THE EFFECTS OF SCHOOL RACIAL COMPOSITION ON CHANGES IN BLACK CHILDREN'S ACADEMIC ENGAGEMENT AND MOTIVATION DURING LATE ELEMENTARY SCHOOL

by

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(Under the Direction of Margaret Caughy)

ABSTRACT

The present study examined the impact of attending a predominantly Black school and school quality on Black children's academic engagement and motivation during late elementary school. Academic engagement and motivation were assessed in a sample of 182 Black boys and girls at ages 10 and 11. Longitudinal changes in children's academic engagement and motivation were estimated using a latent change score model. Findings indicated increases in emotional academic engagement for children attending predominantly Black schools, with a significant interaction between school racial composition and school quality such that attending higher quality schools indicated no declines in emotional engagement. The current study highlights the important role of school racial composition in shaping Black children's academic outcomes. Specifically, attending a predominantly Black school represents a potential protective factor against declines in academic engagement and motivation that often occur during middle school. Implications for future research on Black children's academic outcomes are discussed.

INDEX WORDS: school diversity, academic motivation, academic engagement, Black children

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CHAPTER 1

THE EFFECTS OF SCHOOL RACIAL COMPOSITION ON CHANGES IN BLACK CHILDREN'S ACADEMIC ENGAGEMENT AND MOTIVATION DURING EARLY ELEMENTARY SCHOOL

INTRODUCTION

Research on racial-ethnic differences in academic achievement show that Black students score lower on measures of academic achievement compared to White students (Reardon, 2016). This is due to social, structural, and economic inequalities which disproportionately affect Black students (Burchinal et al., 2011; Fahle et al., 2020; Kohlhaas et al., 2010; Reardon, 2016). These social, structural, and economic inequalities experienced by Black students can directly impact their academic engagement and motivation. Although positive educational outcomes are dependent on the active engagement of students, students' engagement is often shaped by whether students feel like they belong within the school and feel connected to their school (Appleton, 2006; Wang et al., 2011). When students feel that these needs are not met, their academic engagement and motivation decline, leading to poor academic performance (Eccles et al., 1993).

For Black students the school environment has been found to play an important role in their academic engagement and motivation, as unsupportive school environments are associated with lower active school engagement and academic motivation, while supportive school environments are associated with higher levels (Wang et al., 2011). However, research investigating the role of the school environment in Black children's academic engagement and motivation has primarily focused on Black adolescents (Byrd, 2015; Shernoff et al., 2016; Wang et al., 2015), and the majority of available research is cross-sectional rather than longitudinal (Cornell et al., 2016; Konold et al., 2016; Robayo-Tamayo et al., 2020; Shernoff et al., 2016). There is also limited research on how the school environment can influence changes in Black children's academic engagement and motivation in late elementary school, specifically school racial composition. This study will examine the relation between school racial composition and changes in Black children's academic engagement and motivation in late elementary school.

The Importance of Academic Engagement and Motivation

Academic engagement includes students' actions that facilitate productive learning, school involvement, students' feelings of school connectedness, and students' self-regulation and learning skills (Wang et al., 2011). In contrast, academic motivation reflects children's beliefs about their own abilities and competencies in specific tasks based on their perception of an activity's difficulty, importance, usefulness, and their ability to improve on the activity (Eccles et al., 1993). Research has shown positive associations between students' academic engagement, academic motivation, and academic achievement (Appleton et al., 2006). Students who display higher levels of academic engagement are likely to display higher levels of academic motivation, which leads to increases in academic achievement (Wang et al., 2011).

The multidimensional construct of academic engagement encompasses behavioral, cognitive, and emotional aspects of students' school engagement (Alrashidi et al., 2016; Fredricks et al., 2004; Wang et al., 2011). The behavioral dimension refers to students' engagement in disruptive school behaviors (Fredricks et al., 2004; Wang et al., 2011), while the cognitive dimension indexes students' investment in schoolwork (Alrashidi et al., 2016; Fredricks et al., 2004). The last dimension, emotional engagement, is defined as students' positive or negative feelings toward their school, teachers, peers, and academic tasks (Fredericks et al., 2004; Wang et al., 2011). Academic motivation, which is also known as achievement motivation, has been identified as having two dimensions: self-concept and subjective task valuing (Eccles et al., 1993; Wang et al., 2011; Wigfield et al., 2014). Academic self-concept is defined by a students' belief in their ability to complete and succeed in specific academic domains (Eccles & Roeser, 2009; Wang et al., 2011), while academic subjective task valuing is defined by how enjoyable, useful, and relatable students find academic tasks to be (Eccles & Roeser, 2009; Eccles et al., 1993; Wang et al., 2011).

Each dimension of academic achievement and motivation significantly contributes to students' academic achievement. Fredricks and colleagues (2004) found that the three dimensions of academic engagement concurrently influence students' academic achievement. For example, students' emotional engagement with their school declines when students do not feel connected to their school; this then leads to declines in students' behavioral and cognitive engagement, which in turn predict lower academic success as students withdraw from school-related activities and engage in negative behaviors (Benner & Graham, 2013; Wang et al., 2015; Wang et al., 2011). Academic motivation self-concept and subjective task valuing significantly predict students' academic performance, expectations, and competency beliefs which are both

key indicators of overall school performance (Wigfield et al., 2015). Specifically, when students experience declines in academic self-concept and subjective task valuing, students also experience declines in their overall GPAs and grades due to decreased competency beliefs in their academic abilities and a decreased desire to participate in academic – or school-related tasks (Brown & Jones, 2004; Chavous et al., 2018; Whitney & Bergin, 2018).

Academic engagement and motivation further explain the nuanced relation between these constructs and students' academic achievement. However, research on these constructs has primarily focused on children in middle school, high school, and college. This is due to the belief that children's academic attitudes and behaviors developed during early elementary school remain salient for the duration of children's time in school (Entwisle & Alexander, 1998). Cross-sectional and longitudinal research have identified the critical role of school, child, and family characteristics that significantly predict students' academic engagement and motivation.

Correlates of Academic Engagement and Motivation

Students' academic engagement has been associated with perceived support within the school. Middle school, high school, and college students report higher academic engagement when they perceive greater support from their school and a more positive school climate (Cornell et al., 2016; Konold et al., 2017; Robayo-Tamayo et al., 2020). Perceived support, positive school climate, and higher academic engagement are also associated with higher grades for these students. In addition to school characteristics, researchers have identified a relation between child characteristics and academic engagement, specifically students' affection or disaffection with school. Student affection for school is associated with higher levels of academic engagement for college students compared to college students with negative feelings toward their school (King et al., 2015).

Similar patterns have emerged for students' academic motivation in studies of high school and college students. In a study of high school students' perceptions of unfair treatment at school contributed to lower academic motivation, which also led to lower GPAs for these high school students (Brown & Jones, 2004). For Black college students, Chavous and colleagues (2018) identified their perceptions of their racial identity such as private regard, public regard, and race centrality as significant predictors in their academic motivation. Positive private and public regard and race centrality were associated with higher levels of academic motivation, while negative private and public regard and race centrality were associated with lower levels of academic motivation for Black college students (Chavous et al., 2018).

Changes in Academic Engagement and Motivation

Longitudinal changes in students' academic engagement have primarily been explored for children in middle school and high school. Minoritized students' perceptions of their school environment such as teacher relationships and peer support contribute to changes in children's behavioral, emotional, and cognitive engagement from 7th grade to 8th grade, such that positive teacher relationships and greater peer support are associated with increases in students' behavioral, emotional, and cognitive engagement (Wang & Eccles, 2013). This relation is often mediated by children's academic motivation and their satisfaction with their school. For example, middle school students' positive emotions toward their school and increased academic motivation predicted increases in students' academic engagement throughout their time in middle school, while dissatisfaction with their school and decreased academic motivation predicted decreases in students' academic engagement (King et al., 2015; Wang & Eccles, 2013).

