

The Socialization of Emotion Regulation in Preschool Classrooms

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by

Craig Steven Bailey  
Bachelor of Science  
South Dakota State University, 2009

Director: Susanne A. Denham, University Professor  
Department of Psychology

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George Mason University  
Fairfax, VA



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## **Dedication**

I dedicate this dissertation to my wife, Stephanie. When I believed I could not keep going, she was there to listen and to comfort me. Never once did she lose hope or faith in me. I am forever in her debt and owe any future success to her. I am lucky to have her by my side.

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## Table of Contents

	Page
List of Tables .....	vii
List of Figures .....	viii
Abstract .....	ix
Introduction .....	1
Emotion Regulation.....	4
Parental Socialization of Emotion.....	10
Modeling of emotion expressions.....	12
Contingent reactions to emotion.....	15
Emotion language and discussions about emotions. ....	18
Teachers as Emotion Socializers.....	19
Expressions and contingent reactions.....	21
Emotion language and discussion about emotion.....	22
Emotion socialization in Head Start classrooms. ....	23
The Current Study .....	23
Method .....	26
Participants .....	26
Procedure.....	27
Measures.....	28
Emotion regulation—Emotion Elicitation and Regulation Assessment. ....	28
Validity and development.....	28
Training and reliability. ....	32
Description of protocol. ....	34
Analysis variables and data reduction.....	37
Teachers’ emotion socialization—Focal-T. ....	42
Validity and development.....	42
Training and reliability. ....	44
Description of protocol. ....	45

Analysis variables and data reduction.....	48
Data Analyses.....	49
Results.....	54
Preliminary Analyses .....	54
Research Question 2: Effectiveness of Emotion Regulation Strategy Utilization .....	63
Research Question 3: Differences in Emotion Regulation Strategy Utilization Between Fall and Spring .....	64
Research Question 4: Exploration of Preschool Teachers' Socialization of Emotion Regulation .....	67
Expressive modeling.....	67
Contingent reacting.....	69
Expressive modeling and contingent reacting compared. ....	71
Discussion .....	73
Preschoolers' Use of Emotion Regulation Strategies .....	76
Research question 1.....	76
Research question 2.....	77
Research question 3.....	79
Differential Effects of Expressive Modeling and Contingent Reacting.....	81
Research question 4.....	81
Contingent reacting.....	82
Expressive modeling.....	87
Limitations .....	88
Conclusion.....	88
References.....	90

**List of Tables**

Table	Page
Table 1 .....	30
Table 2 .....	31
Table 1 .....	39
Table 3 .....	46
Table 4 .....	47
Table 6 .....	55
Table 7 .....	57
Table 8 .....	60
Table 9 .....	62
Table 10 .....	68
Table 11 .....	70

## List of Figures

Figure	Page
<i>Figure 1.</i> Emotion regulation as a process involving arousal and expression and change in arousal and expression. ....	5
<i>Figure 2.</i> Emotion regulation as a process including behavioral strategies. ....	8
<i>Figure 3.</i> Expressive modeling structural equation model. ....	52
<i>Figure 4.</i> Contingent reacting structural equation model. ....	53
<i>Figure 5.</i> Effective emotion regulation strategy utilization marginal means between fall and spring. ....	66



## **Abstract**

### **THE SOCIALIZATION OF EMOTION REGULATION IN PRESCHOOL CLASSROOMS**

Craig Steven Bailey, Ph.D.

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Dissertation Chair: Dr. Susanne A. Denham

Preschool children's emerging ability to utilize strategies to regulate negative emotion in the classroom is an important skill that contributes to concurrent and later social and academic success. Teachers as social-emotional educators may contribute to children's emerging regulation abilities via their classroom expressive modeling and via the ways that they react to children's emotions. The current study explored 39 preschool teachers' emotion socialization relative to 168 3- and 4-year-olds' effectiveness in the utilization of emotion regulation strategies. Children's expression of negative emotion, their use of active distraction, information gathering, and passive waiting emotion regulation strategies, and their change in emotion expression, were coded during fall and spring administration of a disappointing gift task and a frustrating drawing task. Teachers were observed for their expressions of emotions and their reactions to children's emotions. In general, children were equally effective at using the three emotion regulation strategies to regulate their negative emotion. Children did not change from fall to spring in their

effectiveness in utilizing the emotion regulation strategies, but did attempt less active distraction in the spring than they did in the fall. Frequency of using a particular strategy did not correlate with how successful children were in using that strategy. Unexpectedly, teachers' punitive and minimizing reactions predicted children's effectiveness in utilizing an active distraction emotion regulation strategy. Teachers' socialization of emotion may be with respect to classroom expectations of how and when emotions are expressed and children's increasing understanding of how to use emotions to achieve their goals. Teacher emotion socialization processes may operate differently than parental emotion socialization processes.

## Introduction

Emotion regulation—managing the internal and external experience of emotion through activation, inhibition, or modulation of thoughts, feelings, and behavior—is considered by many as foundational to the social and academic learning inherent in young children’s school adjustment and later school success (Denham, 2006; Garner, & Waajid, 2008; Graziano, Reavis, Keane, & Calkins, 2007; Miller, Gouley, Seifer, Dickstein, & Shields, 2004; Shields et al., 2001; Spinrad et al., 2006; Trentacosta & Izard, 2007). As important as *how* emotion regulation unfolds during the early childhood years is to research and practice, *why* it unfolds the way it does is of equal or greater importance. Why, for example, might some children leave particular preschool classrooms be better to meet the social-emotional demands of kindergarten and beyond than their peers? The growth in children’s social-emotional functioning that characterizes the preschool period happens within the social-emotional context of the classroom. Exploring this ecology of emotion regulation involves investigating the social agents with which children interact and the social processes of emotional experience. Within a bioecological approach, the early childhood classroom represents a salient context in which children are learning socially and emotionally, including how to regulate their emotion-related experiences (Bronfenbrenner & Morris, 2006; Zins, Bloodworth, Weissberg, & Walberg, 2007).

At the center of children's experiences in preschool classrooms are teachers, and much research suggests that their behavior in the classroom is principal to children's social-emotional learning (Buyse, Verschueren, Doumen, Van Damme, & Maes, 2008; Mashburn et al., 2008). For example, emotionally supportive teachers have students that are not only rated higher in their social skills, but the negative outcomes associated with internalizing or externalizing behavior may even be mitigated for children in these supportive contexts (Buyse et al., 2008; Mashburn et al., 2008). This research highlights the pivotal role that teachers play in children's development. Nonetheless, little work has been done to fully understand the emotion-related transactions between teachers and children that may be socializing children's social-emotional learning in the classroom, and in particular, the development of emotion regulation (Denham, Bassett, & Zinsser, 2012).

Research on parenting reveals the various dimensions of caregiving that may carry over into the classroom to predict child outcomes including sensitivity, responsiveness, comfort, harshness, warmth, and control (e.g., Berzenski & Yates, 2013; Blandon, Calkins, & Keane, 2010; Chang, Schwartz, Dodge, & McBride-Chang, 2003; Davidov & Grusec, 2006; Dennis, 2006; Vesely, Brown, & Mahatmya, 2013). *How* these dimensions of parenting contribute to the prediction of optimal developmental outcomes is unclear. Emotion socialization behaviors are more than positive or negative styles during particular scenarios like discipline, frustrating situations, or teachable moments. Rather, emotion socialization processes encompass specific, dyadic behavior within everyday transactional interactions (Denham, Bassett, & Wyatt, in press; Eisenberg,

Cumberland, & Spinrad, 1998). In particular, emotion socialization processes encompass the behaviors of transmitting and receiving national, local, familial, school, and cultural values, rules, and beliefs within the context of emotional experience.

Family models of emotion socialization, centering on the type and quality of parents' expressive modeling, contingent reacting to their children's emotion, and emotion talk and discussion of emotion, provide specific social pathways for children's social-emotional development, explaining both *how* and *what* children are learning from their interactions with caregivers (Chaplin, Cole, & Zahn-Waxler, 2005; Denham, 1989; Denham & Grout, 1992; Denham & Kochanoff, 2002; Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997; Fabes, Leonard, Kupanoff, & Martin, 2001; Luebbe, Kiel, & Buss, 2011; Taylor, Eisenberg, Spinrad, Eggum, & Sulik, 2013; Wong, McElwain, & Halberstadt, 2009). The association of parenting dimensions like warmth with children's social-emotional learning may be mediated by parental socialization processes like expression and contingent reaction (Zhou et al., 2002).

Teachers' expressive modeling, contingent reaction to children's emotion, and emotion talk and discussion of emotion in preschool classrooms may contribute to children's abilities to express and regulate their emotions in similar ways as family emotion socialization practices (Denham et al., 2012). The conceptual framework guiding our research integrates child, family, and education theory and provides the bedrock for our methodological and analytical strategy. First, we believe that understanding the processes that *support* children's development of emotion regulation begin with a consideration of the processes *of* emotion regulation. Second, we draw largely from the

family emotion socialization literature to inform our search for emotion socialization processes that operate within teacher-child interactions in preschool classrooms. Finally, we explore the limited early childhood education socialization literature. Given these foundations, the purpose of the current investigation is to explore the processes of socialization in the preschool classroom that may be driving children's development of emotion regulation over the course of an academic year.

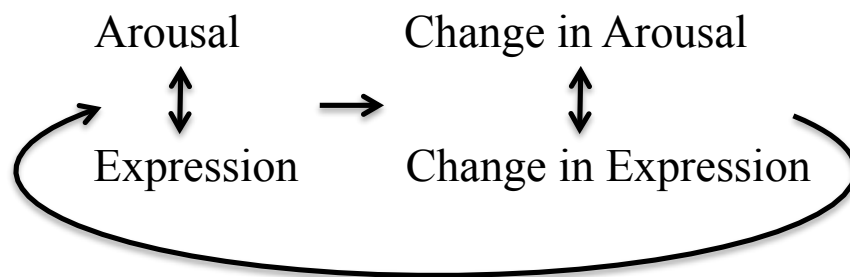
### **Emotion Regulation**

Emotion regulation begins with experiencing an emotion, which starts as cognitive, behavioral, and physiological arousal in reaction to internal or external stimuli allowing an immediate evaluation of personal and situational circumstances for an emotion-related behavioral response (Brenner & Salovey, 1997; Cole, Martin, & Dennis, 2004). The nature of stimuli, as perceived by the individual, determines the emotion, and the subjective significance determines the intensity (Campos, Frankel, & Camras, 2004; Lemerise & Arsenio, 2000). Once elicited, emotions influence behavior.

The external patterns of facial, bodily, and vocal expression and behavior result from these emotion processes and is what others end up seeing of our subjective, internal experience (Denham, 1998). The expression of fear, for example, is an external manifestation of internal experiences like muscle tension and heightened awareness. Likewise, happy is an external manifestation of internal experiences like increased heart rate and subjective interpretation of endorphins. The facial, vocal, and bodily expressions of emotions communicate to others internal emotional states (Cole, Michel, & Teti, 1994; Halberstadt, Denham, & Dunsmore, 2001; Lemerise & Arsenio, 2000). Emotion

expressions are indicative of how children are reacting to the features of situations, giving clues to their subjective, internal experience. In the preschool classroom, emotion expressions are what teachers see when children are smiling, laughing, frowning, crying, hugging, scowling, yelling, or cowering.

Emotions are not static. Emotions change in intensity, duration, or type (Cole et al., 2004). This quality of emotion is, in part, the outcome of its regulation, such that when an emotion is regulated, the intensity, duration, or type changes. Emotion regulation can be thought of as a process beginning with an emotional experience involving arousal and emotion expression and ending with a change in that experience (see Figure 1). For example, when Carl down-regulates his anger by using language to express his displeasure by yelling, “Stop it!” he is engaging in a form of emotion regulation.



*Figure 1.* Emotion regulation as a process involving arousal and expression and change in arousal and expression.

Emotion regulation is the process of modulating arousal, and there are two separate but interrelated mechanisms for initiating and carrying out this process. One mechanism is the automatic, psychophysiological tendency of the autonomic nervous system to return to a state of homeostasis, and the other mechanism involves the deliberate and effortful attempts to do so (Blair, 2003; Calkins, 2007; Dennis, 2006; Eisenberg & Spinrad, 2004; Metcalfe & Mischel, 1999; Rothbart & Bates, 2006; Schaefer et al., 2003; Smith-Donald, Raver, Hayes, & Richardson, 2007; Thompson, Lewis, & Calkins, 2008). Biologically based individual differences in children's patterns of reaction, arousal, and regulation (i.e., psychophysiology) are often considered aspects of their temperament, (Rothbart & Bates, 2006). Temperament, the stable cognitive, emotional, and behavioral patterns involving the psychophysiological tendency to return to homeostasis or, at least, optimal arousal, is the foundation and context for children's active and effortful management of their emotions (Eisenberg & Spinrad, 2004; Rothbart, & Bates, 2006). Children's temperamental differences in both arousal and regulation in part determine children's behavior. Arousal and behavioral tendencies explain, in part, how and to what degree they regulate their emotions. That is, the history and consistent experience of emotion is linked to its regulation. Display rules that center on containing negative arousal, especially in the classroom, put great pressure on children to regulate their negative emotion expressions. As such, we focus on children's regulation of negative expressions as learning such an ability is an appropriate developmental task of the preschool period.



The theoretical distinction between emotion arousal, emotion expression, and emotion regulation is at times unclear from an observational standpoint. For example, there is no way to accurately and reliably know what feelings 3-year-old Sarah is experiencing internally without evidence via outward expression. Is her lack of expression the result of voluntary effort or simply an aspect of the way she expresses her feelings to others if she is in fact experiencing an emotion? Similarly, if DeShawn is crying when he is dropped off by a parent, but eventually stops crying, how are we to ascertain whether DeShawn is *actively* down-regulating his emotional response?

Teachers can only react to children's observable behaviors of emotion regulation, whether voluntary or involuntary. The support children need from teachers to be successful in school may even be contingent on whether children are suffering socially because of their struggles to regulate their emotions (Bailey, Denham, Curby, & Bassett, 2014). In this sense, the function rather than the processes of emotion regulation may be more important in that when it happens appropriately and effectively relative to the child's temperament, it contributes to children's social-emotional and academic competence. Accordingly, the present study focus was on the observable, functional behavioral strategies of emotion regulation. There is no way to observe with 100% certainty whether a child is emotionally aroused but not expressing any observable indicators because they are effectively regulating/inhibiting that emotion. Furthermore, there is no way to objectively determine the extent to which a child is regulating or whether the regulation behaviors are effortful or not effortful. For this reason, rather than focusing on the voluntary, effortful, and goal-directed behavior of emotion *self*-regulation

(Campos et al., 2004; Denham, 2006; Dennis, 2006; Eisenberg & Spinrad, 2004; Spinrad et al., 2006; Thompson et al., 2008), we focus on the functional behavioral strategies as part of the process of emotion regulation (see Figure 2).

