

EMOTION-FOCUSED TEACHING IN EARLY CHILDHOOD EDUCATION
MEALTIME CONTEXTS

by

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DEDICATION

To early childhood education teachers who give so much for so little in return.

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ABSTRACT

EMOTION-FOCUSED TEACHING IN EARLY CHILDHOOD EDUCATION MEALTIME CONTEXTS

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Preschool mealtimes may be an overlooked context and an underutilized opportunity for teachers to support the development of children’s social–emotional competence and healthy eating habits. Emotion-focused teaching—how teachers model their own emotions, respond to children’s emotions and instruct about emotions—and responsive feeding practices—provider behaviors and mealtime environments that support healthy eating behaviors— can be both be employed during mealtimes to support these learning outcomes, but guidance for teachers during mealtimes is limited. guidance The purpose of this study is to understand how these practices are employed (or not employed) at mealtimes, and the relationship between them. Mealtime video footage (n=107) from 17 preschool classrooms were assessed using observational tools including the EMOTion TEaching Rating Scale (EMOTERS) to measure emotion-focused teaching, and the Mealtime Observation Childcare Checklist (MOCC) to measure adherence to recommended feeding practices. Additionally, this study identifies aspects of mealtimes

that challenge, support, or provide opportunities for emotion-focused teaching. Emotion-focused teaching scores during mealtimes are low to moderate and instructing practices are rarely used. Responsive feeding scores were also low, and few mealtimes were observed to have indicators of family-style meal service. There was a significant, albeit weak, negative association between total MOCC and EMOTERS scores as well as between the Sensory Exploration subscale of the MOCC and the Modeling domain of the EMOTERS. However, given the limitations of this study, these findings do not support the hypothesis that there are clear relationships between emotion-teaching scores and responsive feeding practices or indicators of family-style meal service. An analysis of mealtime events and interactions (e.g., spills) demonstrate that mealtimes present several challenges to emotion-focused teaching, but also offer many opportunities to use such practices. Opportunities include: avoiding negativity when responding to spills; making space for playfulness and sensory exploration of food; handling misbehavior by explaining how it affects others, and addressing underlying emotions; creating and leveraging personal conversations as an opportunity for emotion-focused teaching; using emotionally-supportive strategies to encourage eating; and sitting and engaging with children at the table.

INTRODUCTION

Preschool mealtimes may be an overlooked context and an underutilized opportunity for children’s learning and development. While mealtimes in preschool are commonly thought of as times to educate children about nutrition and encourage healthy eating habits to reduce the risk of later health outcomes like obesity, they also have the potential to support children’s learning and development in a range of domains including social–emotional competence. Provider feeding practices in preschool have been recommended by nutrition-focused organizations, but no guidance has been developed for teaching during mealtimes, let alone instruction intended to support social–emotional competence. Of particular interest in this study is how emotion-focused teaching practices are used—or could be used—in mealtime contexts and how such practices align with recommended responsive feeding practices. The purpose of the proposed study is to better understand how responsive feeding and emotion-focused teaching practices are employed (or not employed) at mealtimes, identify aspects of mealtimes that challenge, support, or provide opportunities for emotion-focused teaching, practices, and describe the relationship between responsive feeding and emotion-focused teaching practices.

Early Childhood Education and Social–emotional Competence

Early childhood education (ECE) refers to any part- or full-day group program in a center, school or home that serves children from birth through age eight (*A Conceptual Framework for Early Childhood Professional Development*, 1993). The primary focus of this investigation is on preschool programs that serve children from 3-5 years old.

Preschool in the United States is offered by a mix of providers and funders such as state or federally funded programs; public school systems; for-profit organizations, including small family-owned businesses; and private organizations, including religious centers. Most research demonstrates that attending a preschool program is associated with small to moderate gains academically, socially, and cognitively in the short and long term. One meta-analysis of 22 studies found that preschool leads to a small but statistically significant improvement in some academic outcomes: an 11% increase in high school graduation and an 8% decrease in special education placement and grade retention (McCoy et al., 2017). Another meta-analysis of 123 studies found that early education interventions had a significant effect on cognitive outcomes as well as social skills and school progress, but only some effects persisted over time (Camilli et al., 2010).

One way that preschool is thought to set children up for success is its focus on developing social–emotional competence. Social–emotional competence can be defined in a variety of ways. Five core concepts that were outlined by Denham (2006) as priorities in early childhood education include emotional expression, emotion regulation, emotion knowledge, social problem solving, and overall social positivity. Teachers have reported that a range of social–emotional competencies – including several of the concepts identified by Denham – are important for overall school readiness (Rimm-Kaufman et al., 2000). Social–emotional skills are important for success in school environments; for example, improved emotional regulation enables children to sit and engage more fully in learning, while social problem solving and social positivity may help children cooperate with their peers. Research has corroborated these teachers’

reports (Blair & Raver, 2015; S. Denham et al., 2013). One study found that the way children choose to respond behaviorally to an emotion in the preschool years (e.g., passive behavioral response to an angry emotion), uniquely predicts later social competence and partially mediates kindergarten classroom adjustment (Denham et al., 2013).

These core social and emotional competencies set trajectories in that they continue to predict a range of outcomes beyond their kindergarten years. Five-year-old children's ability to recognize and interpret emotions are associated with their social and academic competence at nine years (Izard et al., 2001). Another prospective longitudinal study found that aggressive young children with lower peer competence had a higher risk of dropping out of high school (Jimerson et al., 2000). Others have found that poorer social and emotional skills predict outcomes in young adulthood, such as criminal offenses, unemployment, substance abuse, and poor physical health (Jones et al., 2015; Moffitt et al., 2011).

Emotion-Focused Teaching

A growing body of literature demonstrates that teacher-child interactions in early childhood education are important for children's social competence (Curby et al., 2009a), classroom behavior (Myers & Pianta, 2008) and longer term academic growth and achievement (Curby et al., 2009b). This may be because the teacher is an "ad-hoc attachment figure," as their relationships with children have empirical similarities to parental attachment relationships. Teachers are even able to buffer the negative impacts of a child's insecure attachment to their mother (Buyse et al., 2011; Verschueren &

Koomen, 2012). When teachers are sensitive and responsive to a child's needs, they support the child's learning by providing a supportive, safe, secure base which allows children to feel free to navigate and explore their environment. Teachers are also an important source of emotion knowledge. Intentionally or not, teachers are emotion socializers. Morris et al. (2013) proposes a three-part model of emotional socialization: modeling, contingent responding, and teaching. These constructs will henceforth be referred to as "modeling," "responding," and "instructing."

Modeling refers to the teacher's own emotion expressions (Morris et al., 2013; Zinsser et al., 2021, in review). Children observe their caregivers carefully; when teachers experience and express their own emotions, children learn about emotion display rules, which situations may lead to the experience of certain emotions, and how to regulate their emotions. For example, if a student suddenly jumps in front of the teacher, she may say, "Oh! When you jumped out like that it scared me!" and take a deep breath to recenter herself. Responding is the way the teacher reacts to a child's emotional expression. For example, a teacher may respond to a child's emotion in an invalidating way ("Stop crying!") or a validating way ("Are you throwing blocks because you are mad?"). Instructing is any time a teacher shares information about an emotion, either spontaneously or as part of a planned activity (Morris et al., 2013; Zinsser et al., 2021). For example, a teacher may be reading a book and expand on emotional content ("What face is she making? She looks like she is crying. How do think she feels?"). Instructing children about emotions involves helping children recognize their own and others'

emotions, understand the antecedents and consequences of expressing emotions, and how to regulate them (Morris et al., 2013; Zinsser et al., 2021, in review).

Mealtimes as Opportunities for Developing Social–emotional Competence

The study of nutrition and social–emotional competence certainly go hand-in-hand. The affective social context of the meal is an important predictor of healthy eating behavior (Birch et al., 1980), and by logical extension, social–emotional competence. It could be that positive adult attention conditions the child to enjoy and accept those foods.

One research group hypothesized that the Collaboration for Academic Social and Emotional Learning competencies (self-awareness, self-control, social awareness, responsible decision making) would also support healthy eating behaviors (Bavarian et al., 2016). They conducted a randomized controlled trial and found that a program geared towards social and emotional development, Positive Action, impacted healthy eating behaviors over time and that this effect was mediated by improvements on the Social–emotional and Character Development scale. The relationship between social–emotional learning and nutrition outcomes indicate that further collaboration developmental psychologists and nutrition scientists is needed.

Mealtimes may be one way to promote positive outcomes both in the nutrition and developmental psychology domains. While there is limited research on mealtimes and their role in promoting social–emotional competence in preschool, some insights can be derived from the few studies on family meals that focus on preschool-aged children. Parents primarily characterize family meals as opportunities to build a strong emotional connection and create patterns of open communication (Malhotra et al., 2013). Similar to

other family routines like storytelling and singing before bedtime, mother-reported social–emotional health was higher when families frequently engaged in family meals (Muñiz et al., 2014). Parents also reported many barriers to family meals, however, including a lack of confidence in their cooking skills, difficult work schedules, and problematic child behavior (Malhotra et al., 2013; Quick et al., 2011), making mealtimes at home less likely to occur. Therefore, the preschool environment is an important one for mealtimes that foster social and emotional skills. Additionally, building mealtime skills in preschool may help children participate in family meals at home.

Most literature on mealtimes focuses on nutrition and health outcomes (e.g., obesity, fruit and vegetable consumption), how mealtimes can be leveraged to educate children about healthy eating habits, and how teachers can promote acceptance of certain foods and coach self-regulation of food intake (e.g., Gubbels et al., 2015). However, the value of mealtimes in preschool centers also seems to go beyond nutrition. One teacher interviewed in a qualitative study on mealtimes said, “. . .[children are] learning about colors of food. . .textures of food, they’re learning vocabulary, social skills, math, I could just could go on and on. . .mealtime is like cross curricular activity, because it goes across all the curriculum” (Mita et al., 2015).

Teachers can guide socialization at mealtimes to develop children’s prosocial skills

The mealtime environment promotes personal sharing and classroom community (Mita et al., 2015). A qualitative study of 65 Head Start teachers concluded that the socialization that occurs at mealtimes (e.g., sharing about home) is important for strengthening relationships between children and teachers and with their peers. Several

teachers emphasized that mealtimes promote a family-like feeling within the classroom (Mita et al., 2015). Indeed, Malek-Lasater et al. (2021) found that one of the children's most common behaviors at mealtimes, aside from eating (45.8%), was talking/socializing (15.4%). In fact, the kind of verbal communication that occurs during mealtime is unique in that it is more decontextualized in nature than it is during other contexts (Gest et al., 2006). In essence, the conversation at meals is not about the activity at hand, and may include more personal topics, such as children's families, or what they did over the weekend (Barnes et al., 2020).

Teachers are important leaders in socialization, helping children respond to peers in prosocial ways and prompting more personal conversation, like about children's home life and parents (Harte, 2019). Teachers have the opportunity to model prosocial behaviors and assist children in both sending and receiving affective messages to promote prosocial interactions. For example, a teacher may shape the conversation to introduce emotional content, such as asking, "Who has exciting news to share?" A child may say, "I'm going to get a baby brother soon!" The teacher can respond by labeling the emotion and helping other children respond in a way that acknowledges that emotion, such as saying, "Did you hear Jax's exciting news everyone? Jax is going to have a baby brother soon! Let's all say 'Congratulations!'"

Teachers can support self-regulation at mealtimes in an emotion-focused way

In the social-emotional development literature, self-regulation is conceptualized as the ability to deliberately control one's emotions, behavior and attention (Denham et al., 2014; Kopp, 1982). In the nutrition and food literature, self-regulation is

conceptualized slightly differently. Self-regulation in terms of *eating* refers to the child's ability to use their own internal cues of hunger and satiety to guide their food intake (Dev et al., 2017; Johnson, 2000; Ramsay et al., 2010). In both cases, mealtime environment presents several self-regulation challenges to the child.

