiologically, and strategies for regulating emotions. This can happen through a planned activity, such as a storybook reading or a lesson on an emotion, or it can happen through a teacher talking to students about emotions based on a classroom situation, such as two students being frustrated with one another. Instructing has the possibility of expanding students' understanding of the antecedents, consequences, and expressions of emotions as well as providing information about the use of emotion-regulation strategies (taking a deep breath). Any interaction during which instruction is taking place

has the possibility of the information being generalized to future situations (what to do the next time someone takes your toy). Thus, telling a student to “stop crying” is responding to a child’s emotion, but a teacher reminding a student to “take three deep breaths when you’re upset” would be instructing.

Although the EMOTERS was not designed specifically in line with any particular social-emotional curriculum, many such programs encourage teachers’ engagement in some of these socialization practices, especially Instructing. Likewise, teachers’ arrangement of the learning environment, such as a calm-down corner or having accessible puppets and feelings charts, can facilitate greater Responding practices with teacher engagement.

## Emotion-focused teaching in the classroom

There is an agreement on the value of emotion-focused teaching broadly, but work specifying whether and how domains of practice are distinct remains limited. In prior analyses with these same data using the EMOTERS, we demonstrated that each of these teacher practices independently explains students’ social and learning behaviors in the classroom (within and across time; Curby et al., 2022). A separate study, however, confirmed a single factor of emotion-focused teaching, albeit with a slightly different focus. In racially- and ethnically-diverse older elementary classrooms, Cipiriano et al. (2019) captured teachers’ emotions-focused teaching practices via self-report surveys across three subscales: personalized interactions (e.g., individualized greetings); responding to emotions (e.g., asking students to discuss their feelings); and caring beyond the classroom (e.g., asking about their lives outside of school). In their analysis, a single factor of emotion-focused interaction was confirmed and was moderately associated with observed emotional support as measured by the Classroom Assessment Scoring System (CLASS, Pianta et al., 2008). In the development of the EMOTERS, we initially conceptualized modeling, responding, and instructing practices as conceptually distinct but, in the context of a classroom, these interactions actually can be highly related and intertwined. When these practices were originally described in the parenting literature, conceptual models sometimes combined them together under a single umbrella of emotion socialization (e.g., Eisenberg et al., 1998). As was evidenced in a recent meta-analysis, some empirical studies of parents’ emotion-focused practices highlight just one or two practices while others combine all three in predicting students’ social and emotional growth (Zinsser et al., 2021).

However, no study to date has explored whether these three practices—modeling, responding, and instructing—can be conceptualized as the unitary construct of Emotion-focused teaching. It might be helpful to think about a unidimensional model as seen in a different subject: Math. In math, students often learn addition, subtraction, multiplication, and then division. These are distinct mathematical functions with little ambiguity. But they are generally seen as existing on a continuum of mathematics understanding. Generally, addition is taught first, followed by subtraction, and so on. Knowing that subtraction is coming after addition helps teachers to teach addition in such a way that it better supports later skills.

A unitary view of emotion-focused teaching with all practices, regardless of the domain, arranged along a single continuum might best represent instructional practice. An observer of a typical preschool classroom would quickly identify multiple instances of each practice supporting the interconnectedness and potential unidimensionality of emotion-focused teaching. For example, imagine the following vignette:

*At the end of their morning meeting, an instructional coach watches Ms. Dominique read “Going on a Bear Hunt” by Michael Rosen (1989) to her preschool class. She smiles at their excitement [Responding; Modeling] when they join in, saying, “Oh no! A River! A Great Big River!” Then Ms. Dominique asks, “I think they’re scared.” [Instructing]. She then feigns disappointment [Modeling] and smiles [Modeling] as they all say, “We’ve gotta go through it.” At the end of the story, when they find the bear in a cold dark cave, she makes a scared face before pantomiming running back out of the cave, through the woods, and across the river before slamming the door and diving under the bed covers [Responding];. “Phew!” she says, looking relieved as she and the kids wipe their brows with mock relief [Modeling]. As the story comes to an end, Jackson shouts, “Again! Again!” but the teacher explains that it’s time for them to get ready to go outside. Jackson picks up a nearby book and hurls it on the floor, yelling, “I want to read it again!” Ms. Dominique says, “I see you’re disappointed and frustrated, but we’re going outside now [Instructing; Responding]. Please [Modeling] get on your jacket.” After a moment of pouting, Jackson gets on his jacket, and the class goes outside [Responding].*