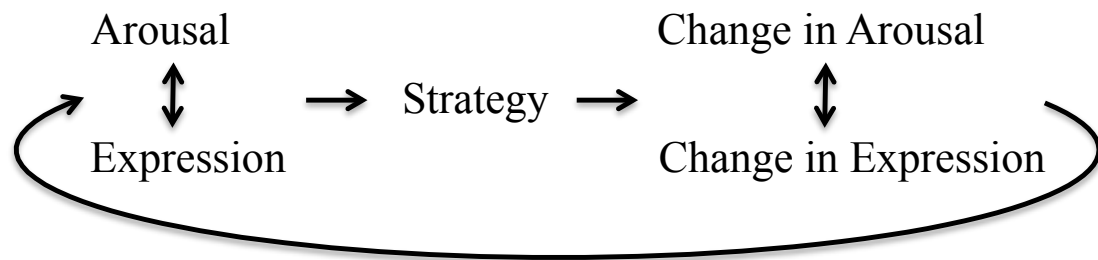


Figure 2. Emotion regulation as a process including behavioral strategies.

The strategies that children use to regulate emotion and their experiences are organized patterns of expression and behavior (Grolnick, Bridges, & Connell, 1996). Like the processes of emotion arousal, expression, and modulation, the strategies children use to regulate their emotion involve underlying attention, cognitive, behavior, and expression processes (Denham, 1998). In a study of 3-year-olds, Gilliom, Shaw, Beck, Schonberg, and Lukon (2002; see also, Grolnick et al., 1996) identified distinct behavioral strategies that young children use to regulate their emotions, which involve the processes of attention (e.g., *active distraction*, *focusing*, or *waiting passively*), cognitive reappraisal (e.g., *information gathering*), and self- or other-coping behaviors/expression (e.g., *venting*, *externalizing*, *assertive verbalizing*, *self-soothing*, and *comfort-seeking*).

Thus, young children may regulate their emotion using their processes of attention, such as distracting himself or herself from the source of emotion by focusing on a toy, person, or object (i.e., *focusing*), or engaging in another situation entirely (i.e., *active distraction*). Alternatively, children may focus directly on the source or passively wait for the source to change (i.e., *waiting passively*). More cognitively taxing strategies involve reappraisal, which is where children attempt to understand a situation by gathering more information through asking questions (i.e., *information gathering*). At times, children's strategies are closely aligned with their expression of emotion, such as *venting* or *externalizing*. Children also engage in behaviors geared towards reducing discomfort and distress by *self-soothing*, such as when children suck their thumb or hold a blanket. Soothing can also come externally from others (i.e., *comfort seeking*)—the focus here, though, is not necessarily on others' behaviors that result in emotion regulation, such as a hugs, but on the child behaviors that elicit the comfort and affection of others.

These strategies (i.e., active distraction, focusing, waiting passively, information gathering, venting, externalizing, assertive verbalizing, self-soothing, and comfort-seeking) are functional because the strategies are used by children to accomplish the goals of embracing display rules or reducing distress (Campos et al., 2004; Denham, 2006; Dennis, 2006; Eisenberg & Spinrad, 2004; Spinrad et al., 2006; Thompson et al., 2008). Some strategies have been shown to be more effective than other strategies. For example, Gilliom and colleagues (2002) found that 3-year-old boys were more effective in their regulation of anger during a frustrating situation (i.e., the strategy was followed

by a decrease in anger) when they used an information gathering strategy and were less effective (i.e., the strategy was followed by a maintenance or increase in anger) when they used a active distraction or passive waiting as a strategy. Because the current study includes 3- and 4-year-old boys and girls, age and gender were used as control variables.

Developmentally, the processes of cognitive appraisal such as information gathering may be considered more advanced than passively waiting or those that involve shifting attention. However, active strategies in general (e.g., active distraction, focusing, information gathering, assertive verbalizing, self-soothing, and comfort-seeking) may be better for children's social-emotional competence than passive strategies (e.g., waiting passively, venting, externalizing; Blair, Denham, Kochanoff, & Whipple, 2004; Blanchard-Fields & Coats, 2008). Through toddlerhood and into early childhood, children are increasingly able to actively manage their emotional experiences, especially in situations that arouse negative emotions rather than resorting to passive strategies (Cole et al., 2011). One aim of the current study was to explore differences in the effectiveness of particular emotion regulation strategies when children experience negative emotion, as well as differential associations of teachers' emotion socialization behaviors. The nature of emotion socialization, based in large part on the parenting literature, is discussed in turn.

### **Parental Socialization of Emotion**

Socialization, first and foremost, is a collection of social learning *processes* (Denham et al., in press; Eisenberg et al., 1998; Halberstadt, 1991). The current study is therefore concerned with the processes of socialization in the classroom that are

contributing to children's social-emotional learning, especially their development of appropriate and effective emotion regulation skills. Within a developmental framework, the processes of socialization involve influential socializers who shape children's behavior and transmit sociocultural rules over time. Socialization processes are inherent within the interactions children have with others like parents, teachers, and peers (Denham et al., in press). It is from these interactions that children are learning about themselves and others, to express their emotions and react in complex, emotionally-charged situations, and to manage their experiences. Thus, parents' own display rules, goals, and strategies are thought to internalize into children's display rules, goals, and strategies, becoming part of the toolkit for children's self-regulation of emotion (Calkins, 2007; Eisenberg et al., 1997; Kalpidou, Power, Cherry, & Gottfried, 2004; Thompson et al., 2008). Most of what is known about the socialization of emotion involves parents, mostly mothers, so our work understanding teachers as socializers in the classroom begins in the home with understanding parents.

The parent emotion socialization model is built from fundamental social and associative learning principles of behavior and is used to explain the transmission and reception of culture from both the transmitters' and the receivers' perspectives (Denham et al., in press; Eisenberg, et al., 1998; Halberstadt, 1991). As such, research has shown that children learn concrete aspects of social-emotional competence via parents' modeling of emotion expressions, contingent reactions to their children's emotion, and parental emotion talk and discussions of emotion (Eisenberg et al., 1998). We apply this model to explore teachers' socialization of preschoolers' emotion regulation.

**Modeling of emotion expressions.** The socialization of emotion model has a foundation in social learning theory—children imitate the behavior of the models they have around them (Halberstadt, 1991). Parents', and potentially teachers', emotion expressions are guides for how children should or should not express themselves in particular situations. Modeling by caregivers thus serves as the means for teaching how to, and how not to, behave (Halberstadt, 1991). Examples of child's social-emotional learning from their models like parents are exhibited in a variety of circumstances. According to an emotion socialization perspective, when Pete views his mother smiling when saying, "Thank you," at the grocery store, Pete is more likely to then smile and say, "Thank you," to others. Pete's mother may also be emotionally expressive by scowling when she is upset with Pete for not picking up his toys. If Pete's mother is not emotionally expressive when happy or angry, Pete is less likely to be expressive himself and may even mask or hide his own emotions. If Pete's mother is consistently negative in her expressions, Pete may come to not only avoid her when she is negative or the situations related to her negativity, but Pete may also come to express more negativity himself. When parents are more positive in their expressiveness, their children are more positive in their expressiveness, both in the home and when those children are playing with peers (Denham et al., 1997; Denham, Renwick-De Bardi, & Hewes, 1994).

As parents express emotions, the cultural and contextual appropriateness of particular emotion expressions and ways of regulating emotion are on display and can be internalized to become aspects of children's emotion knowledge about the nature of emotions, the associated situations that likely elicit emotions, and the cultural and

contextual rules under which appropriate emotional experiences operate (Denham & Kochanoff, 2002; Dunn & Brown, 1994; Warren & Stifter, 2008). In addition, display rules reflect social goals of emotion regulation. When Abbas's father instructs Abbas to use his inside voice when he is upset at the library for not going out for ice cream afterwards, Abbas's father is indirectly conveying that the purpose of emotion regulation at the library is with respect to other patrons. Emotion regulation, then, can be thought of as the process of adhering to personal or social goals, and emotion expressions are the socialization mechanism by which parental and social goals are conveyed to children.

Accordingly, research supports parental expression of emotion as a factor in the development of emotion regulation. For example, mothers who were more positive in their expression had toddlers who were more apt to self-regulate their emotions, whereas more negative expressions were negatively related to toddlers' self-regulation of emotion (Eisenberg et al, 2001). The connection between expressive modeling and emotion regulation is not too surprising given how important expression is to emotion regulation. In fact, when considered within transactional streams of expressing and contingent reacting between parents and children, parents expressions cue children's reactions, such that parental expression regulates children's subsequent experience, sometimes called 'emotion dialoguing,' (Denham, 1989; 1993; Denham & Auerbach, 1995; Denham & Grout, 1992; Eisenberg et al., 2001; Halberstadt et al., 2001).

Additionally, research shows that more frequent family negative emotion is associated with fewer displays of children's emotion regulation behavior (Ramsden & Hubbard, 2002). Not only are heightened negative expressions of emotion by parents

potentially reflective of their own dysregulation, but it is also challenging and unlikely that parents can be supportive of children's emotions when they are dysregulated (Denham and Kochanoff, 2002; Denham et al., 1994; Eisenberg et al., 1997; 2001). Children learn more from parents who are regulated in their negative expression of emotion because the emotion signals are not the dominating feature of the interaction (Denham & Kochanoff, 2002; Denham, Zinsser, Brown, 2010; Denham, Zoller, & Couchoud, 1994; Eisenberg, et al., 1997; Fabes et al., 2001; Halberstadt et al., 2001). When Maggie sees her mommy's expression of anger, she might also see her mommy take deep breaths as her mommy copes with her intense arousal. Parents' expressive modeling is thus comprised of emotion expressions and its regulation.



**Contingent reactions to emotion.** Children's emotional reactions to the environment, and then subsequent regulation, are shaped not only by how parents express themselves, but also by how they react to and attempt to regulate and control children's emotion (Eisenberg et al., 1998). Contingent responding to emotion works as an instrumental learning contingency, such that appropriate or inappropriate behaviors are reinforced or punished (Halberstadt, 1991). Parents who are positive and supportive in their reactions to negative emotions provide children with the strategies to regulate and instill a sense that negative emotions can be tolerated and regulated, whereas punitive or unsupportive reactions do not provide children with the strategies to regulate and demonstrate to children that negative emotions should be hidden or are inappropriate (Eisenberg et al., 1998; Halberstadt, 1991; Jones, Eisenberg, Fabes, & MacKinnon, 2002; Spinrad, Stifter, Donelan-McCall, & Turner, 2004).

Within transactional interactions, parents' contingent responding regulates children's experience and learning of emotion (Calkins, 2007; Denham, 1989; 1993; Denham & Auerbach, 1995; Denham & Grout, 1992; Eisenberg et al., 1997; 2001; Halberstadt et al., 2001). Children learn, for example, how to respond to others' experiences of emotion, based in part, on how parents react to them and to others (Davidov & Grusec, 2006; Eisenberg et al., 1992; Taylor et al., 2013).

When parents are supportive and encourage emotion expression, children are better able regulate their emotion (Eisenberg & Fabes, 1994). Similarly, children whose parents reflected positive emotion displayed more emotion regulation behavior (Garner, 2006). Supportive reactions allow children to explore and learn from negative emotions

rather than avoiding them (Baker, Fenning, & Crnic, 2011). For example, when parents are supportive when their children are distressed, those children learn that their experience of emotion is both acceptable and manageable. In turn, children end up knowing more about how to effectively regulate their emotions (Cole, Dennis, Smith-Simon, & Cohen, 2009). By contrast, when parents are punitive, dismissive, or negative in their reactions, they may promote maladaptive patterns of expression, such as avoiding negative emotions and experiences, as well as greater externalizing, because children have no template of what to do and are not learning to actively regulate (Denham and Kochanoff, 2002; Eisenberg et al., 1997; Eisenberg & Fabes, 1994; Fabes et al., 2001). It is likely that early socialization may be an important factor in steering and reinforcing children in particular directions. For example, when mothers were more punitive and dismissive when their children were sad or afraid, their toddlers were reported as exhibiting more internalizing behaviors one year later (Luebbe et al., 2011).

When caregivers contingently respond to children, caregivers' responses may be a component of how they express themselves. For example, how parents respond to children's emotion, especially negative emotion, is linked to parents' own experience of distress (Fabes, et al., 2001). The likelihood and degree of contingent reaction, especially punitive, dismissive, or negative reactions, may depend not only on the degree of child expression and behavior, but also on parents' own ability to regulate (Fabes, et al., 2001; Zhou et al., 2002). Socialization processes are not only inextricably entangled but also, multidirectional between adult and child.

There is some evidence that parents' emotion expression may be socializing the display rules that children learn regarding expressing emotion, whereas the way parents respond to children's distress teaches children how to respond to others' emotion and how regulate their own emotions (Davidov & Grusec, 2006). As children become better able to regulate during the preschool years, their emotion regulation abilities are likely strengthened as parents react to and support the new limits of what children are capable of doing by themselves. That is, parents may *co-regulate* the experience of emotion in concert with children's growing abilities to self-regulate. Parents often sense children's increasing participation in emotion regulation as most children approach kindergarten and naturally decrease their co-regulation unless children's distress becomes too much to bear (Bernier, Carlson, & Whipple, 2010; Denham & Kochanoff, 2002; Fabes et al., 2001; Metcalfe & Mischel, 1999; Spinrad et al., 2004). The preschool years are thus a time when positive emotion socialization experiences are important for a successful transition from caregiver-child co-regulation to child self-regulation.

**Emotion language and discussions about emotions.** Expressions, reactions, and discussions of emotion happen in the stream of interaction and are often concomitant (Denham & Auerbach, 1995; Halberstadt, 1991). For example, when mothers are co-regulating emotion, they end up explaining more about emotion (Spinrad et al., 2004). The ways people talk about emotions are thus an aspect of how emotions are expressed, reacted to, and explained (Gottman, Katz, & Hooven, 1996). An adult talking about feelings can help children learn about themselves and others (Eisenberg et al., 1992). Even though emotion talk happens during expressive modeling and contingent reacting, emotion talk is a unique socialization mechanism in that it involves specific verbal language that directs attention to salient emotional cues (Bailey, Denham, & Curby, 2013; Denham et al., 2010; Eisenberg et al., 1997).

