The transition from preschool to first grade: A transactional model of development☆

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ABSTRACT

Transactional relations between children's positive social interaction skills, school engagement, and academic achievement were examined using a longitudinal panel model across the transition from preschool to first grade. Participants were Head Start children ($N = 241$; 49% girls, M age = 53 months, range 45–60); 78% were Mexican/Mexican-American; 82% of families were of low socioeconomic status. Head Start children's positive social interaction skills and academic achievement in preschool were positively related to kindergarten school engagement, positive social interaction skills and school engagement influenced one another over time, and academic achievement was positively related to positive social interaction skills from preschool to kindergarten. A small, but significant, transactional effect of preschool academic achievement on first-grade school engagement through kindergarten positive social interaction skills was found. Findings from the current study provide support for previously undocumented longitudinal relations between positive social interaction skills, school engagement, and academic achievement for Head Start children.

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1. Introduction

Too many children, especially low-income and racial/ethnic minority children, are inadequately prepared for the transition to formal school. This lack of readiness is evidenced by the significant and persistent gap in academic achievement between low-income, racial/ethnic minority children and their more affluent, racial/ethnic majority peers (Rathbun, West, & Hausken, 2004). In addition to academic skills, practitioners and scholars agree that children's positive social interaction skills and school engagement are important factors for a successful transition from preschool to elementary school (Rimm-Kaufman & Pianta, 2000; Stipek, 2006). Transactional models of development suggest that positive social interaction skills, school engagement, and academic achievement likely build on and influence one another over time (Sameroff & MacKenzie, 2003). Despite the consensus regarding the importance of academic and social behaviors and skills for a successful transition to elementary school, few studies have longitudinally examined the potential transactional development of positive social interaction skills, school engagement, and academic achievement for low-income, ethnic minority children across this critical transition. Doing so is important because this type of research can help identify the specific skills and time period in which practitioners should intervene to set these children on a positive trajectory for school success.

The purpose of the present research was to address this gap using a sample of low-income Head Start children. Nearly two-thirds of the children in the current study were of Mexican or Mexican/American descent and about half were dual-language learners. We followed these children from preschool through first grade and examined how positive social interaction skills, school engagement, and academic achievement assessed at the end of each year related to one another across three time points (preschool, kindergarten, first grade). In line with a transactional model that posits bidirectional and transactional influences, we examined direct and indirect relations between children's positive social interaction skills, school engagement, and academic achievement across the transition from preschool to formal school using a cross-lagged longitudinal panel model.

2. The transition to formal schooling

The transition from the informal learning context of preschool to the formal learning context of elementary school is a time during which

there are dramatic changes in the expectations for children (Fabian & Dunlop, 2002; Rimm-Kaufman & Pianta, 2000). For example, in most preschool settings, children spend 30% to 60% of their time in play-based activities (Chien et al., 2010; Goble, Hanish, Martin, Eggum-Wilkens, Foster, & Fabes, 2016). These play-based activities typically emphasize the development of positive social interaction skills, such as sharing and cooperation, and they are characterized by warm teacher-child relationships, unstructured child-directed activities, and children spending time in small peer groups (Early et al., 2010; Martin, Fabes, Hanish, & Hollenstein, 2005; Palermo, Hanish, Martin, Fabes, & Reiser, 2007). In contrast, kindergarten and first-grade contexts typically emphasize academic achievement and consist of larger class sizes and structured teacher-directed academic activities (Bassok, Latham, & Rorem, 2016). Children's interactions with peers tend to occur in larger peer groups with fewer adults present. Moreover, teacher and parental expectations for self-control and attention are greater, teacher-child relationships tend to be less warm, and children typically must interact with a more diverse population of children (Wilson, Pianta, & Stuhlman, 2007).

Thus, the transition from preschool to the start of formal schooling involves changing circumstances, expectations, and settings, such that by the time children start formal schooling, they are expected to be able to interact successfully with larger groups of peers during structured tasks and expected to devote extended periods of time to learning academic concepts and skills. This transition may be particularly challenging for Head Start children from low-income, racial/ethnic minority backgrounds. Although there are many benefits derived from Head Start, Head Start children often move out of Head Start to attend low-quality and low-performing elementary schools compared to their counterparts (Pigott & Israel, 2005). Although speculative, low-quality classroom experiences in kindergarten classrooms may reduce positive social interactions with peers and school engagement as well as negatively impact academic achievement (Burchinal et al., 2008). Accordingly, it is especially important to examine, in Head Start children, the relations between children's positive social interaction skills, school engagement, and academic achievement across this critical transition.

