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Preschool interpersonal relationships predict kindergarten achievement: Mediated by gains in emotion knowledge



Marcela M. Torres^{a,*}, Celene E. Domitrovich^b, Karen L. Bierman^a

^a The Pennsylvania State University, Department of Psychology, 141 Moore Bldg, University Park, PA 16802-3106, USA

^b The Pennsylvania State University, Prevention Research Center for the Promotion of Human Development, 310E Biobehavioral Health Building, University Park, PA 16802, USA

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ABSTRACT

Using longitudinal data, this study tested a model in which preschool interpersonal relationships promoted kindergarten achievement in a pathway mediated by growth in emotion knowledge. The sample included 164 children attending Head Start (14% Hispanic-American, 30% African-American, 56% Caucasian; 56% girls). Preschool interpersonal relationships were indexed by student-teacher relationship closeness and positive peer interactions. Two measures of emotion knowledge (identifying emotions in photographs, recognizing emotions in stories) were assessed at the start and end of the preschool year. Structural equation models revealed that positive interpersonal relationships (with teachers and peers) predicted gains in emotion knowledge (identification, recognition) during the preschool year. Positive interpersonal relationships in preschool also predicted kindergarten achievement (controlling for initial preschool achievement); however, this association was mediated by gains in emotion knowledge during the preschool year. Implications are discussed for school readiness programs serving economically-disadvantaged children.

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An increasing body of research suggests that interpersonal experiences during preschool play key roles in facilitating (or impeding) early learning, and may make unique contributions to academic skill acquisition at kindergarten entry (Denham, Zinsser, & Brown, 2013; Ursache, Blair, & Raver, 2012). In particular, supportive relationships with teachers and peers during preschool may enhance academic readiness, at least in part by promoting specific social–emotional competencies such as emotion knowledge (Denham et al., 2013; Garner & Waajid, 2008). Emotion knowledge refers to the ability to recognize, understand, and verbally label emotion states (Izard, Stark, Trentacosta, & Schultz, 2008; Rhoades, Warren, Domitrovich, & Greenberg, 2011). Emotion knowledge is an important marker of social–emotional competence (Izard et al., 2001; Trentacosta & Fine, 2010), and has been linked directly with academic success (Zins, Payton, Weissberg, & O'Brien, 2007).

Young children growing up in poverty are at heightened risk for delays in cognitive school readiness (math and reading scores at school entry) and social–emotional skills (Farkas & Hibel, 2008). The preschool classroom affords important opportunities for social–emotional growth, fostered by positive interpersonal relationships with teachers and peers, and may be especially critical for children entering school from lowincome backgrounds (Gormley, Phillips, Newmark, Welti, & Adelstein, 2011). Despite research highlighting the importance of relationships for school readiness, no longitudinal study has yet examined the specific predictive associations between interpersonal relationships and gains in emotion knowledge during preschool, nor the degree to which gains in emotion knowledge may mediate the association between preschool relationships and academic achievement after the transition into kindergarten.

This study tested three specific hypotheses in a sample of lowincome students attending Head Start: 1) positive relationships with preschool teachers and peers will promote gains in emotion knowledge, 2) positive relationships with preschool teachers and peers will promote academic achievement in kindergarten (controlling for initial achievement in preschool), and 3) preschool gains in emotion knowledge will mediate, at least partially, the association between positive preschool relationships and kindergarten academic achievement. Results consistent with these hypotheses may have important implications for preschool programming that targets the quality of interpersonal relationships.

Positive interpersonal relationships, emotion knowledge, and academic achievement

Much of the research examining the development of emotion knowledge in early childhood has focused on parenting contributions. More recently researchers have adapted theoretical frameworks from the parenting literature to guide research on socialization processes in

^{*} Corresponding author at: Institute of Behavioral Science, University of Colorado at Boulder, 1440 15th Street, UCB 483, Boulder, 80309 CL, USA. Tel.: +1 303 492 4532; fax: +1 303 492 2151.

E-mail addresses: marcela.torres@colorado.edu (M.M. Torres), cxd130@psu.edu (C.E. Domitrovich), kb2@psu.edu (K.L. Bierman).

the preschool classroom (Denham et al., 2013; Pianta, 1999). A driving hypothesis is that children learn about emotions in the context of close interpersonal interactions through both explicit learning processes (e.g., adults labeling and explaining feeling states) and implicit learning processes (e.g., adults modeling emotional expressiveness, responding sensitively to emotional displays, scaffolding around emotionally-evocative events) (Ashiabi, 2000). In a manner parallel to parents, teachers who form warm and supportive relationships with young children may similarly foster their emotion knowledge by providing emotional support, discussing feelings, and offering sensitive, responsive scaffolding in the context of emotionally-evocative events (Denham, Bassett, & Wyatt, 2007; Pianta, 1999). In addition, close student-teacher relationships may benefit children by shaping their classroom behavior and providing emriched opportunities for positive socialization and social learning experiences (Davis, 2003).

Indeed, a number of empirical studies document links between close student-teacher relationships and child emotional functioning (Garner & Waajid, 2008; Izard et al., 2008). For example, in cross-sectional studies of young children, high-quality student-teacher relationships are associated with measures of child social-emotional competence, behavioral adjustment, and cognitive skill development (Doumen, Koomen, Buyse, Wouters, & Verschueren, 2012; Palermo, Hanish, Martin, Fabes, & Reiser, 2007). When teachers report close and supportive relationships, students report that they like school more, exhibit higher levels of engagement in the classroom, and do better academically over time (Hamre & Pianta, 2001; O'Connor & McCartney, 2007; Peisner-Feinberg et al., 2001).