Overall, research shows that more parental talk about emotions is associated with more child talk about emotion and more knowledge of emotion (Denham & Auerbach, 1995; Denham et al., 1997; Dunn, Brown, & Beardsall, 1991; Eisenberg et al., 1997). Learning the language of emotion is important for labeling, because emotion words and general talk about emotions are a means by which children can regulate emotion (Eisenberg et al., 1998; Halberstadt, 1991). Emotion language is a critical aspect of positive emotion regulation skills. For example, preschoolers were more likely ready for kindergarten when they used language in their reactions to resolve frustrating situations (Denham et al., 2012).

Emotion talk is a means to transmit directly and specifically parental values, beliefs, and attitudes about emotional experience and expression (Gottman et al., 1996;

Katz, Maliken, & Stettler, 2012). Parents may even teach or coach children during emotional experiences by setting expectations in particular circumstances (Halberstadt, 1991). For instance, a parent may explain that, “We don’t hit our friends when we’re angry.” This example also illustrates that when parents talk about emotion, their talk is not only indicative of the knowledge they have of display rules, their own goals, and how they use their behavior to achieve those goals, but also, the knowledge and behavior they wish their children to have and exhibit. In other words, emotion talk can indicate parents’ meta-emotion philosophy (Gottman et al., 1996; Katz et al., 2012). Different emotions and scenarios likely elicit different discussions, which may serve distinct functions based, in part, on how parents think about emotion and what they want their children to learn about emotion (Fivush, Berlin, Sales, Mennuti-Washburn, & Cassidy, 2003). Many parents want what is best for their children, which may involve adhering to display rules about negative emotion. Therefore, talking about emotion is more likely in the context of negative emotional experiences, but up to a point (Dunn & Brown, 1994). Frequent or intense negativity inhibits discussion and learning, so it is important that parents are regulated in their own expressions and reactions (Dunn & Brown, 1994; Fabes et al., 2001; Zhou et al., 2002).

### **Teachers as Emotion Socializers**

The parental socialization of emotion model of expression, contingent reaction, and discussion of emotion provides a useful framework to investigate the specific processes of teacher emotion socialization operating within classrooms (Denham et al., 2012). This framework remains largely unexplored in classrooms. It is likely that the

underlying principles of learning from which emotion socialization is based remain operative in the classroom. Furthermore, even though teachers are not children's primary caregivers, they may still be important socializers of emotion and contribute to their social-emotional learning, especially for children who spend considerable hours in their care (Bronfenbrenner & Morris 2006; Denham et al., 2012; Zins et al., 2007).

Furthermore, children have been shown to respond similarly to parents as they do to nonparental caregivers, based in part on children's generalization of their working model of attachment to others (Feldman & Klein, 2003). Therefore, we focus on whom we know the least about—teachers. Although research is available focusing on teachers' construction of an emotional climate/environment (e.g., Hargreaves, 1998, 2001; Nias, 1996; Yan, Evans, & Harvey, 2011) the indices of an emotional climate are not necessarily indicative of specific emotion socialization behaviors. Additional research is required to cross-validate these constructs and is not the focus of the current investigation. What scant research available about the way teachers express and contingently react to emotion, and how they discuss emotions in the classroom, is presented in turn.

**Expressions and contingent reactions.** Teachers experience emotion (Cross & Hong, 2012; Meyer & Turner, 2007; Pianta, 1999; Sutton, & Wheatley, 2003). Much of the available research about adult emotion in the classroom does not include preschool teachers. Additionally, even less is known about how teachers express and react to emotions in the classroom and the effect these behaviors have on children's development of emotion regulation (Denham et al., 2012). Some evidence suggests that teachers' emotionally supportive reactions protect children from stress experienced at home (Rabineau, 2004). Teachers' emotion, like parents', likely organizes and regulates children's experience of emotion within social interactions. For instance, teachers who were higher in intensity in their negative emotions were found to be more punitive of children's negative emotion than less emotionally intense teachers (Ersay, 2007). Like parents, teachers' expressions and reactions to emotion provide children with information about display rules and strategies they can internalize and use to self-regulate their emotions (Rabineau, 2004). Additionally, teachers' reactions to children's emotions change as they adapt to children's increasing abilities (Ahn & Stifter, 2006; Meyer & Turner, 2007). As a result, children's age may not only be associated with children's effectiveness at regulating their negative emotions, but also may be associated with teacher's emotion socialization behaviors. The current study used children's age as a control variable.

**Emotion language and discussion about emotion.** Teachers' discussions of emotion with children, when purposeful, are familiar acts of teaching, and many curricula have been developed to expand and facilitate social-emotional learning (Brackett & Katulak, 2007; Denham et al., 2012; Jennings & Greenberg, 2009; Raver, 2004; Zins et al., 2007). Moreover, as in many households, books in classrooms serve as props to engage children in learning about emotions, especially how emotions operate in self and others, as well as contextualizing display rules for children (Ahn, 2005). Further, as with parent socialization of emotion, teachers' reactions to emotion often go hand in hand with talk about emotion (Ersay, 2007; Rabineau, 2004). For example, preschool teachers who used emotion words in their reactions to children's negative emotions were less likely to use punishing or minimizing reactions (Ersay, 2007). Ersay also found that teachers who were more expressive themselves referred more to children's emotions, especially children's anger. Furthermore, much of teachers' talk about emotions was in reference to children's behavior concerning their emotions, the cause and consequences of their emotions, and the display rules for expressing and regulating emotion (Rabineau, 2004). In other words, teachers incorporate emotion words and discussions about emotion into their dialogues with children about aspects of children's behavior rather than in reference to teacher behavior or in storybooks.



**Emotion socialization in Head Start classrooms.** Low-income children entering Head Start classrooms are at risk for difficulties in regulating their emotions compared to their higher income peers, which may contribute to an achievement gap (Campbell & Stauffenberg, 2008; Denham et al., 2012). The cultural background, beliefs, and educational practices specific to Head Start teachers may explain differences in teacher–child interactions and socialization practices (Zinsser Bailey, Curby, Denham, & Bassett, 2013; Zinsser, Shewark, Denham, & Curby, 2014). Head Start classrooms may offer a unique context for enhancing emotion socialization for at-risk children, providing disadvantaged groups with the experiences that foster positive emotion regulation development and successful transitions into kindergarten (Bierman et al., 2008; Izard et al., 2008).

### **The Current Study**

Preschool children demonstrate that they are emotionally competent and ready for kindergarten when they effectively regulate their emotions, especially the negative emotion that accompanies disappointing and frustrating situations. The current study utilizes disappointing and frustrating tasks to elicit emotions in children, giving them opportunities to regulate emotions. In our paradigm, the measurement of emotion regulation via strategy use hinges first on children’s expression of emotion and then on whether that emotion changed following the use of a strategy (see Figure 2). Children who exhibited a change away from negative emotion following the use of a strategy were considered to be effectively utilizing a particular strategy to regulate their emotion. Children who utilized strategies with no change in their emotion expressions or who used

no strategies at all were believed to be not effectively regulating emotions. We explored this distinction and hypothesized that there is in fact a difference between patterns of behavior that are associated with effortful emotion regulation (i.e., emotion regulation strategies) and children's successful utilization of emotion regulation strategies to regulate emotion. This was addressed in the first research question:

1. How do preschool children's raw frequencies of active distraction, disruptive behaviors, passive waiting, and information gathering associate with their effectiveness at regulating negative emotion?

H1. Across all emotion regulation strategies, children's raw frequencies will not associate with their effectiveness at regulating negative emotion.

We followed up research question 1 by investigating the variance within children's effective utilization of emotion regulation strategies:

2. When preschool children express negative emotions, which of their emotion regulation strategies—active distraction, disruptive behaviors, passive waiting, or information gathering—are the most effective?

H2. Children will be most effective in regulating their negative emotions in when using an information gathering emotion regulation strategy.

Over the course of a school year, children may or may not have changed in their ability to regulate their emotions based on normative change and interactions with teachers, peers, and parents. We explore children's learning to regulate their emotions by asking:

3. Over the course of a school year, how do preschool children change in their effective utilization of active distraction, disruptive behaviors, passive waiting, or information gathering?

H3. Children will change the most in their effective utilization of information gathering.

Much of what teachers do rests on what is happening in the classroom within the day-to-day interactions they are having with their students. We therefore investigate the processes of teacher emotion socialization by exploring the way teachers' express their emotions during their interactions with children, and the way teachers contingently react to children's emotion. Specifically:

4. How do teachers' expressions of emotions and contingent reactions to emotions predict the way children change in their effective utilization of emotion regulation strategies?

H4. Teachers' contingent reactions to children's emotion will be stronger predictors of change in children's effective utilization of strategies to regulate negative emotion than teachers' expressions of emotions.

H5. Teachers' supportive reactions will be the strongest predictor of positive change in children's effective utilization of strategies to regulate negative emotion.

H6. Teachers' unsupportive reactions will be the strongest predictor of negative change in children's effective utilization of strategies to regulate negative emotion.

## Method

### Participants

Participating children and teachers were recruited from 3- and 4-year-old classrooms in Head Start and private childcare centers in Northern Virginia during the 2012 – 2013 academic year. Of the 168 children who participated, 74 (44.05%) were in 3-year-old classrooms, 91 (54.17%) were in 4-year-old classrooms; 3 (1.78%) were unable to be identified. Children were between 30 and 60 months in age ( $M = 38.12$ ,  $SD = 6.95$ ) and were half female ( $n_{\text{female}} = 85$ ,  $n_{\text{male}} = 83$ ). Race was indicated by parent report as 73 Caucasian (43.5%), 29 African American (17.3%), 7 Asian (4.2%), 13 other (7.7%); 46 parents did not provide a response (27.4%).

There were approximately 4 children in the study per classroom within 39 classrooms. Sixty-four of the children (38.1%) were in 15 Head Start classrooms and 104 of the children (61.9%) were in 24 private childcare classrooms. All lead teachers were female. Teachers were between the ages of 18 and 64, identifying mostly as between 25- and 34-years-old ( $n = 18$ , 46.5%) or 45- and 54-years-old ( $n = 9$ , 27.1%). In terms of experience, 23.1% were novice teachers (1 – 6 years,  $n = 9$ ), 38.5% were moderately experienced (7 – 15 years,  $n = 15$ ), and 33.3% were highly experienced (16+ years,  $n = 13$ ); 2 (5.1%) teachers did not identify their years of experience. The majority of teachers held a bachelor's degree ( $n = 20$ , 51.3%), 6 held a graduate degree (15.4%), 6 held an

associate's degree or child development accreditation (15.4%), and 5 completed some college, held at least a high school diploma or a GED (12.8%). Three teachers either did not identify their educational experience (7.7%). Teachers identified as belonging to specific racial categories, with 29 as Caucasian (74.4%), 7 as African American (18.0%), 2 as Asian (5.1%), and 1 as Puerto Rican (2.6%).

### **Procedure**

From October to May, trained research assistants visited participating schools. Data collection during this period was separated into three distinct and non-overlapping periods: fall, winter, and spring. The fall data collection period was defined as October, November, and December and included the emotion regulation assessment pretests. The winter data collection period included the second half of January, all of February, and the first half of March and included naturalistic classroom observations of teachers' emotion socialization. The spring data collection period included the second half of March and all of April and May and included the emotion regulation assessment posttests. Data collection was facilitated by tablet computers, which served as a means to enter data and to structure observational coding using computer programs.

The emotion regulation assessment described in the current study was part of a larger child assessment protocol measuring other aspects of children's social-emotional and academic competence. The child assessment protocol included six visits during the fall and spring pre and posttests. Visits with individual children were approximately 10 – 15 minutes long, were conducted outside the classroom, and were completed in either the morning or afternoon outside of structured academic learning periods. Two assessments

were completed with the child during each visit—the emotion regulation assessment was the second assessment of the protocol. The classroom observations of teachers’ emotion socialization described in the current study were completed across four classroom visits. Each visit comprised of 20 minutes.

## **Measures**

### **Emotion regulation—Emotion Elicitation and Regulation Assessment.**

*Validity and development.* Children were observed for their expressions of emotion and their subsequent use of emotion regulation strategies using the Emotion Elicitation and Regulation Assessment (EERA) protocol and coding system. The EERA protocol and coding system is an adaptation of the Laboratory Temperament Assessment Battery (Lab-TAB), which was created to assess aspects of 3 and 3-year-olds’ temperament like latency, duration, and intensity of emotional reactions and the degree of regulation strategies used during structured, laboratory experiences (Goldsmith & Rothbart, 1999). We utilized the Lab-TAB framework and created a new protocol and coding system to meet the needs and constraints of our project. For example, the Lab-TAB is typically filmed and coded in a laboratory setting, whereas EERA is live-coded during direct assessments at the child’s school.

Development of EERA involved three phases. The first phase of development consisted of exploring past coding, theory, and research regarding children’s emotion expressions and the strategies they used to regulate their emotion. In terms of emotion expressions, we narrowed the scope of emotions covered in Lab-TAB to three: happy, sad, and annoyed/angry (see Table 1) in order to reduce observer fatigue and burden on

research assistants live-coding during the assessment thereby increasing reliability. Like Lab-TAB, our emotion coding system includes intensity. We also chose from Grolnick and colleagues' (1996) emotion regulation strategies to narrow the scope of coding and to also reduce observer fatigue and burden. We settled on four strategies, active distraction, disruptive behaviors, passive waiting, and information gathering, which were the most likely during the EERA tasks with our preschool population and were well supported by theory. We then discussed and finalized the coding criteria for each emotion expression and strategy based on consensus (see Table 2).

Table 1

*Emotion Elicitation and Regulation Assessment Emotion Codes, Definitions, and Typical Examples*

Emotion Code	Definition	Typical examples
Happy	Expresses pleasure or joy	Smiles, laughs Hums, sings; voice moves up & down in pitch freely, sounds relaxed Jumps for joy or with excitement, cheers
Sad	Expresses unhappiness	Looks dejected sorrowful; eyebrows may slant down. Vocal quality has a falling pitch; may be whiny with sad, not angry or fearful tone Body may be angled down or drawn in to center; child may look down and away
Annoyed/Angry	Shows irritation, frustration, or disappointment	Lips may be pursed; eyebrows furrowed down; may even clench teeth, snarl with classic square mouth Shows displeasure or disapproval by “grr” tone, raising voice May throw objects, place overly forcefully on table, or active non-compliance, cross arms
Neutral	No emotion shown	



Table 2

*Emotion Elicitation and Regulation Assessment Emotion Regulation Strategy Codes, Definitions, and Typical Examples*

Strategy Code	Definition	Typical examples
Active Distraction	Functional behavior that allows child not to attend to a difficult situation or purposeful behaviors in which the focus of attention is not on the task	Fantasy play Exploration of the area Putting the toy back in the box
Disruptive Behaviors	Behaviors that are not socially acceptable, “not ok”, or aggressive	Breaking or throwing objects Making hostile or rude comments to the examiner
Passive Waiting	Doing nothing functional, just “getting through this” or behaviors oriented to the environment without active task engagement	Looking at or fidgeting with toy Looking around the room Standing or sitting quietly and doing nothing else
Information Gathering	Asking questions aimed at learning more about the situation but not questions or statements indicating that the child wants to change the situation	“Is this a good circle?” “I have a broken toy, where is my present?” “What is this?”

