A multi-level analysis of school racial composition and ecological correlates of academic success

Laura M. Hopson [a,*], Eunju Lee [b,1], Ning Tang [a]

[a] The University of Alabama, School of Social Work, P.O. Box 870314, Tuscaloosa, AL 35487-0314, United States
[b] The University at Albany, School of Social Welfare, Richardson Hall, 135 Western Avenue, Albany, NY 12222, United States

ABSTRACT

Current policy and practice interventions have failed to address disparities in academic success by race/ethnicity or socio-economic status. In addition, as policy interventions to prevent racially segregated schools have stalled, progress toward reducing these achievement gaps has also slowed. This exploratory study employs multi-level modeling to examine how risk and protective factors in students' schools, homes, peer groups, and neighborhoods relate to behavior and academic performance. We examine whether these relationships depend on the racial composition of the school and, in particular, the concentration of African American students in schools. The findings indicate that protective school, home, peer group, and neighborhood environments characterized by social support and safety are associated with positive academic outcomes and behavior. Students attending more segregated schools in which the majority of students are African American report worse behavioral and academic outcomes than students in other schools, even when controlling for other important dimensions of the school environment, school climate, school safety, and poverty. In addition, school racial composition shapes how key protective factors relate to grades.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

Gaps in student achievement by race and ethnicity persist in the face of interventions at the federal, state, and district levels that aim to reduce these gaps. These gaps translate into exclusion from opportunities and resources for students of color and for schools. Schools serving large proportions of students of color and those from low-income families often fail to meet expectations put into place by education policies, such as No Child Left Behind. Failing to meet these expectations, in turn, means penalties that bring reductions in federal funding for schools.

Gaps in academic achievement by race and ethnicity are especially alarming in the face of increasingly large proportions of students of color attending public schools (NCES, 2010). At the same time, efforts to create racially and economically integrated schools have stalled, resulting in schools that have large concentrations of students of color and, often, students from low-income families (Logan, Minca, & Adar, 2012; Mickelson, Bottia, & Lambert, 2013; Orfield, 2009).

The purpose of the present study is to examine how school racial composition and, in particular, the concentration of African American students in schools is related to academic performance and behavior in a sample of racially diverse, mostly low-income middle school students. We limit our sample to middle school students, as the impact of racial segregation in schools tends to become more pronounced as students enter middle school (Mickelson et al., 2013). In terms of segregation, we focus on the concentration of African American students in schools, since most of the students of color in our sample identified as African American. The present study extends the growing body of extant research in this area by examining whether school racial composition shapes how risk and protective factors commonly cited in the research literature relate to academic outcomes. More directly, we examine whether these risk and protective factors have unique relationships with student behavior and grades in the context of segregated schools serving predominantly African American students.

1.1. School segregation

The U.S. Supreme Court's decision in 1954 that school segregation was unconstitutional (Brown v. Board of Education, 1954) drove the development of policies focused on school segregation. These policies proposed to reduce disparities in the quality of education provided to students of color through integration (Morris, 2008). Over the last 20 years, however, desegregation policies have been increasingly abandoned (Frankenberg, Lee, & Orfield, 2003; Ogletree, 2004).

Recent trends in segregation during the past decade are complex. Although racial segregation increased during the 1990s, the past decade has seen modest overall improvement in integration. The southern region of the United States has experienced smaller improvements in

integration than other parts of the country (Stroub & Richards, 2013). Despite modest improvements, most African American and Latino students still attend racially segregated, high poverty schools (Frankenberg et al., 2003; Logan et al., 2012; Orfield & Frankenberg, 2008). The research suggests that racial segregation in the public schools continues to compromise the educational opportunities available to students of color (Clotfelter, 2001, 2004; Frankenberg et al., 2003).

A primary cause of racial segregation in schools is the racial segregation of the neighborhoods served by public schools (Frankenberg, 2013). This racial segregation of neighborhoods is strongly related to socio-economic segregation (Clotfelter, 2004; Rumberger & Palardy, 2005). In comparison to White students, many more African American and Latino children live in poor neighborhoods with higher proportions of people of color and, as a result, are more likely to attend high-poverty, segregated schools (Orfield & Lee, 2005; Saatcioglu, 2010).

The result of this socio-economic segregation is that predominantly African American schools, compared with more integrated or predominantly White schools, have fewer resources, a less rigorous academic curriculum, and fewer facilities (Morris, 2008). These resource issues may explain why many schools with high concentrations of students of color fail to meet federal and state standards for academic outcomes. Mickelson et al. (2013), for example, conducted a meta-analysis of studies examining school racial composition and math achievement. They found that an increase of one standard deviation in the proportion of students of color translates to a decrease in math test scores of approximately 7 points (Bowen et al., 2012).