First, students may struggle with the rules, routines, and constraining etiquette around mealtimes. For example, children may wrestle with the task of exerting self-control to sit at the table, restlessly rocking in their chairs, and playing with their utensils and food. One ethnographic exploration of mealtimes observed children resisting the adult control over the eating experience by spilling food, throwing food, or threatening to pour water on the teachers (Alcock, 2007). In order to maintain a positive mealtime environment and avoid using prohibitions and commands that limit children's ability to make and execute choices (Bindman et al., 2013), teachers may need to resist the urge to over-regulate some of these mealtime behaviors. Some common mealtime behaviors that may be perceived as problematic may actually be developmentally appropriate, such as playing with or manipulating food (Dev et al., 2014). And, in situations that truly require intervention, teachers can respond in a warm and emotion-focused way that allows the child to practice self-regulation. For example, if a child is having a hard time staying seated and is walking over towards his friend, instead of using prohibitions or commands (e.g., "Sit down! Eat your lunch!"), a teacher could respond, "I can see that being by your friends makes you really happy. But, how will you eat your food if you're up and about? Could you sit back down at your table and make friends there?" The use of suggestion

language predicts higher executive function at 3 years while direction language (i.e., commands) predicts lower executive function (Bindman et al., 2013).

Second, mealtimes are opportunities for students to practice responding to their bodily cues of hunger and satiety by deciding when to start and stop eating. However, teachers rarely verbally cue children to match their food intake to their internal hunger (e.g., “Does your tummy feel full?”; Ramsay et al., 2010). More often, adults pressure children to consume food, sometimes by bribing them (e.g., “If you eat all your vegetables, you can have dessert”), or threatening them (e.g., “If you don’t clear your plate, you can’t play outside later”) (Dev et al., 2016; Dotson et al., 2015; Galloway et al., 2006). While these statements may be well-intended, they direct children away from using self-regulatory skills to guide food intake (Johnson & Birch, 1994). Teachers could instead model their own feelings of hunger and fullness (e.g., “My stomach is rumbling! I must be super hungry”), or prompt children to use their own bodily signals (e.g., “I haven’t seen you take a bite in a while. Are you still hungry or are you starting to feel full?”). Research demonstrates that when providers use this kind of language to help preschoolers recognize their internal cues at mealtime, both overeaters and under-eaters improved over time in their ability to self-regulate their food intake (Johnson, 2000).

While self-regulation of food intake and self-regulation of emotions and behaviors may seem like disparate constructs, both require the child to be aware of and interpret their own physiological signals, an ability known as interoception. Interoception refers to the processes by which we sense, interpret, and integrate signals originating from within the body including hunger, temperature, and heart rate, as well as emotional

physiological signals (Murphy et al., 2017). Interoception has been linked to a range of physiological and psychological health outcomes. For example, in cross-sectional studies of adults, deficits in interoception are associated with higher BMI (Robinson et al., 2021). Deficits in interoceptive ability have also been linked to deficits in emotional awareness (Kanbara & Fukunaga, 2016; Murphy et al., 2017). Notably, those with alexithymia—the inability to recognize and identify own emotions—have been found to have lower interoceptive abilities (e.g., Brewer et al., 2016).

Interoceptive ability does seem to be malleable, an interesting implication for teaching practices at mealtime (Bornemann & Singer, 2017). However, little research has been conducted on methods for improving interoceptive awareness in children that spans both emotional and eating domains. One study trained children 5-9 years old with functional abdominal pain to be “Feeling and Body Investigators” with the help of cartoon characters to represent bodily sensations, such as “Harold the Hunger Pain” and “Julie Jitters.” The aim of the study was to evaluate this way to assist hypersensitive children in developing a curious stance about the function of a variety of bodily signals, including hunger and emotions, rather than taking a stance of fear or dismissal. Researchers observed decreases in pain as well as negative affect of medium to large effect size after 10 weekly appointments (Zucker et al., 2017).

While additional research is needed to identify teaching practices that support interoception more broadly in preschoolers, teacher practices that help children strengthen the skill of perceiving and acting upon their bodily cues of hunger and fullness (i.e., interoception) are similar to emotion-focused teaching practices that help children

regulate emotions in that they both involve investigation of bodily cues. There may be opportunities to employ this practice at mealtime. For example, prior to serving food, teachers could prompt children to identify how they are feeling, and how hungry they are. Promoting this kind of self-awareness may help students understand the difference between hunger and an emotion triggered by hunger (i.e., “hangriness”), and thereby lessen the possibility of engaging in problem behaviors during the meal. Teacher prompts may also start conversations about emotions and help children decide how much food to eat according to their hunger level.

Teachers can use common mealtime events as opportunities for responding to and instructing about emotions

Mealtimes can be a minefield of emotional eruptions that require teachers to respond in a way that supports their relationship and teaches children about their emotions. Throughout mealtime, children may angrily refuse foods that are being served. Teachers may respond with commands to eat (e.g., “Eat your food!”) that are associated with negative responses in children and are counterproductive to the intake of healthy foods (Dotson et al., 2015; Galloway et al., 2006; Hughes et al., 2007; Murashima et al., 2012). Or they could respond in a validating way, such as, “I see you’re angry about this food! I’d be very proud of you if you tried it, but you don’t have to take any. Take a deep breath and see if there’s any other food you’d like to try.” This response labels their emotion, helps them regulate their emotions and non-judgmentally encourages them to try some of their food. Another example: children may spill foods and look fearfully at

the teacher. A teacher could respond, “If you make a mess, it’s okay! We can clean it up. Everyone makes mistakes. I might feel disappointed for a moment, but that’s okay.”

Teachers can choose mealtime structures that support development of social–emotional competencies

Mealtime structure may influence how effective the teacher is in executing any of the behaviors discussed thus far. Mealtime structure in preschool varies. Some centers use family-style service while others use plated service; some centers are the exclusive providers of food, while others allow children to bring food from home (Sigman-Grant et al., 2008). A family-style food service model—one in which teachers are seated at the table with the children, and children are able to serve themselves and are encouraged to pass the food around the table—has a range of benefits (Locchetta et al., 2017; Malek-Lasater et al., 2021), and may promote a greater sense of community. One study, for example, found that students were more likely to initiate social interactions during family-style meals (Locchetta et al., 2017). While it has not been empirically tested, teachers may also be better able to facilitate social interaction in family-style settings because they are seated and may be less distracted with serving children one-by-one. Additionally, children can practice more self-regulation of food intake because the structure of family-style meals shifts more agency to the student by allowing them to serve themselves according to their own perceived wants and needs. It is primarily for this reason that family-style meals are recommended by Head Start and other authorities as best practice (Dev et al., 2014).

Teaching at Mealtime: Existing theories

While mealtime is a unique and important time for implementing teaching practices, there is a lack of teaching guidance and training around mealtime. There is general guidance and principles for teaching cross-contextually, but specific teaching strategies for mealtime that span the full range of learning domains are lacking. The guidance that does exist is narrowly focused on healthy eating and originates from the nutrition and dietetics discipline which is not well integrated with the field of education such as the “Benchmarks for Nutrition in Child Care,” published by the Academy of Nutrition and Dietetics (Benjamin-Neelon, 2018). In addition to recommending that child care centers provide healthy and nutritious food, these recommendations urge providers to use responsive feeding practices, which generally constitutes using family-style dining formats, supporting child-led feeding and incorporating nutrition education into mealtimes. In fact, some centers already have a policy for healthy mealtime environments. Head Start’s performance standards state that meals should be family-style; should foster staff-child interaction; contribute to a child’s learning, development, and socialization; should be sufficiently long enough for children to eat; and that providers should refrain from using controlling feeding practices (Head Start Program Performance Standards, n.d.).

The Positive Mealtime Environment (PME) explanatory framework as proposed by Mita et al., 2015 is the first to integrate children’s needs related to learning *and* healthy eating during the mealtime (see Figure 1). It proposes that within a PME, teachers

help children learn a range of skills (e.g., language, social, motor, cognitive), socialize with teachers and peers, and learn about eating (healthy habits, etc.).

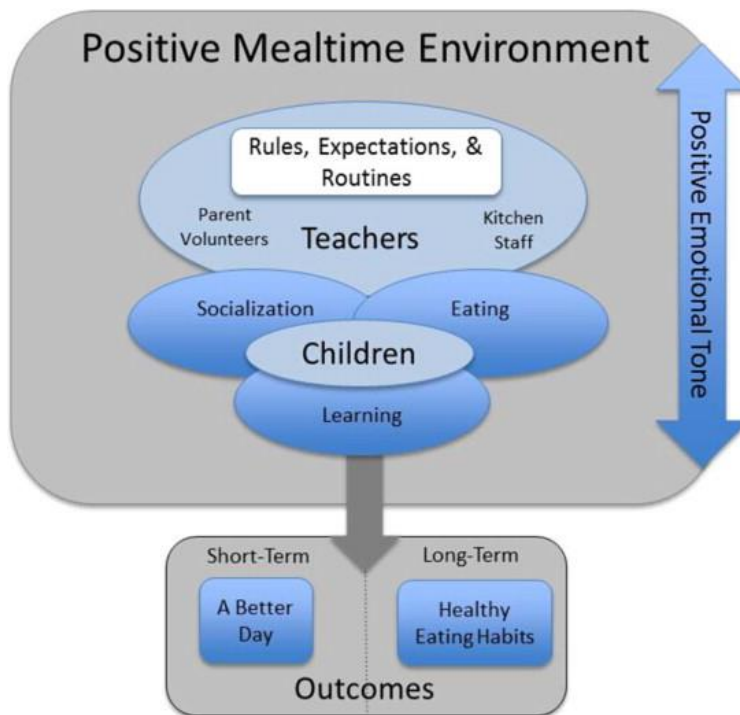


Figure 1: Positive Mealtime Environment explanatory framework (Mita et al., 2015)

Malek-Lasater expanded the positive mealtime environment framework to include more specific development constructs and teaching behaviors by creating a new, evolved framework, the “Supportive and Responsive Mealtime Practice Framework” which includes four domains (Malek-Lasater, 2021). The first domain is “positive & supportive climate,” which includes responding in an emotional supportive way, modeling, and teaching prosocial behaviors, maintaining a positive and warm environment, and

promoting the children’s sense of psychological safety and community. The “support for healthy eating” domain includes practices that foster healthy eating behaviors such as offering healthy foods, role modeling healthy behaviors, using peer modeling and encouraging the sensory exploration of food. The “support for learning” domain includes teacher practices that fosters children’s learning in all domains including nutrition, social skills, cognitive, and motor development. For example, mealtime is a great opportunity to learn colors, food groups, and expand their language use. Finally, the support for self-regulation including teaching practices that support all forms of self-regulation including emotional regulation and eating regulation (i.e., eating when they are hungry, and stopping when they are full).