Changes in students' academic motivation have also been linked to students' school environment. For example, school changes from middle school to high school such as larger

schools and switching classrooms during the day predicted decreases in White students' academic motivation during their transition from middle school to high school (Barber & Olsen, 2004). Similar patterns emerge for minoritized students. Black middle school students experience decreases in academic motivation when they experience stereotypes about their academic abilities during their transition to middle school and high school (Eccles & Roeser, 2009; Steele & Aronson, 1995).

Lastly, research has also identified family level characteristics that shape students' academic motivation, specifically parents' academic expectations for their children. Dotterer and colleagues (2009) identified increases in White children's academic motivation from middle school to high school in relation to parents' high academic expectations. Children with parents who had lower academic expectations of their children reported decreases in academic motivation during this period which also led to decreases in children's GPAs (Dotterer et al., 2009).

Although cross-sectional and longitudinal research on changes in students' academic engagement and motivation has examined this relation for students in middle school, high school, and college, we still know very little about what occurs during late elementary school, prior to the declines of academic engagement and motivation identified in middle school (Evans et al., 2018). Furthermore, there is limited longitudinal research that investigates changes in academic engagement and motivation for ethnically and racially minoritized students. Longitudinal research in this area has been limited to studies of White students from middle school through high school and the relation between low academic engagement and motivation, school dropout, low GPA, and an overall decline in grades (Barber & Olsen, 2004; Dotterer et al., 2009). Lastly, cross-sectional research on this topic does not begin until children enter middle

school (Brown & Jones, 2004; Cornell et al., 2016; Wang & Eccles, 2013). More research is needed on changes in minoritized students' academic motivation and engagement during late elementary school to better understand the factors that may support high levels of engagement and motivation as children move into middle school.

Academic Engagement, Motivation, and School Ethnic Racial Composition

The ethnic racial composition of a child's school can influence students' academic outcomes (Aldana, 2015; Redding, 2019). For example, minoritized students in less ethnically and racially diverse schools experience more peer victimization and harassment due to stigma and prejudice surrounding minoritized students' ethnic racial group (Graham et al., 2009). These experiences of peer victimization and harassment lead to declines in minoritized students' academic achievement (Benner & Graham, 2013; Williams & Graham, 2020). Additionally, Benner & Crosnoe (2011) reported that students who attend an ethnically matched school had higher reading and math achievement than students who attended a school with an ethnic racial composition that largely differed from their own. This research emphasizes the importance of ethnically and racially minoritized students having access to other students who share their ethnic racial identity, as it provides them with the critical support needed to bolster their academic outcomes.

Black students' academic engagement and motivation has also been directly linked to the school's ethnic racial composition. Research is mixed, as some research shows that Black students who attend ethnically matched middle and high schools tend to have higher academic motivation compared to students who attend non-ethnically matched middle and high schools (Benner & Graham, 2009; Jones, 2018; Williams et al., 2017; Yull & Wilson, 2018). However, others have reported that attending a more diverse school can have positive effects for ethnically

and racially minoritized adolescents' overall well-being, as these schools promote more cross-cultural friendships and acceptance of diversity (Juvonen et al., 2018).

The literature on the impact of school ethnic racial composition may be mixed due to the continued focus on changes in students' academic engagement and motivation throughout middle school, high school, and college. Research in this area has not fully explored these changes for minoritized students in late elementary school, prior to declines in academic engagement and motivation during middle school (King et al., 2015; Wang & Eccles, 2013), as this research has been limited to studies of White children (Barber & Olsen, 2004; Dotterer et al., 2009). Without a comprehensive understanding of changes in academic engagement and motivation prior to these declines in middle school, research will be unable to fully capture the nuances of changes in academic engagement and motivation in relation to school ethnic racial composition.

The Present Study

Black students' academic engagement and motivation are significantly influenced by the school environment (Wang et al., 2011). However, this research has primarily focused on Black students from middle school through college and, as such, cannot inform an understanding of the relation between school racial composition and the change in academic engagement and motivation during late elementary school (Juvonen et al., 2018; Redding, 2019; Verkutyen et al., 2019). The present study examines changes in Black elementary school-aged children's academic engagement and motivation in relation to school racial composition. We will examine two research questions. First, does the academic engagement and motivation of Black children change over the course of late elementary school, and if so, are there similar changes across all domains of engagement and motivation? Second, are these changes similar or different for Black

children attending schools of differing racial composition? Based on previous research, we predict there will be significant declines in all domains of academic engagement and motivation for Black children during late elementary school. Furthermore, we predict that Black children attending predominantly Black schools will report higher levels of academic engagement and motivation overall and will also demonstrate less decline, and possibly even increases, during this time compared to Black children attending non-Black schools.

CHAPTER 2

METHOD

Participants

This study is a secondary analysis of data from the Dallas Preschool Readiness Project (DPReP). DPReP investigated cultural and familial factors that affect the development of self-regulation and academic achievement among African American and Latinx children from low-income families. Families were recruited from Dallas County, Texas and had a target child between 29 and 31 months of age at the first time point (Wave 1, 2009-2011), at least one parent who self-identified as African American or Latinx, and a family income below 200% of the federal poverty level. A total of 407 families were enrolled in the study, of which 183 (45%) were African American.

Child reports of academic engagement and motivation were collected at Wave 5 and Wave 6. At Wave 5, a little over half of the children (52%) were in fourth grade, while 29% were in third grade, and 18% were in fifth grade. Starting in Wave 5, the study employed a planned missing design in which study families were assigned to be interviewed in some waves but not others (Graham, 2006). In order to be eligible for participation starting in Wave 5, families had to satisfy the following criteria: completed at least two data collection points in Waves 1-4, child had not been diagnosed with a significant developmental disability, and family had not voluntarily withdrawn from the study. Of the 183 African American families enrolled in the study, one was excluded from follow-up due to a diagnosed disability, and two children died before the follow-up. In addition, six African American families voluntarily withdrew from the

study, and 22 families only completed the first home visit data collection. Of the 152 African American families eligible for follow-up, 114 were scheduled to be interviewed in Wave 5 and/or Wave 6. Of these scheduled families, 94 (82%) completed their assigned data collection. Before conducting analyses to address the study aims, missing data for all African American children in the sample excluding the one child diagnosed with a developmental disability – both data missing due to the planned missing design as well as data missing due to response failure or loss at follow up – were imputed using auxiliary variables derived from a block of study variables using principal components analysis (Howard et al., 2015).

Characteristics of the study sample of 182 children are displayed in Table 1. At Wave 5, children ranged in age from 9.6 to 10.9 years (Mean = 10.33 years, *SD* = .25). There were 100 boys (54.9%) and 82 girls (45.1%). Approximately 48.4% of families had an average household income of less than 50% of the federal poverty level. Families who did not complete data collection at Wave 5 did not differ in terms of family income, child gender, or primary caregiver education compared to families who did complete data collection.