Although the relationship between socio-economic segregation and racial segregation is strong, racial gaps in achievement are evident when researchers control for measures of SES, including parental income and education (Grodsky, Warren, & Felts, 2008). Researchers have attempted to unpack the issue of segregation to better understand reasons for achievement gaps based on school racial composition. One explanation relates to racial dissimilarity and isolation of students of color. Racial dissimilarity is conceptualized as the proportion of students of one race or ethnicity that would need to transfer to another school in order to achieve integrated schools. Isolation refers to an environment in which students of one race or ethnicity are predominantly exposed to members of their own group. In schools characterized by racial dissimilarity and isolation, gaps in achievement between African American and White students tend to be greater than in schools that are more integrated. Conversely, increased interaction between African American and White students reduces achievement gaps for African American students (Condron, Tope, Steidl, & Freeman, 2013).

1.2. Risk and protective factors related to academic outcomes

The racial and socio-economic segregation of communities served by public schools has implications for the development of youth in those communities. Extant research provides considerable support for linkages between living in impoverished, isolated communities and adverse developmental outcomes (Cataldi, Laird, & Kewal Ramani, 2009). Much of this research is grounded in Ecological Theory and a risk and resilience framework. Integrating Ecological Theory with the risk and resilience perspective calls for examining risk and protective factors across different social contexts, such as the family, peer group, school, and neighborhood (Bowen, Hopson, Rose, & Glennie, 2012; Bronfenbrenner, 1979). Risk factors are social processes that increase the likelihood of adverse outcomes, including low grades and scores on standardized tests, suspensions for problem behavior, and dropping out of school. Protective factors are social processes that either increase the likelihood of positive developmental outcomes or reduce the adverse effect of risk factors.

Research on protective factors across social contexts points to the importance of support from positive, pro-social adults in predicting positive youth development and academic success (Werner, 2004; Bowen et al., 2012). In the literature related to academic outcomes,

family supports tend to be highly influential, especially for elementary and middle school students (Bowen et al., 2012; Crosnoe & Cooper, 2010). Social support from parents, parental involvement in school, and high parental expectations for students' behavior and academic performance are strongly linked with positive grades and behavior (Bowen et al., 2012).

Although parents tend to have the strongest influence on student outcomes, the research also strongly supports the importance of teachers. For example, students who have positive relationships with teachers are likely to have better grades and report fewer risk behaviors than students who do not feel connected to their teachers (Hopson, & Lawson, 2011; Baker, 1999; Brewster & Bowen, 2004; Niebuhr & Niebuhr, 1999; Waxman, Anderson, Huang, & Weinstein, 1997).

Adults in the neighborhood are another potential source of social support for students. Although often overlooked in the extant research, support from neighbors can also be important in predicting academic success. Youth who report relationships with positive, caring adults in their neighborhoods tend to have higher grades and better behavior in school (Bowen, Rose, Powers, & Glennie, 2008; Cook, Herman, Phillips, & Settersten, 2002; Sampson, 1997; Woolley & Bowen, 2007).

Peer influences become more strongly linked with academic outcomes during the middle school years as children enter adolescence and prioritize their relationships with friends (Brown, 2004). Social support from friends can be a protective factor for youth (Epstein, Griffin, & Botvin, 2002; Powers, Bowen, & Rose, 2005; Wentzel, Barry, & Caldwell, 2004). However, social support must also be studied in the context of the behavior and norms of the peer group. Social support from peers involved in risk behavior, for example, could increase, rather than mitigate, risk (Bowen et al., 2008).

In addition to feeling supported by prosocial adults and peers, students need to feel safe in order to excel academically. Students who live in neighborhoods with safety problems, such as robberies, muggings, and drug use, are less likely to perform well in school than students who live in safer neighborhoods (Berliner, 2010; Sampson, 2012). Similarly, students who feel safe at school are likely to perform better than those who have safety concerns (Astor, Benbenishty, Zeira, & Vinokur, 2002; Cohen & Geier, 2010). For example, students who worry that they will be targeted by verbal or physical aggression at school may miss more school, compromising their grades (Astor et al., 2002). Students' academic performance also suffers when they regularly witness verbal and physical abuse of their peers and teachers at school (Rivers, Poteat, Noret, & Ashurst, 2009).

1.3. Risk and protective factors in the context of segregated schools

The over-representation of students of color in high poverty communities may only partially explain disparities in outcomes. Racial discrimination and isolation present serious risks to youth development, and there is increasing evidence that these processes are linked with disparities in educational outcomes based in race and ethnicity. African American students, in particular, may have experienced racial discrimination that affects their ability to feel connected to school and adults within the school (Nicholson-Crotty, Birchmeier, & Valentine, 2009; Sakura-Lemessy, Carter-Tellison, & Sakura-Lemessy, 2009). African American students report that discrimination in school settings results in feeling that their teachers do not respect or care about them (Wentzel, 1997).

These reports of discrimination from students are supported by research evidence that points to unequal use of disciplinary policies, with African American students receiving more suspensions than students of other racial and ethnic groups for the same offenses (Nicholson-Crotty et al., 2009). Experiences of racial discrimination may compromise African American students' motivation to excel academically and increase their likelihood of involvement with friends who engage in risky or disruptive behaviors (Wong, Eccles, & Sameroff, 2003).