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School Connectedness and African American Students: An Examination with Implications for Policy and Teacher Education

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SCHOOL CONNECTEDNESS AND AFRICAN AMERICAN STUDENTS: AN EXAMINATION WITH IMPLICATIONS FOR POLICY AND TEACHER EDUCATION

by

ADRIAN N. NEELY

Under the Direction of Dr. Nadia Behizadeh

ABSTRACT

This study examined (1) student perceptions of school connectedness across racial subgroups (African American, white, Hispanic, Asian or Pacific Islander, and Other); (2) the relationships between student perceptions of school connectedness and school-level variables of racial composition, teacher racial composition, and socioeconomic status across African American and white racial groups; and (3) the relationships between school connectedness, teacher racial composition, peer support, adult support, teacher support, discrimination, and expectations when examining African American middle school students perceptions, as measured by the Georgia Student Health Survey 2.0. These relationships were explored using data collected from middle school student (N = 308,887) across 580 public schools in Georgia. This three-part, quantitative study employed one-way analysis of variance (ANOVA) and an integrated, multilevel modeling approach (inclusive of confirmatory factor analysis and structural equation modeling) for statistical analyses. The results indicated that perceptions of school connectedness are practically significantly different across racial groups, with the largest difference between white and African

American students. Contrary to extant research, African American students were more connected to schools relative to white, Hispanic, and multiracial and less connected than Asian or Pacific Islander racial groups. Gender had a weak association with connectedness across African American and white racial groups. Connections to school decrease as students advance in grades, above and beyond other school- and individual-level factors included in the study. Lastly, the results point to the need for student-driven conceptions of school connectedness. These findings are discussed in terms of the challenges facing racial equity in understanding, contextualizing, and developing culturally sensitive measures of school connectedness. Study limitations, future directions, and implications are discussed.

INDEX WORDS: School Connectedness, School Climate, School Accountability, Multilevel Modeling, Critical Race Theory, Socioecological Theory

SCHOOL CONNECTEDNESS AND AFRICAN AMERICAN STUDENTS: AN EXAMINATION WITH IMPLICATIONS FOR POLICY AND TEACHER EDUCATION

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DEDICATION

"Education and work are the levers to uplift a people."
— W.E.B. Du Bois

This dissertation is dedicated to
Ladybug and Bruh Bud

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1 THE PROBLEM: SCHOOL CLIMATOLOGY AND ACCOUNTABILITY

Differences in academic and health outcomes for African American students and their white peers are among the most persistent concerns facing U.S. schools (Walsemann et al., 2013; Williams et al., 2019) and are receiving increased attention from policymakers and educational and public health researchers (Au, 2008; Griffin, 2015). Moreover, empirical work suggests supportive relationships among students, peers, and teachers are associated with positive academic and behavioral outcomes (Klem & Connell, 2004; Nasir et al., 2011). The strength of these relationships is theorized to contribute to students feeling connected to school. According to the Centers for Disease Control (2010), school connectedness is the belief by students that adults in the school care about their individual well-being and learning. Also, connectedness is operationalized as particular kinds of behaviors in school, such as attending school regularly, completing homework, having higher grades, and actively participating in local community activities (Blum, 2005). Of great concern, looking across school connectedness studies, positive relationships with adults are lacking for African American students. In fact, research indicates that African American students are the least connected to schools across racial groups.

Yet complicating this finding is the complexity of school connectedness for students who are historically marginalized in schools, especially African American students. School connectedness for African American students must consider the role of larger systems, including systemic racism and its effects on policies, curricula, and assessments. To understand the complex nature of school connectedness, I include four sections that form an argument for why there is a critical need to theorize and empirically study school connectedness for African American students: racist ideology and school leadership, discriminatory school policies, education reform and school accountability measures, and school connectedness and African

American students. I briefly examine these four parts of my argument and develop each area further in the literature review in Chapter 2.