This vignette contains numerous instances of each emotion-focused practice described above. Ms Dominique models multiple emotions that are both authentic and pretend to validate Jackson’s feelings by labeling his expression. This vignette also shows how these practices can be conceptualized together. For example, when Ms Dominique says to Jackson that “I see you’re disappointed and frustrated”, this serves to validate Jackson’s experience while also giving Jackson labels for the emotions that he’s feeling, from which other students also benefit.

## The EMOTERS

The EMOTERS (Zinsser et al., 2019) was developed in alignment with the emotion socialization framework to capture preschool teachers’ Modeling, Instructing, and Responding practices. Consistent with how the instrument was initially conceived, the constructs have been operationalized separately to date (Curby et al. 2022), and analyses have successfully linked domains of emotion-focused teaching to students’ observed classroom behaviors (Curby et al. 2022). However, in the iterative development of the instrument, we noticed that Instructing practices were consistently observed less frequently while Modeling items were generally observed more frequently. This led us to wonder whether there was an underlying continuum that explained all three practices.

## The present study

The purpose of this study was to explore an alternative conceptualization of emotion-focused teaching. Prior analyses of these data have separated emotion-focused teaching into three distinct domains of practice (modeling, responding, and instructing), each of which is observed independently and have been associated with student outcomes (Curby et al., 2022; Gordon et al., 2021). In this study, however, we test whether emotion-focused teaching can be conceptualized as a unitary model, with each domain contributing to explaining a portion of a continuum of practice. If this unitary model reflects the true nature of emotion-focused teaching, any analysis that separates the domains (and their respective variances) could undercut our understanding of how the construct as a whole operates.

Different models have implications for how professional development and research should measure emotion-focused teaching practices. If emotion-focused teaching practices are distinct and separate, then professional development programming should guide teachers to move up each practice continuum independently. If domains of emotion-focused teaching practices are part of a unitary construct, then professional development should not focus on improving domain-based practices separately. Regardless, efforts to promote teachers' emotion-focused teaching should be aligned with the true nature of the construct(s) and teachers' lived experiences in the classroom. Without knowing which conceptualization best fits the practices, efforts to enhance teaching practices could be inefficient or ineffective.

The present study addressed the following research questions: Is a unitary view of emotion-focused teaching practices justified? What does the arrangement of items in relation to their frequency of occurrence tell us about the domains of emotion-focused teaching practices?

## Methods

### Participants

Participants included lead and assistant teachers ( $N=47$ ) in 18 three- and/or four-year-old preschool classrooms. Teachers worked in four centers, two each in large mid-Atlantic and Midwestern cities. Centers included two non-profit programs serving primarily Latinx and immigrant families and two private programs serving primarily middle- and upper-income families. The study protocol was approved by the institutional review boards of the two collaborating universities.

### The EMOTion TEaching Rating Scale

The EMOTERS (Zinsser et al., 2019) was developed to capture the observed teaching practices that could contribute to a positive social-emotional classroom environment and promote students' emotional competence. The instrument is available for free through a Creative Commons license (Zinsser et al., 2021, [www.emoters.org](http://www.emoters.org)). In its development, potential items were created, piloted, and refined for three domains of practice: Modeling, Responding, and Instructing. Items in the Modeling domain describe teachers' expressions of positively and negatively valenced emotions, modalities of expression (e.g., vocally, bodily), and visible use of emotion regulation. Responding items are always in response to students' expressions of emotions and capture whether teachers react in ways that validate or invalidate students' emotion expressions. The final domain, Instructing, encompasses instances in which the teachers provide information about the nature of emotions or opportunities for students to practise or expand their understanding of emotions. These instances can be planned (such as during an SEL lesson) or unplanned (such as if a teacher helps an upset student to see another student's perspective). Items vary in the number and nature of response options, with some being dichotomous (a behavior did or did not occur) and others being ordinal, with indicators at lower and higher levels of intensity or quality.