Measures

Academic Engagement

The Child Report of Academic Engagement scale was used to assess students' school engagement at Waves 5 and 6 (Wang et al., 2011). It is comprised of three subscales: Behavioral, Emotional, and Cognitive (Wang et al., 2011). In the seven item Behavioral subscale, children were asked to assess how often they followed the school rules and participated in class. Children responded on a 5-point Likert scale (1 = *Almost Never* to 5 = *Almost Always*). Six of the seven items in this scale were reverse coded such that higher scores indicate higher attentiveness to schoolwork and less engagement in behavioral problems (e.g., being in a physical fight). In the

6-item Emotional subscale, students were asked their feelings about the school they attend, such as their feelings of acceptance, interest, and enjoyment. An example item is "I feel happy and safe in this school", and children responded on a 5-point Likert scale (1 = *Strongly Disagree* to 5 = *Strongly Agree*). Lastly, in the five-item Cognitive scale, children were asked the extent of their self-regulation learning skills. An example item for the Cognitive scale is "How often do you try to figure out problems and try to solve them?" Children respond to the Cognitive scale items on a 5-point Likert scale (1 = *Almost Never* to 5 = *Almost Always*).

Confirmatory factor analysis was used to examine the fit of the factor structure proposed by Wang and colleagues (2011) for the present sample. Initial model fit was poor, χ^2 (150) = 303.40, p = .00, *CFI* = .84, *RMSEA* = .07, *SRMR* = .05. Items that did not load significantly on either scale or that cross-loaded were dropped from the model. Cross-loadings on each scale were identified as having a loading of more than .50 on a specific variable. On the behavioral subscale two of the seven items were dropped, "Gets school work done on time" and "Skipped class". None of the eight cognitive subscale items were dropped from the CFA. On the emotional subscale, four of the eight items were dropped, "Schooling is not so important for kids like me", "I learn more useful things from friends and relatives than I learn in school", "Getting a good education is the best way to get ahead in life", and "I learn a lot from my school-work". After dropping these items, the model fit indices improved significantly, χ^2 (17) = 180.64, p = .00, *CFI* = .92, *RMSEA* = .05, *SRMR* = .06.

Academic Motivation

The Child Report of Academic Motivation scale was used to assess students' perception of their achievement motivation at Wave 5 and Wave 6 (Eccles et al., 1993). Wang and Eccles (2013) identified two subscales: Academic Self-Concept and Subjective Task Valuing of School

Learning. The academic self-concept subscale consisted of 5 items that assess students' perceptions of their ability to learn and succeeded in certain subjects. Children were presented with a list of academic tasks and asked how good they are at the tasks listed. Children responded on a 7-point Likert scale (1 = *Not at All Good* to 7 = *Very Good*). The Subjective Task Valuing of School Learning subscale consisted of 6 items that assess how much the student values academic achievement. An example item is, "I go to school because I like to see my friends". Children responded on a 7-point Likert scale (1 = *Not an Important Reason* to 7 = *A Very Important Reason*).

Confirmatory factor analysis was used to examine the fit of the factor structure proposed by Wang and Eccles (2013) for the present sample. Before the model was fit and because responses were not evenly distributed across the 7 response categories, items were recoded into three-point Likert scales with 1-3 = 1, 4 = 2, and 5-7 = 3. Initial model fit was poor, χ^2 (43) = 146.15, p = .00, *CFI* = .61, *RMSEA* = .10, *SRMR* = .07. Items that did not load significantly on either scale or that cross-loaded were dropped from the model. Cross-loadings on each scale were identified as having a loading of more than .50 on a specific variable. The academic self-concept items that were dropped included "How good at math are you?", "How good are you in other school subjects", and "How good are you in sports?" The subjective task valuing of school learning that was dropped was, "Why do you go to school?" After dropping these items, the model fit indices improved significantly, χ^2 (17) = 21.53, p = .20, *CFI* = .98, *RMSEA* = .03, *SRMR* = .04.

School Racial Composition

The school racial composition variable at Wave 5 was derived from a data set for Texas schools developed by Children at Risk. Children at Risk is a research and public policy advocacy organization that provides information on Texas Public Schools' student achievement and student growth each year (Children At Risk, 2020). In the fall of 2019, Children at Risk compiled data for 8,106 public and charter elementary, middle, and high schools in Texas from the Texas Education Agency. The current study used the percentage of students in the school that identified as Black as a measure of school racial composition. If 75% or more students in the school identified as Black, the school was classified as "predominantly Black". If less than 75% of the students in the school identify as Black, then the school will be classified as "not predominantly Black". This classification was used based on previous research conducted by Johnson (2005) stating that schools with populations of more than 75% Black students were considered predominantly Black after examining frequencies for Black children among the minority or majority in their respective schools.

Covariates

Covariates included school quality, school percentage economically disadvantaged, and family income. School quality and percentage economically disadvantaged were derived from the Children at Risk database. To assess school quality, Children at Risk estimates a campus performance score by regressing school level pass rates for state standardized tests on the proportion of economically disadvantaged students in the school. For each school, the difference between the actual and predicted pass rate in the school (e.g., the residual) is added to the actual pass rate to create a campus performance score. As such, schools that have pass rates higher than what would be predicted by the economic characteristics of the school have a higher campus

performance score, and those that have pass rates lower then what would be predicted have a lower campus performance score. Children at Risk also provided the percentage of children in the school who qualified for free or reduced lunch as an index of the proportion of economically disadvantaged children in the school. To assess family income, household composition and family income data were collected at Wave 1 through Wave 4. Family income-to-needs ratio was calculated at each time point by dividing family income by the federal poverty level for a family of a similar size and averaged across time points.

Analysis Plan

Preliminary analyses examined the bivariate relations between academic engagement, academic motivation, and school racial composition, in addition to the covariates and the relation between school racial composition and study covariates. Covariates that were significantly associated with both the outcomes (academic engagement and motivation) and the independent variable of interest (school ethnic composition) were included in multivariate models. A latent change score model was used to model change in children's academic engagement and motivation in relation to school racial composition at Wave 5 with changes in children's academic engagement and motivation from Wave 5 to Wave 6. Models were fit in M*plus* using structural equation modeling (Muthén & Muthén, 1998-2017).

CHAPTER 3
RESULTS

Bivariate Relations Between Child and School Characteristics

Bivariate correlations between academic engagement, academic motivation, school racial composition, and the covariates are reported in Table 2. School economic disadvantage at Wave 5 was positively associated with school racial composition at Wave 5. At Wave 6, school economic disadvantage was negatively associated with behavioral engagement. Lastly, family income was positively associated with academic motivation self-concept at Wave 5.

Latent Change Score Model

A latent change score model was used to model change in students' academic engagement and motivation from age 10 (Wave 5) to age 11 (Wave 6). Two unconditional models were fit: a no change model and a constant change model. The no change model reflects a no change, intercept only model of academic engagement and motivation, while the constant change model includes linear change in academic engagement and motivation. Chi-square difference tests were used to determine the best fitting model for the academic engagement and motivation subscales (Satorra, 2000). The best fitting model was used to predict the effect of the school racial composition and additional study covariates on students' academic engagement and motivation.

In the present study, the unconditional constant change model was a fully saturated model and fit the data significantly better than the no change model for both the academic engagement and motivation subscales. Chi-square difference tests indicated evidence for change in two of the

academic engagement subscales, cognitive $\chi^2\Delta$ = 16.63 and emotional $\chi^2\Delta$ = 14.24, as well as the one of academic motivation subscales, self-concept $\chi^2\Delta$= 55.87. For both the academic engagement cognitive and emotional subscales as well as the academic motivation self-concept subscale, the test statistic exceeded the chi-square critical value indicating the constant change models fit the data significantly better than the no change models. The results of the chi-square difference tests are reported in Table 3 for the unconditional model. The unconditional constant change model intercept mean and variance as well as the slope mean variances for the academic engagement and motivation subscales can be found in Tables 4 and Table 5 respectively.

