



# Longitudinal, reciprocal effects of social skills and achievement from kindergarten to eighth grade



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## ABSTRACT

Previous research suggests that students' social skills and achievement are interrelated, and some findings support bi-directional effects between the two constructs. The purpose of this research study was to estimate the possible longitudinal and reciprocal effects of social skills and achievement for kindergarten through eighth grade students. Data from the Early Childhood Longitudinal Study program were analyzed; teachers' ratings of students' social skills and students' standardized math and reading achievement performance were collected 4 and 5 times, respectively. Latent variable structural equation modeling was used to test a panel model of reciprocal, longitudinal effects of social skills and achievement. The results suggest that the effects of students' social skills and achievement are bi-directional, but the effects of students' achievement on their later social skills are stronger than the effects of social skills on achievement. The significant effects of students' social skills on their later achievement are mostly indirect. These findings suggest that the future social skills of students who struggle academically may be of particular concern to educators, and intervention and prevention efforts aimed to address both social and achievement skills may help remediate the other skill in the future.

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## 1. Introduction

Children's early social experiences are predictive of important outcomes later in their lives. Children who are rejected by their peers are more likely to participate in criminal behaviors as adolescents and young adults (Kupersmidt & Coie, 1990), drop out of school (Kupersmidt & Coie, 1990; Parker & Asher, 1987), be unemployed at age 18 (Woodward & Fergusson, 2000), and experience bullying (Murray-Harvey & Slee, 2010). Low academic achievement results in similar negative long-term outcomes (Barrington & Hendricks, 1989; Tremblay et al., 1992). Moreover, these two variables are interrelated; negative peer relationships are associated with lower academic achievement (Murray-Harvey & Slee, 2010). Taken together, these findings strongly suggest that students' relationships with peers are likely linked with their subsequent academic performance.

Although there is evidence to suggest that these two constructs are interrelated, the effect of achievement on students' peer relationships appears less studied than the effect of peer relationships on achievement. Much of the research on the effect of achievement on peer relationships focuses on students with specific educational disabilities, such as learning disabilities, attention-deficit hyperactivity disorder (ADHD), and emotional disturbance (e.g., Barkley, 2003; Hinshaw, 1992; Kavale & Forness, 1996). Low academic performance is a common characteristic among students with educational disabilities, which is not surprising given that academic difficulties are required for students to receive such classifications and special education services in schools

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(IDEA, 2004). In addition to low academic performance, research demonstrates that students with educational disabilities tend to exhibit social skill deficits as well. These students engage in problematic behaviors more often than their peers (Barkley, 2003; Bursuck, 1989; Hinshaw, 1992; Kavale & Forness, 1996; Maughan et al., 1985; McGee et al., 1986), display fewer prosocial behaviors, have fewer friends, and are less accepted by peers (Bursuck, 1989; Wagner, 1995). It is important to note, however, that most of these findings are limited by the lack of diversity of their samples; many of the studies did not include ethnically diverse students or students without educational disabilities, or were not representative of both genders.

In addition to the aforementioned studies, intervention research further indicates that achievement affects peer relationships. For example, among a small sample of African American fourth grade students, those who received academic tutoring experienced improvements in their math and reading achievement, were more accepted by their peers, and displayed fewer socio-emotional difficulties, in comparison to students in the control group (Coie & Krehbiel, 1984). Additional research with nationally representative samples may improve the understanding of if and how students' achievement exerts any effects on students' relationships with others.

### 1.1. Social skills effects on achievement

More common is research focused on the opposite direction of effects, the effect of students' social competencies on achievement, and such effects have been observed across different raters, assessment methods, measures of achievement, measures of social variables, and grade levels (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Buhs & Ladd, 2001; Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000; Deroiser & Lloyd, 2011; DiPerna, Volpe, & Elliott, 2001; Ladd, 1990; Malecki & Elliott, 2002; Ray & Elliott, 2006; Wentzel, 1991). For example, third and fourth grade US students' and teachers' ratings of children's social skills, measured by the Social Skills Rating Scale, were significantly related to their subsequent performance on standardized measures of reading, language, and math achievement (Malecki & Elliott, 2002). Likewise, ratings of social acceptance completed by the teachers and peers of 1225 North Carolina third graders, measured via sociometric ratings and interviews, were positively associated with students' grade point average (GPA) in reading and math (Deroiser & Lloyd, 2011). Furthermore, prosocial behavior and peer status, rated by peers and teachers, explained 13% and 4% of the unique variance in sixth and seventh grade students' annual GPA, respectively (Wentzel, 1991). The effect of social competency on students' learning is not surprising given that theories of cognitive development and school learning have long highlighted the importance of the social environment in children's learning (Bandura, 1997; Vygotsky, 1978; Walberg, 1984). The interdependence between these two domains, students' achievement and social lives, suggests that the two are "related spheres of influence" (Ladd, Birch, & Buhs, 1999).

A variety of terms has been used across these studies to describe components of students' social experiences, such as social acceptance, prosocial behavior, and social skills. As used here and as defined by the authors of the measure used in this study (an adaptation of the Social Skills Rating Scale), social skills are "socially acceptable learned behaviors that enable a person to interact effectively with others and to avoid socially unacceptable responses" (Gresham & Elliott, 1990, p. 1). Well-developed social skills assist individuals in accurately selecting salient interpersonal information from their interactions with others in order to inform their goal-directed behavior, support the initiation and maintenance of positive interpersonal relationships, and contribute to their acceptance by peers (Beauchamp & Anderson, 2010; Bedell & Lennox, 1997). Understanding the developmental trajectory of children's social skills is also important because children's social environments expand and may change as they progress through school, and grow to include peers as well as teachers (Birch & Ladd, 1996).

As is the case with achievement and learning research, intervention research focused on social skills also supports the hypothesis that it is possible to modify students' social skills and that increases in their social skills often result in increases in achievement. A recent meta-analysis showed that school-based universal social-emotional learning (SEL) programs resulted in higher prosocial behavior, social-emotional skills, and achievement, lower emotional distress and fewer conduct problems in a large sample of students ranging from kindergarten to high school (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). The effect of SEL programs on achievement was found for both grades and standardized reading and math tests and remained significant when measured six months later. Such findings suggest that the benefits of remediating social skills include improving achievement over time for some students.

### 1.2. Longitudinal effects

By studying the relation between these two constructs across time, researchers are also able to untangle the likely effect of social skills on achievement and the effect of achievement on social skills by examining the development of these two constructs. More is known about the longitudinal effects of social skills on achievement, however, than the effects of achievement on social skills. Studies that followed students during the course of a full school year have shown that measurements of social skills and peer acceptance in the fall significantly predicted elementary school students' achievement during the following spring (Buhs & Ladd, 2001; Deroiser & Lloyd, 2011; Ladd, 1990; Malecki & Elliott, 2002), even after controlling for previous academic achievement (Deroiser & Lloyd, 2011).

Such longitudinal investigations reinforce the notion that social skills are likely important for subsequent achievement. Relatively few studies, however, have investigated this effect beyond a single year; the results of these long-term longitudinal studies are inconsistent. One such longitudinal study, using structural equation modeling (SEM) to examine the effect of social skills on achievement, found that Italian students' prosocial behavior in third grade, rated by teachers, peers, and students, was a strong predictor ( $\beta = .52$ ) of their classroom achievement in eighth grade (Caprara et al., 2000). In contrast, the regression results of another longitudinal study, using a large nationally representative sample from the Early Childhood Longitudinal Study, Kindergarten class of

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