The EMOTERS is completed by a trained observer after observing a 10-min video segment. While watching the video, raters take unstructured notes and afterwards they

complete the EFT using an online Qualtrics-based coding form that manages contingencies and skip logic. Ratings typically take 2 or 3 min for each 10-min video cycle.

Prior studies using this measure have involved calculating a score for each domain. Using this approach, practices captured by the EMOTERS have been shown to occur more and less frequently (Gordon et al., 2021), and to be related to student-observed (Curby et al., 2022) and teacher-reported (Fetahi et al., 2023) outcomes. Central to this study, we evaluated a unidimensional model across all items that allows us to determine if emotion-focused teaching can be viewed as a unitary construct (instead of three related constructs) and to understand how items in different domains compare with one another. Scores were calculated using Rasch modeling described in the analysis plan below.

## Procedures

### Video recording

Classrooms were videoed from the start of the day (approximately 7:30 am) until lunch preparations began or the class left for an extended period of time (e.g., recess). An integrated multi-camera system approximated what live observers might see by capturing close-up video and audio from multiple locations around the classroom. A central iPad was placed on a SWIVL™ robotic base that rotated to follow a teacher wearing a wireless microphone. Up to four iPods cameras were placed around the room (e.g., block corner, circle-time area, home-living center). The SWIVL system is designed so that the various video and audio streams are uploaded and synced automatically, allowing seamless viewing and switching among up to five video streams.

For each classroom, we aimed to collect 12 mornings of video, one morning per week for four weeks each in fall, winter, and spring. We obtained a median of ten dates of codable video in most classrooms (from four to 12 dates in 18 classrooms). All but two classrooms contributed data across all seasons (one classroom left the study after fall; another participated in winter and spring; together, these two classrooms contributed 11 dates of video). When multiple teachers in a single classroom participated, the teacher leading the primary activity wore the microphone and was the focus of EMOTERS coding.

### EMOTERS coding procedures

The full instrument description and coding protocol are freely available from the measure website ([www.emoters.org](http://www.emoters.org)), and items and response options are summarized in the online supplemental materials. As indicated in the protocol, videos for this study were segmented into 10-min occasions and screened by research assistants for codability. A 10-min occasion was selected based on results from early instrument development pilot coding sessions, with 10 min allowing sufficient time for observers to see an array of child and teacher behaviors while maintaining strong reliability. Codable occasions ( $N=1606$ ) met the following criteria: (a) students were in the room; and (b) the teacher who was wearing the SWIVL microphone was visible. These occasions were subsequently assigned to raters for coding using the EMOTERS. Raters were undergraduate and graduate students at two large public universities during the 2018–2019 school year ( $N=23$ ). Each was trained in the EMOTERS and passed a reliability assessment for which they watched and coded five reliability video occasions independently. Exact agreement with the master code on at least 75% of items was necessary for a research assistant to be certified.

Using the many-facet Rasch model (MFRM), all raters do not need to code every video (i.e., fully-crossed coding). However, there does need to be enough crossing of coding to provide the *connectedness* of the raters (Linacre, 2002; Wind & Jones, 2019). To provide connectedness, some occasions were coded by all raters, and nearly all the remaining were coded by pairs of raters. Specifically, among all 10-min occasions inventoried in a given week, one occasion was designated for all raters to code. From the remainder, the first occasion in a list was assigned to the first rater pair, the second to the second pair, and so forth. Altogether, 89 occasions were coded by all of a wave's raters. Most occasions (1369 of 1606, 85%) were coded by at least two raters. The remaining roughly 15% of cases (237 of 1606 occasions) had only one rater.

### **Analysis plan: many-facet Rasch model (MFRM)**

At its core, the MFRM is a logit model, with the log-odds of ratings as the outcome and various facets as the predictors. We then had various facets that were accounted for in the analysis, including the frequency at which an item was observed, the harshness of the rater, and the proficiency of the teacher. We have previously detailed the strength of this analytic approach for the iterative refinement of the EMOTERS's Modeling domain (Gordon et al., 2021).