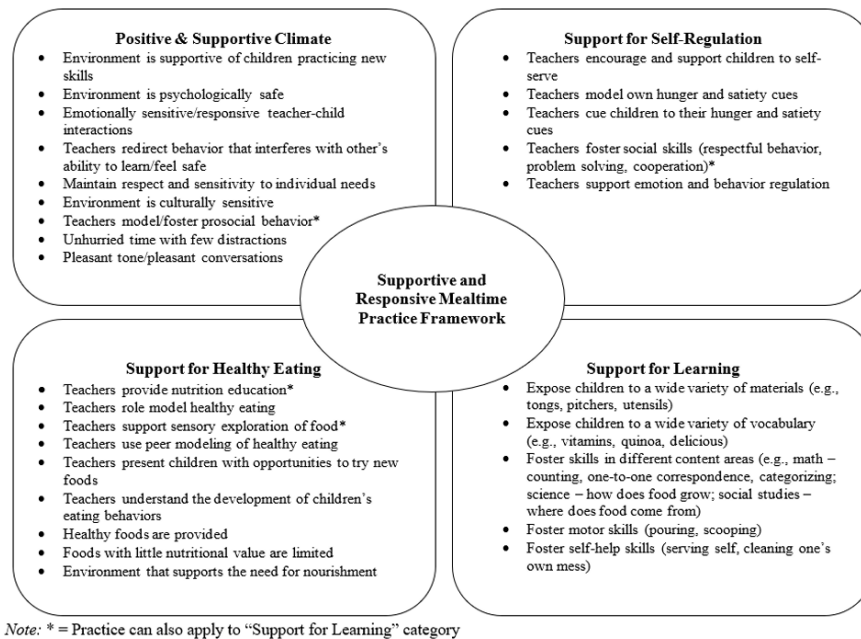


Figure 2: Integrated and Supportive Mealtime Practices Framework (Malek-Lasater et al. 2021)

While these frameworks position mealtimes as an opportunity for supporting a broad range of outcomes, little empirical research has been conducted to test how teachers are indeed using mealtimes to its full potential. While no research has specifically examined emotion-focused teaching practices or general strategies to support the development of social–emotional competence at mealtimes, a few studies have found that general teaching quality are lower in mealtimes than in other classroom contexts, which is concerning given that mealtimes and routines take up a substantial portion of the day (Chien et al., 2010). For example, a few studies have noted the lack of teacher–child interaction during meals. One study found that there was minimal teacher–child interaction during mealtimes, noting that mealtimes were often quiet, with few teacher

vocalizations (Hallam et al., 2016), while another noted that the rate of teacher statements was lower during mealtime than other contexts (Gest et al., 2006). The communication that did occur was less sensitive and responsive than other contexts, but contained the same number of directives (Gest et al., 2006). Similarly, Klette et al. (2016) found that teacher–child interaction was limited during meals and was characterized by low teacher sensitivity. Another study found that the instructional quality of teaching as measured by the Classroom Assessment Scoring System (CLASS) was much lower at mealtime than during other contexts, particularly whole group or free choice settings (Cabell et al., 2013).

Two studies led by Adrien Malek-Lasater have examined the associations between teacher–child interaction (CLASS) and responsive feeding practices as measured by the Mealtime Observation Childcare Checklist (MOCC). One study found that the feeding practice domains of role modeling, peer modeling and supporting eating self-regulation were associated with teachers’ emotional support scores. These domains, as well as sensory exploration, were associated with teachers’ instructional support scores. A major limitation of this study was that CLASS scores were obtained from contexts *outside* of the mealtime environment (Malek-Lasater, 2021). Because teaching quality may be different during the mealtime environment, these authors conducted another study to examine associations between feeding practices and CLASS scores obtained at mealtime in preschool. CLASS scores were in the mid-to-low range during mealtimes. Teachers with higher CLASS scores also had higher feeding practice scores in certain domains, indicating that there is some alignment between recommended feeding practices

and overall teaching quality (Malek-Lasater, 2021). Specific areas of alignment were not explored, but the results of this research seem to suggest that an interdisciplinary approach to teaching during mealtime is valuable and should continue to be pursued.

In summary, mealtimes pose many opportunities to support social–emotional competencies in addition to healthy eating behaviors and other learning domains. At the minimum, recommended feeding practices, are not incompatible with high quality teaching during mealtime. However, it does not appear from the current, albeit limited, literature that mealtimes are being leveraged to their maximum potential. Further research is needed to better understand how mealtime structure, events and interactions support or provide opportunities for emotion-focused teaching so that more nuanced ways to measure, and therefore empirically investigate emotion-focused teaching at mealtime can be conducted.

The Current Study

This research is primarily descriptive in nature, intended to improve understanding and ability to measure emotion-focused teaching in preschool mealtime settings and how such practices overlap with or support recommended feeding practices. Specifically, this research aims to expand a tool that measures emotion-focused teaching practices cross-contextually in preschool called the EMOTion TEaching Rating Scale (EMOTERS; Curby et al., 2021; Gordon et al., 2021; Zinsser et al., 2021) to capture emotion-focused teaching specifically within the mealtime context. Additionally, it uses the Mealtime Observation Childcare Checklist (MOCC) to measure the degree to which teachers implement recommended feeding practices and to inventory notable mealtime

events (e.g., accidents, spills), interactions (e.g., food negotiation), and other elements (e.g., type of meal service) that may have implications for emotion-focused teaching.

The purpose of this proposed study is to better understand how responsive feeding and emotion-focused teaching practices are employed (or not employed) at mealtimes; identify aspects of mealtimes that challenge, support, or provide opportunities for emotion-focused teaching, practices; and describe the relationship between responsive feeding and emotion-focused teaching practices.

METHODS

Participants

The original study protocol was approved by the institutional review boards of the two collaborating universities. This study has been approved by the institutional review boards of the original study as an amendment. Seventeen classrooms from four centers located in two cities participated. Two centers (six classrooms) were in a large midwestern metropolitan area with several million residents. Two centers (11 classrooms) were in a large mid-Atlantic metropolitan area, also with several million residents. Of the midwestern centers, one was a Head Start program serving primarily Latinx and eastern European immigrant families; the other served predominantly White and Asian American families on a sliding scale fee. Of the mid-Atlantic centers, one was a faith-based preschool serving primarily middle- and upper-income families; the other primarily served lower-income Latinx families and had a sizeable population of English language learners. Across all centers, 47 teachers of four types (lead, co-lead, assistant, and floater) were observed in 17 three- and four-year-old classrooms. All but two teachers identified as female (95.7%), and most identified as White or Latinx.

Protocol

This study uses video-recording segments already collected from the original study (Zinsser et al., 2021, in review). Typical mornings of classroom instruction were intended to be captured on video. Research assistants would set up multiple classrooms of video recording equipment. They were not in the room during recording except to

check on the equipment. Although the goal was to have video equipment set up as children arrived, because there were multiple rooms to set up and because of other technical difficulties, there was variability in when recordings began. Classrooms were videotaped from the start of the day approximately until lunch preparations began (approximately 11:00 am) or if the class left for an extended period of time (e.g., special classes, a field trip). Again because of multiple rooms of equipment and the fact that they looked for the least disruptive time to take down equipment, end times varied. Mealtimes were not consistently recorded as they were typically the times that research assistants would arrive at the classroom to start or end recording.

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 (www.swivl.com) that rotated to follow a teacher wearing a wireless microphone. Up to four iPod cameras were placed around the room (e.g., block corner, circle-time area, home-living center). The SWIVL system is designed such that the various video and audio streams are uploaded and synced automatically, allowing for seamless viewing, and switching among the up to five video streams. When WiFi was not available in the classroom and the video streams could not be synced, EMOTERS coding focused on the main camera.

For each classroom, videos were collected at three time points throughout the 2018-2019 school year, one morning per week for four weeks each in fall (September/October), winter (January/February), and spring (March/April). All but two classrooms contributed data across all seasons.

All classrooms had teams of lead, co-lead, assistant, and/or floater teachers. One teacher wore the focal microphone tracked by the SWIVL device. Teaching teams were asked to have the teacher in charge of the activity during a given time to wear the microphone. The teacher wearing the microphone was the focus of EMOTERS coding.

In total, 1,606 10-minute video segments were coded. Study staff completed initial inventories by viewing videos and identifying codable occasions in 10-minute intervals starting from the beginning of the day. Codable was defined as: (a) children being in the room and (b) the teacher who was wearing the SWIVL microphone being visible. During coding, additional video occasions were identified as not codable, for example, when the teacher wearing the microphone was visible only briefly.

Raters reviewed 351 video segments coded as “meal/snack” from the original study to ensure they meet the current study’s criteria for a mealtime: at least one child is seated at tables or the mealtime location, eating or prepared to eat for 50% or more of the cycle. Additionally, mealtime segments were excluded if the table/the meal was not clear or in frame, or if the focal teacher was not involved in mealtime. Raters also reviewed one segment before and after segments originally noted to include a meal to ensure that all segments in that mealtime were included. The EMOTERS scores of the included 10-minute segments were retained from the original study and aggregated for each mealtime, which contains one or more segments. This resulted in 185 mealtime video segments and 107 mealtimes. The number of mealtimes from each center and classroom varied. Centers contributed 18-36 mealtimes each, and classrooms contributed 2-15 mealtimes each to the sample. Raters completed the Mealtime Observational Childcare Checklist (MOCC)

on each mealtime, which included one or more segments, and documented the notable mealtime events as described in measures below.

Measures

Emotion-Focused Teaching

The EMOTERS is an observational assessment tool that will be used to assess the emotion-focused teaching quality of the focal teacher (Zinsser et al., 2022). This study utilizes version 6, although subsequent versions have been developed. The full instrument, EMOTERS version 6, can be found in Appendix A. EMOTERS was developed specifically for teachers whose students are 3-5 years old. The measure captures emotion-focused teaching practices across three domains: modeling, responding, and instructing, both positive and negative. Modeling practices are any adult expressions of emotions and displays of regulation strategies; for example, a teacher expresses positive emotions in verbal and non-verbal ways by hugging a child when they arrive at school and saying, “I’ve missed you!”. Responding practices are the teacher’s reactions to children’s expressions/displays of emotions, which can be validating (“You look upset, what’s wrong?”) or invalidating (“Big boys don’t cry.”) Finally, instructing captures any time when a teacher shares information about the nature of emotions or emotional content (“Sometimes when I’m angry, I have to take three deep breaths to calm myself down”).

While conceptually distinct, these three domains are can be seen to indicate one unidimensional construct: Emotion-focused teaching (Zinsser et al., 2021, in review). Rasch analysis supports that emotion-focused teaching practices fall along a continuum,

with modeling practices generally being the easiest to employ, and instructing practices being the most difficult, and least frequently observed (Gordon et al., 2021). In this study, sum scores of scorable items are used to report the total EMOTERS score, as well as scores for each domain. Sum scores are highly associated with Rasch location scores ($r=.98$).

EMOTERS scores are associated with child social interactions and engagement in the classroom (Curby et al., 2021, in press). Another study under review found that emotion-focused teaching is associated with teacher-reported child emotion regulation and learning behaviors in children (Fatahi et al., 2021, in review)

Using the EMOTERS, raters indicate when teachers have demonstrated certain emotion-focused teaching practices (e.g., “When a negative emotion is presented by a child, the teacher responds in a validating way”). In this study, twenty-three research assistants were trained to be reliable EMOTERS raters during the 2018-2019 academic year. To be considered reliable, raters had to agree with the master code for on average at least 75% of items across five videos. Coders who were originally trained and certified prior to the fall video coding attended a refresher training session before coding spring videos.

Responsive Feeding Practices and Mealtime Elements

The Mealtime Observation Childcare Checklist (MOCC) (Dev et al., 2020) is an observation tool that measures preschool teachers’ mealtime practices in classrooms of children between ages 3 and 5. Face validity of the MOCC was established via expert

reviewers, and convergent validity was established with other validating measures that assess feeding practices (D. Dev et al., 2020).

The MOCC has 43 questions clustered into 12 subscales. The study uses an adapted version of the MOCC, and did not include subscales that were not relevant to general teaching quality, including “Mealtime Environment”, “Role Modeling: Eating Together”, and some items of “Style of Meal Service.” The included subscales that were thought to be theoretically linked to emotion-focused teaching include: “Role Modeling: Sitting Together”, the degree to which teachers are seated at the table and present; “Role Modeling: Verbal Communication”, how teachers communicate and participate or lead conversation about food or other topics; “Peer Modeling”, teachers use peer models to encourage food consumption (e.g., “Brendan is eating all his vegetables!”); “Pressure, Praise, Rewards and Threats”, controlling strategies to encourage food consumption that bypass a child’s ability to self-regulate their food intake and may be negative in nature (e.g., “If you don’t finish your milk, you can’t have your applesauce”); “Provider’s Response to Food Refusal”, how a teacher responds to a child who refuses food including positive strategies like helping children attend to their hunger/fullness cues, or negative strategies like rewards and threats; “Self-Regulation”, modeling hunger or fullness or helping children eat according to their own hunger or fullness cues; and “Overall Feeding Style”, which assesses if a provider uses a supportive, Authoritative approach, which is one that strikes a balance between encouraging children to eat healthy foods and allowing children to make their own food choices, utilizing reason and education rather than bribes

or threats. Other non-supportive styles are noted, including Authoritarian, Indulgent and Uninvolved.