In terms of protocol, we used three of the Lab-TAB tasks, Bubbles, Disappointing Gift, and Impossibly Perfect Circles, which were used as contexts to elicit the emotion and emotion regulation strategies. The protocol for these tasks was adapted to meet the needs of our project. In terms of coding, we developed computer software that facilitated task administration and live coding (Bassett & Bassett, 2012).

The second phase of measurement creation consisted of piloting. Two advanced graduate students piloted EERA with 20 3-, 4-, and 5-year-olds, and we subsequently used these data to modify the protocol and fine-tune the coding descriptions. Piloting was filmed, which were used for training purposes. These two advanced graduate students became master coders. Phase two culminated in the creation of the EERA manual. The third phase involved training and assessing reliability of coders. Data were then collected a month and a half later.

*Training and reliability.* Training consisted of completing a series of tasks that increased in difficulty. Tasks involved learning the protocol and the definition of each code, watching and discussing EERA demonstration with peers facilitated by the two expert graduate students who were involved in measure development and piloting, watching, coding, and discussing videos with master the two graduate student master coders and among peers, and practice administration and coding among peers (Fettig, Howarth, Denham, Bassett, Bailey, & Watanabe, 2012).

Reliability was assessed in three phases: protocol administration, video reliability, and live reliability. A research assistant was deemed proficient in protocol administration if the number of errors they made did not exceed 20% when demonstrating protocol

proficiency with an expert administrator. Passing video reliability involved watching and coding seven videos of children being administered each EERA task. Moving beyond video reliability required research assistants to have codes that significantly correlated with the master code. If a research assistant had at least one code that was significantly correlated or was moderately correlated, they met with an expert coder and recoded the videos in which their codes did not match. Overall, the final, Average Measure Intra-Class Correlations after all training had concluded for video reliability were between .94 and 1.00.

Live reliability was dual coded with a master coder of a live demonstration of all three tasks where an actor pretended to be a child. Research assistants were deemed reliable with kappas greater than .60 (i.e., good in strength) for all emotion and strategy codes. Alternatively, if all but one kappa for the emotion and strategy codes was at least .52 (i.e., lowest calculated kappa that was moderate in strength), the research assistant was considered reliable after meeting with the master coder to discuss and compare coding. With more than one kappa below .52, the research assistant met with a master coder to discuss and compare coding, watched video of the live administration, recoded problem areas, and became certified after a final discussion (Fettig et al., 2012).

*Description of protocol.* EERA utilizes mutually exclusive and exhaustive frequency coding of emotion, such that when a child was not expressing happy, sad, or annoyed/angry expressions, they were coded as neutral. Emotion codes also did not overlap. Emotion coding were via three channels, facial, vocal, and behavior, which collectively corresponded to the intensity. For example, if a child was smiling and only smiling (i.e., one channel), they were coded as low happy. If a child was jumping up and down while smiling (i.e., two channels) or jumping up and down, smiling, and giggling (i.e., three channels), they were coded as high happy. When an emotion was coded, the ER Observe computer program recorded onset of emotion, and duration was represented as time between emotion codes. If at any point during the task administration, the child utilized an emotion regulation strategy, the research assistant noted the corresponding emotion regulation code in the ER Observe computer program; the time was automatically noted.

Emotion expression and regulation strategies were coded during three tasks: Bubbles, Disappointing Gift, and Impossibly Perfect Circles. Although children competed all three tasks during the fall and spring data collection periods, the current investigation only uses data from the Disappointing Gift and Impossibly Perfect Circles tasks because those tasks elicited negative emotion and the Bubbles task did not.

During the Disappointing Gift task, children's baseline emotion was first recorded after the research assistant asked them if they wanted to play another game. Then, research assistants then said,

[Child's name], look what I have here! It's a present. You've done great so far today, and I'm going to let you unwrap this present and keep what's inside. It's a really neat toy! You'll have lots of fun playing with it. It's really wonderful. I wish I could keep it myself, but you've done such a good job, I'll give it to you.

Here you go! You can unwrap your gift now (Fettig et al., 2012, p. 4).

Research assistants then handed children a gift box (fall administration) or gift bag with a hole in the bottom (spring administration), which contained either a broken slinky toy (fall administration) or nothing (spring administration), and began coding once the child first looked into the gift box or gift bag. After 20 seconds, the research assistant asked, "Are you going to take it home?" followed by "Do you like it?" at 40 seconds (Fettig et al., 2012, p. 4). Research assistants were forbidden to engage in conversation with the child during the coding period and repeated any vocalizations the children made in a soft, neutral tone. After 60 seconds, the research stopped coding and exclaimed that they are silly and forgot the amazing toy that was supposed to be in the gift box or gift bag. Once the child received the toy, the research assistant began coding again during a 10-second recovery period. Research assistants were required to return children in a positive state and as such, recovery may have lasted longer than 10 seconds. Children were returned to their normal activities with a sticker and a prize for working so hard.

During the Impossibly Perfect Circles task conducted on a separate data collection day, children's baseline emotion was recorded after being asked if they wanted to play another game. Then, the research assistants asked, "Can you do me a favor? I need a perfect green circle. Could you draw it for me? I need a perfect green circle" (Fettig et al.,

2012, p. 5). Next, research assistants placed a sheet of paper and green marker on the table in front of the child and began coding once the child completed the first circle. After each circle or attempt, the research assistant criticized the child's performance by saying phrases like, "That's not circle enough," or "The two lines on that circle are not connected." At 60 seconds, the research assistant would repeat the phrase, "I need a perfect green circle" (Fettig et al., 2012, p. 5). After 120 seconds, the research assistant ended coding and would point to the last circle drawn, exclaiming, "That one looks great! Circles are hard to draw, aren't they? You did a great job! Thanks for drawing all those circles. Would you like to draw a smile in this one? You can take it home to show your family" (Fettig et al., 2012, p. 5). While the child drew a happy face, the research assistant began coding again during a 10-second recovery period. Like the Disappointing Gift protocol, research assistants were required to return children in a positive state, and children were returned to their normal activities with a sticker, a prize, and a perfect circle award for working so hard.

*Analysis variables and data reduction.* The current study focused on the effective utilization of emotion regulation strategies when children were sad or angry during the Impossibly Perfect Circles and Disappointing Gift tasks. High angry, low angry, high sad, and low sad constituted four separate codes, and each of the four strategies were separate codes. Each variable in the stream of data were represented with an onset time within the task period. Emotion codes were mutually exclusive and exhaustive “states” in the data in that the research assistants only entered the code for the emotion at the onset, but the duration for the emotion “state” was captured as the time between the onset and another emotion code. For example, when a child was no longer angry, the research assistant either coded neutral for no emotion or any other emotion being expressed by the child. Thus, although happy and neutral codes were not being specifically evaluated for the current study, they were used in relation to the expression of sad and angry. Because codes were structured sequentially, sequential analyses were used to create variables representing children’s utilization of strategies to regulate negative emotion.

Using a computer program developed by Bassett (2013), individual child data files from ER Observe were aggregated into one single data file. This data file contained all child data at fall and spring time points for both the Impossibly Perfect Circles and Disappointing Gift tasks. This file was imported into Generalized Sequential Querier (GSEQ 5.1; Bakeman & Quera, 2011) to analyze data sequentially and create analyses variables. Using the GSEQ command EVENT, the onset and offset information was removed from the file leaving only sequences of codes. This procedure was necessary to create an emotion-strategy sequential chain. This emotion-strategy sequential chain was

needed to create variables that represented the effective utilization of each emotion regulation strategy.

Effective utilization of a strategy to regulate negative emotion was operationally defined as exhibiting either high angry, low angry, high sad, or low sad, exhibiting either an active distraction strategy, disruptive behaviors, an information gathering strategy, or a passive waiting strategy in the adjacent code, and then exhibiting either high, low happy, or neutral in the following code. For example, a child expresses low anger. Next, the child uses an information gathering strategy. Then, the child is neutral—the child has now effectively regulated their emotion using the information gathering strategy.

Because we were interested in regulation of negative emotion, both high and low angry and sad were recoded into a single negative emotion code using the GSEQ command RECODE. High and low happy and neutral were also recoded into a single variable as no research questions of the current study differentiated happy or neutral as products of emotion regulation strategy utilization. Table 5 shows raw frequencies, means, and standard deviations of codes, as well as associations between fall and spring across Disappointing Gift and Impossibly Perfect Circles tasks collapsed by intensity. Inspection of sad and angry raw frequencies shows that the negative emotion recoded variables were made up of proportionally more sad than angry at both the fall and spring time points. Sequential analyses were attempted with angry and sad codes separately, but frequencies were too low individually to continue. Additionally, the happy/neutral variable was proportionally more neutral than happiness.



Table 3

*Emotion Elicitation and Regulation Assessment Raw Frequencies, Means, Standard Deviations, Paired Differences Between Fall and Spring*

Code	Freq.	<i>M</i>	<i>SD</i>	<i>t</i> <sub>spring-fall</sub>	<i>d</i>	<i>p</i>
Active Distraction T1	180	1.39	1.20	-4.65	0.46	.001
Active Distraction T2	104	0.88	1.02			
Disruptive Behaviors T1	0	0.00	-	-		-
Disruptive Behaviors T2	0	0.00	-			
Information Gathering T1	199	1.42	1.81	0.08	0.01	.938
Information Gathering T2	201	1.41	1.64			
Passive Waiting T1	90	0.69	0.80	-1.71	0.18	.090
Passive Waiting T2	53	0.55	0.72			
Angry T1	183	1.11	1.37	-0.17	0.02	.868
Angry T2	164	1.14	1.49			
Sad T1	345	2.74	1.90	-3.44	0.37	.001
Sad T2	250	2.10	1.59			
Happy T1	638	3.49	2.68	-1.57	0.12	.119
Happy T2	568	3.06	2.60			
Neutral T1	1031	5.66	3.00	-0.42	0.04	.672
Neutral T2	926	5.54	2.40			

*Note.* Codes are collapsed across Disappointing Gift and Impossibly Perfect Circles; T1 = fall, T2 = spring.

The GSEQ command CHAIN was used next to create four emotion-strategy sequential chained variables. The CHAIN command searched the datafile for paired instances of (1) negative emotion and active distraction, (2) negative emotion and disruptive behaviors, (3) negative emotion and information gathering, and (4) negative emotion and passive waiting. If there was no strategy adjacent to the negative emotion code, these instances were ignored by the GSEQ program. These were instances where

the child did not attempt to regulate and the emotion continued or ended without the use of a strategy. Inspection of frequencies revealed too few instances of negative emotion-disruptive behaviors sequential chains for later sequential analysis. Thus, disruptive behaviors were removed from further analyses.

Sequential analyses within the GSEQ program were then used to generate transitional probabilities representing how likely the happy/neutral code followed the expression of the three negative emotion-strategy sequential chains across both EERA tasks and within fall and spring time points. The sequences following the three negative emotion-strategy sequential chains were Lag 1 and the initial three negative emotion-strategy sequential chains were Lag 0. Thus, the change to the happy/neutral code was lagged one sequence from the negative emotion-strategy sequential chains. Note that together, the negative emotion, strategy, and change in negative emotion sequences follow the definition of emotion regulation using strategies outlined in Figure 2.

Using GSEQ, we then calculated the residuals for each of the three Lag 0 negative emotion-strategy sequential chains to the Lag 1 happy/neutral. These residuals are defined as the transitional Lag 0 to Lag 1 probability relative to the expected probability or the likelihood of each Lag 0 given all the available data. Next, we calculated the *adjusted* residual, which is the standardized difference between the transitional probability (TP) and the expected probability (EP),  $Z = (TP - EP) / (\sqrt{EP * (1 - EP) / N})$ . Children higher on the three adjusted residuals were more likely to effectively regulate negative emotion using that particular strategy, and children lower on these variables were less likely to effectively regulate negative emotion on that particular strategy.

Because of standardization and how probabilities were calculated in the GSEQ program, children with zeros were both average in their regulation ability and were those children who did not express emotion during the task. To create meaningful variables in line with the current research questions, children who did not express any emotion across both the EERA tasks (fall = 23, 13%; spring = 27; 15%) were given a missing designation for the three effective utilization of emotion regulation strategy variables to differentiate their data from those children who were average in their effectiveness.

### **Teachers' emotion socialization—Focal-T.**

*Validity and development.* Teachers were observed for their expressions of emotion and their contingent reaction to children's emotion using the Focal-T coding system. Focal-T is an adaptation of coding systems designed to capture emotion socialization. Past iterations of the focal coding system have been used between peers (Denham, 1986; Denham & Auerbach, 1995; Denham, Blair, Schmidt, & DeMulder, 2002; Denham et al., 2001; Denham, McKinley, Couchoud, & Holt, 1990; Mitchell-Copeland, Denham, & DeMulder, 1997), between siblings (Strandberg-Sawyer et al., 2002), and between parents and children (Denham, 1989, 1993; Denham, & Grout, 1992, 1993; Denham & Kochanoff, 2002; Denham et al., 1997; Denham et al., 1994). This body of research has shown how children's expressions and contingent reactions are aspects of their social-emotional functioning, how their expressions and contingent reactions relate to their social-emotional competence, and parents' socialization of children's emotion.

Development of Focal-T involved three phases. The first phase of development consisted of exploring past coding, theory, and research for use with teachers in the classroom. In addition, narrative notes of 3- and 4-year-old classrooms were collected to capture a variety of classroom behaviors, paying close attention to how emotion were expressed and reacted to in these contexts. After narrative notes were collected, the measurement team discussed each scenario and how each scenario would be coded for expressions and reactions. Codes were discussed this way and were appropriately modified in order to capture the expression and reactions found within classrooms. All

codes were finalized based on consensus. The second phase consisted of piloting the newly adapted codes in classrooms by using anecdotal record, utilizing the same discussion and modification technique used to adapt the codes for the classroom. This phase was done to fine tune the descriptions of each code and to adapt observation rules for the classroom. Coding protocol and rules were also adapted according to this piloting. The culmination of the second phase was the creation of the Focal-T training manual. The third phase involved training and assessing reliability of coders and piloting in 31 classrooms. Data for the current study were collected one year later.