In the current paper, we focus on location maps (also known as item-person or Wright maps; Wilson, 2011) that display the point estimates of the locations of the items from the unidimensional model. Such maps are possible because the MFRM places the location of each facet on a common logit scale. We hope to see a map showing the good distribution of items along the full continuum with fairly equal distance between items allowing for good targeting (for more information about the use of MFRM in the development of the EMOTERS; Gordon et al., 2021). In this way, the MFRM can be thought of as constructing a 'ruler' for measuring emotion teaching across a continuum of practice from the basic items to the advanced items. Standard errors of item location estimates help to gauge whether they assess statistically-distinct levels of emotion teaching. A chi-square statistic tests the null hypothesis that all items had equal locations. Follow-up *t*-tests determine the significance of differences between each pair of elements. Supplemental materials (available online) provide additional statistics and equations, a few of which we mention next in relation to overall model fit.

## **Results**

The good fit of the model was reflected by all items having item fit statistics within conventional bounds (Infit ranging from 0.80 to 1.30; Outfit running from 0.43 to 1.52), reflecting the accumulation of residuals that are closer to and farther from the occasions' quality levels. Although three outfit values for the most extreme items were outside conventional bounds of 0.60 to 1.40, their infit values were within range and their outfit reflected their frequency in this sample (Linacre, 2002; Tennant & Pallant, 2006). Additionally, the ability of the items to differentiate between classrooms at different levels was reflected by a strata statistic of 3.20 (i.e., lower, middle, and higher quality occasions could be distinguished). Traditional internal consistency reliability was also high at 0.82. And a significant overall chi-square value indicated that at least some of the items reflected significantly different locations along the latent continuum (chi-square = 70,718.10,  $df=44$ ,  $p=0.00$ ).



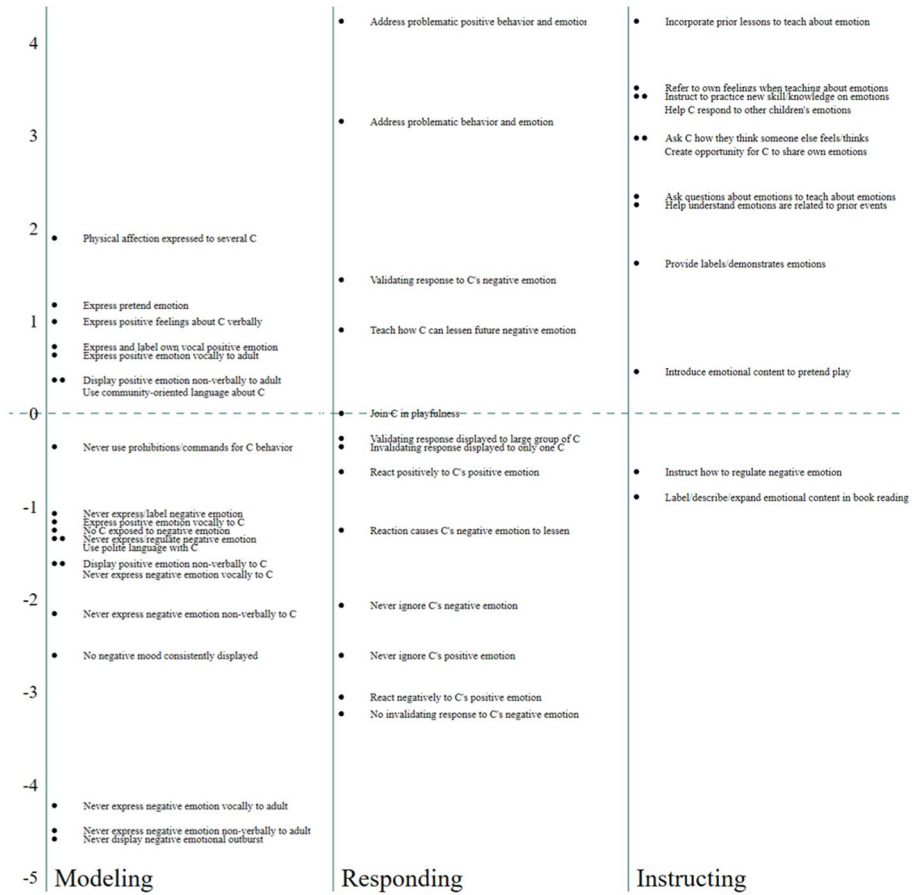


Fig. 1 Emotion-focused teaching measure item ordering by domain

These results demonstrate that a unidimensional model fits these data and therefore we can examine how items are ordered across these domains of practice.