Each item is a description of teacher behavior and raters must indicate whether and how often that behavior was observed using a score of 0, 1, or 2 (0 = *unable to observe*, 1 = *Yes, sometimes*, 2 = *Yes, regularly, greater than three times*). *Unable to observe* is selected when the rater could not observe a situation. Total points are summed for each subscale and divided by the total possible points for that subscale (minus “unable to observe” items). Some items are reverse scored.

Two raters coded 5 videos together to ensure 90% reliability across all subscales. Raters were all women and included individuals who identified as Hispanic and non-Hispanic individuals who identified as White. One rater was fluent in Spanish. Previous studies have found high inter-rater reliability (Fleiss’s Kappa, $K=0.85$).

The MOCC also captures mealtime events and interactions that are reviewed to better understand the antecedents to emotion-focused teaching opportunities. These include instances when a child refuses food, when a teacher has personal conversations with a child, engages a child’s senses (e.g., smell, taste), pressures a child to eat more than they may want, threatens punishments, or offers rewards for eating food, verbally directs a child to eat all of the food on their plate or of a specific category, models or talks to a child about hunger or fullness. This study is not employing the MOCC subscale where spills are documented, so raters also noted if a spill occurs during the mealtime. Additionally, raters noted if the meal was a breakfast, snack, lunch or if it was unclear

(“unclear” was selected if foods were unidentifiable or if teachers did not mention what kind of meal it was).

Research Questions and Data Analysis

Research Question 1

To what extent does emotion-focused teaching (as measured by EMOTERS) occur during meal and snack times in preschool centers? What emotion-focused teaching practices are commonly used (or not used) at mealtimes?

Hypothesis

Emotion-focused teaching scores will be low to moderate. Instructing practices will rarely be used.

Data Analysis

EMOTERS and MOCC scores during mealtimes, and by meal type (e.g., lunch versus snack) are statistically described including the mean, range, and standard deviation. Because most mealtime segments were rated by multiple raters, the mean EMOTERS score was calculated for each. Because the unit of analysis was the mealtime, in instances in which there were multiple segments for a given mealtime, the mean EMOTERS scores for segments were aggregated across a mealtime. Mealtime EMOTERS scores were also calculated using the maximum for each mealtime segment, and then averaging segments of the same mealtime. Maximum EMOTERS scores were significantly higher than using the averaging approach by about 4 points per mealtime. To prevent inflation of EMOTERS scores, the averaging approach was retained.

To determine the most and least common emotion-focused teaching practices, frequencies of the specific emotion-teaching practices at the segment level were computed. Because segments were coded by multiple raters, the maximum score for each segment was used, reflecting what at least one rater observed. The average of rater responses for each item was also computed, reflecting a proportion of raters that observed a behavior captured by a specific item (for example, .50 reflects that 50% of the raters observed this behavior). Albeit a bit inflated, the maximum rater score was retained to compute frequencies of specific emotion-focused teaching practices, to improve interpretability.

Research Question 2

Is teacher use of recommended feeding practices (as defined by the MOCC) associated with emotion-focused teaching?

Hypothesis

Some recommended feeding practice domains will be associated with emotion-focused teaching scores including Role Modeling: Verbal Communication, Role Modeling: Sitting Together, and Pressure, Praise, Rewards and Threats.

Data Analysis

Pearson correlations between EMOTERS scores and subscales of the MOCC were computed. However, some MOCC subscales did not have a normal distribution and were better represented as categorical variables. For example, some practices were so rare that most mealtimes scored a “0”. Therefore, it was more appropriate to treat these subscales as categorical (“One or more instances” or “None observed”). The scales that

were converted to categorical variables include Pressure, Praise, Rewards and Threats, Provider's Response to Food Refusal, Self-Regulation and Overall Feeding Style. Role Modeling: Sitting Together and Role Modeling: Verbal Communication were retained as continuous variables. In some instances, very few mealtimes were observed to have one or more of the subscale items observed. Therefore, Welch's t-tests were used to compare the means between mealtimes that had "one or more instances" of a certain subscale and those where no practices of that subscale were observed, due to the unequal variances.

It could be argued that hierarchical linear modeling is required to account for variance at the classroom level. However, very few significant relationships were identified. Accounting for nesting would make these already weak findings less significant. Therefore, results using the non-parametric t-tests are presented with the understanding that they likely do not represent meaningful relationships.

Research Question 3

What meal service formats are conducive to established emotion-focused teaching practices?

Hypothesis

Family-style meal service and food passing will be associated with higher emotion-focused teaching scores.

Data Analysis

Two t-tests comparing EMOTERS scores were computed: 1) mealtimes where children served themselves most food versus mealtimes where children did not and 2) mealtimes where children passed food around the table versus mealtimes where children

did not. Normality and variance assumptions were checked. Due to the very small number of mealtimes where either of these behaviors were observed, a Welch's t-test was used to account for the large differences in sample size between groups.

Research question 4

What mealtime events (e.g., spills) are antecedents to, provide opportunity for, or pose challenges to emotion-focused teaching? Do teacher behaviors and practices during these events reveal mealtime-specific, emotion-focused teaching practices not already captured by EMOTERS?

Hypothesis

Certain mealtime events will be linked to established and new mealtime-specific emotion-teaching practices. These events include:

- When a teacher has a personal conversation with a child
- When a teacher pressures a child to eat more than they seem to want
- When a teacher verbally directs a child to eat all the food on the plate or all of a specific category of food (e.g., “eat all your vegetables”).
- When a provider threatens food punishment or non-food punishment
- When a child refuses food
- When a spill occurs
- When a provider talks to a child about hunger or fullness

Data Analysis

To determine if common mealtime events (e.g., spills/accidents) are antecedents to, provide opportunity for, or pose challenges to using emotion-focused teaching

practices, raters used the MOCC to identify cycles with significant mealtime events (list below). To narrow down the number of videos to review and increase the likelihood of finding positive and negative exemplars of emotion teaching, videos for each type of event that were in the 90th percentile and 10th percentile of EMOTERS scores were reviewed for the presence (or lack thereof) of emotion teaching practices. In addition to these 90th and 10th percentile events, raters noted any significant interaction that could be potentially related to either responsive feeding practices or emotion-focused teaching. The events with the most relevance to emotion-focused teaching are described in vignette format.

The following events are reviewed:

- When a teacher has a personal conversation with a child
- When a teacher supports sensory exploration of food
- When a teacher pressures a child to eat more than they seem to want
- When a teacher verbally directs a child to eat all the food on the plate or all of a specific category of food (e.g., “eat all your vegetables”).
- When a provider threatens food punishment or non-food punishment
- When a child refuses food
- When a spill occurs
- When a provider talks to a child about hunger or fullness
- Any interaction or event specific to mealtime noted by a rater that theoretically could be linked to emotion-focused teaching

RESULTS

Mealtime Characteristics

A total of 107 mealtimes (including snack), made up of 185 video segments, were included according to the inclusion and exclusion criteria. At times, children were either arriving or departing during the meal (16.8%) or were doing other activities while other children participated in the meal (11.2%). In about one-third of the mealtimes, the type of meal was lunch (31.8%), and in another third, the type of meal was unidentifiable (29.9%). The remainder was split between snack and breakfast. The EMOTERS and MOCC scores are presented below for each type of meal (Table 2). A one-way analysis of variance showed that there were no significant differences in EMOTERS scores between the different meal types but that there were significant differences in MOCC scores, $F(3,103) = 7.48, p < .001$. Tukey post hoc analyses for indicated that lunch MOCC scores ($M = 64.75, SD = 12.88$) and breakfast scores ($M=61.03, SD= 10.12$) were significantly greater than snack scores ($M=52.08, SD= 8.07$).

Table 1: Mealtime Characteristics

	Mealtimes	EMOTERS: Total Mean (SD)	EMOTERS: Modeling Mean (SD)	EMOTERS: Responding Mean (SD)	EMOTERS: Instructing Mean (SD)	MOCC: Total Mean (SD)
All meals	107					
Breakfast	15 (14.0%)	25.07(8.61)	16.23(5.22)	7.49(3.25)	1.35(2.54)	61.03(10.12) ^b
Lunch	34 (31.8%)	23.47(6.87)	15.56(4.54)	7.21(2.08)	0.71(1.9)	64.75(12.88) ^{ab}
Snack	26 (24.4%)	26.47(5.43)	17.39(3.63)	7.59(2.43)	1.48(3.02)	52.08(8.07) ^a
Unclear	32 (29.9%)	24.75(7.02)	16.19(5.01)	6.76(2.35)	1.81(3.13)	58.88(9.02)

^aLunch greater than snack, p<.001

^bBreakfast greater than snack, p<.05

Emotion-focused teaching scores during mealtimes

The EMOTERS scores, including total and all domains, were very low compared to their theoretical maximums. The theoretical maximum for total EMOTERS is 83 whereas the mean EMOTERS score for mealtimes was 24.8 (Table 4). The most and least common emotion-focused teaching practices observed during mealtime within each domain are described below. All frequencies and percentages reported reflect what at least one rater observed during a mealtime video segment (N=185). See the Appendix for the frequencies of all emotion-focused teaching practices captured in the EMOTERS.

Modeling

See Table 1 in Appendix B for frequencies of the modeling practices used by teachers in the mealtime cycles. In most video segments, positive emotions were expressed around children vocally (86.5%) and non-verbally (91.9%). Teachers rarely labeled these emotions (10.2%). Teachers expressed positive feelings about a child, usually just to 1 or 2 children (49.2%), but sometimes several children (14.6 %). Teachers also expressed physical affection to one or more students in one-third of the mealtime video segments.

In about one third of the mealtime video segments, teachers expressed negative emotion in some way, either vocally (35.7%, such as groaning or sighing), or non-verbally (29.2%, such as frowning). In over half the mealtime video segments, teachers did regulate their emotions, meaning that the negative emotion was transient before returning to a positive or neutral state. In about half of the segments where teachers expressed negative emotion, their overall mood remained neutral or positive (49.3% of

cycles where negative emotion was expressed). However, in the remainder of the cycles where teachers expressed negative emotions, teachers had several moments of negativity or were consistently negative. Additionally, expressions of negative emotions were rarely labeled (4.1%). In about 60% of the mealtime video segments, at least one command or prohibition was used.

Responding

See Table 2 in Appendix B for the responding practices used at mealtimes by providers. When children expressed positive emotion, teachers generally responded positively (observed in 74.6% of cycles by at least one rater). But when a child expresses a negative emotion, it was most common to see a teacher ignore the emotion.

When responding to a problematic behavior (positive or negative underlying emotion), in only one segment did a teacher respond to the emotion as well as the behavior.

Instructing

See Table 3 in Appendix B for the Instructing practices used by providers during mealtimes. Few strategies were used to teach children about their emotions directly. The most common teaching strategy was labeling or demonstrating emotions (at least one rater observed this in 12.7% of the mealtime video segments).

Responsive feeding practices during mealtime

Average total MOCC scores for the mealtimes ($M=44.97$, $SD=10.24$) are low considering that the theoretical maximum of the adapted MOCC is 140 (see Table 3). Indicators of family-style food service are reported separately, below, and were not

included in the total MOCC score. For most mealtimes, no practices were observed in some of the subscales. Therefore, the number of mealtimes where at least one practice from the subscale was observed is indicated. These scales included “Self-Regulation,” “Pressure Praise Rewards and Threats,” and “Provider’s Response to Food Refusal.”

Most subscales (“Self-Regulation,” “Overall Feeding Style,” “Peer Modeling,” “Role Modeling: Sitting Together,” “Role Modeling: Verbal Communication,” and “Provider’s Response to Food Refusal”) reflected a lack of responsive feeding practices compared to their theoretical maximums. The Overall Feeding Style score reflects a low use of an Authoritative feeding style, an approach to feeding that minimizes use of controlling feeding practices and relies mostly on more responsive feeding practices (like self-regulation and peer modeling). Although children may not have eaten their food, active refusal was rarely observed (10.3%); therefore, most providers did not receive scores for this subscale. Those who did generally scored low, indicating a lower quality response to food refusal (e.g., failing to use self-regulation, sensory exploration and peer modeling strategies). Conversely, in the counterproductive practices in the “Pressure, Praise, Rewards and Threats” subscale were rarely used, so most providers generally received higher scores (see Table 3).