Correlates of Change in Academic Engagement and Motivation

To assess change in academic engagement and motivation in relation to school racial composition, the school level predictors of school quality and school economic disadvantage were also included in the model. Additionally, an interaction between school racial composition and school quality as well as an interaction between school racial composition and school economic disadvantage were also tested. School racial composition accounted for a modest amount of the variance in the behavioral engagement subscale, R^2 = .26, the emotional engagement subscale, R^2 = .01, and the cognitive engagement subscale, R^2 = .13. School racial composition also accounted for a modest amount of the variance in the academic motivation self-concept subscale, R^2 = .00, and in the academic motivation subjective task valuing subscale, R^2= .01.

A three-step data analytic process was used within the latent change score model to address each of the predictors added to the model using an interaction approach. The first step assessed the model excluding interactions between the predictors of school racial composition, school quality, and school economic disadvantage. The second step in the model included the

interaction of school racial composition and school quality, while the third step included the interaction between school racial composition and school economic disadvantage. Due to the current study's hypotheses specific focus on change, we only examined the predictors of academic engagement (emotional and cognitive) and academic motivation (self-concept) that specifically evidenced change based on chi-square difference tests.

Emotional Engagement

The results for emotional engagement are shown in Table 6. At age 10, school racial composition and school quality did not significantly predict students' emotional engagement. However, both school quality and school economic disadvantage predicted significant increases in student emotional engagement from age 10 to age 11. Additionally, there was a significant interaction between school quality and school racial composition. To further probe this interaction, a Johnson-Neyman plot was used to determine the region of significance. As can be seen in Figure 1, attending a predominantly Black school was associated with declines in emotional engagement from age 10 to age 11 except when children attended higher quality schools. When school quality was just below the mean or higher, children attending predominantly Black schools did not report a decline in emotional engagement.

Cognitive Engagement

The results for cognitive engagement are also displayed in Table 6. School racial composition and school quality did not significantly predict students' cognitive engagement at age 10. However, school economic disadvantage did significantly predict lower levels of cognitive engagement at age 10. Furthermore, school characteristics did not significantly predict changes in student cognitive engagement from age 10 to age 11. Results also indicated no

significant interactions between school racial composition with school quality nor between school racial composition and school economic disadvantage.

Academic Motivation Self-Concept

The results for academic motivation self-concept are reported in Table 7. School economic disadvantage significantly predicted lower levels of academic motivation self-concept at age 10 while school racial composition and school quality did not. However, school racial composition and school economic disadvantage predicted significant declines in student academic motivation self-concept from age 10 to age 11. Specifically, children experienced greater declines in academic motivation self-concept when they attended predominantly Black schools. In addition, counter-intuitively, higher levels of economic disadvantage predicted increases in academic motivation self-concept. Lastly, the results indicated no significant interaction effect between school racial composition, school quality, nor school economic disadvantage.

CHAPTER 4
DISCUSSION

This study examined the moderating role of school racial composition on Black children's academic engagement and motivation over the course of one year in late elementary school. To our knowledge, previous research has not fully examined changes in academic engagement and motivation for minoritized students in late elementary school but rather has primarily focused on children in middle school, high school, and college (Chavous et al., 2017; King et al., 2015; Wang & Eccles, 2013; Wang et al., 2011) in addition to longitudinal studies primarily focusing on White children during middle school (Dotterer et al., 2009). We developed two hypotheses based on previous research that examined the saliency of children's academic beliefs and competencies in early elementary school and the effects of racially matched schools on Black children's school experiences and academic trajectories (Benner & Graham, 2013; Entwisle & Alexander, 1998). First, we hypothesized that there would be significant declines in all domains of academic engagement and motivation for Black children during late elementary school. Second, we predicted that Black children attending predominantly Black schools would report higher levels of academic engagement and motivation overall, demonstrate less decline, and possibly increases during this time compared to Black children attending non-Black schools.

Although we had hypothesized that there would be significant declines in all domains of academic engagement and motivation for Black children during late elementary school, with children attending predominantly Black schools demonstrating less decline, the research findings only partially supported the research hypotheses. An examination of the average slopes from the latent differences model indicated that academic motivation self-concept declined significantly

from age 10 to age 11. However, subjective task-valuing and behavioral engagement did not demonstrate significant change over this period.

We found that changes in emotional and cognitive engagement in late elementary school differed based on school characteristics such as racial composition, quality, and economic disadvantage. Specifically, attending a predominantly Black school was associated with declines in student emotional engagement from age 10 to age 11 except when Black children attended higher quality schools. To understand these findings surrounding school racial composition, school quality, and emotional engagement, we must first understand how school quality is operationalized in the current study. As stated previously, school quality is based on the school-level pass rates on standardized tests adjusted for the proportion of economically disadvantaged students in the school. Schools that have higher pass rates than predicted based on school economic characteristics receive higher ratings on school quality. Schools with higher ratings of school quality are challenging the narrative that posits greater economic disadvantage can lead to negative academic outcomes due to inequity in resources and less social and cultural capital (Donnellan et al., 2013; Lee & Bowen, 2006; McLoyd et al., 2009).

Research has demonstrated that students' positive ethnic-racial identity development (Leath et al., 2019), perceived support from teachers and peers (Kiefer et al., 2015), as well as their sense of belonging can buffer the potential negative influence of school economic disadvantage on children (Gillen-O'Neel & Fuligni, 2012; Graham, 2020), which has often been found in ethnically and racially matched schools (Graham, 2020; Graham, 2018; Derlan & Umaña-Taylor, 2015). In the current study, emotional engagement assessed Black students' feelings of satisfaction with their school, their sense of belonging, and the importance of exceling in school. Therefore, one possible explanation for our findings is that the students in our sample

have supports within their schools that buffer them against the negative effects of school economic disadvantage.

Findings regarding academic motivation self-concept indicated that school racial composition and school economic disadvantage predicted declines in student academic motivation self-concept from age 10 to age 11. Children who attended predominantly Black schools experienced greater declines in their academic motivation self-concept than children attending racially and ethnically diverse schools. Extant research has consistently emphasized the importance of ethnically and racially matched schools, as they provide students with the support necessary to bolster their social, emotional, and academic outcomes (Aldana & Byrd, 2015; Redding, 2019). However, there is empirical evidence of the opposite effect, that is, that school diversity can lead to improved student mental health, better school adaptation, and the development of cross-ethnic and racial friendships while also decreasing students' feelings of vulnerability and victimization in school (Graham, 2018; Juvonen et al., 2018). Our results are consistent with studies emphasizing the benefits of attending racially and ethnically diverse schools.

When including the study covariates, the results also indicated that children who attended schools with higher levels of economic disadvantage experienced increases in their academic motivation self-concept. It would be expected that higher levels of school economic disadvantage would lead to decreases in student academic engagement and motivation. It is unclear why the counter-intuitive results were found. There may be additional unmeasured school factors that may buffer the negative effects of economic disadvantage (Brown & Jones, 2004; Dotter et al., 2009; Kiefer et al., 2015). Regardless, this finding requires replication.