Figure 1 depicts the modeled order of items. We separated the items into columns based on the domain to which they are assigned to, but all the items were run together in a unidimensional model. All items are on the same scale from the same model and, therefore, the locations can be compared within and across domains. Higher scores reflect more emotion-focused teaching. Items at the lower end of the scale are considered easiest because they were demonstrated in the most observation cycles. To save space, some item stems are truncated in Fig. 1 (see the online Supplemental materials for a table of full item stems, response options, and contingencies in order of frequency).

In examining item locations across domains, an interesting pattern emerged. Modeling items generally captured emotion-focused teaching practices at the lower end of emotion-focused teaching (Range -4.5 to 2). Responding items had the widest range of coverage for emotion-focused teaching but were primarily grouped towards the center of the scale (Range -3.2 to 4). Instructing items were more concentrated toward the top of the scale and described higher-order practices (-1 to 4).

The substantive sizes of pairwise comparisons (i.e., whether the item locations were more than half a standard deviation apart) followed the expected patterns. We calculated these comparisons within each of the three domains as well as between each pair of domains. Generally, we expected fewer differences within domains than between domains. This within-versus-between pattern was anticipated to be especially evident for the domains at the lower and higher ends of the emotion-teaching competency continuum (Modeling and Instructing) and less so for the domain in the middle (Responding). The Modeling and Instructing domains were also expected to be the most distinct from each other, given their extreme locations, and more overlapping with Responding.

We indeed saw the fewest large ( $> 0.5$  SD) differences within-domain for Instructing (59%) followed by Modeling (68%) and then Responding (76%). In other words, whereas two-thirds or fewer of the comparisons were large within the Instructing and Modeling domains, over three-quarters of the comparison within Responding were considered larger. The largest percentages of between-domain comparisons were also evident for Instructing versus Modeling (85%), confirming that their items located at the extreme ends of the emotion-teaching competency continuum were most distinct from each other. In contrast, fewer differences were evident between Responding and Modeling (69%) and between Responding and Instructing (79%).

All of these percentages are in a moderate to high range (from 59 to 85%), reflecting the desired distribution of item locations even within domains. In other words, we wanted items to be well distributed within their lower, middle, and higher regions of emotion-teaching competency. The three domains are distinct yet overlapping empirically, reflecting their conceptual levels of a single continuum that intertwines at their borders when moving from one to the next.

## Discussion

The present study tested a unidimensional model of emotion-focused teaching practices. Rasch analysis of items from Modeling, Responding, and Instructing domains supported a unidimensional approach. Further, the arrangement of the items for the various domains showed overlapping bands of practice, with Modeling generally occurring more frequently and Instructing practices occurring less frequently. Examination of the relative frequencies of the different domains of practice, as well as the frequency of the various individual items, was highly informative and could help to guide professional development.

### A unidimensional model of emotion-focused teaching

Rasch analysis supports conceptualizing emotion-focused teaching practices along a single continuum. This is consistent with a one-factor approach found with a self-reported measure of emotion-focused interactions used with teachers of older children (Cipriano et al., 2019). This differs from the original conceptual model used in the development of the EMOTERS in which each domain of practice was viewed as contributing to students' social-emotional growth. The separation of emotion-focused practices is in line with how socialization interactions are largely assessed in the parenting literature, according to a recent meta-analysis (Zinsser et al., 2021). With this approach, we not only can respect the multitude of ways in which teachers engage in emotion-focused teaching, but also recognize the relative frequency of Instructing compared to Modeling. The ordering of domain

frequency demonstrated in this study is consistent with prior studies demonstrating that the rarer practice of Instructing is more strongly associated with student social–emotional outcomes than Modeling, both in classrooms (Curby et al., in press) and in families (Zinsser et al., 2021).

