



Effect of school belonging trajectories in grades 6–8 on achievement: Gender and ethnic differences

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ABSTRACT

This study investigated the association between trajectories of school belonging across grades 6–8 and academic achievement in grade 8 in an ethnically diverse sample of 527 academically at-risk adolescents. Students reported annually on school belonging. Reading and math achievement were assessed at grade 5 (baseline) and grade 8. Interactive effects of gender and ethnicity were found in the conditional growth models for school belonging. Girls of all ethnicities had identical growth trajectories and reported higher initial school belonging than Euro-American or Latino boys. Latino and Euro-American males had lower initial level of school belonging than African American males, and Latino males had lower growth in school belonging than Euro-American males. In structural equation modeling (SEM) analyses, initial level of school belonging predicted grade 8 reading for girls and grade 8 math for boys and girls, above prior achievement and school and child covariates, but growth in school belonging predicted grade 8 achievement only for African American students. Implications for strategies to improve school belonging among academically at-risk youth are discussed.

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1. Introduction

A sense of belonging to school can be defined as the extent to which students feel personally accepted, respected, included, and supported by others in the school social environment (Goodenow, 1993). Considered a component of affective or emotional engagement in school (Blumenfeld, Fredericks, & Paris, 2004), researchers use different terms to refer to constructs that are closely akin to school belonging, including liking for school, identification with or attachment to school, school bonding, and school connectedness. Although some researchers consider these terms interchangeable, Benner and Graham (2007) suggest that a sense of belonging to school, more so than liking for school, reflects one's social adaptation, or "fitting in" at school. In the review of school belonging literature that follows, we include studies that use terms that reflect this sense of "fitting in" at school, including students' emotional connection and identification with their academic institutions and the people in those institutions (Gillen-O'Neel & Fuligni, 2013). Appendix A provides the specific terms used in studies referenced in this review to refer to this construct.

Self-determination theory (Deci & Ryan, 2000) and the Self-System Model of Motivation (Connell & Wellborn, 1991) offer conceptual frameworks for understanding the importance of a sense of school belonging to students' academic motivation and achievement. Both theories posit that a sense of relatedness to others at school (along with a sense of autonomy and competence) is fundamental to students' internalization of the norms and values of school and self-determined engagement in learning (Fredericks et al., 2004; Vansteenkiste, Lens, & Deci, 2006).

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Consistent with these theoretical frameworks, empirical studies have documented positive associations between school belonging and academic motivation and achievement from elementary school (Furrer & Skinner, 2003) through high school (Gillen-O'Neel & Fuligni, 2013). However, school belonging has been most extensively studied in the middle school grades. As students transition from elementary to middle school, their school belonging often declines, with a corresponding drop in their academic effort and achievement (Anderman, 2003; Niehaus, Rudasill, & Rakes, 2012; Roeser, Midgley, & Urdan, 1996; Wang & Holcombe, 2010). In turn, low levels of academic motivation and achievement during middle school predict poor academic performance in high school, including dropping out of school (Janosz, Archambault, Morizot, & Pagani, 2008). Consequently, researchers and educators have advocated for policies and interventions to improve school climate in middle school, thereby enhancing students' sense of belonging to school (Brand, Felner, Shim, Seitsinger, & Dumas, 2003; Juvonen, 2007).

Despite the literature documenting associations between middle school students' sense of school belonging and academic effort and achievement, gaps remain in our understanding of the role of school belonging on achievement. The current study aims to address these gaps by examining the contribution of school belonging trajectories across middle school (i.e., grades 6–8) to reading and math achievement in grade 8, as well as ethnic differences in trajectories and their relationship to achievement. We pursue these aims with a longitudinal sample of students who were identified as at-risk for academic difficulties at entrance to first grade, based on a measure of literacy skills (see the *Participants* section). Ethnic minority and low socioeconomic status children are over-represented among students who enter formal schooling with low academic readiness skills and continue to be over-represented among students who repeat grades and leave school prior to earning a high school diploma (Chapman, Laird, & KewalRamani, 2011). Academically at-risk students may experience a lower sense of belonging to school, yet be more responsive to variations in level of school belonging than their higher achieving counterparts (Olsson, 2009; Wang, Brinkworth, & Eccles, 2012). Thus, it is important to understand trajectories of school belonging among an ethnically diverse sample of students who are at-risk for low educational attainment.