*Training and reliability.* Training consisted of completing a series of tasks that increased in difficulty. Tasks involved learning the protocol and learning the definition of each code, watching and discussing videos with an expert coder and among peers, reading and discussing narrative notes, and practice coding of videos (Denham & Bassett, 2013). Assessment of reliability was first over coding of narrative notes compared to an expert coder ( $M_{\text{kappa}} = .83$ ,  $SD_{\text{kappa}} = .07$ ), second over two videos of children and an adult compared to an expert coder ( $M_{\text{kappa}} = .62$ ,  $SD_{\text{kappa}} = .05$ ), third over live reliability dual coding with a partner in classrooms ( $M_{\text{kappa emotions}} = .88$ ,  $SD_{\text{kappa emotions}} = .09$ ,  $M_{\text{kappa reactions}} = .69$  ( $SD_{\text{kappa reactions}} = .15$ ), and fourth as a refresher after live reliability but before data collection ( $M_{\text{kappa emotions}} = .88$ ,  $SD_{\text{kappa emotions}} = .18$ ,  $M_{\text{kappa reactions}} = .68$  ( $SD_{\text{kappa reactions}} = .21$ ).

*Description of protocol.* Focal-T utilizes mutually exclusive and exhaustive frequency coding of focal-target coding. Focal-target methodology involves observing the focal person for behavior and watching for how the target of that behavior contingently responds. Codes were recorded via tablet computers utilizing software specializing in focal-target observations (Roberts, 2010). When teachers were focal participants, their expressions of emotion were coded via facial, bodily, and vocal channels. Emotion expression codes were happy, sad, angry/annoyed, afraid/tense, tender, pain, other, and neutral (see Table 3). When children were focal participants, their expressions of emotion were coded in proximity to the teacher using the same seven codes. Proximity was defined as eyesight and earshot of the teacher. Immediately following coding of a focal person's emotion, the target's contingent reactions to the focal person's emotion cues were coded. Contingent reaction codes were distress, positive, punitive, problem-focused, emotion-focused, expressive validation, minimization, and no response (see Table 4). A session constituted two trials: five minutes of teacher as focal and five minutes of child as focal. Two sessions were completed during each classroom visit. Thus, each classroom visit included two trials with teacher as focal and child as target and two trials with child as focal and teacher as target. In total, eight, two trial sessions were completed. The current investigation involves teachers' emotion expressions and teachers' contingent reactions to children's emotion.

Table 4

*Focal-T Emotion Codes, Definitions, and Typical Examples*

Emotion Code	Definition	Typical examples
Happy	Expresses pleasure or joy	Smiles, laughs Hums, sings Jumps for joy, cheers, Voice moves up & down in pitch freely, sounds relaxed
Sad	Expresses unhappiness or grief	Cries Looks dejected, sorrowful Eyebrows slant down Vocal quality has a falling pitch May express worthlessness, gloominess, or withdrawal
Annoyed/Angry	Shows irritation, frustration, or disappointment. Shows displeasure or disapproval by verbal and/or physical attacks	Lips may be pursed Eyebrows furrowed down Clench teeth, snarl with classic square mouth. Yelling, striking, throwing objects, passive aggression, or active non-compliance Lips may be pursed
Tense/Afraid	Is fearful, anxious	Eyes may be wide, eyebrows up If worried, eyes cast down Move back and forth, as in jiggling leg. Jumpy or unable to relax Acts uncertain or apprehensive Child may suck thumb, shake arms, or cling to parent. Teacher may chew on lip, tap toes
Tender	Physically or verbally demonstrative	Hugs, kisses, snuggles “I love you” Shows empathy or caring behaviorally Holds on lap with tenderness
Pain	Suffers distress due to physical injury or ailment	“Ouch” Crying and holding a body part Actively see the injury happen and cringing eyes. Assume pain
Other	Any emotion not listed	Guilt, disgust, surprise
Neutral	No emotion shown	



Table 5

*Focal-T Reaction Codes, Definitions, and Typical Examples*

Reaction Code	Definition	Typical examples
Distressed	Responds any negative emotion by displaying facial or vocalic means in response to focal child's emotion	Frowning after child shows emotion Anxiety, sadness, anger, frustration, annoyance "I feel like such an idiot!"
Positive	Reflects a child's positive emotion by facial or vocalic means	Focal laughs, target smiles back. Focal hugs target, target says something sweet.
Punitive	Corrective or rebuking reaction to stop or decrease the display of a child's expression of emotions by verbally discouraging or suppressing emotional display	"Be quiet!" "Shhh!" Stop crying" "Don't laugh" Threatens, "Do you want me to tell your Mom?" "No one is playing with the toys if you can't share" Physical punishment after emotion display
Problem-focused	Responds with strategies to help a child solve the emotion-related problem by giving assistance via explanations or information	"The toys are for everyone to share" "If you don't like him touching you, just tell him"
Emotion-focused	Responds with verbal or physical strategies to help a child feel better by offering comfort or reassurance to a negative emotion	Holds child if they are upset and wipes the tears away "It will be ok" Redirects with the goal of helping the child feel better
Expressive Validation	Validates, encourages, or questions in a verbal or nonverbal manner	"It's okay to feel sad" Touches kindly, hugs, but not to console the child "Are you feeling okay?" "What happened?" or "What's wrong?" Approaches in space, comes closer
Minimization	Minimizes the seriousness of the situation, devalues the situation or emotion, or criticizes the emotional experience itself. The implicit message in this category is simply, "feeling that way is not important, wrong, or even silly" or "that particular feeling is not worthy of my attention."	Ridicules when the child is upset Criticizes the display of emotion Leaves the area in an overt attempt to "get away" when an emotion is displayed "You're fine!" Shaking head/rolls eyes
No response	Does not react in any way to the child's emotion	

*Analysis variables and data reduction.* Frequencies for each emotion expression and contingent reaction to emotion code were aggregated across the eight Focal-T trials. The total number of emotion expression codes and contingent reaction codes were summed and used in the denominator to create a proportion score for happy, angry, positive reactions, and distressed reactions. These variables were then standardized. Next, the proportion of happy subtracted by the proportion of angry created *affective balance* (Denham & Grout, 1992; Denham et al., 2001; Denham et al., 1990; Denham et al., 1997; Denham & Kochanoff, 2002; Strandberg-Sawyer et al., 2002). Proportion of *tender* was kept distinct. The proportion of positive reactions subtracted by the proportion of distressed reactions created *positive emotional reactions*.

A rate score was created for minimizing, punitive, emotion-focused, problem-focused, ignoring, and validating reactions by dividing each by the total number of child emotional displays witnessed by the teacher. This created a rate of contingent reaction per amount of child emotion expressed in the classroom.

A principal components analysis with Promax rotation and Kaiser Normalization was then used to determine statistically how the five rate of contingent reaction variables were both related but distinct aspects of teacher emotion socialization. Three contingent reaction components were identified, as follows: The rate of minimizing and punitive reactions were standardized and averaged to create *unsupportive reactions*. The rate of emotion-focused, problem-focused, and ignoring (reversed) were standardized and averaged to create *supportive reactions*. Finally, the rate of validating created *validating*

*reactions*. Thus, in total, five teacher socialization variables were used in subsequent analyses.

### **Data Analyses**

Before the primary analyses, descriptive statistics, including normality and rate of missing data, were run for all study variables. Zero-order correlations were also explored for child-level raw frequencies variables and child-level analysis variables as well as classroom-level variables.

Three primary analyses were conducted to explore the four research questions. First, children's raw frequency of each emotion regulation strategy use were compared to children's effectiveness in utilizing each strategy (i.e., research question 1) using partial correlations accounting for variance associated with age and gender. Second, research questions 2 and 3 were explored using a two-way, repeated measures ANCOVA. For research question 2, the within-child variance between each strategy were compared to determine which of the three strategies were the most effective. For research question 3, the within-child variance between fall and spring was explored as well as the time x strategy interaction to determine how children change in their effective utilization of the three emotion regulation strategies during the school year. Time (fall and spring) and strategy (effective utilization of active distraction, information gathering, and passive waiting) were within-child factors, and age and gender were between-child factors.

Third, teachers' expressions and contingent reactions to emotions were explored relative to children's effective utilization of the three emotion regulation strategies (i.e., research question 4) were explored using structural equation modeling (SEM) in Mplus

version 6 (Muthén & Muthén, 2011) to simultaneously model and account for the covariance structures of three control variables (age, gender, and Head Start or private classroom designation), six predictor variables (affective balance, tender expressions, positive emotional reactions, supportive reactions, unsupportive reactions, and validating), and three outcomes variables (effective utilization of active distraction, information gathering, and passive waiting). Parameters were estimated using MLR, which uses all available data to estimate unbiased means and variances and accounts for missing data (Acock, 2005; Baraldi & Enders, 2010).

Standard errors generated by MLR are adjusted using the Huber-White sandwich estimator under the TYPE = COMPLEX Mplus command to account for the nesting associated with the non-independence of multiple children in the same classroom, (Muthén & Muthén, 2011). Without accounting for nesting, standard errors are inaccurate and increase the chances of Type I errors (Cohen, Cohen, West, & Aiken, 2002; Raudenbush & Bryk, 2001).

Multiple avenues for modeling children's change in effective utilization of emotion regulation strategies between fall and spring were considered. The difference score approach involves subtracting the posttest score from the pretest score. Because of the additive nature of difference scores, the reliability of a difference score is usually less than the reliability of either pretest or posttest (Edwards, 2001). Likewise, the residualized score approach involves controlling for pretest scores in the prediction of posttests scores. This method, too, has limitations in that compound measurement error in pre and posttest significantly biases the estimate of change, and the estimates of change

can yield inconsistent estimates (Raykov, 1993). The latent score approach is based on classical test theory, which states that posttest scores are equal to the pretest true score plus the difference between the posttest true score plus error (Steyer, Eid, & Schwenkmezger, 1997). Although the latent score approach has added benefit over the difference score and residualized score approach, the residualized score approach was chosen because of non-significant correlations between fall and spring effective utilization of emotion regulation strategy scores (see Table 8). Thus, the outcome variables in the primary analyses were the unique variance in spring scores not shared with fall scores.

In accordance with the theoretical distinction between the socialization techniques of expressive modeling and contingent reactions, and their differential theoretical impact on children's learning to regulate their emotions, two SEM models were constructed and run to test the associations between teacher socialization and children's change in effective utilization of emotion regulation strategies (research question 4). Figures 3 and 4 depict the expressive modeling and contingent reacting SEM models, respectively. Both models used spring active distraction, spring information gathering, and spring passive waiting as outcome variables. Both models also used the respective fall emotion regulation strategy, age, gender, and whether the classroom was classified as Head Start or private as control variables. The expressive modeling model included affective balance, tender expressions, and positive emotional reactions as predictor variables. The contingent reacting modeling included supportive reactions, validating reactions, and unsupportive reactions as predictor variables.

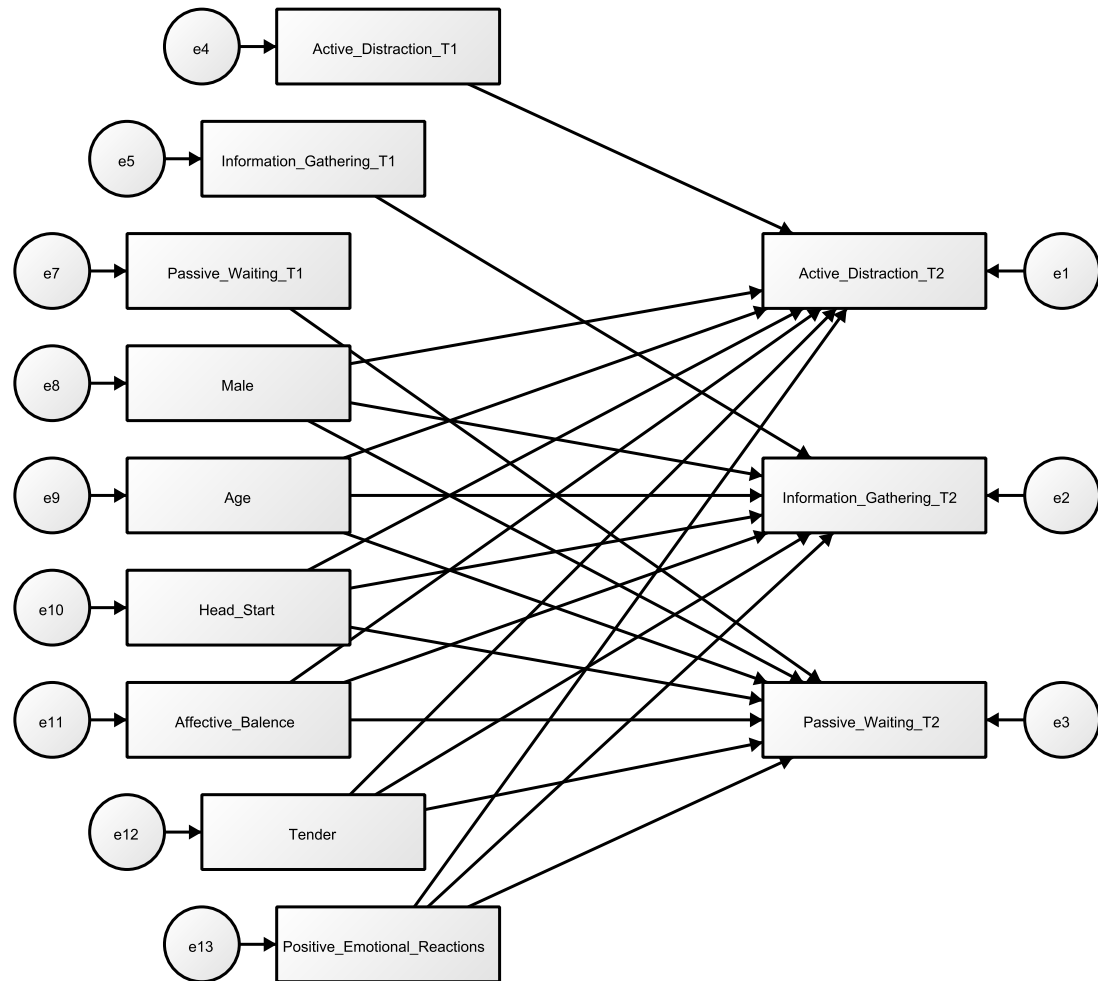
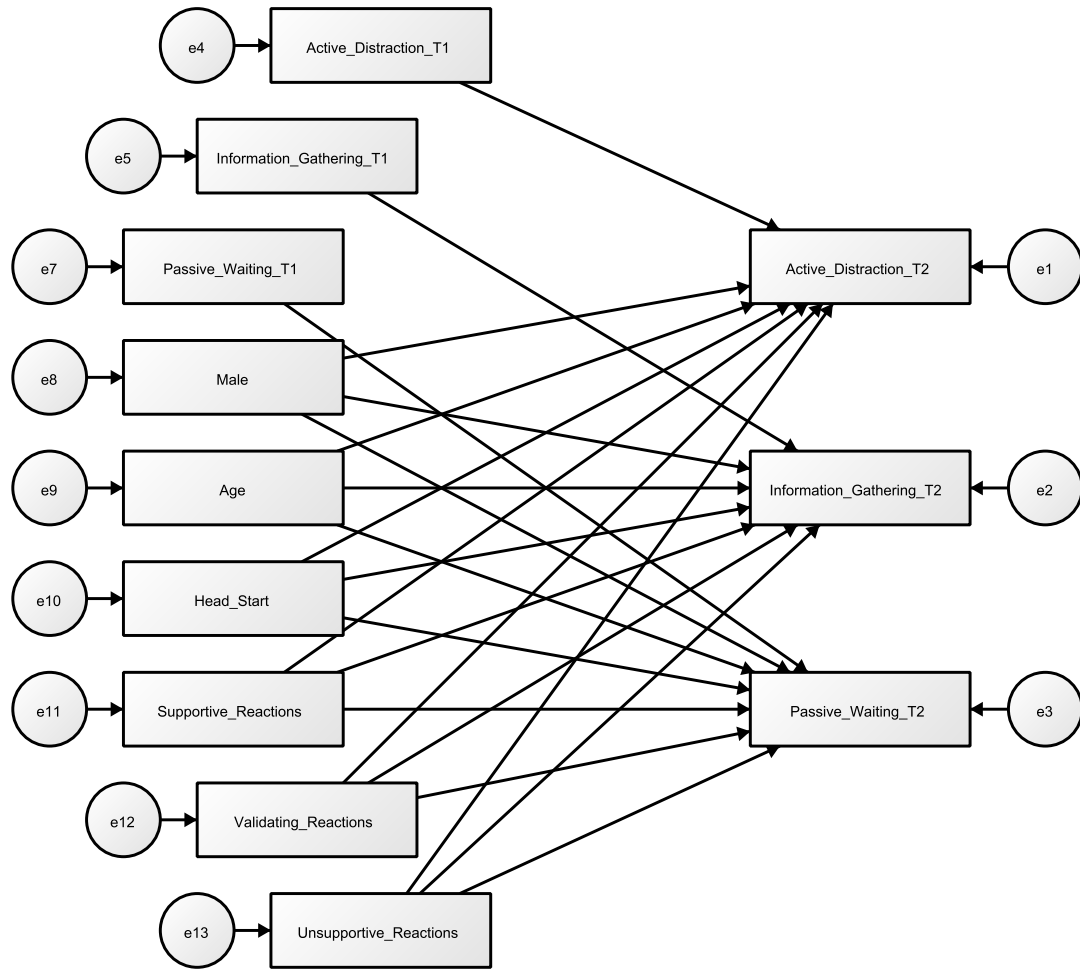