Racist Ideology and School Leadership

The United States has a long and complex history of racism and systemic oppression. These forces have structured spaces, such as public educational systems, that serve African American students. To take a concrete example, on September 15, 2016, the top administrator of Georgia's second-largest school district commented in a leadership meeting, "their asses would be benched" (Walker, 2016). The district superintendent was referring to student athletes plan of "taking a knee" during the national anthem at upcoming high school football games. "Taking a knee" is a form of silent protest against racism, discrimination, police brutality, and economic inequality. Colin Kaepernick, former African American, National Football League quarterback, initiated this response to call attention to high-profile police shootings of African Americans by white officers that often result in deaths of innocent African American men and women. This form of activism spread across the country with many African American athletes, students, in particular, kneeling to shed light on social injustices. The superintendent's pointed statement was a reaction to the news of his district's high school football player's plan of taking a knee in solidarity with other athletes across the nation.

Although not cast as blatant racism in the article, to suggest students would be "benched" speaks to the punishment, rather *de facto* policy formulation, fettered upon mostly African American players. In line with Feagin's (2013) notion of the white racial frame, the top school district official, either consciously or unconsciously, imposed a white dominance frame by enacting an oppressive policy as a form of punishment for African American athletes - those mostly affected by racist incidents they are protesting. And while research suggests competitive

sports in secondary schools enhances academic achievement, reduces the risk of dropping out (Eide & Ronan, 2001), and increases school engagement and connectedness (Finn, 1989; Kamau et al., 2015), it is conceivable that white-dominant ideology, as opposed to democratic tenets in a free society, is the lessons all students receive. But more importantly, the African American athletes may perceive the actions and statements of their district leader as discriminatory, unjust, and uncaring about their academic future.

In a second example, another Georgia superintendent resigned for calling African American school construction workers "deadbeat niggers" in a racist rant recorded and used as evidence in a racial discrimination suit against the district he led (Perez, 2018). These are recent examples of racist comments and epithets used by high-ranking education officials responsible for setting the rules and parameters that shape school contexts. Although these two stories are anecdotes, they serve as powerful counternarratives to the whitewashed notion of schools as apolitical, safe places of learning where one only needs to work hard to be successful; they illuminate the subordination of the "other" while establishing racial, self-dominance ─ the inherent job of learning to be white (Thandeka, 1999). While most powerful officials have not been caught on tape, these two illustrate specific contextual examples of this truth in Georgia, where my dissertation study took place, and it is likely other incidents are happening in Georgia but are not captured. Nationally, similar incidents of racial trauma in schools impacting students of color is chronicled in social media to document the perveance of this national travesty and the boundless reach of white supremacy (Jones, n.d.). Further, these comments and acts support a long history of racist, white supremacist ideology, perpetuated by individuals in power, that have molded education policies that discriminate, subjugate, and disenfranchise African American students in schools (Kendi, 2017). And yet, these school environments are characterized as

supportive in providing free and appropriate education to Georgia's culturally, linguistically, and economically diverse student populous without calling attention to school policies that may emanate from racist ideology. For African American students in these counties in Georgia, the policies, words, and actions of district administrators are part of the fabric of racism that can impact their levels of school connectedness.

Discriminatory School Policies

Institutional racism is pervasive in American society. According to Jones (1997), institutional racism is a process whereby racist beliefs, fostered by convictions of power and authority, translate into discriminatory policies, procedures, and actions of the institution. It functions on multiple levels to create biased policies resulting in racial disparities between African American and white students in K-12 education. These racial group disparities, regardless of socioeconomic status, are present in all areas of the school experience, participation in gifted and special education programs, performance on standardized assessments, and rates of discipline infractions (Franklin, 2007; O'Connor & Fernandez, 2006; Skiba et al., 2002, 2011). For example, zero-tolerance policies have contributed to disparate exclusionary discipline outcomes. Zero Tolerance policies mandated by the 1994 Gun-Free Schools Act and renewed under No Child Left Behind have adverse impacts on minority students (Jones, 2013). Under these legislative acts, students who engage in a broad range of behaviors including school violence, disruption, and attendance can be suspended or expelled (Jones, 2013). Welsh and Little (2018) examined 183 empirical studies of K-12 public schools focusing on the causes of disparities in disciplinary outcomes between 1990 and 2017. They discovered race, as opposed to behavior is a significant factor in predicting out-of-school suspensions for African American students when compared to their white counterparts. This means beyond any measure, African