Preschool peer relations may also provide unique opportunities for social-emotional learning, thereby fostering emotion knowledge during the preschool years (Arsenio, Cooperman, & Lover, 2000). Positive peer interactions appear to motivate and support children as they engage in complex, cooperative, and imaginative play sequences that scaffold more sophisticated emotional exchanges and socialcognitive reasoning (Bierman, Torres, Domitrovich, Welsh, & Gest, 2009; Coolahan, Fantuzzo, Mendez, & McDermott, 2000). Participation in collaborative pretend play is hypothesized to exercise and strengthen emotional understanding and perspective-taking skills, as it requires the enactment and coordination of diverse roles (Ursache et al., 2012). Conversely, when children have difficulties getting along with peers, particularly if they show aggressive and disruptive behaviors or are isolated socially, they may miss out on these opportunities for social-emotional learning (Buhs & Ladd, 2001). Thus, in a manner parallel to and likely inter-dependent with close student-teacher relationships, positive peer relations may directly promote gains in emotion knowledge and thereby foster improved learning at school.

In the current study, children's relations with their teacher and their peers were considered two indices of the quality of their preschool interpersonal relationships (Degotardi, Sweller, & Pearson, 2013). In addition to replicating links between positive preschool relationships and enhanced academic learning found in prior studies, the current longitudinal study also examined the degree to which positive preschool relationships promoted gains in emotion knowledge, and tested preschool gains in emotion knowledge as a potential mediator of enhanced achievement in kindergarten.

Emotion knowledge and academic achievement

Accumulating research suggests that emotion knowledge is correlated with academic success (Zins et al., 2007). For example, in a crosssectional study, Leerkes, Paradise, O'Brien, Calkins, and Lange (2008) found that emotion understanding emerged as a unique correlate of academic competence among preschool children, distinct from inhibitory control and perspective-taking skills. Similar studies of preschool age children found positive concurrent associations between emotion situation knowledge and academic competence, controlling for age, sex and income level (Garner & Waajid, 2008; Shields et al., 2001).

Few empirical studies have examined the link between emotion knowledge and academic competence over time. An important exception is a longitudinal study with low income children conducted by Izard et al. (2001). In that study, children's ability to accurately recognize and label emotion expressions at the end of preschool was positively predictive of teacher-rated academic competence in third grade after controlling for demographic factors and verbal ability (Izard et al., 2001). Similarly, Rhoades et al. (2011) found a significant predictive relationship between preschool emotion knowledge and first grade academic competence, controlling for baseline academic performance, demographic factors, and receptive vocabulary. In a slightly older sample, path analyses revealed that kindergarten students' emotion knowledge measured with the Assessment of Children's Emotions Scale (ACES; Schultz, Izard, & Bear, 2004) was positively associated with direct assessments of academic achievement and teacher ratings of social competence (Trentacosta & Izard, 2007).

One intervention study has also demonstrated that preschool gains in social-emotional skills associated with the intervention, including emotion knowledge, made unique contributions to kindergarten outcomes in reading achievement and learning engagement, as well as social behavior, after accounting for the concurrent contributions of gains in vocabulary and emergent literacy skills (Nix, Bierman, Domitrovich, & Gill, 2013). Together, these studies suggest that gains in emotion knowledge during preschool may play a unique role in enhancing later learning engagement and academic achievement. The current study built on these findings by testing a model in which gains in emotion knowledge mediated the link between preschool interpersonal relationships and later academic achievement.

Preschool relationships and academic achievement: Emotion knowledge as mediator

To date, only two studies have tested mediation models designed to characterize the developmental processes linking positive interpersonal relationships, emotion knowledge, and academic achievement in early childhood. Trentacosta and Izard (2007) examined the possibility that the link between kindergarten emotion knowledge and first-grade academic achievement was mediated by first-grade student-teacher closeness and peer acceptance. However, the mediational model was not supported, as kindergarten emotion knowledge did not predict first grade interpersonal relationships. Instead, kindergarten emotion knowledge emerged as a direct predictor of first-grade academic achievement. Subsequently, Garner and Waajid (2008) found support for an alternative mediation model using cross-sectional data, in which preschool emotion knowledge mediated the association between teacher-child closeness and direct assessments of academic competence (concept knowledge and language skills). The Garner and Waajid (2008) findings are consistent with a theoretical model in which high-quality interpersonal relationships create opportunities for young children to learn about emotions (their own and others) (Denham et al., 2013). From a conceptual standpoint, this may occur because positive interpersonal relationships provide children with frequent opportunities to give and receive communications about emotions (Denham et al., 2013). Young children with positive interpersonal experiences may be more able to attend to and accurately encode information about their own and others feelings in school, whereas children with more negative interpersonal experiences may be constrained and biased in their emotional perceptions (Izard et al., 2008). Emotion knowledge, in turn, may facilitate academic learning by promoting self-regulation of attention and emotion in the classroom, allowing the child to engage more fully in learning activities (Izard et al., 2001; Shields et al., 2001).

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