Table 2: Mealtime EMOTERS scores

N=107	Mean (SD)	Median [Min, Max]	Theoretical Maximum
Total	24.8 (6.86)	24.0 [11.0, 47.0]	84

N=107	Mean (SD)	Median [Min, Max]	Theoretical Maximum
Modeling	16.3 (4.58)	16.0 [7.50, 26.0]	36
Responding	7.20 (2.42)	7.00 [2.00, 15.0]	21
Instructing	1.32 (2.68)	0 [0, 13.0]	26

Table 3: Mealtime MOCC scores

	≥ 1 observed	Mean (SD)	Median [Min, Max]	Theoretical Maximum
Total		44.97 (10.24)	58.2 [40.0, 89.4]	140
Role Modeling: Sitting Together		9.19 (5.01)	10.0 [0, 16.7]	25
Role Modeling: Verbal Communication		8.83 (2.52)	8.33 [3.33, 16.7]	20
Sensory Exploration		4.91 (5.00)	5.00 [0, 15.0]	15
Overall Feeding Style	19 (17.75%)	1.78 (3.84)	0 [0, 10]	10
Peer Modeling	4 (3.7%)	0.41 (2.00)	1 [0, 10]	10
Self-Regulation	28 (26.2%)	0.44 (0.86)	0 [0, 5]	20
Pressure, Praise, Rewards & Threats	39 (36.4%)	18.32 (0.49)	18.57 [15.71, 19.29]	20
Provider Response to Food Refusal	11 (10.3%)	1.14 (3.4)	0 [0, 11.54]	20

Table 4: Pearson correlations between EMOTERS domains and MOCC subscales

	EMOTERS: Modeling	EMOTERS: Responding	EMOTERS: Instructing
MOCC: Role Modeling: Verbal Communication	-.17	-.06	-.06
MOCC: Role Modeling: Sitting Together	-.11	.02	.02
MOCC: Sensory Exploration	-.21*	-.12	-.08

*p<.05

Indicators of family-style food service

Children were rarely observed to be passing food to one another at the table (6.5%) or serving themselves (10.3%), two indicators of family-style eating.

Relationship between responsive feeding and emotion-focused teaching

Total EMOTERS scores were significantly and *negatively* correlated with total MOCC scores, $r(105) = -.23$, $p < .01$. In terms of the domains of the MOCC and EMOTERS, the Modeling domain of EMOTERS was also significantly and negatively correlated with the Sensory Exploration subscale, $r(105) = -.21$, $p < .05$. See Table 4 for the correlations between MOCC subscales and EMOTERS domains. No other subscales were significantly correlated.

For several of the t-tests, the sample size in one group was much smaller, limiting the ability to detect a relationship and make inferences. Non-parametric, Welch's t-tests on EMOTERS scores between MOCC subscales that were treated categorically (Self-Regulation, Pressure Praise Rewards and Threats, Provider's Response to Food Refusal, and Overall Feeding Style) resulted in no significant differences between groups (Table 5).

Table 5: Welch's t-test for MOCC subscales

	One or more instances		None observed		<i>df</i>	<i>t</i>	<i>p</i>
	n	Mean (SD)	n	Mean (SD)			
Self-regulation							
EMOTERS: Total	28	24.29 (6.34)	79	24.99 (7.07)	53	.48	.63
EMOTERS: Modeling		16.37 (4.29)		16.26 (4.7)	52	-.12	.91
EMOTERS: Responding		6.92 (1.89)		7.30 (2.59)	65	.82	.41
EMOTERS: Instructing		1.00 (2.22)		1.43 (2.83)	61	.82	.41
Provider Response to Food Refusal							
EMOTERS: Total	11	22.76 (8.36)	96	25.04 (6.68)	12	.87	.40
EMOTERS: Modeling		14.86 (4.52)		16.45 (4.58)	12	1.11	.29
EMOTERS: Responding		6.63 (2.73)		7.27 (2.39)	12	.75	.47
EMOTERS: Instructing		1.28 (3.06)		1.32 (2.65)	12	.05	.96
Pressure Praise Rewards and Threats							
EMOTERS: Total	39	23.59 (6.1)	68	25.5 (7.22)	90	1.46	.15
EMOTERS: Modeling		15.38 (4.29)		16.8 (4.68)	85	1.60	.11
EMOTERS: Responding		6.85 (2.12)		7.41 (2.57)	92	1.21	.23
EMOTERS: Instructing		1.36 (2.66)		1.29 (2.71)	80	-.126	.90
Overall Feeding Style							
		Authoritative Style		All other styles			
EMOTERS: Total	19	23.45 (7.06)	88	25.1 (6.83)	26	.93	.36
EMOTERS: Modeling		15.01 (4.38)		16.56 (4.6)	27	1.38	.18
EMOTERS: Responding		7.08 (2.33)		7.23 (2.45)	27	.25	.81
EMOTERS: Instructing		1.36 (2.29)		1.31 (2.77)	30	-.08	.94

Relationship between indicators of family-style food service and EMOTERS

No significant differences in EMOTERS scores between mealtimes where children served themselves food and/or passed food around the table were found using non-parametric Welch's t-tests (Table 6). One difference that approached significance was observed, in the opposite direction than anticipated: Mealtimes where children served themselves had lower EMOTERS Modeling scores ($M=14.33$, $SD= 3.51$) than mealtimes that didn't ($mean=14.33$, $SD=3.51$). Importantly, the group sizes were unbalanced with food passing and children serving themselves observed in less than 10% of the mealtimes, limiting interpretability and the ability to make inferences.

Table 6: Welch's t-test for indicators of family-style meal service

	Observed		Not observed		<i>df</i>	<i>t</i>	<i>p</i>
	n	Mean (SD)	n	Mean (SD)			
Family-style: Children served themselves							
EMOTERS: Total	11	22.75 (4.94)	88	24.98 (7.14)	15	1.39	.19
EMOTERS: Modeling		14.33 (3.51)		16.42 (4.63)	14	1.89	.08
EMOTERS: Responding		7.83 (1.72)		7.2 (2.52)	14	-1.21	.24
EMOTERS: Instructing		0.59 (1.32)		1.36 (2.84)	22	1.65	.11
Passing: Children passed food around the table							
EMOTERS: Total	7	24.59 (6.75)	99	24.88 (6.91)	7	.87	.40
EMOTERS: Modeling		16.01 (4.61)		16.33 (4.61)	7	1.11	.29
EMOTERS: Responding		8.33 (2.32)		7.14 (2.43)	7	.75	.47
EMOTERS: Instructing		0.24 (0.66)		1.41 (0.66)	27	.05	.96

Opportunities for and challenges to emotion-focused teaching

Vignettes of positive and negative exemplars of teacher behavior in nine categories of mealtime events and interactions can be found in Table 7. As listed in the data-analysis section, categories were preidentified as possible mealtime situations relevant to emotion-focused teaching. Three categories (“Teacher pressures a child to eat more than they seem to want”, “Teacher directs child to finish all of their food or one type of food”, and “Teacher threatens food or non-food punishment”), were collapsed into a single category, “Pressures or directs child to finish food” as similar teaching practices were observed in all three and were not distinct enough to warrant separate categories. Three additional categories were created based upon similarities in the situations that raters noted that had implications for emotion-focused teaching: “Responding to playfulness at mealtime”; “Responding to a safety issue (e.g., threat of choking)”; and “Responding to mealtime problem behavior (e.g., kicking under table)”

Vignettes confirm that there are at least nine special situations that arise during mealtimes that both challenge and provide opportunities for emotion-focused teaching. The purpose of the vignettes is to aid in better understanding the challenges and opportunities for emotion-teaching at mealtime but are not the product of an exhaustive and methodologically rigorous qualitative analysis. Therefore, these observations are discussed in the discussion section as exemplars and possible opportunities, and not as theme.

Table 7: Vignettes of teacher behavior in mealtime events and interactions

Mealtime Event / Interaction	Positive exemplar	Negative exemplar
Responds to a child spilling food	<p><i>A teacher uses a term of endearment when she notices that a child spills.</i></p> <p>A teacher spots something on the floor and says to a child, “Pick it up, Papi, if you spilled”</p>	<p><i>The teacher expresses negativity while handling a spill.</i></p> <p>She sternly directs a child to get paper towels to clean up spilled milk and helps her clean it up. “You need to pay attention to what you’re doing! You spill your milk every day because you’re playing at the table.” The teacher tells the child to leave the table to change their clothes.</p>
Leads personal conversations	<p><i>The teacher talks about the emotion, “love” and talks about its expression</i></p> <p>The teacher leads a discussion about Valentines Day. “Tomorrow is the big day! Tomorrow is a day of love and celebration. We love each other and we’re gonna show it by giving each other cards.”</p> <p><i>The teacher uses a topic brought up by a child as an opportunity to teach about sadness.</i></p> <p>Prompted by a child’s story about how they cried when they first started coming to school, the teacher leads a conversation about sadness. A child then mentioned that their mother sometimes feel sad. The teacher responds, “Mommies get sad sometimes. How can we help our mommies feel better?”</p>	<p><i>The teacher misses opportunities to model and teach about emotions.</i></p> <p>A child is sharing a story about their grandmother’s birthday the past weekend. The teacher prompts the child along to continue their story (“And then what happened?”) but doesn’t label the child’s or their own emotions.</p> <p><i>Teacher enforces a “quiet lunch” as punishment for misbehaving.</i></p> <p>The teacher is frowning and crosses his arms and says sternly, “Guys! The lights are still off. We’re having a quiet lunch because no one here can seem to follow directions. We shouldn’t be hearing anything.” He calls out children out by name who continue talking and tells them to be quiet. “If I have to continue talking to you about this, I’m going to take you to Miss Charlotte.”</p>

<p>Responds to a child refusing food</p>	<p><i>The teacher addresses the emotion accompanying the food refusal.</i></p>	<p><i>The teacher doesn't address the emotion accompanying the food refusal.</i></p>
	<p>The meal is happening during child drop off time. In tears, a child refuses to accept milk from teacher. When she continues to be upset, the teacher reminds her how much fun they had the day before and rubs her back affectionately. The teacher squats down next to her. "How about we take some bites together?" She takes a bite of her graham cracker and the child starts to eat some of hers.</p>	<p>One child refuses to drink his milk and is crying. The teacher tells him, "Drink your milk!" several times while she is circulating amongst the lunch tables, attempting to get children to eat. After several minutes, the teacher returns to the boy who had refused his milk and finds that his pants are wet. She says to him, "Your pants are wet! That's why you're crying!" and helps him change his pants.</p>
<p>Uses hunger or fullness language</p>	<p><i>The teacher expresses positive emotions as she models hunger to children.</i></p>	<p><i>The teacher couches self-regulation strategies in negativity, and couples it with several other more coercive strategies to get children to eat.</i></p>
	<p>She exclaims, "I am so hungry" and makes positive comments about the healthy food being served (e.g., "These vegetables are so yummy"). One child points out that she has a lot of food on her plate, and the teacher responds "I know! I am really hungry!" and the table laughs together.</p>	<p>The teacher circulates the snack tables, reminding child that they'll be hungry if they don't eat, commanding children to eat, shushing children and telling them to focus on their food, and expressing frustration when a child doesn't seem to be eating the food she thought they would ("but you said that you liked it!").</p>
	<p><i>A teacher connects food choices to feeling full, and what it feels like in the body.</i></p>	
	<p>"Ketchup doesn't fill us up. And if you don't get full, then you'll feel tired later. You'll feel weak."</p>	
<p>Pressures or directs child to finish food</p>	<p><i>None found</i></p>	<p><i>A teacher expresses negativity when directing a child to finish their food.</i></p>
		<p>Teacher sighs when a child hasn't finished their food. "You need to finish it. I told you, if you were going to ask for milk, you needed to finish it."</p>