1.1. School belonging during middle school

The transition to middle school is difficult for many students and is often associated with a decline in students' academic motivation, psychosocial adjustment, and grades (Anderman, 2003; Barber & Olsen, 2004). According to the stage–environment fit model (Eccles et al., 1993), a mis-match between students' developmental needs as they enter adolescence and the structure and processes of middle school contribute to declining academic motivation. Specifically, at a developmental period when youth desire increased autonomy and experience a heightened sensitivity to peers' reactions to them (Brown & Larson, 2009), the middle school context provides less choice over academic tasks, an enhanced focus on competition, a larger and more diverse peer context, and increased demands for organization and planning skills (Roeser et al., 1996). Furthermore, as students move from elementary to middle school they report less availability of adults to provide support and guidance in meeting these challenges (Eccles et al., 1993; Furrer & Skinner, 2003; Niehaus et al., 2012). Consistent with the stage–environment fit model, to the degree that middle school students perceive low levels of teacher emotional support and autonomy and an emphasis on grades and competition, they report lower liking for and sense of belonging to school (Roeser et al., 1996; Wang & Holcombe, 2010).

Recent research suggests that the normative drop in school belonging across the transition to middle school continues across the first year of middle school (Niehaus et al., 2012). However, little is known about students' trajectories of school belonging across the middle school grades. It is possible that a decline in school belonging observed during the first year of middle school levels off or is followed by a gradually increasing sense of school belonging, as students adjust to the context of middle school. Support for this view comes from a study of urban adolescents (Benner & Graham, 2009). Specifically, using piecewise growth modeling, Benner and Graham (2009) reported a positive slope for school belonging from the beginning of grade 7 to the end of grade 8, followed by a level slope for the first two years of high school. Their findings also highlight that trajectories of school belonging in middle school and high school may differ. Thus, studies that analyze trajectories of school belonging across middle and high school (Wang & Eccles, 2012; Witherspoon & Ennett, 2011) may obscure patterns of school belonging specific to middle school or high school.

The middle school and high school contexts are similar in many ways, including departmentalized curricula and a larger and more complex social environment; however, the middle school student navigates these changes while also adjusting to the biological changes associated with puberty and experiencing an increased sensitivity to peer approval. Thus, trajectories of school belonging and the impact of gender and ethnicity on these trajectories may differ between middle school and high school. Studies of trajectories of school belonging from the first to the last year of middle school would contribute to a more complete picture of the development of school belonging across the crucial middle school grades.

1.2. Effects of school belonging in middle school on academic functioning

When measured concurrently, students' perceived school belonging and indices of achievement are positively related (Anderman, 2003; Goodenow, 1993; Singh, Chang, & Dika, 2010). Longitudinal studies have also documented associations between middle school students' school belonging and academic engagement and achievement (Wang & Holcombe, 2010). For example, Niehaus et al. (2012) found that declining levels of school belonging from the beginning to the end of the first year of middle school were associated with lower end-of-year grades. However, because many of these studies did not control for students' baseline levels of academic performance, the association between a sense of school belonging and subsequent achievement may be the result of an effect of achievement on school belonging (Anderman, 2003; Voelkl, 1997) or an effect of other confounding variables not included in the analyses.

Although causal inferences cannot be made with the same certainty in observational studies as in randomized experiments, the inclusion of strong covariates, especially prior performance on the outcome measure, can reduce the likelihood that associations

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