American students are punished and pushed out of school at higher rates than non-Black counterparts because of their race. Welsh and Little concluded, "the disparities in disciplinary outcomes may be better explained by the behavior of teachers and principals in schools rather than student characteristics such as misbehavior, poverty, or race" (2018, p. 758). This comprehensive review clearly illustrates the propagation of racists beliefs from the distal- to the proximal-level where policy actors and implementors interact with students on an interpersonal level. Indirectly, the researchers make a strong case for examining the racialized schooling experiences of African American students, in particular their interactions with peers and adults in the school.

A further example of educational policy that may exacerbate racial disparities concerns the identification of students for special education services. African American students are overrepresented in high-incidence disability referrals by teachers for judgmental (subjective) categories such as learning disabled and behavioral and emotional disorders. Alternately, student placement in special education services for non-judgmental categories, such as blind, deaf, autism spectrum disorder, requires a diagnosis by a professional in the health field (Kramarczuk Voulgarides et al., 2017; O'Connor & Fernandez, 2006). In fact, Kramarczuk-Voulgarides and colleagues (2017) examined why protections under the federal Individuals with Disabilities Education Act did not buffer minoritized students from disparate outcomes. The researchers concluded that as a race-neutral policy, IDEA did not account for the salience of race, noting the "growing empirical evidence that teacher beliefs and expectations of students, based on race, relate to disproportionate outcomes" (2017, p. 65). Furthermore, Kramarczuk-Voulgarides et al., (2017) recommended that future research on disproportionality address the complex issue moving beyond person-centered remedies that do not consider context and culture. Taken

together, these examples make a compelling case for understanding how racism shapes the interactions between students and their school environment.

Education Reform and School Accountability Measures

Moving from the district and school levels to the federal level reveal how U.S. policy fails to address racism. The goal of federal educational reform under the No Child Left Behind Act (NCLB) of 2002 was twofold: create standards-based reform efforts to promote excellence and equity in education and develop an accountability reporting system to inform educational improvement and reporting efforts (Felner, Bolton, Siestsinger, Brand, and Burns, 2008). Excellence referred to high-quality resources, processes, outcomes, and impacts of the educational system and equity referred to the fair and nondiscriminatory allocation of resources, processes, and outcomes that impact the education system (Felner et al., 2008). Yet, critics of the federal policy noted the emphasis placed on what a student knows and should be able to do, as opposed to the conditions in which students are attempting to learn and the quality of teacher instruction, especially for African American students. Lewis and colleagues (2008) noted that access to high-quality teachers was not a reality for inner-city African American students. Moreover, the lack of access to a high-quality teacher is "only exacerbated by a system and teachers who view student's culture as pathological and insufficient" (Lewis et al., 2008, p. 139).

According to Clifford, Menon, Gangi, Condon, and Hornung (2012), these education reforms support consistent and systematic measurement of district, school, principal, and teacher performance as a mechanism for improving school quality. Historically, these measures focused on academic achievement, but more recently states have included multidimensional measures of school climate, assessing subdimensions such as school connectedness. To support equity in schools, it is important to consider how variables assessing perceptions of care, fairness, respect,

and equity, are operationalized, particularly for historically marginalized students, such as African American students.