<p>Reacts to sensory engagement in food</p>	<p><i>The teacher expresses positive emotions when supporting a child's sensory exploration of food.</i></p> <p>A child makes a "mask" out of her tortilla by biting out two holes for her eyes. The teacher laughs with her, "You cut two eyes!"</p>	<p><i>The teacher uses a punishment response to a child playing with their food and misses opportunities to acknowledge their underlying positive emotions.</i></p> <p>A child is playing with food on their plate. The teacher takes the plate away and tells her if she's only playing with it she can leave the table. When the child protests, she hands it back saying, "This is your last chance."</p>
<p>Responding to playfulness at mealtime</p>	<p><i>Teacher engages in playfulness at mealtime.</i></p> <p>A teacher plays a game with the children at the table where they hide an apple behind their back and they have to guess where the apple went.</p>	<p><i>The teacher shuts down playfulness at mealtime and misses opportunity to address underlying positive emotion.</i></p> <p>Children start a sing-song chant about tacos at the lunch table. The teacher responds quickly after they start, "Okay please stop!"</p> <p><i>The teacher reacts negatively to a child's positive emotion because she is eating.</i></p> <p>The teacher is finishing her food as a child approaches her for a hug. He begins to wrap his arms around her neck when she pushes him away and says, "not while I'm eating!"</p>
<p>Responds to safety issue (running, choking, throwing fork)</p>	<p><i>The teacher stops dangerous behavior by explaining the possible consequences without negativity.</i></p> <p>The teacher notices that a student is making odd sounds and moving around while they're eating. The teacher explains that it's not safe to be moving around so much as food might get stuck in their throat. The teacher praises the child when she demonstrates understanding and stops doing the dangerous behavior.</p>	<p><i>After stopping dangerous behavior, the teacher uses shaming language about the child's actions, and doesn't address underlying emotions.</i></p> <p>After a teacher intervenes when a child pokes another child with his fork at the table, the child runs away. She explains to the other children that the child is asking for a lot of negative attention and that she wants to make sure he doesn't hurt them. She does not attempt to bring the child back to the table.</p>

<p>Responding to mealttime problem behavior</p>	<p><i>A teacher responds to an inappropriate comment by acknowledging the underlying emotion and explaining how it might affect others at the meal.</i></p>	<p><i>The teacher handles a conflict between two children with physical control and misses opportunities to teach about how to respond to each other's emotions.</i></p>
	<p>A child smiled and laughed while he said an inappropriate comment. The teacher acknowledged that the child found this amusing and explained, "You might think that is funny, but it's actually kind of rude, and not very polite, especially when people are eating."</p>	<p>A child cries out when another child kicks her under the table. The teacher responds by removing the kicking child from the table by dragging his chair. The teacher says, "That's what you get."</p>

DISCUSSION

Summary of findings

The purpose of this study is to improve understanding of emotion-focused teaching in preschool mealtime settings and how such practices overlap with or support recommended feeding practices. Additionally, it aims to identify possible challenges to emotion-focused teaching and opportunities for it during mealtimes.

Results confirm the hypothesis that emotion-focused teaching scores (as measured by the EMOTERS) are low to moderate and that emotion instructing practices are rarely used. Responsive feeding scores were also low (as measured by the MOCC), and few mealtimes were observed to have indicators of family-style meal service. There was a significant, albeit weak, *negative* association between total MOCC and EMOTERS scores as well as between the Sensory Exploration subscale of the MOCC and the Modeling domain of the EMOTERS. However, given the limitations of this study, these findings do not support the hypothesis that there are clear relationships between emotion-teaching scores and responsive feeding practices or indicators of family-style meal service. An analysis of mealtime events and interactions (e.g., spills) demonstrate that mealtimes present several challenges to emotion-focused teaching, but also offer many opportunities to use such practices.

Teachers generally did not use many responsive feeding practices

Nutrition researchers and advocates have long noted that responsive feeding practices are not being used in mealtimes in child care environments (Nicklas et al., 2001; Ramsay et al., 2010; Sigman-Grant et al., 2008, 2011). These findings led the Academy of Nutrition and Dietetics to create more specific guidance for child care centers in 2018 (Benjamin-Neelon, 2018). This led to the creation of the MOCC, a checklist to measure adherence (Dev et al., 2020), which was used in this study. Despite the recent guidance, the few studies that have used the MOCC since its creation have found that responsive feeding scores are generally low compared to its theoretical range (Malek-Lasater, 2021; Sleet et al., 2020). The current study's low MOCC scores align with the extant literature. Because this study uses an adapted MOCC (one that retains only the subscales that were hypothesized to be connected to emotion-focused teaching), a direct comparison of scores between previous studies and the current study was not possible.

Consistent with other studies (Malek-Lasater, 2021; Ramsay et al., 2010; Sleet et al., 2020), this study found that teachers are not frequently using practices that support children's eating self-regulation (for example, modeling hunger or fullness by saying, "I'm taking an extra scoop of these vegetables because I'm super hungry!") or using peer modeling strategies (for example, saying, "I see how Jared is eating his vegetables!"). However, few controlling strategies to get children to eat (ones that use pressure, threats or inappropriate praise and rewards) were observed, consistent with other recent studies (Malek-Lasater, 2021; Sleet et al., 2020). The decline in the use of controlling feeding strategies may represent an improvement in teacher behavior, as some older studies

reported a high number of those practices (Mita et al., 2015; Ramsay et al., 2010; Sigman-Grant et al., 2011). Or, this finding may be a function of the limited teacher–child interaction during mealtimes (Gest et al., 2006; Hallam et al., 2016; Klette et al., 2018).

An important component of responsive feeding practices is family-style meal service—food is placed in the middle of the table that teachers and children can serve themselves from and pass around to one another, promoting self-regulation of food intake, autonomy, community (Dev et al., 2019), and social interaction (Locchetta et al., 2017). Family-style meal service may facilitate other responsive feeding practices; one study found that MOCC scores were higher when family-style meal service was used (Malek-Lasater et al., 2021). The current study observed a very low occurrence of family-style meal service (less than 10 percent of meals), even lower than the already-low estimates from previous studies (Dev et al., 2020; Sigman-Grant et al., 2008). This extremely low occurrence may be because the indicators used in this study do not capture the presence of platters at the center of the table, only the intended outcomes of having the food served in this way—children serving themselves and passing food to one another. Therefore, this study does not capture mealtimes where some attempt is made at family-style meal service.

The low-quality feeding practices observed in this and other studies may be due to a range of factors. First, the policies of the center certainly drive the style of meal service. For example, some centers, including Head Start and centers whose food costs are reimbursed by the Child and Adult Care Feeding Program (CACFP), are encouraged to

use family-style meal service (Head Start Program Performance Standards, n.d.; Offer Versus Serve and Family Style Meals in the Child and Adult Care Food Program, 2016). Studies on the barriers to implementing family-style meal service found that non-Head Start centers cited several main barriers including resource issues (including not being able to cover the cost of meals for providers); a lack of control over foods served; and storage problems (Dev et al., 2020, 2014). Center-level policies also may drive how mealtime is leveraged. For example, Head Start policy states that mealtimes should be used to foster staff–child interaction and contribute to a child’s learning, development, and socialization; meals should allow sufficient time for children to eat; and that providers should refrain from using controlling feeding practices (Head Start Program Performance Standards, n.d.). In fact, one study found that Head Start status predicted higher MOCC scores as compared to other types of childcare centers (Malek-Lasater et al., 2021). Further, its possible that centers require their teachers to complete administrative tasks during the meal, or leave little time for the teachers to take breaks and socialize with their colleagues.

Teachers may better employ responsive feeding practices in some meals better than others. This study found that higher quality responsive feeding practices were used during lunch than snack. While not measured by the MOCC, it’s possible that because lunches typically have more time allocated to them, teachers have more time to sit with children, engage in conversation, and observe how each child is eating so that they can use the most appropriate responsive feeding strategies (e.g., using peer models). During snack times, family-style meals may not be possible; the teacher may not have the

support of kitchen staff and is instead tasked with serving the food themselves. For example, in one mealtime, a teacher was preparing each child's snack individually, resulting in communication that mostly involved asking what each child wanted on their cracker, and brief directive remarks to continue or focus on eating.

Provider beliefs may also underpin their feeding practices. Dev et al. (2016) conducted a thorough qualitative investigation of the determinants of using controlling feeding practices in several different types of childcare centers. They found that providers may believe that they are using responsive feeding behaviors, when in reality, they're using controlling ones (e.g., "Great job cleaning your plate today!"). This indicates that while theoretically, teachers may be aiming not to use overly controlling feeding practices, there may be gaps in understanding about what constitutes a controlling feeding practice. It may not be intuitive that using food as rewards, or praising completion of a meal, would not be supportive of children's development of healthy eating. On the other hand, some providers simply believed that controlling feeding practices were the most effective at getting children to eat and perform other desired behaviors. For example, one provider in Dev's 2016 study said, "Sometimes you'll have that stubborn kid that just won't eat. Or they'll throw the plate, or they just won't want anything to do with it. So sometimes it is very hard to find a way to get them to eat, find a way that's fun without really pressuring them or yelling at them." Others cited their fear of parents' negative reactions if their child did not eat during the mealtime, as some centers are required to ensure that the child eats a certain number of times, or a certain proportion of their daily calories (Head Start Program Performance Standards, n.d.).

A key determinant may be the lack of teacher training on these practices. One study demonstrated that just one 90-minute teacher-focused training that utilized video demonstrations of key responsive feeding practices resulted in an improvement of MOCC scores (Sleet et al., 2020). While the overall MOCC score improved, there were no significant changes in the subscale scores, suggesting that the training resulted in minor changes in each subscale, amounting to significant overall differences. Future studies would be helpful in identifying what teaching-training strategies would produce more meaningful changes in responsive feeding practices.

Responsive feeding practices do not necessarily coincide with high-quality emotion-focused teaching

The only significant associations found (total MOCC and total EMOTERS, Modeling EMOTERS domain and the “Sensory Exploration” domain of the MOCC) were *negative* in direction, albeit weakly. This is surprising because the only other study to examine the relationship between the MOCC and a teaching quality measure found that “Role Modeling: Verbal Communication” and the “Self-Regulation” subscales of the MOCC were significantly and *positively* associated with the Emotional Support dimension of the CLASS (Malek-Lasater, 2021). These findings may differ for a few reasons. First, the Emotional Support dimension of the CLASS assesses the broader classroom environment and teaching behaviors, while the EMOTERS *only* captures behaviors that teach children about emotions in some way. For example, a teacher having a conversation with a child about an exciting event that happened over the weekend may be effectively and positively engaging with the child in ways that are captured by the

CLASS (e.g., engaging in social conversation with the child and encouraging them to express their ideas), but are not using emotion-focused teaching techniques (e.g., labeling and asking questions about the emotions they are expressing or talking about).

Although responsive feeding practices and emotion-focused teaching practices are not incompatible in theory, the observed relationship may be due to teachers being hyper-focused on mealtime duties and encouraging children to eat, therefore not focused on employing emotion-focused teaching strategies. For example, one vignette featured a teacher that was so focused on getting children to eat by using a variety of positive and negative strategies captured in the MOCC (“If you don’t eat you’ll be hungry!”) that she did not investigate the reason *why* an upset child was refusing their milk and not eating for several minutes. She eventually discovered the child was upset because his pants were wet and needed a new pair. Similarly, the observed relationship between the “Sensory Exploration” subscale of the MOCC and EMOTERS domains may be a function of teachers’ frustration with children playing with their food. One vignette in this study showed a teacher threatening to punish a child for playing with their food (“If you’re not going to eat it, I’m taking it away!”).

Aside from the two weak, negative associations found in this study, no other relationships were found. Particularly surprising is the lack of relationship between the EMOTERS domains and the “Role Modeling: Verbal Communication” and “Role Modeling: Sitting” subscales. It could be assumed that if teachers are sitting with children and engaging with them in conversation, emotion-focused teaching scores are likely to be higher. However, higher scores on these scales may represent more *opportunities* to use

high-quality emotion-focused teaching practices, but do not guarantee them. Indeed, in over half of the mealtimes observed in this study, there were no personal conversations between teachers and children. Even when there were personal conversations, the captured vignettes demonstrate that these conversations are not being leveraged as opportunities to teach about emotions.