Although our study hypotheses were focused on changes in academic engagement and motivation from age 10 to 11, it is important to note that school economic disadvantage significantly predicted lower levels of cognitive engagement and academic motivation self-concept at age 10. These underscore disparities in school funding and resources that occur in schools with greater economic disadvantage. The resource deficit occurring in schools that primarily serve minoritized students is well documented in the literature (Fahle et al., 2020; Reardon, 2016). Under-resourced and underfunded schools are more likely to have lower quality teachers with fewer years of overall teaching experience and lower education, certification, and training levels compared to well-resourced and properly funded schools (Clotfelter et al. 2007). In addition to less teacher training, these schools also may offer a less rigorous curriculum for their students and inadequate school facilities which leads to disruptions in student learning time, lower standardized test scores, and overall declines in minoritized students' academic achievement (Fahle et al., 2020; Goodman et al., 2018; Reardon, 2016). Taken together, these school factors significantly contribute to the Black, Brown, and White achievement gap, as well as exacerbate educational inequalities that can lead to declines in the cognitive engagement of Black children (Fahle et al., 2020; Reardon, 2016).

Despite research indicating the interwoven nature of the dimensions of academic engagement and motivation, we did not identify any changes in students' behavioral or cognitive engagement nor in students' academic motivation subjective task valuing from age 10 to age 11 regardless of school racial composition, school economic disadvantage, and school quality (Fredricks et al., 2004; Wigfield et al., 2015). There are two possible explanations for these findings. First, there may be additional school characteristics important for students' engagement and motivation such as school climate, school equity, relationships with teachers and peers, and

experiences of peer victimization and bullying that were not measured in the present study (Graham, 2020; Wang et al., 2015; Yang et al., 2020). Second, null findings are consistent with studies that identify the establishment of academic attitudes and behaviors during early elementary school (Entwisle & Alexander, 1998). Although research has found declines in academic engagement and motivation when children reach middle school, factors contributing to these declines may not affect children during late elementary school, as they are not experiencing the difficulties of school transitions which often influence their social, emotional, and academic outcomes (Duchesne et al., 2012).

Limitations and Future Directions

The findings of the current study should be considered within the context of several limitations. First, our analyses were limited to three constructs – school racial composition, school economic disadvantage, and school quality – to assess school characteristics that may influence student academic engagement and motivation. Research has consistently shown that a child's school environment can hinder or promote their academic success (Aldana & Byrd, 2015; Bronfenbrenner, 1992). To fully examine the effects of the school environment on children's academic success, additional school factors contributing to academic engagement and motivation must be examined such as school climate and school equity (Williams & Graham, 2020). In addition to exploring school level factors such as school equity and school climate, this study did not examine students' relationships with their teachers and peers at school. Positive teacher-student relationships have been found to not only be key to students' academic success but also promotive in their overall development, as teachers help shape students' self-image (McGrath & Van Bergen, 2015; Split et al., 2012). Peers also play key role in children's academic success and overall development as students who experience more peer victimization and bullying have often

reported lower self-confidence and lower academic, social, and emotional outcomes (Graham et al., 2009; Split et al., 2012).

An additional limitation of this study was the lack of range in socioeconomic status of study participants. Many families in our sample were below 200% of the federal poverty level, and children often attended schools with a similar socioeconomic disadvantage. Due to this, we were unable to assess the intersectionality that may be present for race and socioeconomic disadvantage and its relation to academic engagement and motivation. Future research should explore the relation between socioeconomic status of students and their school and student academic engagement and motivation in a more economically diverse sample of Black children.

Lastly, it is important to consider how academic engagement and motivation were operationalized in this study. This study utilized Wang and Eccles (2013)'s measure of academic engagement motivation. Academic engagement is a measure with three latent constructs: behavioral, emotional, and cognitive. Although academic engagement has consistently been measured by these three latent constructs in the literature, it has primarily been used with students beginning in middle school (Alrashidi et al., 2016; Wang & Eccles, 2013). Likewise, academic motivation has been operationalized in a variety of ways in the extant literature including the development of academic skills and abilities (Chavous et al., 2018; Kiefer et al., 2015), self-efficacy and self-regulated learning (Cleary & Kitsantas, 2017), or how much students are interested in school and enjoy school (Byrd, 2015). Using a different operational definition of academic engagement and/or motivation may have resulted in different findings (McCleary & Kitsantas, 2017). Additionally, using a measure designed specifically to assess younger students' academic engagement and motivation could have resulted in different

findings. Future research should consider measuring academic engagement and motivation in a variety of ways.

Implications

Despite these limitations, this study provides important information regarding Black children's school experiences and academic outcomes. First, our study can provide further insight into Black children's transition to middle school. Research has shown that academic engagement and motivation tend to decline when children enter middle school (Evans et al., 2018). However, our results indicated that attending a predominantly Black school was associated with declines in emotional engagement, except when children attended higher quality schools. Emotional stressors can be exacerbated during the transition to middle school as students are in larger classrooms, change classes throughout the day, and must adjust to new relationships with new teachers and peers (Duchesne et al., 2012; Evans et al., 2018). Given the important role that emotional engagement plays in long term academic success, particularly for Black children (Brown & Jones, 2004; Mikami et al., 2017; Robinson & Mueller, 2014; Tyler & Boelter, 2008), the advantages conveyed by attending high quality elementary schools may be important.

Second, our focus on children in late elementary school, prior to their transition to middle school, highlights a critical period for the development of children's academic beliefs and attitudes. Previous research has solely focused on children's transition into middle school, high school, and college (Barber & Olsen, 2004; Eccles & Roeser, 2009; Steele & Aronson, 1995). Focusing on changes in students' academic engagement and motivation prior to their entry into middle school can help further our knowledge of potential protective factors prior to declines in academic engagement and motivation often seen in middle school.

Conclusion

Understanding the role of school racial composition in Black students' academic engagement and motivation is important for improving academic achievement outcomes as both have been identified as important factors that contribute to students' academic achievement. We found that attending a predominantly Black schools was associated with declines in emotional engagement from age 10 to age 11 except when children attended higher quality schools. Future work in this area would benefit from further exploration of school-level factors that may contribute to students' academic engagement and motivation. By centering Black student's experiences within the school setting, we can improve our understanding of how to develop more inclusive and affirming learning environments for Black children.

References

Aldana, A., & Byrd, C. M. (2015). School ethnic–racial socialization: Learning about race and ethnicity among African American students. *The Urban Review*, *47*(3), 563-576. https://doi.org/10.1007/s11256-014-0319-0

Alrashidi, O., Phan, H.P., & Ngu, B. H. (2016). Academic engagement: An overview of its definitions, dimensions, and major conceptualizations. *International Educational Studies*, *9*(12), 41-52. http://dx.doi.org/10.5539/ies.v9n12p41

Appleton, J. J., Cheistenson, S.L., Kim, D., & Reschly, A.L., . (2006). Measuring cognitive and psychological engagment: Validation of the student engagement instrument. *Journal of School Psychology*, *44*(5), 427-445. https://doi.org/10.1016/j.jsp.2006.04.002

Barber, B. K., & Olsen, J. A. (2004). Assessing the transitions to middle and high school. *Journal of Adolescent Research*, *19*(1), 3-30. https://doi.org/10.1177/0743558403258113

Benner, A. D., & Crosnoe, R. (2011). The racial/ethnic composition of elementary schools and young children's academic and socioemotional functioning. *American Educational Research Journal*, *48*(3), 621-646. https://doi.org/10.3102/0002831210384838

Benner, A. D., & Graham, S. (2013). The antecedents and consequences of racial/ethnic discrimination during adolescence: Does the source of discrimination matter? *Developmental Psychology*, *49*(8), 1602-1613. https://doi.org/10.1037/a0030557

Benner, A. D., & Graham, S. (2009). The transition to high school as a developmental process among multiethnic urban youth. *Child Development*, *80*(2), 356-376. https://doi.org/10.1111/j.1467-8624.2009.01265.x

Bronfenbrenner, U. (1992). *Ecological Systems Theory*. Jessica Kingsley Publishers.