For example, Georgia's statewide accountability measure, the College and Career Ready Performance Index (CCRPI), was implemented in 2012 as part of a flexibility waiver to replace NCLB's Adequate Yearly Progress measure under the Elementary and Secondary Education Act (ESEA) (Georgia Department of Education, n.d.). Under this evaluation, school districts and schools receive an annual CCRPI score, which serves as an indicator for schools, parents, policymakers, and communities to assess school performance and student academic progress. In addition to this school-wide accountability measure, CCRPI includes a sub-evaluation, the School Climate Star Rating, measuring the extent to which the school environment is safe and supportive. The rating is based on four components: 1) student, teacher, and parent perceptions of a school's climate; 2) student discipline; 3) a safe and substance-free learning environment; and, 4) student attendance. Within the school climate survey is a measure of school connectedness. Data on school connectedness are collected via surveys administered to students, teachers, staff, and administrators (e.g., Georgia School Personnel Survey and Georgia Student Health Survey, 2.0) (Georgia Department of Education, 2017). Interestingly, the Georgia Parent School Climate Survey does not capture parents' perceptions of school connectedness intimating familial or guardianship connectedness to the school is not an aspect to consider or evaluate in relation to student connectedness. Furthermore, a strategic goal of the state education department is to "increase the number of schools with a safe, healthy, and positive learning climate using the results of the Georgia Student Health Survey and School Climate Rating for accountability" (Georgia Department of Education, 2019a, p. 6). Therefore, school connectedness data becomes a

measure in the statewide accountability systems that is used to evaluate schools and determine their efficacy.

Purportedly, the inclusion of socioemotional measures, such as school climate, self-efficacy, intrinsic motivation into accountability systems reflects an interest in supporting more equitable schooling experiences for all children (Bandura, 1986; Linnenbrink-Garcia et al., 2010; Teven & McCroskey, 1997). However, critical race theorists emphasize the enduring, embedded nature of racism in schools as a barrier to equity. Thus, these measures need to be carefully constructed to reflect a rich and robust construct of school connectedness that is valid for students of color and yields data that can address educational inequities. Also, consequential validity scholars have highlighted that validity depends on how a measure is used, not just the richness of its construction (Slomp et al., 2014).

Although the rhetoric of NCLB is to eliminate the academic achievement gap between white students and students of color, history bears out that racial disparities in academic achievement are only justified by standardized tests. The enactment of educational policies that mandate standardized testing perpetuate racist ideology and entrench systemic inequities. Educational research has largely characterized African American children as intellectually inferior (Au, 2009; Franklin, 2007; Gillborn, 2010). Joseph Baldwin (1986) has defined the European American psychology as the social pathology of black behavior (or the distortion of black people's reality) based on their views of normality (or European whiteness norms). The problem led to the development of inequitable measurements as they are often crafted by white researchers living in white-mainstream contexts and validated using white study participants (Goddard, 1911; Hagborg, 1994). As such, assessment and measurement often utilize middle-class white people as the norm or standard. O'Connor and Deluca (2006) observed this issue while analyzing the

disproportionate placement of minority children in special education services. The authors critiqued a report published by the National Research Council that utilized the white-middle class as an appropriate standard to compare and evaluate the parenting skills of poor, culturally different, non-white parents.

Moreover, the field of educational psychology, which gives rise to the development of measurement scales suffers from the same shortcomings. According to Akbar (1991), the Euro-American reference point of normality is based on the middle-class, white male of European descent, thus allowing white norms to confirm all reality and establish statements and thoughts with white supremacy as scientifically fact-based and objective. When juxtaposing business and school systems, Hilliard (1992) argued businesses ironically are more culturally responsive because they have to consider customer needs and desires when marketing. However, he critiqued schools and identified them as having the "luxury of ignoring" cultural diversity. He made the case that not recognizing cultural behaviors as a style of learning will lead to errors in identifying intellectual abilities (deficit ideology), learned abilities, and language abilities. As a consequence of developing measurements based on white normality for racially heterogeneous groups, I question the definition, utility of, and contextually applicable indicators of school connectedness measures as a valid and strong indicator of African American youth connectivity in schools. Similar to Hilliard's argument, by not recognizing macrosocial factors, such as race, gender, and class, that shape how culturally and racially different students perceive school connectedness, the lack of accountability may yield inaccurate assumptions about school quality owing to inequitable decisions regarding policy and program interventions.