When interpreting these findings, it is important to consider that neither high-quality emotion-focused teaching practices nor responsive feeding practices were consistently observed during mealtimes, resulting in little variance in both constructs of interest. This limits the ability to confidently make inferences about their relationship. Future research that seeks to capture the full range of both teaching practices may need to include early childhood education centers that have responsive feeding policies or a special focus on emotion-focused teaching.

Teachers use low-quality emotion-focused teaching during mealtimes

This study is an important addition to the small body of literature that examines the quality of teacher-child interactions at mealtime (Gest et al., 2006; Hallam et al., 2016; Klette et al., 2018; Malek-Lasater, 2021), and the even smaller pool of studies that have examined teaching practices that support social-emotional learning specifically (Curby et al., 2022, *in prep*; Ng & Bull, 2018). Although those previous studies use different measurement tools and concentrate on different aspects of teacher-child interactions, all found that teaching quality during mealtimes is poor, or lower than, other childcare contexts (e.g., small group). This study's finding that teachers use low-quality emotion-focused teaching during mealtime certainly aligns with those previous findings.

Importantly, the quality of emotion-focused teaching observed in this study is not representative of the quality of teaching from this same sample in other contexts throughout the day. Preliminary analyses using data from this sample demonstrate that mealtimes are the lowest EMOTERS-scoring context compared to other contexts including large group; small group, or centers/free choice; and transitions (Curby et al., 2022, *in prep*). This indicates that mealtimes are treated differently than other contexts, possibly due to the unique demands placed on teachers during mealtime.

A strength of this study is that it explores the kinds of emotion-focused teaching behaviors used during mealtimes and seeks to understand what it is about mealtimes that may explain why emotion-focused teaching quality is low in this context. To do this, this study measured the most- and least- common emotion-focused teaching strategies used during mealtimes and identified nine categories of mealtime situations where teachers are, or could be, exercising high-quality emotion-focused teaching practices. These mealtime events include times when children spill; are playful; explore the sensory properties of their food; refuse food; and engage in unsafe or problem behaviors. Other mealtime events include times when teachers lead personal conversations with children and use certain strategies get children to eat food, including self-regulation and pressuring strategies.

A few negative exemplars of emotion-focused teaching observed during these mealtime situations included expressing negativity without an emotion label (labeling their own negative emotions was observed just three times in the entire sample); using commands and prohibitions (observed in over 60% of mealtimes in the entire sample);

addressing problematic behaviors without addressing the underlying emotion (recognizing emotions underlying a problem behavior was observed just once in the entire sample); and generally missing opportunities to teach about emotions (more difficult instructing practices, including labeling emotions, was rarely observed in the entire sample). However, vignettes demonstrate that some teachers do use high-quality emotion-focused teaching in the exact same situations. These teachers express positivity and engage in playfulness, take advantage of situations to teach about emotions and they address the emotions underlying problem behaviors. Based on these observations, a few key opportunities for promoting more emotionally supportive mealtimes are discussed below.

Avoiding negativity when responding to spills

Spills, although developmentally expected, may be frustrating to teachers and cause them to express negativity when handling one. For example, in one video segment, a teacher sternly directed a child to get paper towels to clean up her spill and said, “You need to pay attention to what you’re doing! You spill milk every day because you’re playing at the table.” However, a different teacher responded more positively to a spill, using a term of endearment: “Pick it up, Papi, if you spilled.” This approach maintains the expectation that a child should clean up their own mess but avoids the added layer of negativity and judgment.

Making space for playfulness & sensory exploration

Like spills, sensory exploration of food and general playfulness is expected at mealtimes at this age. Some teachers seem to recognize that playing with food, or general

playfulness, is natural and make space for it at mealtime, supporting a warm and positive environment. For example, one teacher allowed a child to make bite holes out of a tortilla to make a face mask. She laughed along with the child and pointed out her silly behavior to the other children at the table.

Other teachers seem to feel that such behaviors are unwelcome and counterproductive. For example, in response to a child playing with their food, one teacher took the plate away and told the child that if she's only playing with it, she can leave the table. When the child protested, the teacher handed back the plate and said, "This is your last chance." In another example, when a teacher was attempting to explain what is for lunch, the children started a playful sing-song chant about tacos, and the teacher interrupted them and sternly said, "Okay, please stop!"

Not only is reacting negatively to positive emotions or responding to sensory exploration behavior in a negative way an invalidating response and counterproductive to high-quality emotion-focused teaching, but it is also counterproductive to developing healthy eating patterns. Exploring a food's sensory properties by "playing" with it is helpful for encouraging food acceptance by easing the introduction of a new food into a toddler's diet in a less-distressing, non-taste way (Coulthard & Sealy, 2017; Dazeley et al., 2012; Nekitsing et al., 2018). Similarly, social playfulness during a meal creates an affectively positive environment, which has been shown to be conducive to developing healthy eating behaviors (Birch et al., 1980; Saltzman et al., 2018).

Handling misbehavior by explaining how it affects others, and acknowledging underlying emotions

Behaving appropriately during mealtime may be challenging to children, possibly because mealtimes involve stretches of unstructured time, leaving plenty of opportunities for children to act out or distract themselves. Importantly, mealtime in preschool is a social activity where these actions of one child may affect others at the table. Therefore, mealtimes are an opportunity for teachers to work on children's ability to understand the emotions underlying their actions, and how expressing them may make others feel (i.e., affective social competence; Halberstadt et al., 2001).

In one vignette, a teacher is walking around among the tables when one child kicks another under the table. The teacher responds by physically removing the kicking child from the table by dragging his chair away from the table. The teacher says, "That's what you get." Additionally, a better emotion-focused teaching practice would be to inquire about the emotions that led a child to kick their classmate, help them understand how kicking a classmate may make them feel, and find ways to make their classmate feel better (e.g., apologize).

Mealtimes are also challenging to children because they have a specific set of social rules that children are still learning. For example, "potty talk" at the table is not socially acceptable. In one vignette, teachers and children are seated around a table when one child brought up this topic. The teacher explained, "You may think it's funny, but it's actually kind of rude, especially when people are eating." While this isn't a perfect example of labeling emotions and explaining their actions, the teacher seems to recognize

that the child is still learning about what's appropriate during mealtimes, acknowledge the child's underlying emotions (in this case, amusement), and remind them of how their behavior affects others at the table.

Creating and leveraging personal conversations at the table as an opportunity for emotion-focused teaching

Mealtimes are unique contexts where there is no designated curricula or activity that is the focus of teacher-child interactions. Gest et al. (2006) found that mealtimes contain the most decontextualized conversation. In other words, instead of talking about a book, a lesson, or the activity at hand, teachers and children are more likely to discuss matters more personal to the child—perhaps their likes, dislikes, what they did that weekend or how their family is doing.

Despite this opportunity, previous studies have found that mealtimes are characterized by little teacher-child interaction and that the interaction that does occur is of low quality (Gest et al., 2006; Hallam et al., 2016; Klette et al., 2018). Specifically, Klette et al. (2018) also found that during mealtimes in Norwegian childcare centers, most of the providers in the study displayed very low sensitivity to children using the CARE index, a tool to assess provider- or parent-relational quality with an infant or toddler. One study investigating language development in different preschool contexts found that teacher sensitivity and responsiveness was lower during mealtimes as compared to other contexts, though the number of directives (e.g., “Sit down. Eat your food.”) used was similar to other contexts (Gest et al., 2006).

The current study's findings align with the extant, albeit limited, literature on teacher-child interactions during mealtime, finding that in over 60% of the mealtimes, at least one prohibitions command was used, and that high-quality responding strategies (e.g., "I see you're pretty upset, what's going on?") were rarely used. And, in over half of the mealtimes observed, there were no conversations that went beyond discussing the food. This indicates that mealtimes are not likely to be used for personal conversations, and so are missed opportunities to teach about emotions.

While a necessary precursor to engaging in meaningful conversation with a child is seeking out opportunities for it, what matters more is the quality of the interaction. The vignettes reveal that personal conversations can easily go underleveraged, in which teachers engage in a conversation, but don't respond to and label the emotions present in the child's statements. One teacher did an excellent job of capitalizing on the emotional content at hand, and elaborated upon it to further understanding about emotions; after hearing a child talk about sadness and how their mother sometimes felt sad, a teacher said to the table, "Sometimes our mommies get sad. What can we do to make them feel better?"

Teachers can also create moments to teach about emotions. One teacher used Valentine's Day as an opportunity to talk about the emotion of love, and how we express love to one another on Valentine's Day. She told the children, "We love each other, and we're gonna show it by giving each other cards."

Lower interactional quality during mealtimes may be an understandable consequence of the long list of demands that are placed upon early childhood education

teachers. The lack of teacher-child interaction may be due to the higher amount of logistical responsibilities during mealtimes; teachers are often required to set up, serve, and clean up food, in addition to other classroom duties. Teachers may also see mealtimes as one of the few opportunities to socialize with their colleagues; the most common reason for teacher distraction in this study was because they were talking to another teacher.

Even still, it is also possible that personal conversations with children during mealtime may be viewed as a low priority, or even something that can be taken away as a punishment. In one vignette, a teacher enforced a “silent lunch” as he circulated the tables with arms crossed, clearly frustrated, and telling children who were continuing to speak to be quiet. No study, including the present, can conclusively say why so little teacher-child interaction occurs during mealtimes. Future studies should focus on understanding teacher’s beliefs about their role in mealtimes and how they are utilized.

Using emotionally supportive strategies to encourage eating

Teachers feel pressure to ensure children eat their food, possibly so that they can give parents a positive report (Dev et al., 2016). Although tactics to control child eating, such as using pressure, praise, rewards and threats, were uncommon in our sample, teachers likely did this through commands and prohibitions, which were commonly used at mealtimes (60%). Not only are directives to eat not effective for developing long-term healthy-eating behaviors (e.g., Galloway et al., 2006), they also constitute low-level modeling of negative emotions, which, over time, can contribute to a negative mealtime environment.

A negative mealtime environment as a function of controlling feeding practices is embodied in one vignette where the teacher circulated the snack tables, reminding one child that they'll be hungry if they don't eat, commanding others to eat, shushing them, and telling them to focus on their food. The teacher expressed frustration when a child didn't seem to be eating the food (saying, "But you said that you liked it!"). More effective and emotionally supportive techniques may include teachers modeling eating according to their own hunger level. One teacher exclaimed, "I am so hungry" and made positive comments about the healthy food being served (at one point saying, "These vegetables are so yummy"). After one child pointed out that she had a lot of food on her plate, the teacher responded, "I know! I am really hungry!" and the table laughed together.

Teachers may also have opportunities to respond in an emotion-focused way to children refusing food. In one vignette, a visibly upset and crying girl refused milk. The teacher got her to start eating some of her food by attending to those emotions by expressing physical affection, reminding her of the fun she had at school, and offering to take bites of food along with her. This study cannot definitively say if food refusal is commonly accompanied by emotions, or reflect underlying emotions, but it is worth investigating in the future. Perhaps attending to the emotions underlying the refusal supports the child in continuing with the meal.

Sitting and engaging with children at the table

Similar to personal conversations, simply sitting at the table with the children is not enough to guarantee high-quality emotion-focused teaching; in fact, more

engagement with children could result in lower-quality emotion-focused teaching. This may explain why the MOCC subscale “Role Modeling: Sitting Together” was not associated with emotion-focused teaching. However, in many of the situations already discussed where teachers used high-quality emotion-focused teaching practices, teachers were seated at the table and actively engaging with children.