Looking at the domains of emotion-focused teaching practices together also respects the complex nature of supporting students' emotional development. Measurements that focus narrowly on one type of emotion-socialization practice (Eisenberg et al., 1998) could constrain observers to focus on those interactions to the detriment of other important and related teaching practices. It is important that we have measurements that enable us to see teachers' multifaceted engagement with children. As shown in the vignette in the introduction, teachers do not limit themselves to a single domain when interacting with children. When Jackson is upset that Ms Dominique will not re-read a book, she models, instructs, and responds. For professional development and measurement, we likewise should view these practices as building upon one another. With a unidimensional approach, a coach might offer different feedback from a professional development coach who views the emotion-focused practice domains separately. A coach who has the three domains separated might evaluate and coach on each practice domain separately, missing the connectedness between the domains. In comparison, a coach using a unidimensional approach can point out that Ms Dominique can use her response to pivot into instructing, as elaborated below.

*Jackson, I know you're disappointed that we only read it one time today, but I don't like it when you yell at me like that because you're frustrated. It makes me feel sad. I think it also made some of your friends feel scared, can you see their faces?" Her face shows a slightly sad face and points to the other children who have moved away from Jackson on the carpet. She asks the class, "Who remembers our song about calming down? Can we all sing it together while putting our coats on?"*

This approach with coaching allows the teacher to move up the continuum described herein in a way that just focuses on the next practice, irrespective of the domain of practice.

This unidimensional conceptualization also allows reading across the three panels of Fig. 1, noting the extent to which there are gaps in the frequency for a given domain and overlap between items. With respect to gaps, there is a notable gap in frequency near the lower end of Modeling. The gaps at the bottom of Modeling and near the top of Responding (Fig. 1) indicate a pairwise difference of at least 0.50 logits (about one-fifth of the item's *SD* of 2.3 logits), indicating a meaningful differentiation in item functioning (Casabianca & Lewis, 2018; Penfield, 2007). Gaps in these areas make it difficult to differentiate similar occasions at that level of a given practice. For this reason, it is best to have items that are more-closely spaced with more occasions scored (de Ayala, 2009; Gordon et al., 2021). However, when using a unidimensional approach, all items are used. From this vantage point, there are practically no gaps in the frequency hierarchy, and occasions can be distinguished across the entire hierarchy of emotion-focused teaching practice.

Looking across the panels of Fig. 1, it is also noteworthy that, within and across domains, there are instances of redundancy with two items occupying the same location on the frequency hierarchy. In these cases, if a teacher is observed to engage in either practice, both items give the same information about teachers' locations along the continuum of practice. In the EMOTERS, several items overlap with other items. For example, in Instructing, two items occupy nearly the same space (at about 3 logits). Asking students how they think someone else feels is just as difficult as creating opportunities for students to share their own emotions. This suggests that these items do not add unique information to our understanding of teachers' capacity. Future iterations of the EMOTERS could

drop one of those items to yield an instrument that is shorter while still providing the same amount of information. The same logic can be used to create different versions of the same instrument (Gordon & Davidson, 2021; Gordon et al., 2021).

## Ordering of emotion-focused teaching practices

Across the spectrum of emotion-focused teaching practices, the question arises about why certain practices occur more often than others. What does this arrangement tell us about the nature of emotion-focused teaching? At a broad level, Instructing items were arranged on the top half of the distribution, indicating that Instructing practices were less frequently observed. Conversely, Modeling items were concentrated near the bottom half of the distribution, indicating that they were highly prevalent in these classrooms. The arrangement of observed occasions by frequency can also reflect the degree to which teachers demonstrated that they had fully mastered competencies. Alternatively, their practices on these occasions might also reflect the contextual demands and constraints of the moment (e.g., being left alone with a large group when the lead teacher stepped out of the room).

These differences in frequency likely reflect differences in the intentionality of the given practice. A teacher rarely needs to think about smiling at students but might need to think about pointing out the facial expressions of a character in a book. Just as parents can intentionally choose which situations in which to have their children engage (Eisenberg et al., 1998), teachers too can intentionally expose students to certain situations and emotions. In this way, the levels of intentionality inherently present in the domains of teaching practices are different. In a recent meta-analysis of parent emotion socialization practices (Zinsser et al., 2021), Instructing practices were described as more intentional because parents made active choices about which emotions to attend to based on their own beliefs and expectations for their children. Across 24 analyzed studies, Instructing practices correlated more strongly with measures of children's emotion skills than did parents' Modeling practices (Zinsser et al., 2021).