Brown, W.T., & Jones, J.M. (2004). The substance of things hoped for: A study of the future orientation, minority status perceptions, academic engagement, and academic performance of Black high school students. *Journal of Black Psychology*, *30*(2), 248-273.

Butler-Barnes, T. S., Leath, S., Williams, A., & Byrd, C. (2018). Promoting resilience among African American girls: Racial identity as a protective factor. *Child Development, 89*(6), 552-571. https://doi.org/10.1111/cdev.12995

Byrd, C. (2015). The associations of intergroup interactions and school racial socialization with academic motivation. *The Journal of Educational Research*, *108*(1), 10-21. https://doi.org/10.1080/00220671.2013.831803

Chavous, T.M., Richardson, B.L., Webb, F.R., Fonseca-Bolorin, G., & Leath. S. (2018). Shifting contexts and shifting identities: Campus race-related experiences, racial identity, and academic motivation among Black students during the transition to college. *Race and Social Problems*, *10*, 1-18. https://doi.org/10.1007/s12552-017-9218-9

Children At Risk. 2019 Texas Public School Rankings Methodology (Updated). (2020). Children At Risk. https://catriskprod.wpengine.com/wp-content/uploads/2019/11/Fall-2019-School-Rankings-Methodology-vf.pdf

Cleary, T.J., & Kitsantas, A. (2017). Motivation and self-regulated learning influences on middle school mathematics achievement. *School Psychology Quarterly*, *446*(1), 88-107. https://doi.org/10.1080/02796015.2017.12087607

Clotfelter, C., Ladd, H., Vigdor, J., & Wheeler, J. (2007). High-poverty schools and the distribution of teachers and principals. *North Carolina Law Review*, *85*(5), 1345–1380.

Cornell, D., Shukla, K., & Konold, T.R. (2016). Authoritative School Climate and Student Academic Engagement, Grades, and Aspirations in Middle and High Schools. *AERA Open*. https://doi.org/10.1177/2332858416633184

Crenshaw, K. (1991). Mapping the margins: Identity politics, intersectionality, and violence against women of color. *Stanford Law Review*, *43*(6), 1241-1299.

Derlan, C.L., & Umaña-Taylor, A.J. (2015). Brief report: Contextual predictors of African American adolescents' ethnic-racial identity affirmation-belonging and resistance to peer pressure. *Journal of Adolescence, 41*, 1-6. https://doi.org/10.1016/j.adolescence.2015.02.002

Donnellan, M. B., M. J. Martin, K. J. Conger, and R. D. Conger. (2013). Economic distress and poverty in families. In M.A. Fine, & F.D. Fincham (Eds.), *Handbook of Family Theories: A Content Based Approach* (338–355). New York: Routledge (Taylor and Francis).

Dotterer, A. M., McHale, S. M., & Crouter, A. C. (2009). The development and correlates of academic interests from childhood through adolescence. *Journal of Educational Psychology, 101*(2), 509–519. https://doi.org/10.1037/a0013987

Eccles, J.S., & Roeser, R.W. (2009). *Schools, Academic Motivation, and Stage-Environment Fit* (Vol. 1). https://doi.org/10.1002/9780470479193.adlpsy001013

Eccles, J., Wigfield, A., Harold, R.D., & Blumenfeld, P. (1993). Age and gender differences in children's self-and task perceptions during elementary school. *Child Development*, *64*(3), 830-847. https://doi.org/10.1111/j.1467-8624.1993.tb02946.x

Entwisle, D. R., & Alexander, K. L. . (1998). Facilitating the transition to first grade: The nature of transition and research on factors affecting it. *The Elementary School Journal, 98*(4), 351-364.

Evans, D., Borriello, G. A., & Field, A. P. (2018). A review of the academic and psychological impact of the transition to secondary education. *Frontiers in Psychology*, *9*(1482). https://doi.org/10.3389/fpsyg.2018.01482

Fahle, E. M., Reardon, S.F., Kalogrides, D., Weathers, E.S., & Jang, H. (2020). Racial segregation and school poverty in the United States, 1999-2016. *Race and Social Problems*, *12*(1), 42-56. https://doi.org/10.1007/s12552-019-09277-w

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59-109. http://dx.doi.org/10.3102/00346543074001059

Gillen-O'Neel, C., & Fuligni, A. (2012). A longitudinal study of school belonging and academic motivation across high school. *Child Development, 84*(2), 678-692. https://doi.org/10.1111/j.1467-8624.2012.01862.x

Graham, J. A. (2020). *Social and emotional learning and school climate: Mutually reinforcing constructs* (Doctoral dissertation, University of Georgia).

Graham, S. (2018). Race/ethnicity and social adjustment of adolescents: How (not if) school diversity matters. *Educational Psychologist*, *53*(2), 64-77. https://doi.org/10.1080/00461520.2018.1428805

Graham, S., Bellmore, A., Nishina, A., & Juvonen, J. (2009). "It must be me": Ethnic diversity and attributions for peer victimization in middle school. *Journal of Youth and Adolescence, 38*(4), 487-499. https://doi.org/10.1007/s10964-008-9386-4

Howard, W. J., Rhemtulla, M., & Little, T. D. (2015). Using principal components as auxiliary variables in missing data estimation. *Multivariate Behavioral Research, 50*(3), 285-299. https://doi.org/10.1080/00273171.2014.999267

Johnson, D. J. (2005). The ecology of children's racial coping: Family, school, and community influences. In T. S. Weisner (Ed.), *Discovering successful pathways in children's development: Mixed methods in the study of childhood and family life.* (pp. 87-109). University of Chicago Press.

Juvonen, J., Kogachi, K., & Graham, S. (2018). When and how do students benefit from ethnic diversity in middle school? *Child Development, 89*(4), 1268-1282. https://doi.org/10.1111/cdev.12834

Kiefer, S.M., Alley, K.M., & Ellerbrock, C.R. (2015). Teacher and Peer Support for Young Adolescents' Motivation, Engagement, and School Belonging. *Research in Middle Level Education*, *38*(8), 1-18. https://doi.org/10.1080/19404476.2015.11641184

King, R.B., McInerney, D.M., Ganotice, F.A., & Villarosa, J. B. (2015). Positive affect catalyzes academic engagement: Cross-sectional, longitudinal, and experimental evidence. *Learning and Individual Differences*, *39*, 64-72. http://dx.doi.org/10.1016/j.lindif.2015.03.005

Konold, T., Cornell, D., Shukla, K., & Huang, F. (2017). Racial/ethnic differences in perceptions of school climate and its association with student engagement and peer aggression. *Journal of Youth and Adolescence*, *46*(6), 1289-1303. https://doi.org/10.1007/s10964-016-0576-1

Leath, S., Mathews, C., Harrison, A., & Chavous, T. (2019). Racial identity, racial discrimination, and classroom engagement outcomes among Black girls and boys in predominantly Black and predominantly White school districts. *American Educational Research Journal, 56*(4), 1318-1352. https://doi.org/10.3102/0002831218816955

Lee, J.-S., & Bowen, N.K. (2006). Parent involvement, cultural capital, and the achievement gap among elementary school children. *American Educational Research Journal, 43*(2), 193-2018. https://doi.org/10.3102/00028312043002193

McGrath, K. F., & Van Bergen, P. (2015). Who, when, why and to what end? Students at risk of negative student–teacher relationships and their outcomes. *Educational Research Review, 14*, 1-17. https://doi.org/10.1016/j.edurev.2014.12.001

McLoyd, V. C., Kaplan, R., Purtell, K. M., Bagley, E., Hardaway, C. R., & Smalls, C. (2009). Poverty and socioeconomic disadvantage in adolescence. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology: Contextual influences on adolescent development* (pp. 444–491). John Wiley & Sons, Inc. https://doi.org/10.1002/9780470479193.adlpsy002014

Mikami, A.Y., Ruzek, E.A., Hafen, C.A., Gregory, A., & Allen, J.P. (2017). Perceptions of relatedness with classroom peers promote adolescents' behavioral engagement and achievement in secondary School. *Journal of Youth and Adolescence*, *46*, 2341-2354. https://doi.org/10.1007/s10964-017-0724-2

Mundy, M. A., Hernandez, J., & Green, M. (2019). Perceptions of the effects of augmented reality in the classroom. *Journal of Instructional Pedagogies*, *22*.