Limitations

There are several limitations in this study. First, the original study was not designed to ensure that mealtimes were recorded during the data-collection days. In fact, research assistants aimed to cease recording and clean up data-collection equipment just before lunch time. Teachers also had varying preferences about equipment set up/clean up timing. Therefore, the sample of mealtimes (n=107) is limited. Although, the lack of mealtimes in this sample does, in itself, reflect that researchers and teachers alike do not view mealtimes as priority contexts. If more mealtimes from each center and classroom were observed, data-analytic strategies like multilevel linear modeling would have been supported.

Second, both EMOTERS and MOCC scores were low with limited variance, limiting the ability to identify relationships and make stronger inferences. More variance would have also allowed for covariance explorations and a better understanding of what is driving observed relationships.

Third, the indicators of family-style meal service used in this study measure only the intended outcomes of having the food served in this way—children serving themselves and passing food to one another. Therefore, this study does not capture mealtimes where some attempt is made at family-style meal service, like when food is served from platters at the center of the table. The MOCC subscale, “Mealtime Environment” was more robust, but included items that we likely would not be able to reliably observe via video observation, like the presence of a screen/TV, or the size of utensils and serving platters. Regardless, it is possible that by extending our definition of family-style meal service, versus just including the behaviors that felt were the most important, a relationship with emotion-focused teaching could have emerged.

Fourth, not *all* emotion-focused teaching practices used by teachers during mealtimes are captured in this study. The EMOTERS instrument is designed to measure what a teacher is capable of, rather than how frequently a teacher does each emotion-focused behavior. For example, it’s possible that in addition to responding positively to a child’s positive emotion the teacher also responded negatively in a separate instance. The EMOTERS would *only* score the teacher as “responding positively to a positive emotion.” Even so, EMOTERS scores were low in this sample, reflecting that even with the capability-driven coding system of the EMOTERS, it can be concluded that mealtimes represent a clear gap in emotion-focused teaching.

Finally, while a systematic way of selecting vignettes was attempted, robust qualitative data collection methodology was not employed to definitively identify key themes in emotion-focused teaching at mealtimes. The approach to selecting these

vignettes was not as effective as intended, and a more subjective approach to selecting vignettes was employed. Regardless, these vignettes were helpful for better understanding what emotion-focused teaching at mealtimes looks like in different situations. but further research is required to develop strong, evidence-based recommendations.

Implications for theory, policy, and practice

This was the first work to empirically describe how emotion-focused teaching and responsive feeding practices are employed during mealtimes. Above all, it has established that generally, feeding practices do not align with the latest guidance (Benjamin-Neelon, 2018), and that emotion-focused teaching is not consistently employed during preschool mealtimes. This work builds upon a limited number of studies that investigate both teaching and feeding quality during mealtime (Malek-Lasater, 2021; Malek-Lasater et al., 2021; Mita et al., 2015). The most recent studies by Malek-Laster have introduced the “Supportive and Responsive Mealtime Practice Framework” which is comprised of four broad domains of mealtime practices. While the current study does not measure teacher behaviors in all domains of this framework, the findings generally demonstrate that mealtimes are not being leveraged to their full potential according to this framework. The finding that responsive feeding is better during breakfast and lunch than snacks may suggest that meal structure, length and varying teacher roles may be important predictors of better practices and highlight an opportunity to refine guidance for specific meal types.

Additionally, this study adds to the theoretical basis for how mealtimes can be leveraged to support specific social–emotional competencies. Although high-quality emotion-focused teaching practices were not widely observed at a quantitative level, the vignettes demonstrate that social–emotional competencies can be supported during mealtime, but generally aren't. Such competencies include affective social competence (supported by the teacher explaining how children's emotions affect others at the table and leading social conversations at the table); emotion knowledge (supported by the teacher responding to children's emotions and instructing about emotions); and self-regulation (supported by the teacher modeling sitting at the table and addressing emotions underlying misbehavior).

Future research should explore additional teaching practices or interventions that may support the development of children's healthy eating behaviors and social–emotional competence. For example, teachers in this sample were not observed to help children understand and interpret their bodily sensations (both emotions and satiety cues) during mealtime, but that does not mean that mealtime is not an opportunity for practicing these skills. A teacher could implement a guided moment at the beginning of the meal where children check in with their body to understand how hungry they are and what emotions they are feeling. Existing curricula like “Feeling and Body Investigators” that help children distinguish between bodily sensations like nervousness (an emotion) or hunger (a satiety cue), could be adapted for general use at mealtimes (Zucker et al., 2019). Experimental research is needed to clarify if these potential interventions, or the opportunities identified in this study, significantly improve emotion-focused teaching

during meals. Similarly, it's possible that knowledge of what is developmentally expected of children 3-4 years old at mealtimes (e.g., spills, playfulness, sensory exploration of food) is limited. Providing clarity on these developmental expectations may reduce teacher frustration.

Future research should also seek to understand why the quality of emotion-focused teaching and responsive feeding is low during mealtime. It's possible that mealtimes are underleveraged because teachers are overleveraged and under supported. Depending on the center's policies, if resources are not allocated to support family-style eating, teachers may be tasked with serving food to children and may not have enough time to sit and engage with the children (Dev et al., 2014, 2017). Mealtimes may be used to prepare for the next activity (e.g., setting up cots for naptime), or to complete administrative work. Or, there may not be enough teachers to sit at each table, requiring them to circulate between the tables, possibly leading to a lower quality mealtime experience for children. Finally, there may simply not be enough opportunities for breaks and social interaction with their colleagues, leading them to use mealtime to meet those needs. It's likely that attending to teachers' needs and being sensitive to the demands put upon them is an important step for improving emotion-focused teaching and responsive feeding practices at mealtimes. Perhaps allowing for more time at meals or reducing administrative barriers to make meals more efficient would allow teachers to be more engaged with children during mealtimes.

In addition to informing future research, this study's in-depth look at emotion-focused teaching during mealtimes identified key opportunities for improvement that can

be incorporated into impactful teacher training and professional development. Mealtime-specific examples and guidance will be useful in strengthening the training and helping teachers conceptualize how emotion-focused teaching can be implemented throughout the school day.

Finally, while this study was unable to definitively ascertain the relationship between emotion-focused teaching and responsive feeding practices, understanding how recommended feeding practices align with emotion-focused teaching is important interdisciplinary work. This study is one of very few studies that explores specific teaching strategies *other than* recommended feeding practices or global measurements of teaching quality and engagement. Future work is needed to better understand the full suite of teaching practices that should be employed to maximize mealtime environments to support a range of learning outcomes, including the development of healthy eating behaviors, social skills, content-knowledge (e.g., how food is grown), vocabulary, and more. At a minimum, this study identifies a gap in emotion-focused teaching and responsive feeding practices during preschool mealtimes, despite it being an opportunity for both. Mealtimes warrant more attention from developmental and educational psychologists and the nutrition practitioners and scientist

APPENDIX

Table A1: Emotion teaching practices during mealtimes: Modeling

Note: frequencies reflect what at least one rater observed

	Overall (N=185)
Models Pretend Emotions	
No	129 (71.3%)
Yes	52 (28.7%)
Frequency of Commands	
More than twice	37 (20.0%)
1-2 times	75 (40.5%)
Never	73 (39.5%)
Uses Polite Language	
No	24 (13.0%)
Yes	161 (87.0%)
Community Oriented Language	
No	106 (57.3%)
Yes	79 (42.7%)
Expresses non-verbal positive emotion towards a teacher	
No	75 (40.5%)
Yes	110 (59.5%)
Expresses non-verbal positive emotion towards a child	
No	15 (8.1%)
Yes	170 (91.9%)
Vocally expresses positive emotion towards a teacher	
No	88 (47.6%)
Yes	97 (52.4%)
Vocally expresses positive emotion towards a child	
No	25 (13.5%)
Yes	160 (86.5%)

	Overall (N=185)
Labels their own positive emotions	
No	150 (89.8%)
Yes	17 (10.2%)
Vocally expresses negative emotion to any children	
No	119 (64.3%)
Yes	66 (35.7%)
Vocally expresses negative emotion towards a teacher	
No	177 (95.7%)
Yes	8 (4.3%)
Expresses negative emotion non-verbally to a child	
No	131 (70.8%)
Yes	54 (29.2%)
Expresses negative emotion non-verbally towards a teacher	
No	177 (95.7%)
Yes	8 (4.3%)
Teacher mood	
Consistently Negative	4 (5.5%)
Moments of Negativity	33 (45.2%)
Consistently neutral or positive	36 (49.3%)
Labels own negative emotions	
No	70 (95.9%)
Yes	3 (4.1%)
Has a negative emotional outburst	
Yes	1 (1.4%)
No	72 (98.6%)
Models regulation of a negative emotion	
No	34 (46.6%)
Yes	39 (53.4%)
Frequency of physical affection	
Never	127 (68.6%)
1-2 children	54 (29.2%)
Several children	4 (2.2%)
Frequency of expression positive feelings about children	

	Overall (N=185)
Never	67 (36.2%)
1-2 children	91 (49.2%)
Several children	27 (14.6%)

Table A2: Emotion teaching practices during mealtime: Responding

Note: frequencies reflect what at least one rater observed

	Overall (N=185)
Responds to child's negative emotions	
Invalidating response	24 (13.0%)
Ignores or handles without address emotion	53 (28.6%)
Validating response	33 (17.8%)
Reaction to child's negative emotion lessens its intensity	
No	16 (32.7%)
Yes	33 (67.3%)
Gives information to prevent possible future negative emotion	
No	118 (63.8%)
Yes	67 (36.2%)
Responds to a child's positive emotion	
Responds negatively	37 (20.0%)
Ignores or another teacher responds	32 (17.3%)
Responds positively	138 (74.6%)
Teacher responds to a child's problematic positive emotion	
No problematic positive emotion	9 (25.7%)
Addresses behavior but not emotion	25 (71.4%)
Addresses behavior and emotion	1 (2.9%)
Teacher responds to a behavioral problem	
No behavior problems	87 (47.0%)
Addresses behavior but not emotion	98 (53.0%)
Addresses emotion related to problem behavior	0 (0%)

Table A3: Emotion teaching practices during mealtime: Instructing*Note: frequencies reflect what at least one rater observed*

	Overall (N=185)
Spontaneously teaches about emotions	
No	155 (68.0%)
Yes	30 (13.2%)
Uses a child's emotion to teach about emotions	
None	11 (4.8%)
Labels emotion child is expressing	11 (4.8%)
Describes natural consequences of expressing an emotion in the classroom	4 (1.8%)
Describes what it feels like to experience an emotion	4 (1.8%)
Leads planned activities about emotions	
No	180 (78.9%)
Yes	5 (2.2%)
Creates opportunity for children to share about their emotions	
No	25 (11.0%)
Yes	8 (3.5%)
Asks children how they think someone else feels	
No	24 (10.5%)
Yes	9 (3.9%)
References their own emotions when teaching	
No	27 (11.8%)
Yes	6 (2.6%)
Helps children respond to other children's emotions	
No	28 (12.3%)
Yes	5 (2.2%)
Use of dramatic play	
No dramatic play	31 (13.6%)
Does not introduce emotions	1 (0.4%)
Introduces emotions	0 (0%)
Provides labels for and/or demonstrates emotions	
No	4 (1.8%)

	Overall (N=185)
Yes	29 (12.7%)
Asks questions about emotions	
No	19 (8.3%)
Yes	14 (6.1%)
Has children practice/apply new skill or knowledge	
No	31 (13.6%)
Yes	2 (0.9%)
Incorporates prior lessons or knowledge	
No	32 (14.0%)
Yes	1 (0.4%)
Reads a book	
Yes	3 (1.3%)
No	146 (64.0%)
Reads a book with no emotional content	
No	146 (64.0%)
Yes	3 (1.3%)
Reads a book with emotional content but does not expand on it	
No	149 (65.4%)
Yes	0 (0%)
Reads a book with emotional content and expands on it	
No	146 (64.0%)
Yes	3 (1.3%)
Helps children understand that emotions are related to previous events	
No	0 (0%)
Yes	14 (6.1%)
Teaches children about regulating an emotion	
Not observed	29 (12.7%)
Tells a child to regulate, but not how	3 (1.3%)
Provides guidance on how to regulate	1 (0.4%)

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