Furthermore, the different levels of intentionality are not only present when comparing different domains of practices at a broad level but also when comparing nearly-adjacent items. For example, in the scenario described above, a Responding item located just above the overlapping Instructing items described above captures teachers' abilities to address an emotion related to a child's problematic behavior (e.g., asking, "Are you throwing things because you're frustrated?"). This Responding practice was slightly less frequently observed than the Instructing practices and can be conceived as necessitating more intentionality. To receive credit for the Instructing items, a teacher needed to remember to ask students about how others might feel (e.g., during a storybook reading). The Responding item requires a teacher to think about how a child's behavior might be related to an underlying emotion and then convey that to the child. The Instructing items also represent good practice but do not require the same level of intentionality. In other words, Modeling without planning might speak to teachers' underlying trait-like levels of positivity while Instructing, which happened least frequently in these videos, and mostly might occur when a teacher plans to do so. Infusing Instructing practices throughout teacher-child interactions could be an aspirational goal, but Responding, for which constructs overlap most frequently, can serve as a segue by helping teachers to become increasingly intentional in which emotions they choose to react to and how.

We caution, however, that Modeling should not be viewed as less important than Responding and Instructing but, instead, can be framed as foundational to higher-order

practices. Likewise, professional coaches and teacher preparation faculty should not reserve discussions of Instructing for only some teachers or for teachers to engage in during certain formal contexts such as planned lessons. Both Modeling and Instructing are important parts of teachers' emotion-focused teaching toolkits. At the same time, future work should consider whether and how engaging in intentional Instructing practices can be particularly cognitively or emotionally taxing for teachers and how best to coach them in when, why, and how to increase their frequent use of these skills.

Another lens through which to view this continuum of practices is intentionality. At the bottom of the continuum, teachers' simplistic modeling of their emotions and invalidating responses to students' emotions is unintentional and ineffective. Towards the middle of the continuum, teachers engage in intentional instruction, such as selecting reading materials that highlight emotions and giving students specific opportunities to role-play such as Domitrovich et al.'s (2007) Preschool PATHS. But at the top of the continuum, teachers engage in both Responding and Instructing contingent on specific events or needs of children. This responsive instruction necessitates that the teacher actively incorporates emotional learning into their interactions, even when a situation could be effectively addressed in a less emotion-focused manner (such as in the vignette in the introduction). In the parenting literature, instructing (sometimes called emotion coaching) is described as requiring greater levels of intention because parents make active choices about which emotions to teach based on their own values and beliefs (Eisenberg et al., 1998; Zinsler et al., 2021).

Another factor that could play into the frequency of each EMOTERS item of a given item is the extent to which the item requires the teacher to anticipate student responses and, therefore, require a theory of mind. Theory of mind is the ability to take someone else's perspective, even if it differs from your own (Frith & Frith, 2005). Generally, we see that EMOTERS items that require more theory of mind were observed less frequently than items that required less. For example, we can compare the answer choices for the Responding item: "When any negative emotion is presented by any child, how does the teacher respond?" The highest-level answer choice ["The teacher addresses the emotion in a validating way (e.g., "I see you're upset", or "What's wrong?")"] was observed less frequently than "The teacher addresses the emotion in an invalidating way (shaming, distracting, dismissing, punishing)". To answer in a validating way, teachers need to take the perspective of the student experiencing the emotion to validate it. The Responding domain was originally conceptualized in line with broad notions of responsive and sensitive teaching, which has been incorporated in prior observational ratings of teacher-child interactions, such as the Classroom Assessment Scoring System (Pianta et al., 2008). The EMOTERS theoretical grounding in emotion socialization, however, enables expansion of the notion of responsiveness to consider the teachers' ability to take students' perspectives while validating their emotional experiences.