Muthén, B., & Muthén, L. (1998-2017). *Mplus User's Guide* (Eighth ed.). Muthén and Muthén. http://www.statmodel.com/download/usersguide/MplusUserGuideVer_8.pdf

Reardon, S. F. (2016). School segregation and racial academic achievement gaps. *Russel Sage Foundation Journal of the Social Sciences*, *2*(5), 34-57. https://doi.org/10.7758/rsf.2016.2.5.03

Redding, C. (2019). A teacher like me: A review of the effect of student-teacher racial/ethnic matching on teacher perceptions of students and student academic and behavioral outcomes. *Review of Educational Research, 89*(4), 499-535. https://doi.org/10.3102/0034654319853545

Robayo-Tamayo, M., Blanco-Donoso, L.M., Román, F.J., Carmona-Cobo, I., Moreno-Jiménez, B., Garrosa, E. (2020). Academic engagement: A diary study on the mediating role of academic support. *Learning and Individual Differences*, *80*. https://doi.org/10.1016/j.lindif.2020.101887

Robinson, K., & Mueller, A.S. (2014). Behavioral engagement in learning and math Achievement over Kindergarten: A Contextual Analysis. *American Journal of Education*, *120*(3), 325-249.

Satorra, A. (2000). Scaled and adjusted restricted tests in multi-sample analysis of moment structures. In R. D. H. Heijmans, D. S. G. Pollock, & A. & Satorra (Eds.), *Innovations in Multivariate Statistical Analysis* (Vol. 36). Springer, Boston, MA. https://doi.org/10.1007/978-1-4615-4603-0_17

Shernoff, D.J., Kelly, S., Tonks, S.M., Anderson, B., Cavanagh, R.F., Sinha, S., & Abdi, B. (2016). Student engagement as a function of environmental complexity in high school classrooms. *Learning and Instruction*, *43*, 52-60. https://doi.org/10.1016/j.learninstruc.2015.12.003

Split, J. L., Hughes, J.N., Wu, J., & Kwok. (2012). Dynamic of teacher-student relationships: Stability and change across elementary school and the influence on children's academic success. *Child Development, 83*(4), 1180-1195. https://doi.org/10.1111/j.1467-8624.2012.01761.x

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology, 69*(5), 797–811. https://doi.org/10.1037/0022-3514.69.5.797

Tyler, K.M., & Boelter, C M. (2008). Linking Black middle school students' perceptions of teachers' expectations to academic engagement and efficacy. *Negro Educational Review*, *59*(1/2), 27-44.

Verkuyten, M., Thijs, J., & Gharaei, N. (2019). Discrimination and academic (dis)engagement of ethnic-racial minority students: A social identity threat perspective. *Social Psychology of Education*, *22*(2), 267-290. https://doi.org/10.1007/s11218-018-09476-0

Wang, M., Chow, A., Hofkens, T., & Salmela-Aro, K. (2015). The trajectories of student emotional engagement and school burnout with academic and psychological development: Findings from Finnish adolescents. *Learning and Instruction*, *36*, 57-65. http://dx.doi.org/10.1016/j.learninstruc.2014.11.004

Wang, M., & Eccles, J.S. (2013). School context, achievement motivation, and academic engagement: A longitudinal study of school engagement using a multidimensional perspective. *Learning and Instruction, 28,* 12-23. https://doi.org/10.1016/j.learninstruc.2013.04.002

Wang, M., Willett, J.B., & Eccles, J.S. (2011). The assessment of school engagement: Examining dimensionality and measurement invariance by gender and race/ethnicity. *Journal of School Psychology, 49*(4), 465-480. https://doi.org/10.1016/j.jsp.2011.04.001

Whitney, S.D. & Bergin, D.A. (2018). Students' motivation and engagement predict reading achievement differently by ethnic group. *Journal of Genetic Psychology*, *179*(6). https://doi.org/10.1080/00221325.2018.1527754

Wigfield, A., Eccles, J. S., Fredricks, J. A., Simpkins, S., Roeser, R. W., & Schiefele, U. (2015). Development of achievement motivation and engagement. In M. E. Lamb & R. M. Lerner (Eds.), *Handbook of child psychology and developmental science: Socioemotional processes* (pp. 657–700). John Wiley & Sons, Inc. https://doi.org/10.1002/9781118963418.childpsy316

Williams, M. W., & Graham, J. (2020). Cross-racial interactions in schools 65 years after Brown. *Peabody Journal of Education, 94*(5), 545-554. https://doi.org/https://doi.org/10.1080/0161956X.2019.1668211

Yang, C., Chan, M., & Ting-LanMa. (2020). School-wide social emotional learning (SEL) and bullying victimization: Moderating role of school climate in elementary, middle, and high schools. *Journal of School Psychology*, *82*, 49-69. https://doi.org/10.1016/j.jsp.2020.08.002

Table 1

Characteristics of Study Sample (N = 182)

	N	%
Child Gender		
Boy	100	54.9
Girl	82	45.1
Child Grade at Wave 5		
3rd	53	29.1
4th	96	52.7
5th	33	18.1
Primary caregiver's level of education		
No diploma	27	14.8
High school/GED	83	45.6
More than high school	72	39.6
Average family poverty level (Waves 1-4)		
Less than 50% federal poverty level	88	48.4
50-99% federal poverty level	56	30.8
100-149% federal poverty level	21	11.5
150%+ federal poverty level	17	9.3

Table 2
Bivariate Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Academic Engagement																	
1. Behavioral (W5)	1																
2. Cognitive (W5)	-.13	1															
3. Emotional (W5)	.17	.40**	1														
4. Behavioral (W6)	.06	.16	.29	1													
5. Cognitive (W6)	-.11	.38**	.17	-.03	1												
6. Emotional (W6)	-.20	.36*	.22	.27*	.29*	1											
Academic Motivation																	
7. Self-Concept (W5)	.04	.22	.37**	.22	.08	.07	1										
8. Subjective Task Valuing (W5)	.36**	.19	.43**	0.20	.22	.16	.33**	1									
9. Self-Concept (W6)	.24	-.10	.20	.25*	.10	.35**	.07	.06	1								
10. Subjective Task Valuing Subscale (W6)	.01	.34*	.20	.18	.23*	.34**	.24	.31*	.26*	1							
Covariates																	
11. School Racial Comp (W5)	-.24	.08	-.15	-.05	-.14	-.18	-.21	.10	-.09	.10	1						
12. School Racial Comp (W6)	.05	-.18	-.05	-.16	-.20	-.29	.09	.09	.07	-.15	-.22	1					
13. School Quality (W5)	.22	.06	.02	.27	.15	.14	-.05	.01	.20	.09	-.17	.18	1				
14. School Quality (W6)	-.01	-.04	.14	.29	.06	.21	.15	.25	.22	.28	.21	-.11	.02	1			
15. School Econ Dis (W5)	.08	.06	-.07	-.16	-.07	.00	.11	.11	.20	-.06	.36**	-.22	-.18	0.13	1		
16. School Econ Dis (W6)	-.11	-.08	-.06	-.42*	-.05	.11	.08	.16	-.31	-.13	.08	.28*	-.07	-.23*	.16	1	
17. Family Income	.11	-.16	-.05	.10	-.17	-.17	.32**	.05	.02	-.12	-.13	.15	.21	-.07	-.21	-.11	1

