



Peer interaction in rural preschool classrooms: Contributions of children's learning-related behaviors, language and literacy skills, and problem behaviors[☆]



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ABSTRACT

Peer interaction contributes strongly to children's development and learning, but the processes by which peer interaction is shaped in preschool classrooms, particularly classrooms in rural communities, are largely unknown. This study aimed to examine the patterns of peer interaction in rural preschool classrooms as a way to extrapolate how children influence each other in their day-to-day social interaction. Included in this study were 270 preschoolers (Mean age = 53 months, $SD = 3.2$) from 61 preschool classrooms located in rural communities that primarily served children from low-income families. Results of actor-partner interdependence models demonstrate significant homophily effects of children's learning-related behaviors and language and literacy skills, after accounting for gender and problem behavior homophily. The similarity of learning-related behaviors between a dyad mediated the relationship between their problem behaviors and the frequency of peer interaction. Children's language and literacy skills were similar to the skills of their peers with whom they interacted more often toward the end of the academic year. These findings have implications for understanding and improving peer interaction in rural preschool classrooms.

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1. Introduction

Preschool classrooms are important social contexts for many young children, representing an early milieu in which they learn to establish social interaction and relationships with their peers. During this period, young children gradually transition from solitary to interactive behavior patterns (Rubin, Bukowski, & Parker, 1998). This change in social behaviors provides more opportunities for advancement of children's social, cognitive, and language skills through peer interaction (Piker & Rex, 2008). While several studies have documented the significant influences of peer interaction on preschoolers' learning and development (e.g., Bulotsky-Shearer & Fantuzzo, 2011; Henry & Rickman, 2007; Justice, Petscher,

Schatschneider, & Mashburn, 2011; Mashburn, Justice, Downer, & Pianta, 2009), how this dynamic social process emerges as a function of preschool children's learning and development is less understood. Furthermore, most of the studies on preschool children's peer interaction were conducted in Head Start programs serving low-income children in urban communities or schools serving middle-class families (e.g., Daniel, Santos, Peceguina, & Vaughn, 2013; Delay et al., 2016; Vaughn, Colvin, Azria, Caya, & Krzysik, 2001). Little attention has been directed towards children living in rural areas, where educational resources and facilities are limited and considerably small numbers of households are scattered across a broad region. The purpose of this study was to examine rural preschoolers' peer interaction in relation to their learning-related behaviors, language and literacy skills, and problem behaviors. In particular, we identified individual and dyadic factors contributing to the homophily phenomenon, defined as a preference for interacting with peers who share similar characteristics with them (McPherson, Smith-lovin, & Cook, 2001).

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1.1. Peer interaction and child development

According to the bio-ecological theory (Bronfenbrenner & Morris, 2006), peer interaction is a *proximal process*, defined as “progress of progressively more complex reciprocal interaction” that “takes place on a regular basis over extended periods of time” (pp. 797), that drives human development. The underlying mechanisms of peer interaction are heavily discussed in several prominent developmental theories. For example, Vygotsky (1978) sociocultural theory posits that children’s experiences with peers, as they co-construct various cognitively and socially stimulating learning experiences, afford them opportunities to deepen their knowledge and social understanding, and to appropriate cognitive and social skills for better adaptation to the learning environment. Bandura’s social learning theory (1971) proposes that a critical learning skill in young children is to learn by observing and imitating others. Piaget (1932) stresses that the symmetric knowledge status between peers allows children to engage in more reciprocal inquiry processes that assist them in constructing their knowledge of the world.

These theoretical assumptions have been supported by many studies from the early childhood literature conducted in urban or suburban preschool programs. For example, evidence shows that interactive peer play has positive influences on young children’s learning and development, such as spatial reasoning (Ramani, Zippert, Schweitzer, & Pan, 2014), self-regulation (Barnett et al., 2008), and social and learning competencies (Bulotsky-Shearer, Manz et al., 2012). Positive experiences with peers at preschool were also found to enhance children’s knowledge of emotion through more frequent opportunities to communicate their emotion with peers (Torres, Domitrovich, & Bierman, 2015). Recently, Mashburn et al. (2009), and Justice et al. (2011) found that children’s language growth was highly influenced by the language skills of their classmates; the peer effects are manifest more strongly in low-ability children than their high-ability counterparts.