### Putting emotion-focused teaching in context

Now that the underlying structure of the EMOTERS is better understood, future work can explore contributors to emotion-focused teaching practice. For example, further work is needed to understand the contextual factors which can promote or inhibit a teacher's ability to engage in emotion-focused teaching. The less-than-ideal working conditions of the nation's early childhood education workforce have been well-documented (Smith & Lawrence, 2019). Preschool teachers are routinely among the lowest-paid service employees in the country and they report higher levels of stress than teachers of older students (McGarth

& Huntington, 2007). These contextual factors detract from teachers' nascent abilities not only to experience and model positive emotions in the classroom (Zinsser et al., 2013), but also to react in supportive ways. Helping teachers to express more-positive emotions, for example, might help to promote high-quality learning environments (Tobin et al., 2013).

Teachers who themselves struggle emotionally in the classroom and feel ill-prepared to support children's social-emotional development are, in turn, more likely to rely on exclusionary and developmentally-inappropriate discipline strategies such as expulsion (Gilliam & Shahar, 2006; Silver and Zinsser, 2020). Finally, without adequate planning periods, institutional support, and classroom resources, early childhood educators might struggle to engage in intentional instruction about even traditional academic subjects, let alone adequately attend to promoting students' emotional knowledge. Further, these contextual factors can contribute to differences in how teachers and observers perceive classroom environments, as evidenced by low to moderate correlations between teacher self-report and observational data in older classrooms (Cipriano et al., 2019; Scherzinger & Wettstein, 2019).

This contextualization of emotion-focused teaching is consistent with research that has shown that teachers' emotionally-supportive teaching practices can be explained by characteristics of the center including supportive management practices (Zinsser & Curby, 2014; Zinsser et al., 2016) and experiences of workplace stress (Zinsser et al., 2013). With the development of the EMOTERS, future work can more explicitly test how emotion-focused teaching varies with teachers' working conditions, job satisfaction, and well-being. Similarly, in the present study, we were unable to address questions regarding whether and how the group dynamics of a classroom and peer relationships contribute to the emotion-focused teaching process, but such contextual questions are warranted.

## Implications and conclusions

Teachers continually strive to create positive classroom environments that are conducive to learning, and increasingly they are held to professional standards related to enhancing students' social, emotional, and academic competencies (e.g., Dusenbury et al., 2014). As such, curriculum, quality ratings, and training programs often encourage engagement in best practices (e.g., asking open-ended questions to promote students' conceptual understanding). However, calling on teachers to engage in best practices without attending to the lower-order or potentially easier requisite skills that facilitate the best practices could undermine efforts to improve overall quality. Alternatively, an approach can be taken to account for the practices that a teacher is already doing and then focus on the practice in the frequency hierarchy. For example, if the goal is to have teachers ask more open-ended questions, but they are not asking any questions at all, perhaps a better place to start for those teachers is to engage in asking questions. Then, after they are regularly asking questions, they could be coached to ask more open-ended questions. This scaffolded approach might provide teachers with optimal and individualized feedback to improve their emotion-focused teaching practices.

Similarly, calling on teachers to implement a social-emotional learning program that primarily utilizes Instructing practices (e.g., moderating group discussions of how to identify various emotion expressions) similarly might fall short if there is inadequate attention to the foundational skills needed to support higher-order teaching (e.g., Barnett et al., 2008). When the hierarchical nature of social-emotional teaching is respected and planned

for, teachers can successfully engage in higher-order practices. For example, in the Pyramid Model, teachers are prepared to express and understand their own and students' emotions before emphasizing higher-order instructional goals (Fox et al., 2003). Further, the EMOTERS addresses calls for more research into exactly what preschool programs do to effectively support students' social-emotional development (e.g., CASEL, 2013; Morris et al., 2014) and can serve as a curriculum-agnostic tool for cross-program comparison. By observing teachers' classroom practices, researchers can assess how adopting a specific curriculum contributes to teachers' broad use of emotion-focused practices and explain gains in students' social and emotional skills. In this way, the conceptual model, as captured by the EMOTERS tool, can offer a promising way to measure and promote teachers' emotion-focused teaching practices in early childhood classrooms. Future researchers should explore the utility of the EMOTERS and the generalizability of the findings to other school settings.

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