Figure 3. Expressive modeling structural equation model.

Note: All variables were correlated.



*Figure 4.* Contingent reacting structural equation model.

*Note:* All variables were correlated.

## **Results**

### **Preliminary Analyses**

Means, standard deviations, normality, and missingness for level-1 and level-2 variables are presented in Table 6. Of note, skewness values indicated normality, but kurtosis values were somewhat large for active distraction in the spring, passive waiting in the spring, and passive waiting in the fall. The parameter estimates and standard errors generated by MLR in Mplus are particularly robust to small violations in normality (Muthén & Muthén, 2011).



Table 6

*Descriptive Statistics for Analysis Variables*

Variable	<i>M</i> <sup>a</sup>	<i>SD</i>	Skewness	Kurtosis	<i>N</i>	% Missing
Active Distraction T2	0.04	0.30	-0.02	10.94	136	22.29
Information Gathering T2	0.03	0.54	-0.23	4.05	136	22.29
Passive Waiting T2	-0.01	0.37	-1.24	11.14	136	22.29
Active Distraction T1	-0.02	0.47	-0.21	3.48	138	21.14
Information Gathering T1	-0.04	0.51	-0.58	4.46	138	21.14
Passive Waiting T1	0.02	0.32	0.98	11.78	138	21.14
Age	0.04	6.91	-0.19	-1.07	172	1.71
Male <sup>a</sup>	0.49	0.50	0.03	-2.02	175	0.00
Head Start	0.38	0.49	0.54	-1.80	39	0.00
Affective Balance	0.00	1.82	-1.35	2.83	39	0.00
Tender	0.02	1.00	1.81	3.54	39	0.00
Positive Emotional Reactions	0.00	0.48	0.42	0.10	39	0.00
Supportive Reactions	-0.01	0.73	0.66	0.26	39	0.00
Validating Reactions	0.00	1.00	1.16	1.40	39	0.00
Unsupportive Reactions	0.00	0.81	1.64	2.67	39	0.00

*Note.* a. For the emotion regulation strategies, 0 = average effectiveness; b. Males = 65, Females = 70; T1 = fall, T2 = spring.

Zero-order correlations were explored to investigate how the child-level variables and the classroom-level variables were associated, which may shed light on the teacher–child associations found in the primary analyses. When comparing associations among raw frequencies (Table 7), it was found that fall and spring information gathering were correlated, and fall and spring active distraction were correlated. However, raw frequencies between fall and spring passive waiting were not significantly correlated. When children used more instances of information gathering as a strategy in the fall, they

used less instances of passive waiting as a strategy in the fall. The negative associations between the raw frequencies of information gathering and passive waiting were weaker in the spring they were in the fall. Raw frequencies of fall passive waiting were negatively associated with raw frequencies of spring active distraction. However, raw frequencies of fall active distraction were not associated with raw frequencies of spring passive waiting. Boys used significantly more information gathering than girls in the fall, an association that was not significant in the spring.

Table 7

*Zero-order Correlations amongst Raw Frequencies of Emotion Strategy, Angry, Sad, and Controls*

	AD T2	DB T2	IG T2	PW T2	A T2	S T2	AD T1
AD T2	1.00						
DB T2	.09	1.00					
IG T2	.04	-.07	1.00				
PW T2	-.11	-.06	-.16 *	1.00			
A T2	.06	.09	.13	-.05	1.00		
S T2	.03	.14	-.04	.09	.00	1.00	
AD T1	.28 **	.00	.00	-.05	.08	-.02	1.00
DB T1	.00	.00	.00	.00	.00	.00	.00
IG T1	.11	.00	.26 **	-.17 *	.30 ***	-.03	.11
PW T1	-.20	.00	-.31 ***	.12	-.10	.04	-.05 ***
A T1	-.17 *	.00	.04	-.04	.06	.05	.01
S T1	.00	.00	.02	-.03	.22 **	.17 *	.15
Age	-.10	-.05	.00	.13	.17 *	.08	-.14
Male <sup>a</sup>	-.05	-.07	.03	-.07	-.01	-.13	-.01 *
	-.17 *	.00	.04	-.04	.01	.00	.01
	DB T1	IG T1	PW T1	A T1	S T1	Age	Male
DB T1	1.00						
IG T1	.00	1.00					
PW T1	.00	-.29 ***	1.00				
A T1	.00	.01	.19 *	1.00			
S T1	.00	.12	.04	.13 †	1.00		
Age	.00	.10	-.03	.14	.00	1.00	
Male <sup>a</sup>	.00	.17 *	-.05	.06	-.06	.02	1.00

*Note.* † $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ; a. Male = 1; T1 = fall, T2 = spring, AD = Active Distraction, IG = Information Gathering, PW = Passive Waiting, A = Angry, S = Sad.

In terms of how emotions and strategies were associated, instances of child anger in the fall were significantly associated with instances of active distraction in the spring. However, instances of information gathering in the fall significantly associated instances of anger in the spring. Additionally, boys were found to exhibit significantly more instances of information gathering than girls in the fall, but not more instances in the spring. Instances of sad in the fall significantly associated with instances of anger in the spring. Spring and fall sadness were also significantly correlated. Older children were also shown to exhibit more instances of anger in the spring. Altogether, these associations among frequencies of strategy use and negative emotion reveal patterns that may shed light on how children learn to effectively regulate negative emotion.

Associations among the analyses variables, shown in Table 8, reveal fall and spring effective utilization of emotion regulation (i.e., active distraction, information gathering, and passive waiting) were not significantly correlated, suggesting little stability between fall and spring in children's effective utilization of emotion regulations strategies. Similar findings for partial correlations account for age and gender variance reinforced this finding. Correlations did, however, reveal three marginal associations among child-level variables. Spring information gathering was positively associated with spring active distraction, an association that was not found in the fall. Boys were marginally less effective than girls in their emotion regulation using information gathering in the fall, but were not necessarily less effective than girls in their regulation of emotion using information gathering in the spring. A similar association was found

with age. Older children were marginally less effective in their emotion regulation using information gathering in the fall than they were in the spring.

Table 8

*Zero-Order Correlations among Child-level Analysis Variables*

Variable	AD T2	IG T2	PW T2	AD T1	IG T1	PW T1	Age	Male
Active Distraction T2	1.00							
Information Gathering T2	.15 <sup>†</sup>	1.00						
Passive Waiting T2	.00	-.04	1.00					
Active Distraction T1	-.05	-.09	.05	1.00				
Information Gathering T1	-.05	-.11	-.01	-.03	1.00			
Passive Waiting T1	-.09	.06	-.04	.06	.10	1.00		
Age	.00	-.07	-.01	-.05	-.15 <sup>†</sup>	-.03	1.00	
Male <sup>a</sup>	.06	-.09	.04	.00	-.16 <sup>†</sup>	.00	.02	1.00

9 Note. <sup>†</sup> =  $p < .10$ ; a. Male = 1; T1 = fall, T2 = spring, AD = Active Distraction, IG = Information Gathering, PW = Passive Waiting.

At the classroom-level, two statistically significant associations were found (Table 9). Teachers observed as more positive in their contingent reactions were significantly more positive in their emotion expressions and significantly less unsupportive in their contingent reactions. Teachers in private preschool classrooms were observed as significantly more tender, but significantly more negative in their reactions than teachers in Head Start classrooms.

Table 9

*Zero-Order Correlations among Classroom-level Analysis Variables*

Variable	AB	TE	UR	SR	VR	PER	HS
Affective Balance	1.00						
Tender	-.03	1.00					
Unsupportive Reactions	-.23	.02	1.00				
Supportive Reactions	.24	-.17	.15	1.00			
Validating Reactions	.05	-.17	.11	.14	1.00		
Positive Emotional Reactions	.50 ***	-.24	-.52 ***	.08	-.20	1.00	
Head Start <sup>a</sup>	-.06	-.29 †	-.29 †	.14	.07	.15	1.00

*Note.* † $p < .10$ , \*\*\* $p < .001$ ; a. Head Start classrooms = 1, Private = 0; AB = Affective Balance, TE = Tender, UR = Unsupportive Reactions, SR = Supportive Reactions, VR = Validating Reactions, PER = Positive Emotional Reactions, HS = Head Start.



### **Research Question 1: Associations among Frequencies of Strategies and Effectiveness at Regulating Emotion**

Raw frequencies of emotion regulation strategies were compared with effective utilization of strategies to regulate emotion using partial correlations accounting for gender and age variance and revealed that children who displayed more instances of passive waiting in the fall were more efficacious using passive waiting in the fall,  $r(116) = .20, p = .029$ . This association was not found in the spring, and no other significant within-strategy associations were found.

Exploring raw frequency and effective utilization across strategy revealed that children who used less active distraction in the fall were more efficacious using a passive waiting strategy in the fall,  $r(116) = -.27, p = .003$ . Interestingly, this association was not significant in the spring, between spring instances of active distraction and fall effectiveness of passive waiting, or between fall instances of active distraction and spring effectiveness of passive waiting. With a few exceptions, children who used more strategies were not necessarily better at regulating their negative emotions.

### **Research Question 2: Effectiveness of Emotion Regulation Strategy Utilization**

Within-child differences in the effectiveness of emotion regulation strategy utilization were explored using a two-way, repeated measures ANCOVA. Mauchly's test indicated that the assumption of sphericity for the equity of strategy variances had been violated,  $\chi^2(2) = 4.65, p = .098$ . As a result, the Huynh-Feldt correction was used (Field, 2009). Collapsed across time, the main effect for strategy was not significant, suggesting that there were no differences between effectiveness of emotion regulation strategy

utilization,  $\eta^2 = .01$ ,  $F(2, 150.00) = .83$ ,  $p = .439$ . Therefore, children were equally effective at regulating their negative emotions when using active distraction, information gathering, and passive waiting.

### **Research Question 3: Differences in Emotion Regulation Strategy Utilization Between Fall and Spring**

Emotion regulation strategy utilization between the fall and spring were explored via the two-way, repeated measures ANCOVA. The main effect of time collapsed across strategy was explored first, then the interaction between time and strategy was explored second. First, there were marginally significant differences in effective utilization of emotion regulation strategies between the fall (marginal mean = -0.01) and spring (marginal mean = 0.05),  $\eta^2 = .04$   $F(1, 75) = 2.89$ ,  $p = .093$ . Thus, there was little support that children changed from fall to spring in their effectiveness when regulating their negative emotions.

Second, a strategy by time interaction was explored. Mauchly's test indicated that the assumption of sphericity had been violated for the strategy by time variances,  $\chi^2(2) = 6.17$ ,  $p = .046$ , and the Huynh-Feldt correction was subsequently used. Although marginal differences were found in the effectiveness of strategy utilization between fall and spring,  $\eta^2 = .03$   $F(2, 150) = 2.48$ ,  $p = .088$ , plotting of the marginal means (Figure 5), and follow-up paired  $t$ -tests revealed that changes from fall to spring in effective utilization of active distraction, information gathering, and passive waiting were not significant. Therefore, it appears that, despite an overall positive change from fall to

spring, there was no clear pattern in specific change from fall to spring in children's effective utilization of the three emotion regulation strategies.