The construct of school connectedness has received the attention of educational and public health researchers due to its utility in explaining the impact on academic, social, and well-being

outcomes (Osterman, 2000; Shochet, Dadds, Ham, & Montague, 2006). Public health researchers examine the impact of school connectedness on health outcomes, such as mental health (depression and anxiety), violence, and substance abuse. The construct is widely recognized as a factor in predicting the academic success of students in K-12 education (Brookover et al., 1978; Bryan et al., 2012; Hughes, Im, & Allee, 2015; Niehaus, Irvin, & Rogelberg, 2016). Academic outcomes include higher scores on standardized assessments and increases in attendance and graduation rates; however, educational researchers have not come to a consensus on the definition of school connectedness, or the utility of relevant variables, theories, and models (Wang & Degol, 2016). As will be explored further in the literature review, Zullig and colleagues (2010) and La Salle (2017) consider school connectedness as a sub-dimension of school climate focusing on student relationships with adults and peers in the school, while Hart, Stewart, and Jimerson (2011) consider school connectedness a multi-dimensional construct encapsulating student relationships, feelings and perceptions about teaching and learning, school and classroom behaviors that impact learning, participation in extracurricular activities and school events. Thus, there is not a clear consensus on the relationship between school climate and school connectedness.

Compounding issues regarding measuring and defining school connectedness, the perceptions of African American students are often reported in the aggregate in the literature from quantitative analyses of large data sets, such as the Educational Longitudinal Study of 2002 (ELS: 2002) made publicly available by the U.S. Department of Education's National Center for Education Statistics (NCES) (Bryan et al., 2012). By reporting data on African American students in the aggregate, this may inadvertently produce a silencing effect and confusion around how students operationalize school connectedness. This effect silences the perceptions of African American youth and may inadvertently lead to poor policy decisions resulting in detrimental

outcomes. In addition, Anyon, Zhang, and Hazel (2016) found that disparities in out-of-school suspensions were negatively associated with student's sense of connectedness. It is entirely possible that inequitable policies may mediate the effects of school connectivity for African American students.

As noted previously, school connectedness is a variable used by policymakers, school administrators, and teachers as a diagnostic tool for understanding the school environment and making decisions about school-based interventions. To further complicate matters, states place a greater emphasis on this measure by adopting and incorporating measurement standards that assess perceptions of school connectedness, within school climate scales, into their state data accountability measures. For example, Georgia's Student Health Survey 2.0 is a multidimensional construct that includes school connectedness as one of eight sub-dimensions. As previously mentioned, data from this survey is part of a composite score, Climate Star Rating, that is used in Georgia's accountability data to evaluate and assign a letter grade to each school. Similar to a report card, schools may receive a passing grade (A, B, C, D) or a failing grade (F). Furthermore, various definitions of school connectedness are replicated in the various measurements and scales that purport to measure the construct – summarily calling for clarity and validity evidence.

As more states begin to adopt school climate standards and incorporate measures of school connectedness as a form of accountability, it is important to accurately define the construct of school connectedness, understand how it is used in the assessment of school quality, and explore how the construct is understood, defined, and perceived by all stakeholders (i.e., students, parents, teachers, administrators, and the community), particularly African American students. For this dissertation, I focus on defining the construct and how it is used in measures. In the discussion section, I return to the need to explore stakeholders' perceptions.