*p <.05; **p <.01

Table 3

c^2 Difference Tests for Unconditional Model

	c^2	df	c^2 diff	RMSEA
		Academic Engagement		
Behavioral	6.18	3	6.18	.08
Cognitive	16.63	3	16.63	.16
Emotional	14.24	3	14.24	.14
		Academic Motivation		
Self-Concept	55.87	3	55.87	.31
Subjective Task Valuing	4.80	3	4.80	.06

Table 4

Parameter Estimates for Unconditional Constant Change Model in Academic Engagement

	Behavioral	Emotional	Cognitive
	b	*b*	*b*
Intercept mean	3.61***	4.02***	3.91***
Intercept variance	0.14***	0.00	0.15***
Slope mean	0.11	0.35***	-0.04
Slope variance	-0.05	0.01	0.06

$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table 5

Parameter Estimates for Unconditional Constant Change Model in Academic Motivation

	Subjective Task Valuing	Self-Concept
	b	*b*
Intercept mean	2.49***	2.45***
Intercept variance	0.01	-0.01
Slope mean	0.01	-0.01
Slope variance	0.07*	-0.05*

$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table 6

Parameter Estimates for School Predictors of Latent Change in Academic Engagement

	Emotional						Cognitive					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	b (SE)	*t*	*b* (SE)	*t*	*b* (SE)	*t*	*b* (SE)	*t*	*b* (SE)	*t*	*b* (SE)	*t*
Intercept	4.49 (0.23)	19.47***	4.46 (0.24)	18.52***	4.44 (0.25)	18.09***	4.23 (0.20)	21.49***	4.25 (0.21)	20.72***	4.15 (0.21)	19.89***
Intercept variance	0.01 (0.04)	0.23	0.01 (0.04)	0.32	0.01 *0.04)	0.20	0.14 (0.03)	4.27***	0.14 (0.03)	4.26***	0.14 (0.03)	4.25***
Linear slope mean	-0.50 (0.33)	-1.53	-0.30 (0.34)	-0.90	-0.51 (0.35)	-1.47	-0.02 (0.24)	-0.10	-0.04 (0.25)	-0.17	0.01 (0.25)	0.05
Slope variance	0.02 (0.08)	0.24	0.00 (0.08)	0.05	0.02 (0.08)	0.23	0.06 (0.06)	0.96	0.06 (0.06)	0.96	0.06 (0.06)	0.98
Predictors of the intercept												
School racial composition[a]	0.17 (0.14)	1.21	0.17 (0.14)	1.19	0.68 (0.79)	0.86	0.02 (0.12)	0.12	0.02 (0.12)	0.14	0.69 (0.67)	1.02
School quality	-0.01 (0.00)	-2.16	-0.01 (0.00)	-1.81	-0.01 (0.00)	-2.02*	-0.00 (0.00)	-0.31	-0.00 (0.00)	-0.46	0.00 (0.00)	-0.14
Economic disadvantage	-0.00 (0.00)	-1.28	-0.00 (0.00)	-1.19	-0.00 (0.00)	-0.98	-0.01 (0.00)	-2.33**	-0.01 (0.00)	-2.37**	-0.00 (0.00)	-1.83
Racial comp x quality	---	---	-0.00 (0.01)	-0.46	---	---	---	---	0.00 (0.01)	0.46	---	---
Racial comp x econ dis	---	---	---	---	-0.01 (0.01)	-0.65	---	---	---	---	-0.01 (0.01)	-1.02
Predictors of the slope												
School racial composition[a]	-0.27 (0.20)	-1.30	-0.25 (0.20)	-1.24	-0.14 (1.12)	-0.13	-0.24 (0.15)	-1.61	-0.24 (0.15)	-1.62	-0.58 (0.80)	-0.73
School quality	0.01 (0.00)	2.15*	0.01 (0.00)	1.22	0.01 (0.00)	2.14*	0.00 (0.00)	0.19	0.00 (0.00)	0.27	0.00 (0.00)	0.11
Economic disadvantage	0.01 (0.00)	2.04*	0.01 (0.00)	1.70	0.01 (0.00)	1.95*	0.00 (0.00)	-0.08	0.00 (0.00)	-0.03	-0.00 (0.00)	-0.22
Racial comp x quality	---	---	0.02 (0.01)	2.01*	---	---	---	---	-0.00 (0.01)	-0.26	---	---
Racial comp x econ dis	---	---	---	---	-0.00 (0.01)	-0.11	---	---	---	---	0.00 (0.01)	0.44

[a]0 = not predominantly Black, 1 = predominantly Black

*$p < .05$; **$p < .01$; ***$p < .001$

Table 7

Parameter Estimates for School Predictors of Latent Change in Academic Motivation

	Self Concept					
	Model 1		Model 2		Model 3	
	b (SE)	*t*	*b* (SE)	*t*	*b* (SE)	*t*
Intercept	2.94 (0.14)	20.61***	2.91 (0.15)	19.59***	2.92 (0.15)	19.28***
Intercept variance	0.00 (0.01)	0.18	0.00 (0.01)	0.18	0.00 (0.01)	0.19
Linear slope mean	-0.64 (0.19)	-3.37**	-0.62 (0.20)	-3.10**	-0.60 (0.20)	-2.97**
Slope variance	-0.04 (0.03)	-1.32	-0.04 (0.03)	-1.31	-0.04 (0.03)	-1.33
Predictors of the intercept						
School racial composition[a]	0.10 (0.09)	1.17	0.10 (0.90)	1.15	0.23 (0.49)	0.45
School quality	0.00 (0.00)	0.58	0.00 (0.00)	0.75	0.00 (0.00)	0.61
Economic disadvantage	-0.01 (0.00)	-4.66***	-0.01 (0.00)	-4.51***	-0.01 (0.00)	-4.29***
Racial comp x quality	---	---	-0.00 (0.01)	-0.54	---	---
Racial comp x econ dis	---	---	---	---	-0.00 (0.01)	-0.24
Predictors of the slope						
School racial composition[a]	-0.23 (0.12)	-1.93*	-0.23 (0.12)	-1.91*	-0.59 (0.65)	-0.90
School quality	0.00 (0.00)	0.58	0.00 (0.00)	1.23	0.00 (0.00)	1.40
Economic disadvantage	0.01 (0.00)	5.65***	0.01 (0.00)	5.50***	0.01 (0.00)	5.11***
Racial comp x quality	---	---	0.00 (0.01)	0.42	---	---
Racial comp x econ dis	---	---	---	---	0.00 (0.01)	0.56

[a]0 = not predominantly Black, 1 = predominantly Black

*$p < .05$; **$p < .01$; ***$p < .001$

Figure 1

Change in Emotional Academic Engagement Across Time by School Racial Composition