3. Positive social interaction skills, school engagement, and academic achievement

Children's positive social interaction skills fall into two categories: (1) socially competent behaviors, such as sharing and helping and (2) a lack of negative behaviors, such as conflict and aggression (Fantuzzo et al., 1995). Prior research suggests that children's positive social interaction skills are related to academic achievement across the transition from preschool to formal school for low-income, racial/ethnic minority children. For example, Fantuzzo, Sekino, and Cohen (2004) found that predominantly African-American Head Start children who were skilled at interacting with peers early in the preschool year were rated higher on measures of literacy and mathematic skills by their teachers at the end of the year. Similar correlational research in largely African-American Head Start classrooms has found that positive social interaction skills during preschool were associated with literacy and math outcomes in kindergarten and third grade (Bulotsky-Shearer, Bell, Romero, & Carter, 2012; Hampton & Fantuzzo, 2003). Additionally, recent research has shown positive significant associations between positive social interaction skills and language and literacy outcomes for a predominantly Hispanic Head Start sample (Bulotsky-Shearer, Lopez, & Mendez, 2016).

Examining school engagement might help us understand how or why positive social interaction skills are related to academic achievement for low-income, ethnic minority Head Start children. In general, cross-sectional studies with predominately affluent, racial/ethnic majority samples in elementary school show that children who have positive social interaction skills (i.e., both socially competent behaviors and a lack of negative behaviors) are more likely to enjoy being at school

(i.e., emotional engagement) and engage in classroom activities (i.e., behavioral engagement; Birch & Ladd, 1996; Buhs & Ladd, 2001; Ladd & Burgess, 2001). Furthermore, Head Start research with low-income, ethnic minority children supports these associations showing that positive social interaction skills are related to skills that support school engagement such as children's attitudes toward learning, motivation, and attention/persistence (Bulotsky-Shearer et al., 2016; Coolahan, Fantuzzo, Mendez, & McDermott, 2000; Eggum-Wilkens, Fabes, Castle, Zhang, Hanish, & Martin, 2014; Mendez, Fantuzzo, & Cicchetti, 2002). In turn, children's school engagement has been linked to their academic achievement (i.e., language, literacy, math) concurrently as well as longitudinally (e.g., Iyer, Kochenderfer-Ladd, Eisenberg, & Thompson, 2010; Ladd, Birch, & Buhs, 1999; Ladd, Buhs, & Seid, 2000; Ladd & Dinella, 2009; Ladd, Kochenderfer, & Coleman, 1997).

Relations between positive social interaction skills, school engagement, and academic achievement are not likely unidirectional. Sameroff's transactional model of development suggests a continuous, dynamic interplay between the child and his or her social context over the course of development that allows for both continuity in children's development and creates potential for change (Sameroff, 2009; Sameroff & MacKenzie, 2003). As such, the development of a child's positive social interaction skills, school engagement, and academic achievement may form part of a dynamic system of influences across the transition to formal school, such that intervention at any period and on any facet may alter children's school trajectories. Most of the prior empirical evidence examining positive social interaction skills, school engagement, and academic achievement has utilized designs that are limited in their ability to test bidirectional (i.e., A → B and A ← B) and transactional hypotheses (i.e., A → B → C; Buhs & Ladd, 2001; Bulotsky-Shearer et al., 2012; Bulotsky-Shearer et al., 2016; Coolahan et al., 2000; Fredricks, Blumenfeld, & Paris, 2004; Iyer et al., 2010; Ladd et al., 1999; Ladd & Dinella, 2009; Ladd et al., 2000).

Thus, to better understand children's development across the transition to formal school and to identify potential points of intervention, the objective of the present study was to longitudinally explore the transactional effects of Head Start children's positive social interaction skills, school engagement, and academic achievement. We used a cross-lagged panel model (see Fig. 1) that includes bidirectional and indirect relations between these skills over time (Selig & Little, 2012). In addition to accounting for relations among positive social interaction skills, school engagement, and academic achievement concurrently (i.e., within wave) and controlling for stability across time, our cross-lagged model with bidirectional paths examines relations between positive social interaction skills, school engagement, and academic achievement from one wave to the next (i.e., preschool to kindergarten and kindergarten to first grade). This type of analysis allows for the prediction of change in children's skill development at kindergarten and first grade by controlling for prior levels of these skills. Furthermore, testing indirect effects sheds light on potential transactional relations between children's positive social interaction skills, school engagement, and academic achievement from preschool to first grade. When examining complex longitudinal models using a sample of Head Start children, of which a large proportion are dual-language learners, it is important to control for verbal ability and language preference, which may, in part, explain the relations between study variables. Thus, preliminary analyses were conducted to examine how verbal ability and language preference, as well as other potentially important demographic characteristics, were related to the study variables and all models included controls to provide a more robust test of the cross-lagged panel model.

4. Method

4.1. Participants

Data were drawn from a 3-year longitudinal study of Head Start children designed to explore the impact of children's school-based