



# Divorce, approaches to learning, and children's academic achievement: A longitudinal analysis of mediated and moderated effects<sup>☆</sup>

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## ABSTRACT

Data from the Early Childhood Longitudinal Study – Kindergarten Cohort (ECLS-K) were used to test the hypothesis that approaches to learning (ATL) mediates the link between parental divorce and academic achievement. Fixed effects regression was utilized to test for mediation, and subsequent moderation analyses examining gender and age at time of divorce also were conducted. Results indicated that divorce was associated with less growth in test scores and that ATL mediated 18% and 12% of this association in reading and mathematics respectively. Parental divorce also was associated with larger negative effects for children who experienced divorce at an older age as well as for girls' mathematics test scores. These findings contribute to the understanding of the impact of parental divorce on children's academic achievement and underscore the importance of focusing on the variability of child outcomes following parental divorce.

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## 1. Introduction

Approximately half of all American youth will experience parental divorce at some point during their childhood (Lansford, 2009). In light of the prevalence of divorce and its association with negative outcomes, researchers have extensively studied the effects of divorce on children (Amato, 2001, 2010; Amato & Keith, 1991; Cherlin et al., 1991; Emery, 1999). Amato (1993) described a general model of post-divorce outcomes that specified the effects of divorce depend on the configuration of stressors (e.g., conflict, parental remarriage, and moving) and resources (e.g., economic and parental support) present in a post-divorce situation. This model implies an understanding of divorce as a process rather than merely an event. According to the theory, as children experience stressors involved with their parents' unraveling marriage, they start to experience negative outcomes that persist and change following the divorce. Among other negative outcomes, parental divorce has been associated with lower academic achievement (Amato, 2001; Emery, 1999; Jaynes, 2002). Few studies, however, have examined variables that potentially mediate or moderate the link between divorce and academic achievement.

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Some have speculated that the pathway between divorce and diminished academic achievement is primarily one of motivation rather than ability (Emery, 1999). Because divorce can result in a constellation of negative effects, including perceived guilt, blame, stressors, and diminished resources for children (Kurtz & Derevensky, 1993), it is plausible that divorce can negatively affect a child's motivation, engagement, and learning-related behavior in the classroom. This set of attitudes and behaviors have been characterized as *approaches to learning* (ATL; DiPerna, Lei, & Reid, 2007; Li-Grining, Votruba-Drzal, Maldonado-Carreno, & Haas, 2010) and could help explain the negative association between parental divorce and academic achievement.

### 1.1. Divorce and academic achievement

Researchers have consistently shown divorce to be negatively related to academic achievement (Amato & Keith, 1991; Amato, 2001; Jeynes, 2002). In a review of the empirical literature, Jeynes (2002) found only a small number of studies that did not show a significant negative association between divorce and academic achievement. Further, in a meta-analysis, Amato (2001) found that, after controlling for the quality of research methodology, children of divorce performed 0.17 standard deviations lower on measures of academic achievement than their peers from intact families. Similarly, in a large longitudinal study, Sun (2001) found that divorce had significant negative long-term effects on children's academic achievement. These studies support the hypothesis that parental divorce adversely affects children's academic achievement.

With regard to moderators of the association between parental divorce and academic achievement, few studies have examined gender as a moderator of the impact of divorce on academic achievement. Sun and Li (2001) found no interaction effects between parental divorce and gender when predicting academic performance. This finding is consistent with several other studies as well (e.g., Allison & Furstenberg, 1989; Amato, 2001; Lansford et al., 2006; Painter & Levine, 2000). In contrast, Neighbors, Forehand, and Armistead (1992) concluded that the negative effects of parental divorce on academic achievement were stronger for girls than boys. In sum, evidence is mixed as to whether gender moderates the impact of parental divorce on children's academic achievement.

There also is mixed evidence regarding the moderating influence of age on the impact of parental divorce on academic achievement. Amato (2001) reported that divorce more negatively impacted the academic achievement of elementary students than high school students. Jeynes (2002) also concluded that most studies show a more negative effect for children when divorce occurs earlier in childhood. In contrast, Lansford (2009) posited that divorce may more negatively affect adolescents than elementary school students in the area of academic achievement due to the developmental salience of academic achievement during adolescence. Still other studies (e.g., Mednick, Backer, Reznick, & Hovecar, 1990) have reported that age does not significantly moderate the effect of divorce on academic achievement. In sum, evidence is inconclusive as to whether or how age moderates the negative association between parental divorce and academic achievement.

In addition to studying moderating variables, recent research also has examined potential mediators between divorce and negative consequences of divorce. For example, Potter (2010) studied the association between divorce, academic achievement, and psychosocial well-being. Specifically, Potter hypothesized that psychosocial well-being acts as a mediator between divorce and academic achievement. Results indicated that the academic differences between children from divorced and intact families widened as time progressed, indicating that divorce exacerbated differences that were present prior to legal recognition of the divorce. Potter also found that psychosocial well-being following divorce only partially mediated the association between parental divorce and academic achievement. As such, there is need for further research on mediators of the association between parental divorce and academic achievement to more completely explain this association.

### 1.2. Approaches to learning

Several authors have identified key student variables that are related to academic achievement. Such variables could potentially mediate the associations between divorce and achievement. DiPerna (2006) and DiPerna, Volpe, and Elliott (2002, 2005) have proposed and tested a model of academic enablers hypothesized to contribute to academic achievement. DiPerna and Elliott (2002) defined academic enablers as "attitudes and behaviors that allow a student to participate in, and ultimately benefit from academic instruction in the classroom" (p. 294). Given the observed association between parental divorce and diminished academic achievement (e.g., Amato, 2001; Jeynes, 2002), models such as those by DiPerna and colleagues, may provide insight regarding potential mediators of this association. As such, the DiPerna (2006) model was used as a guiding framework of the current study.

Specifically, the DiPerna (2006) model emphasizes the importance of students' motivation, engagement, and study skills. These academically-related attitudes and behaviors are often referred to as ATL. Li-Grining et al. (2010) defined ATL as individual characteristics and observable behaviors related to the learning process. Specifically, it includes motivation (Duncan et al., 2007) and engagement behaviors such as staying on task, persisting in difficult activities, and asking for assistance (DiPerna et al., 2007). Academic achievement has been shown to be related to both motivation (Bandura, 1997; Gottfried, 1990; Mitchell, 1992; Peterson, 1990) and academic engagement (Finn, 1993; Greenwood, Horton, & Utley, 2002; Singh, Granville, & Dika, 2002), and both of these variables are important parts of the DiPerna (2006) model of academic enablers. Given that motivation and engagement behaviors are reflected within ATL, it is not surprising that ATL has been shown to be related to academic achievement in both mathematics (DiPerna et al., 2007) and reading (Li-Grining et al., 2010).

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