1.2. Child attributes and peer interaction

A central focus of the current study was to explore how specific attributes of children may be associated with their interaction in preschool classrooms. Prior studies have suggested that the ways in which children interact with their peers can be influenced by the attributes of children as well as their peers. For example, preschool girls tend to demonstrate greater social skills than boys (Chen, 2010). Children with greater problem behaviors or poorer language skills tend to interact with peers less often (Cohen & Mendez, 2009; Hanish, Martin, Fabes, & Barcelo, 2008; Mendez, Fantuzzo, & Cicchetti, 2002).

The extent to which children differ from their peers in terms of these attributes may also play a role in peer interaction. It is commonly observed that children choose to interact with certain peers more frequently who share some common attributes than to interact with less-similar peers within a preschool classroom. This homophily phenomenon has received considerable attention from early childhood researchers in the past decades. Researchers speculate that the children with whom a child interacts most often can have significant effects on the child’s development (e.g., Delay et al., 2016; Martin et al., 2013; McPherson et al., 2001; Strayer & Santos, 1996; Vaughn et al., 2001).

The most commonly observed homophily phenomenon is that of gender segregation. The preference to interact with same-sex peers emerges in the toddler years, with girls showing stronger same-sex preferences than boys (Howes & Phillipsen, 1992). Data suggest that over one-half of preschool children interact with same-sex peers, and fewer than 10% involve only other-sex peers in their interaction (Fabes, Hanish, & Martin, 2003). Martin and her col-

leagues (Martin et al., 2013; Martin, Fabes, Hanish, & Hollenstein, 2005; Martin, Fabes, Hanish, Leonard, & Dinella, 2011) suggest that the origins of gender homophily may come from children’s beliefs that same-sex peers share more common attributes than other-sex peers, children’s perception of gender roles, or the types of social activities that draw children together.

Behavioral homophily, problem behaviors in particular, has also been extensively investigated in the past decade. Hanish et al. (2008) show that children with externalizing behavior problems (e.g., aggressive, disruptive, or defiance behaviors) tend to affiliate with peers sharing similar externalizing behaviors. Moreover, recent evidence from Stone et al. (2013) suggests that children with internalizing behavior problems, namely, directing distressing feeling toward the self and consequently experiencing “sorrow, guilt, fear, worry” (Zahn-Waxler, Klimes-Dougan, & Slattery, 2000), tend to befriend other internalizing peers, after controlling for externalizing behaviors and gender effects. One possible explanation for this finding is that children with these problem behaviors are often excluded or ignored by their typically developing peers. The experience of peer rejection then leads the children to befriend other rejected peers. The more they are exposed to problem behaviors in their peer networks, the more they are at risk for impaired social, emotional, and cognitive development.

To date, the primary interests on homophily effects in young children focus on gender and behavior homophily. It is less understood whether homophily is influenced by other child attributes, such as children’s skill levels in early academic domains. One exception is a recent study by Delay et al. (2016), who found that the homophily phenomenon among young children was associated with their school competencies; specifically, teacher reports of children’s social and learning behaviors were predictive of their social networks. If homophily effects transcend gender and behavior, we might theorize that children with greater pre-academic competencies, for instance, are drawn to interact with children who approach learning similarly.

1.3. Pre-academic competencies and peer interaction

Important pre-academic competencies develop in the preschool years, and serve as a foundation to future academic achievement in reading, math, and other academic domains (Dickinson, 2011). One of the essential pre-academic competencies is learning-related behaviors (Hyson, 2008), referred to as the behaviors, skills, and attitudes that characterize how a child reacts and adapts to the learning environment. Examples of positive learning-related behaviors include paying attention to the teacher, being interested in exploring new activities, being willing to seek help or accept help, showing perseverance when facing challenges, and collaborating with others. Children who exhibit a high volume of positive learning-related behaviors are more able to profit from learning-related experiences within the classroom (Domínguez, Vitiello, Maier, & Greenfield, 2010). In turn, children’s learning-related behaviors predict early academic development, even when controlling for cognitive abilities (Yen, Konold, & McDermott, 2004).

In addition to the direct relationship between learning-related behaviors and children’s academic achievement, this pre-academic competence has been found to closely relate to children’s social interaction with peers. Coolahan, Fantuzzo, Mendez, and McDermott (2000) found that children who interacted more positively with peers also showed more positive learning-related behaviors and peer relationships. Recent studies further showed that both teacher ratings of learning-related behaviors and positive play behaviors mediate, or can buffer against, the relationships between problem behaviors and academic achievement in Head Start classrooms (Bulotsky-Shearer, Bell, Romero, & Carter, 2014; Bulotsky-Shearer, Bell, Romero, & Carter, 2012; McWayne &

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