



# Relations of positive and negative expressivity and effortful control to kindergarteners' student–teacher relationship, academic engagement, and externalizing problems at school



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## ABSTRACT

The current study examined the role of naturally-occurring negative and positive emotion expressivity in kindergarten and children's effortful control (EC) on their relationships with teachers, academic engagement, and problems behaviors in school. Further, the potential moderating role of EC on these important school outcomes was assessed. Emotion and engagement were observed at school. EC was assessed by multiple methods. Teachers reported on their student–teacher relationships and students' externalizing behaviors. Children's emotion expressivity and EC were related to engagement and relationships with teachers as well as behavioral problems at school. Children low in EC may be particularly vulnerable to the poor outcomes associated with relatively intense emotion expressivity as they struggle to manage their emotions and behaviors in the classroom.

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## 1. Introduction

The frequency and intensity with which children express positive and negative emotions are thought to contribute to their social functioning (Eisenberg et al., 1993), as well as their motivation and participation in school (Pekrun, 2006). Additionally, intense emotional reactivity and/or expressivity, especially of negative emotions, has been linked to problem behaviors (e.g., Eisenberg, Fabes, et al., 1996; Rothbart, Ahadi, & Hershey, 1994) that are believed to undermine early school performance (Bub, McCartney, & Willett, 2007; Bulotsky-Shearer & Fantuzzo, 2011). However, whether emotions and their expression are associated with school outcomes may depend on children's temperamental (dispositional) self-regulation, that is, their effortful control (EC). Effortful control is “the ability to inhibit a dominant response and/or to activate a subdominant response, to plan, and to detect

errors” (Rothbart & Bates, 2006, p. 129). There is a strong body of literature suggesting that EC is related to children's positive school adjustment, including classroom participation, quality of relationships with teachers and externalizing behaviors (Eisenberg, Spinrad, & Eggum, 2010; Graziano, Reavis, Keane, & Calkins, 2007; Kim, Nordling, Yoon, Boldt, & Kochanska, 2012; Valiente, Lemery-Chalfant, Swanson, & Reiser, 2008). However, to our knowledge, no researchers have assessed how extensive observations of children's emotions expressed at school relate to school-related outcomes during kindergarten. Thus, in the current study, we examined the role of negative and positive emotion expressivity and EC (assessed with multiple methods and reporters) on children's interpersonal relationships with teachers, observed engagement in the classroom, and problems behaviors at school. Consistent with Rothbart and Bates' (1998, 2006) discussion of the importance of considering temperament by temperament interactions, especially those involving the reactive and control systems, we also examined whether children's EC moderated the relations of both positive and negative expressivity to school outcomes.

The quality of children's relationships with their teachers and their engagement at school, as well as their ability to refrain from disruptive behavior in the classroom, are relevant for academic success when children enter the school environment. For instance,

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both student–teacher relationship quality and early classroom participation have positive concurrent and prospective relations to children’s academic achievement (Hamre & Pianta, 2001; Ladd & Dinella, 2009; Valiente et al., 2008). Additionally, externalizing behavior is characterized by a constellation of disorderly behaviors believed to compromise academic outcomes including reading and math as well as adjustment at school (Hinshaw, 1992; Masten et al., 2005; Metsäpelto et al., 2015).

Children’s temperament may be an important factor in understanding school-related outcomes. Temperament is comprised of ‘constitutionally based individual differences in reactivity and self-regulation’ (Rothbart & Bates, 2006, p. 100). Reactivity refers to the degree of arousability, responsiveness, and excitability of motor, affective, and sensory response systems (Rothbart & Bates, 1998). Reactivity includes general patterns of behaviors and the overall tendency to express negative (i.e., fear, anger, and frustration) or positive emotionality (i.e., smiling, sociability, and high intensity pleasure; Putnam, Rothbart, & Gartstein, 2008). Self-regulation, on the other hand, refers to capacities or processes like EC that function to modulate reactivity by decreasing or increasing the onset, intensity, or duration of temperamental reactions (Rothbart & Bates, 2006).

Temperamental reactivity and regulation are believed to be fundamental for understanding social and personality development (Rothbart et al., 1994). A growing body of research suggests that temperament may also facilitate or impede learning strategies and processes (Davis & Carr, 2002; Orth & Martin, 1994), extending temperament’s potential effects further into the school context. Indeed, temperament may be associated with children’s reactions to the school environment and contribute to variability in the quality of emerging interpersonal relationships at school (Keogh, 2003; Valiente et al., 2008). Several studies have provided evidence for the critical role of EC for school readiness and adjustment (Raver, 2002; Raver, Garner, & Smith-Donald, 2007). However, little attention has been paid to the potential role of both positive and negative emotion in young children’s school success (Keogh, 2003). Therefore, the goal of the present study was to examine how negative and positive emotional expressivity and self-regulation (EC) relate to student–teacher relationship quality, academic engagement, and behavioral problems in kindergarten. The second goal was to examine the potential moderating role of children’s EC on the relation between emotion expressivity and these important school outcomes.