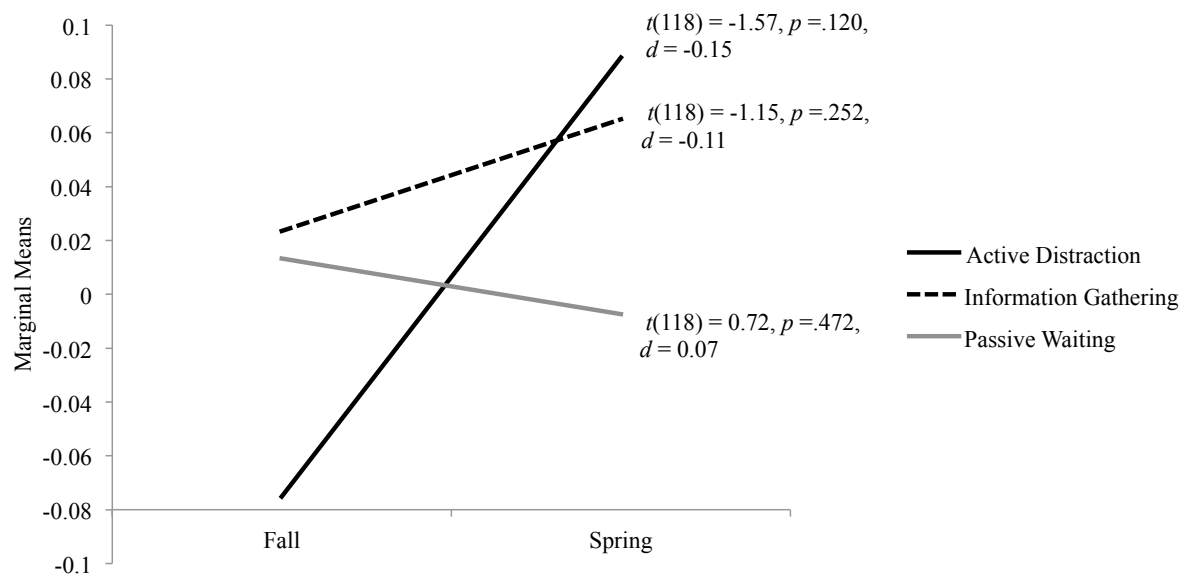


Figure 5. Effective emotion regulation strategy utilization marginal means between fall and spring.

#### **Research Question 4: Exploration of Preschool Teachers' Socialization of Emotion Regulation**

**Expressive modeling.** The expressive modeling model tested whether children who had teachers who were more expressive were better able to regulate their negative emotion. Coefficients, standard errors, and *t*-tests of the SEM parameter estimates for the expressive modeling model are located in Table 10. Overall, the expressive modeling model fit the data well,  $\chi^2_{\text{Expressive Modeling}}(6) = 8.54, p = .201$ , Root Mean Square Error of Approximation (RMSEA) = .05,  $p = .437$ , and Standardized Root Mean Residual (SRMR) = .02. Across spring active distraction, information gathering, and passive waiting outcomes, only one control variable was found to be statistically significant. Children in Head Start classrooms exhibited less effectiveness in their regulation of negative emotion using active distraction than their private classroom equivalents.

Inspection of predictor parameters revealed that the less teachers displayed tender when interacting with children, the *more* children in those classrooms were effective using a passive waiting strategy when regulating their negative emotion. Similarly, the less teachers reacted to children's emotions in an emotionally positive and not negative way, the *more* children in those classrooms were effective using a passive waiting strategy when regulating their negative emotion—both these associations were marginally significant.

Table 10

*Parameter Estimates from Structural Equation Model predicting Residualized Spring Effective Utilization of Active Distraction, Information Gathering, and Passive Waiting from Teachers' Expressive Modeling*

		Active Distraction spring				Information Gathering spring				Passive Waiting spring			
		<i>b</i>	$\beta$	SE <i>b</i>	<i>p</i>	<i>b</i>	$\beta$	SE <i>b</i>	<i>p</i>	<i>b</i>	$\beta$	SE <i>b</i>	<i>p</i>
Controls	Intercept	0.05	0.17	0.04	.169	0.12	0.22	0.08	.145	0.05	0.13	0.04	.290
	Fall	-0.03	-0.04	0.03	.469	-0.15	-0.15	0.10	.114	-0.06	-0.05	0.11	.608
	Age	0.00	0.08	0.01	.417	-0.01	-0.09	0.01	.252	0.00	-0.01	0.01	.942
	Male	0.01	0.01	0.05	.881	-0.13	-0.12	0.10	.179	0.01	0.01	0.07	.921
	Head Start	-0.14	-0.23	0.05	.006	-0.11	-0.10	0.09	.201	-0.11	-0.15	0.07	.091
Predictors													
	Affective Balance	0.00	0.01	0.01	.897	0.00	0.00	0.02	.997	0.02	0.09	0.02	.337
	Tender	0.01	0.05	0.02	.441	-0.05	-0.09	0.05	.300	-0.05	-0.15	0.03	.062
	Positive Emotional Reactions	-0.05	-0.07	0.04	.295	-0.16	-0.14	0.11	.143	-0.10	-0.13	0.06	.093
$R^2$		.07		.03	.032	.06		.04	.073	.04		.03	.226

Despite no statistically significant predictors, marginally and statistically significant amounts of variance (6 – 7%) were collectively explained for the effective utilization of active distraction and information gathering emotion regulation strategies, respectively. Although two marginally significant predictors were found with passive waiting, statistically significant amounts of variance were not explained for this outcome. That is, the variance of passive waiting explained by these two variables was not enough relative to the total variance of passive waiting.

**Contingent reacting.** Coefficients, standard errors, and *t*-tests of the SEM parameter estimates for the contingent reacting model are located in Table 11. Overall, the model fit the data well,  $\chi^2_{\text{Contingent Reacting}}(6) = 7.85, p = .249$ , RMSEA = .04,  $p = .496$ , and SRMR = .02. As in the expressive modeling model, children in Head Start classrooms exhibited less effectiveness in their regulation of negative emotion using active distraction than their private classroom equivalents.

Only one statistically significant predictor out of three was found, such that when teachers were more unsupportive (i.e., punitive or minimizing) in their reactions to children's emotions, children were more effective in their active distraction when regulating their negative emotion. Two marginally significant predictors were found. When teachers provided children with problem-focused solutions or solutions focused on children's experience of emotion in the classroom, those children were more effective using an information gathering strategy when regulating their negative emotion. When teachers were more punitive or minimizing in their reactions to children's emotions, children were more effective in gathering information to regulate their negative emotion.

Table 11

*Parameter Estimates from Structural Equation Model predicting Residualized Spring Effective Utilization of Active Distraction, Information Gathering, and Passive Waiting from Teachers' Contingent Reactions*

		Active Distraction spring				Information Gathering spring				Passive Waiting spring			
		<i>b</i>	$\beta$	SE <i>b</i>	<i>p</i>	<i>b</i>	$\beta$	SE <i>b</i>	<i>p</i>	<i>b</i>	$\beta$	SE <i>b</i>	<i>p</i>
Controls	Intercept	0.04	0.13	0.04	.301	0.10	0.19	0.09	.252	0.03	0.08	0.05	.577
	Fall	-0.03	-0.04	0.04	.514	-0.15	-0.14	0.09	.120	-0.04	-0.03	0.11	.727
	Age	0.00	0.05	0.00	.625	-0.01	-0.10	0.01	.200	0.00	0.02	0.00	.858
	Male	0.02	0.02	0.05	.751	-0.13	-0.12	0.10	.169	0.01	0.02	0.07	.868
	Head Start	-0.11	-0.18	0.05	.012	-0.06	-0.05	0.10	.542	-0.08	-0.11	0.07	.268
Predictors	Supportive Reactions	0.03	0.07	0.02	.166	0.09	0.12	0.05	.075	0.02	0.04	0.04	.647
	Validating Reactions	-0.02	-0.07	0.02	.210	0.03	0.05	0.05	.572	0.00	-0.01	0.03	.898
	Unsupportive Reactions	0.08	0.20	0.02	.000	0.11	0.16	0.06	.087	0.02	0.05	0.04	.588
<i>R</i> <sup>2</sup>		.11		.04	.005	.09		.05	.087	.02		.02	.434



A statistically significant amount of variance was explained (11%) for active distraction but only a marginally significant amount of variance was explained for information gathering (9%). Explained variance for passive waiting was not statistically significant.

**Expressive modeling and contingent reacting compared.** When the fit of the expressive modeling and contingent reacting models were compared using the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC), results revealed that the differences were too small to suggest that one model fit the data better than the other,  $AIC_{\text{Contingent Reacting}} = 3840.14$ ,  $BIC_{\text{Contingent Reacting}} = 3839.98$ ,  $AIC_{\text{Expressive Modeling}} = 3921.43$ ,  $BIC_{\text{Expressive Modeling}} = 3921.27$ . Similarly,  $\chi^2_{\text{Contingent Reacting}} (7.85)$  was smaller than  $\chi^2_{\text{Expressive Modeling}} (8.54)$ . Both the expressive modeling and contingent reacting models were similar in their fit of the data. Further examination of standardized parameter estimates did show that the three statistically significant and marginally significant coefficients from the contingent reactions model were larger than the two marginally significant standardized coefficients in the expressive modeling model. Additionally, more variance was explained in the contingent reacting model than the expressive modeling model. When considered altogether, the contingent reactions appear to be marginally better at predicting children's change in their effective utilization of emotion regulation strategies, rejecting the null hypothesis associated with hypothesis 4.

Surprisingly, across both models, inspection of betas shows that the strongest positive statistically significant predictor was unsupportive reactions, failing to reject the null hypothesis associated with hypothesis 5. The strongest negative statistically

significant predictor was tender expressions, failing to reject the null hypothesis associated with hypothesis 6. Examination of all betas shows that the effects were less than a fifth of a standard deviation.

## Discussion

The ability to regulate emotion, especially negative emotion, is a social-emotional skill coveted by researchers and early childhood educators (Denham, 2006; Garner, & Waajid, 2008; Graziano et al., 2007; Miller et al., 2004; Rimm-Kaufman, Pianta, & Cox, 2000; Shields et al., 2001; Spinrad et al., 2006; Trentacosta & Izard, 2007). When children are regulated in their emotions in the classroom, they exhibit less conflict in their relationships with teachers and peers, are better able to focus on academic tasks, and are more prepared to enter kindergarten successfully (Denham, Bassett, Zinsser, & Wyatt, 2014). Children learn about emotion from their environments—parents, teachers, and peers are agents of emotion socialization (Denham et al., in press; Denham, 2007; Eisenberg et al., 1998; Halberstadt, 1991). The mechanisms of teacher emotion socialization explored in the current study explain both *how* and *what* children learn about emotion regulation. The results of the current study contribute to the understanding of how children are learning to regulate their emotions in early childhood classrooms.

The methods used in the current study were based on the process of emotion regulation (Figure 2), such that emotions are expressed and then changed via strategies as regulation mechanisms. Using this definition, attempts to regulate using strategies do not always lead to successful emotion regulation. The sequentially based methods for

creating an emotion-strategy behavioral chain and then exploring the associated change in emotion provided strict guidelines for indexing effectiveness.

Two broad conclusions can be drawn from the results of this study. First, how preschool children learn to utilize strategies to regulate their negative emotions appears to be complex. Although children in our study used a variety of socially acceptable strategies to regulate their negative emotions when in disappointing or frustrating situations, children were not more effective in a particular emotion regulation strategy nor did they change from fall to spring in the effectiveness in utilizing those strategies. However, children did significantly decrease in their frequency of active distraction and marginally decreased in using passive waiting. By contrast, children did not change in their frequency of information gathering. Frequency of strategy use did not correlate with effectiveness at regulating negative emotion using strategies.

A second conclusion of the current study was that teacher emotion socialization might operate differently than parent emotion socialization. Unexpectedly, children were more effective in their utilization of an active distraction emotion regulation strategy when they were in classrooms with teachers who were *more* punitive and minimizing (i.e., unsupportive) in their reactions to children's emotions. Children in these classrooms were also more effective at utilizing an information gathering emotion regulation strategy, but this association was marginally significant. A similar, marginally significant pattern was found between teachers who reacted in a less emotionally positive way to children's emotions and teachers who were less tender in their expressions. Children with these teachers were more effective at utilizing a passive waiting emotion regulation

strategy. The only result that did not fit this pattern was between teachers who used more problem focused and emotion focused strategies (i.e., supportive reactions), wherein children in these classrooms were more effective at utilizing an information gathering emotion regulation strategy. Although hypothesized, this association was marginal. Overall, the strongest associations were in the way teachers reacted to children's emotions, and the contingent reacting model was slightly better fitting.

## **Preschoolers' Use of Emotion Regulation Strategies**

**Research question 1.** *How do preschool children's raw frequencies of active distraction, disruptive behaviors, passive waiting, and information gathering associate with their effectiveness at regulating negative emotion?* Partial correlations between raw frequencies of each of the emotion regulation strategies and the effectiveness at utilizing those strategies, accounting for variance associated with age and gender, were used to explore research question 1. Apart from a significant association between fall instances of passive waiting and fall effectiveness in utilizing passive waiting, attempts to regulate did not associate with effectiveness at regulating. This distinction provides justification for our methodology in creating a variable that represents emotion regulation as a process (Figure 2), because emotion regulation is broadly defined here as a change in emotion, and a count of strategies is not indicative that a change in emotion has taken place. In other words, presence of a strategy is merely a marker that emotion regulation might be happening, but the raw number may involve behaviors that could be independent of emotion expression and change in emotion expression. Emotion regulation is defined in many different ways, with many of these definitions dependent on how emotion regulation is measured (Thompson et al., 2008), which complicates the understanding of emotion regulation. Also problematic is that definitions do not always match methodology. Defining and operationalizing emotion regulation may impact results and how results are interpreted. The current study demonstrates that the process of emotion regulation can be captured in a way that matches how emotion regulation was defined in line with theory.

Inspection of correlations revealed some interesting associations about how children use strategies to regulate their emotions. When children used less frequent active distraction, they were more efficacious in their use of passive waiting. This association suggests children who tend to distract themselves with other activities may not have success using a ‘sit quietly’ strategy. These children may learn to use other strategies that do not hinge on sitting still. Teachers may find that these children are especially better off being redirected when they are upset rather than asking them to sit quietly and wait.

**Research question 2.** When preschool children express negative emotions, which of their emotion regulation strategies—active distraction, disruptive behaviors, passive waiting, or information gathering—are the most effective? In exploring research question 2, children’s use of effective strategies when regulating their negative emotion were compared using a two-way, repeated measures ANCOVA. The results showed that children did not differ in the effectiveness in utilizing emotion regulation strategies when they expressed angry or sad. Exploring the raw frequencies did, however, reveal that information gathering was used most frequently, followed by active distraction and passive waiting. These raw frequencies were in slight contrast to what one would expect in light of the work by Gilliom and colleagues (2002) in their exploration of the regulation of anger during frustrating situations. They found active distraction occurred most frequently, followed by passive waiting, with few instances of information gathering.