School Connectedness and African American Students

Having explored the larger structural contexts of racism, discriminatory school practices, and current accountability policies, I now zero on school connectedness and African American students. Given the historical legacy of African Americans, school connectedness is a crucial variable for improving both health and academic outcomes for African American students. Previous research that centered on African cultural tenets, ontology, and epistemology, underscored the value, utility, and importance African Americans place on education (Siddle Walker, 2002; Swartz, 2009). Consistent with this idea, many individuals of the African diaspora tend to value social connectedness and interdependence, including relationships and attachment to school (Ani, 2013; Henderson et al., 2017; King & Swartz, 2016). Furthermore, the myriad of ways African American students and families are connected to schools through communal bonds (Morris, 2004), praxis (King & Swartz, 2016) and interpersonal connections (Nasir et al., 2011) is well documented. And yet, school connectedness measures are often void of cultural context and limited to student perceptions of feeling a part of the school, happy and safe at school, and close to people at school. Against a backdrop of disconsensus about the definition of school connectedness, systemic racism, and potentially culturally inappropriate measures, data derived from school connectedness measures, including the consistent low ratings of school connectedness by African American students, (Anyon et al., 2016; Karcher & Sass, 2010a; Zhu, 2018) needs to be carefully examined.

Though relatively few, studies have demonstrated that cultural context and school connectedness are associated among African American students. For instance, a national study using data from the Adolescent Health Survey (AdHealth) assessed the relationships between school valuing and connectedness. Researchers concluded that while African American students

value school at higher rates than their white and Hispanic counterparts, they consistently rated school connectedness the lowest across racial groups (Johnson et al., 2001; Niehaus et al., 2016). While the assessment of school valuing was culturally aligned, the school connectedness measure used in the study was limited, as previously discussed.

In the same study, when teachers assessed student levels of engagement (i.e., completing homework, attending classes, and paying attention), African American students were ranked the least engaged while rating white students as having the highest level of school engagement (Niehaus et al., 2016). To add, research on African American students demonstrating low levels of student engagement suggests teachers exhibited low expectations for their Black students. Taken together, these findings suggest teachers might attribute the low academic performance of African American students to a deficit-based view of these students and their families, which in turn, may contribute to lower expectations. African American student's perceived experiences of racial bias may impact school connectedness.

A student's perceptions of discrimination, differential treatment, and exclusion by adults and peers in the school that lead to disparate outcomes appear to also play a role in perceptions of school connectedness for African American youth. For example, disparate racial gaps in out-of-school suspension between African American and white students were negatively associated with African American students' experience of a supportive school climate. Bottiani and colleagues (2017) found that in schools where African American students have a high risk of out-of-school suspensions, they reported lower levels of school connectedness, whereas this association was not significant for white students. Again, perceived racial bias and inequitable practices based on race may result in disparate perceptions of school connectedness among racial groups.

School racial composition and socioeconomic status (SES) are important aspects of social context that may differentially shape student perceptions of school connectedness by race. For instance, Walsemann, Bell, and Maitra (2011) found that as the percentage of white students increases, African American students in the school were more likely to report unfair treatment by teachers, and less likely to report feeling part of the school, feeling happy to be at school, or feeling close to people at school. Another study found a significant relationship between a school's socioeconomic status and school connectedness; however, teacher and student racial composition were not analyzed. Although research suggests African American students are the least connected to schools across racial groups, additional research is needed to examine disparate perceptions of school connectedness with attention to variation by school context (e.g., racial composition of the school) and to other aspects of students' background (e.g., socioeconomic status).

Taken together, this research demonstrates that schools where peers, teachers, and other adults create a school atmosphere of equitable practices and fewer experiences of discrimination may increase school connectedness for African American youth. Moreover, these studies suggest that school connectedness may be operationalized differently for groups based on race. Unfortunately, these studies do not provide a full assessment of how race and social context have the potential to explain racial differences in student perceptions of school connectedness. More inclusive models addressing the intersections of social context and race are needed to further our understandings of the experiences and interactions of African American students. Further, this dissertation study provides a promising line of research to better understand racial disparities in achievement and behavioral outcomes.