### 1.1. Reactive temperament: negative and positive expressed emotion

Frequent and relatively intense expressions of negative emotion were expected to undermine children’s school outcomes for a variety of reasons. Strong negative emotion reactivity and expressivity, such as becoming angry when the teacher points out a mistake, or becoming sad and withdrawn when corrected, can interfere with remembering information, motivation, and even test performance at school (Raver, 2002; Raver et al., 2007). Moreover, children prone to negative emotion expressivity may encounter more challenges developing and maintaining higher quality relationships (Pianta, Cox, & Snow, 2007). Consistent with this idea, negative emotion has been associated with poorer relationships with teachers, particularly conflictual student–teacher relationships, and with lower student–teacher closeness in both preschool and elementary school (Ladd & Burgess, 1999; Sette, Baumgartner, & Schneider, 2014; Valiente, Swanson, & Lemery-Chalfant, 2012). Such findings are important because student–teacher relationships characterized by warmth/closeness and/or low conflict have been positively associated with children’s achievement, motivation, and academic readiness (Ladd, Birch, & Buhs, 1999; Liew, Chen, & Hughes, 2010). However, significant relations between children’s

emotions and school-related outcomes have not always been obtained; for example, in a study with older children and adolescents, self-reports of negative emotion did not uniquely predict student–teacher relationship quality (Lewis, Huebner, Reschly, & Valois, 2009).

A majority of studies examining the relations of emotion to the quality of student–teacher relationships rely on adults’ reports or self-reports of emotion. However, the reliance on questionnaires has been criticized on the basis that reports may be biased (e.g., reporters try to present the child or the self in a positive light, inaccurate memory, etc.). Evidence of bias is provided by studies that have found high correspondence between mothers’ and observers’ temperament ratings of unknown children but low correspondence when ratings involved mothers’ own children (Seifer, Sameroff, Dickstein, Schiller, & Hayden, 2004; Stifter, Willoughby, & Towse-Goodman, 2008).

Direct observation of children’s temperament is thought to reduce some of the bias associated with questionnaire methods by allowing coder objectivity and by increasing ecological validity (Kagan, 1994). Both theoretical and empirical papers suggest that it is desirable to utilize multiple observations of a construct whenever possible, both as a means of increasing the stability of findings and as a way of minimizing non-representative responding due to the presence of an observer (Kagan, Snidman, McManis, Woodward, & Hardway, 2002; Majdandžić & Van Den Boom, 2007; Rothbart, Chew, & Gartstein, 2001). Moreover, naturalistic observations of emotion expressivity at school may provide a better predictor of school-related outcomes. Emotions expressed at school are embedded in the school context and, thus, reflect appropriateness in regard to within-context expectations that children encounter on a regular basis. In the present study, emotion expressivity observed over months across various school contexts were used as markers of temperamental reactivity.

Children’s emotion expressivity may also be relevant to their academic engagement, which is a vital component in their academic performance (Pekrun & Linnenbrink-Garcia, 2012; Skinner, Pitzer, & Brule, 2014). Academic engagement is comprised of several behaviors, including children’s effort, participation, and ability to follow instructions (Fredricks & McColskey, 2012). According to the Control-Value of Achievement Emotions theory, expression of negative emotion undercuts students’ effort, motivation, and enjoyment of school (Linnenbrink, 2007; Pekrun, 2006). Children who are low in academic engagement, compared to more engaged classmates, likely find it more difficult to follow rules and instructions as well as to focus on learning opportunities (Valiente et al., 2012). Although there is little empirical research regarding the role of negative emotion expressivity in academic engagement, Valiente et al. (2012) found a negative relation between children’s adult-reported negative emotion and adult-reported classroom participation in kindergarteners. Moreover, Denham et al. (2012) found that children high in negative expressivity, observed in a variety of preschool play settings (i.e., free play), had lower engagement in kindergarten.

Negative emotion and its expression are important factors in understanding externalizing problems at school (Diener & Kim, 2004; Eisenberg, Fabes, et al., 1996; Eisenberg et al., 2010). The presence of behavioral problems in early childhood is thought to be associated with an array of later negative outcomes, including antisocial behavior (Campbell, Spieker, Burchinal, Poe, & The NICHD ECCRN, 2006) and academic underachievement (Hinshaw, 1992). Children who exhibit more negative emotion tend to exhibit higher levels of aggression and non-constructive behaviors and fewer prosocial behaviors than their less negative peers (Diener & Kim, 2004; Eisenberg, Fabes, Nyman, Bernzweig, & Pinuelas, 1994) and, likely experience difficulties appropriately engaging in class and in forming close relationships with their teachers.

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