Differences in utilization of emotion regulation strategies uncovered between Gilliom and colleagues (2002) may be related to differences in the samples. Gilliom and

colleagues (2002) focused on anger in disadvantaged 3-year-old boys in frustrating situations whereas our study focused on 3- and 4-year-olds' regulation of both anger and sadness in frustrating and disappointing situations from low, medium, and high income families. The distinctions based on strategy use and age are important because they highlight potential developmental change in phenomena not detected by the current study alone but in conjunction with other available research. That is, the current study included 3- to 4-year-olds, whereas Gilliom and colleagues only included 2- to 3-year-olds. Younger children may be less likely to use information gathering, and because the current study included older children, more information gathering was found. Gilliom and colleagues (2002) suggested that when younger children use information gathering early on, they reap the benefits once they are older.

Distinctions in the utilization of emotion regulation strategies may be very different between boys and girls. We found that boys, compared to girls, used more instances of information gathering in the fall, but then were marginally less effective in their utilization of information gathering in the spring. Gender differences may also be the result of differential emotion socialization in the classroom; this supposition is generally supported by research on gender socialization (Denham, Bassett, & Wyatt, 2010). Although, gender emotion socialization was not explored in the current study, the inclusion of both boys and girls in the current study and the inclusion of only boys in Gilliom and colleagues suggests that little is known about girls' socialization of emotion regulation.



**Research question 3.** Over the course of a school year, how do preschool children change in their effective utilization of active distraction, disruptive behaviors, passive waiting, or information gathering? The results of a two way, repeated measures ANCOVA were explored to answer research question 3. An omnibus main effect showed a marginal difference between fall and spring effective utilization of emotion regulation strategies, but further probing revealed no statistically significant developmental pattern amongst the specific strategies.

Even though there were no discernible differences in the fall compared to the spring in children's *effectiveness* in strategy utilization, children tended to use fewer active distraction and information gathering strategies in the spring than they did in the fall. One explanation for these drops is that there were fewer displays of sadness in the spring. The frequency of sadness may be indicative of the emotion socialization that is happening within those classrooms. It may be that children are less sad during disappointing or frustrating situations because of the expressive modeling in the classroom (Davidov & Grusec, 2006). Children may be adhering to display rules because they are learning to keep arousal contained and to mask their feelings. Alternatively, children may have been less impacted by the disappointing or frustrating situations, either because of emotion socialization and change in emotional competence or due to a practice effect. There was some support in the current study that teachers' contingent reactions socializes children in how to regulate their emotions more than teachers' expressive modeling. Future studies specifically investigating patterns of emotion

expression may find that the way teachers' model emotions explain changes in patterns of children's emotion expression, specifically sadness.

Altogether, differences over the course of the school year in raw frequencies, no differences over the course of the school year in effectiveness (i.e., research question 3), and a distinction between raw frequency and effectiveness (i.e., research question 1) may reveal a social-emotional learning mechanism during the preschool period. Preschool children may become less random in their behavior, such that as children are learning to be more goal-directed and more purposeful, less overall behavior eventually becomes more functional with respect to children's desired outcomes. Learning to better regulate emotions at this age may not be necessarily in terms of improved effectiveness across all experiences of emotion, but in terms of behavior efficiency.

The pattern of associations amongst children's effectiveness at utilizing emotion regulation strategies may be indicative of an underlying pattern in the time course of strategy development. In the spring, an association between effective utilization of active distraction and information gathering strategies was detected. Learning about how to regulate emotions may not be isolated to one emotion regulation strategy and may instead be synergistic. As children become effective at one strategy, such as active distraction, they become effective at other strategies, such as information gathering. Future studies may wish to capture change in strategy use beyond one school year to better map the potential developmental progression of emotion regulation strategy utilization.

## **Differential Effects of Expressive Modeling and Contingent Reacting**

**Research question 4.** How do teachers' expressions of emotions and contingent reactions to emotions predict the way children change in their effective utilization of emotion regulation strategies? Research question 3 was explored using a structural equation model in Mplus that accounted for the nesting of children within classrooms. Comparing the fit of the expressive modeling and contingent reactions models showed that the contingent reactions model fit the data slightly better. Comparing the number and strength of associations between the expressive modeling model and the contingent reactions modeling revealed one significant and two marginally significant associations in the contingent reactions model and two marginally significant associations in the expressive modeling model. The contingent reacting associations were also stronger in effect and explained more variance. It appeared that teachers' contingent reactions to children's emotion were stronger predictors than their expression of emotion for children's effective utilization of emotion regulation strategies in the spring. This finding is also in line with Davidov & Grusec (2006), who found that the way parents responded to distress predicted children's regulation abilities as opposed to the quality of parents expressiveness.

*Contingent reacting.* The strongest and only statistically significant predictor was a positive association between teachers' punitive and minimizing reactions and children's effective utilization of an active distraction strategy when they were experiencing negative emotion. A similar, marginally significant association was found with children's effective utilization of an information gathering emotion regulation strategy. These associations were not hypothesized and were surprising, because punitive reactions, like a teacher telling a child to stop crying, teaches child that their emotional experience in that moment is not acceptable. Similarly, minimizing reactions, like a teacher telling a child that they're not actually sad, teaches children that their emotional experience in that moment are not welcomed or that that their experience are not, in fact, real. However, preschool children in the current study were more effective at regulating their negative emotion when in unsupportive classrooms, indicating that what children may be learning from classroom experiences is far more complex than originally thought.

Punitive and minimizing reactions do not give children the tools they need to manage their experiences and instead give children only information about what *not* to do. Children's expression of emotion may be viewed by teachers as disruptive to classroom activities or as inappropriate for the classroom. Teacher's may in fact be attempting to shape children's behavior in a way that is in line with their meta-emotion philosophy about how a classroom should operate and how they believe children's emotions fit in with those expectations (Gottman et al., 1996; Katz et al., 2012). From their experiences with teachers, children learn to regulate their emotions by distracting themselves or by asking more questions to better understand the situation.

Punitive or minimizing reactions behaviorally punish children's expression of emotion in such a way that the desired effect is a decrease in emotion expression (Halberstead, 1991). The end result for children exposed to both these unsupportive patterns of contingent reacting is intense motivation to form the goal of adhering to the environmental display rules of the classroom, providing children with the purpose that guides the regulation of emotion (Eisenberg et al., 1998; Halberstadt, 1991; Jones et al., 2002; Rabineau, 2004; Spinrad et al., 2004). Children internalize the goals and display rules of the teachers within the classroom (Calkins, 2007; Eisenberg et al., 1997; Kalpidou et al., 2004; Thompson et al., 2008). That is, in an effort to ensure the classroom maintains order, teachers' punitive or minimizing reactions give children situational goals about display rules and motivate children to regulate to meet those goals. The increase in motivation to regulate emotion may be especially conducive to children's active distraction when upset. When Ms. Marley tells Sharon to stop crying because his crayon breaks during an art project demonstration, Sharon turns her crayons into spaceships to both meet Ms. Marley's expectations and to regulate her emotion.

Teachers may also be picking up on preschool children's increasing understanding of the complex situational nuances of emotion expression and children's subsequent use of emotion expression as bids for attention. Preschool children are increasingly using their emotions to achieve their goals (Denham, 1998; 2007). When Sharon sticks out her lip and pouts because it is not her turn to play in the dramatic play area, Ms. Marley responds by saying, "It's not *that* bad, you'll be fine." Sharon then plays in the block area to distract herself. Teachers may be evaluating the authenticity or

seriousness of children's expressions of emotion and sending children the message via their reactions that children cannot achieve their goals in the current situation by using their emotions or that the expressions are not appropriate for the situation. In this sense, children learn to hone their social-emotional skills. However, teachers may also interpret these emotional signals incorrectly, which may lead to children who are both in need of support but afraid of using their emotions to ask for help (Thompson & Calkins, 1996).

Children becoming better able to regulate their emotion from punitive and minimizing socialization may have unintended long-term consequences. Although positive at face value according to the results of the current study, the downside is that children may eventually become over-regulated, characteristic of internalizing rather than expression of feelings. The effects of punitive or minimizing emotion socialization may also be exacerbated with temperamentally inhibited children, who are often hypervigilant and may do well at managing their emotions in the classroom to meet teacher expectations but may be at risk for internalizing problems (Thompson & Calkins, 1996). Some evidence suggests emotion dismissing within family interactions, characteristic of parents who use minimization and punitive reactions, may promote children's later internalizing problem behaviors (Lunkenheimer, Shields, & Cortina, 2007). Unsupportive reactions may cultivate an emotional climate where emotional experiences should be avoided altogether. Some research suggests that punitive or minimizing reactions may come at the expense of teachers' talking about emotions, and in turn children's increasing knowledge about emotion that extends beyond emotion regulation (Ersay, 2007). Furthermore, children may create maladaptive display rules that do not allow for

emotion expression and learn to effectively regulate their emotions with unintended consequences when their teachers use punitive or minimizing reactions, regardless of the intentions of the teacher. These long-term consequences were not explored in the current study, but it may also be possible that the teachers' use of punitive or minimizing reactions is contextually appropriate and benefits the classroom dynamic and children's development. The latter possibility should be interpreted with caution, because the current study did not measure intensity. Future work should explore the consequences of low versus high intensity of teachers' reactions on children's development of emotion regulation, because it may be that punitive or minimizing reactions are harmful when truly mean or intended to be harmful and beneficial for emotion regulation development when not as intense. Additionally, future work should incorporate additional child characteristics, like temperament, to investigate the potential differential effects of teacher emotion socialization.

Teachers may want to utilize strategies where children are not discouraged for expressing themselves and are coached in how to manage their experiences in a socially acceptable way. However, little evidence was found in the current study associating these behaviors with children's effectiveness at regulating negative emotion. A positive, marginally significant association was found when teachers used either more problem-focused reactions or emotion-focused reactions when their students expressed an emotion and those students effective use of an information gathering strategy. When teachers use problem-focused strategies when their students are distressed, teachers and children engage in co-problem solving. That is, teachers give children the means to regulate their

emotions solving the problem associated with the source that is causing that emotion. When teachers use emotion-focused reactions, children learn how to cope with their emotional experiences. Teachers may redirect children by providing a new situation or provide children with affection. Supportive reactions teach children the skills to manage their emotions (Baker et al., 2011).

Punitive reactions and minimization are not aspects of emotion co-regulation because these two reactions only provide children with information about display rules, rather than problem-solving or coping emotion regulation strategies indicative of problem-focused and or emotion-focused reacting that may underlie long-term positive consequences of supportive patterns. Supportive and unsupportive patterns of reacting teach children differently about emotion and were subsequently not correlated, suggesting the potential for separate pathways. Lunkenheimer and colleagues (2007) found that emotion coaching, a construct encompassing the supportive reactions explored in our study, buffered the effects of emotion dismissing, a construct encompassing the unsupportive reactions explored in our study. Indeed, from a bioecological view (Bronfenbrenner & Morris, 2006; Zins et al., 2007), emotional support at school may be especially beneficial for children in negative, unsupportive, and stressful home environments (Rabineau, 2004).



*Expressive modeling.* Whereas teachers' patterns of contingent reaction were associated with children's effective utilization of an active distraction or information gathering emotion regulation strategy, teachers' expressive modeling was associated with children's effective utilization of passive waiting emotion regulation, albeit marginally. When teachers were less tender when interacting with children and less emotionally positive in their reactions, children were more effective at waiting passively when they were distressed. Tender expressions are when teachers give children hugs or when teachers express empathy. The alternative to tender expressions in the classroom may be when teachers are cold, distant, or unaffectionate.

Affection is a social experience, and emotional positivity is often shared. Thus, children may learn from interactions lacking in affection not to be social when expressing emotion. Instead, children regulate by waiting until the negative experience is over. Similarly, when teachers reflected children's positive emotions less and were more negative in their emotional reactions, children were more effective in their utilization of passive waiting. Research shows that negative family expressiveness predicts less child regulation ability and positive parental reactions predicts more regulation ability (Eisenberg et al, 2001; Ramsden & Hubbard, 2002; Garner, 1996) —the current study shows the opposite. It may be that children are accepting the emotional tone of the classroom. Like unsupportive reactions, teachers' lack of tender expressions and positivity when reacting emotionally may be giving children information about the appropriateness of display rules. To meet the expectations of the classroom, children stop

expressing and wait for the negative experience to pass. In this sense, a lack of tenderness and positivity when reacting may be teaching emotional patience.

### **Limitations**

Although this study was one of the first to explore the associations of teachers' emotion socialization practices with children's effective use of emotion regulation strategies, this study had several limitations. The first limitation directly relates to the methodology to capture emotion regulation as a process. Because emotion regulation is defined as a process involving multiple components, that is, emotion expressions, strategy use, and change in emotion expression, much had to be done to transform raw data into variables meeting fidelity with the definition and suitable for analysis. The greater the transformation of raw variables to analysis variables, the greater the challenge is to ensure that the analysis variables fully represent what actually happened.

Second, as with much of educational research, the data in this study are correlational, so meeting the strict criteria needed to discern causality cannot fully be met. However, the data collection periods in this study were temporally distinct opening the door for complex mediational associations. For example, early regulation abilities may predict how teachers respond (Bailey et al., 2014), and such responses shape children's changing regulation abilities. Further analyses into this area are necessary.

### **Conclusion**

The current study lends some support to the notion that emotion socialization does not end when children go to school (Denham et al., 2012). However, the processes of emotion socialization and the associated social-emotional learning at school may be

different than at home. Children learn to effectively distract themselves when they experience sadness or anger in frustrating or disappointing situations in order to adhere to contextual display rules when their teachers are punitive or minimizing in their classroom reactions. This pattern of reacting may be in order to maintain an optimal classroom organization and may be the result of teachers' beliefs about the appropriateness of emotion in the classroom or in the appropriateness of using emotions to achieve goals. Social-emotional learning in the classroom appears complex and the long-term consequences are unknown. Teachers are important for reasons beyond traditional academic learning, and the current study adds to a body of research that supports teachers' contribution to children's social-emotional learning (Buyse et al., 2008; Mashburn et al., 2008). Although the current study is the first exploring the effects of teacher emotion socialization on children's development of emotion regulation, the current study raises questions about the long-term consequences of teacher emotion socialization and about teachers' beliefs about their socialization behavior,

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## **Biography**

Craig Steven Bailey graduated in 2004 from Roosevelt High School in Sioux Falls, South Dakota. He received his Bachelor of Science from South Dakota State University in 2009. As an undergraduate, Craig was also an early childhood education teacher. In 2009, he was accepted into the Applied Developmental Psychology Doctoral Program at George Mason University. At George Mason, he taught psychology courses, conducted research funded by the National Institute of Health and the Institute of Education Sciences, and studied preschool teachers' emotion socialization and their effective classroom practices, both in relation to children's development of emotional competence, specifically emotion regulation. In 2014, Craig graduated with his Ph.D. from George Mason and accepted a postdoctoral research associate position at the Yale Center for Emotional Intelligence.