Overview of Current Study

In this current study, I focus on school connectedness with African American youth in schools because this construct is positively related to academic achievement, school completion, community and civic engagement, and violence and substance abuse, all of which support better health and education outcomes. However, as noted, prior research has demonstrated African American students consistently score low on school connectedness measures, when compared to their white counterparts, suggesting that larger factors associated with race may impact the school environment. Given the historical development and validation of school connectedness measures involved mostly white students, the construct may be an accurate representation of their school connectivity and possibly inaccurate for African American students. More importantly, the construct may not capture the essence of school connectedness for students of color that are culturally and linguistically different from their white peers. And while some contemporary measures of school connectedness were developed and validated with students from a range of ethnic and socioeconomic backgrounds, many of the published validation studies failed to adequately conceptualize the construct of school connectedness (Hodges et al., 2018). Hence, our present understanding of school connectedness for African American students is not yet clearly understood. This study seeks to understand how school connectivity is defined and measured for African American students while considering the historical, political, and social factors within a community - factors that influence human behavior. A theoretical conception of school connectedness for African American students has the potential to illuminate how interpersonal relationships and educational policies impact school connectivity, which in turn, influences school completion, health, and wellness.

To this end, I have designed a three-part quantitative study utilizing analysis of variance (ANOVA) and multi-level, confirmatory factor analysis (ML-SEM) and structural equation modeling (ML-SEM). Study 1 used analysis of variance (ANOVA) to examine the mean differences of perceived connectedness across racial groups. Study 2 used multilevel modeling and multiple group analysis to examine the relationships between school connectedness and student- and school-level indicators across African American and white students. Lastly, Study 3 included an exploratory factor analysis to identify relative school connectedness constructs that aligned with the proposed theoretical model of school connectedness. The second part of Study 3 focused on examining relationships among school connectedness and interpersonal relationships, expectations, discrimination, and school-level covariates (i.e., school SES and racial composition). The relationships were estimated using multilevel structural equation modeling.

Through these analyses, I critique school connectedness construct and currently used measures of connectedness. Additionally, I propose an ecological framing of macrosocial factors to consider when measuring this variable for racially and culturally different students. To ensure that I consider the implications of culture and race in society, I employ CRT as a theoretical lens and layer with an ecological framework for social determinants of health. I used these theoretical frames to inform a conceptual framework for school connectedness and African American students. Further, I use the framework to test a hypothesized model of school connectedness for African American students addressed in part 3 of this dissertation. The research questions that guided the analyses are listed below.

Research Questions

1. Do the perceptions of school connectedness of middle school students in Georgia, as measured by the Georgia Student Health Survey (GSHS) 2.0, vary across racial groups (African American, white, Hispanic, Asian/Pacific Islander, Other)?

2. What are the relationships between student perceptions of school connectedness with and individual-level variables (gender and grade-level) and school-level variables (student racial composition, teacher racial composition, and socioeconomic status) across African American and white racial groups?

3. Using school connectedness, peer support, adult support, cultural acceptance, and school climate subscales of the Georgia Student Health Survey 2.0, what are the empirical factors for African American students?

   a. What are the relationships between school connectedness and teacher racial composition, student racial composition, school socioeconomic status, and the empirical factors established in question 3 for African American middle school students?

Significance of the Study

Dudovitz and colleagues (2016) argued that "schools are critical public institutions" (p.6) that have the power to impact a child's long-term health trajectory. In the United States, students are required by law to attend compulsory education, starting in the first grade. Ample empirical evidence suggests educational attainment, generally operationalized as the years of schooling, is a predictor of long-term health, which includes a person's mental and physical condition. In other words, more educated people live healthier, longer lives. Although research has documented the strong relationship between educational achievement and a variety of health

outcomes, the drivers such as improved health literacy, higher income, improved social standing, and healthier social networks are suggested in the scholarship, the causal pathways that connect education and health have not been established.

In a review of research on the relationship between education and health, Zajacova and Lawrence (2018) posit that to understand the relationship between health and education for policy development, researchers need to consider educational attainment as a mediator of improved health and consider the socio-historical context of schooling that precedes school completion. Here, the researchers are calling for a new line of research that moves the focus from attainment to understanding the social context of schooling such as school and instructional quality, teacher expectations, academic opportunities, and peer and adult relationships. An examination of student interactions within the school, a primary environmental context for youth, may provide a lens for contextualizing multiple factors that impact schooling and school completion. By examining school connectedness, students' perceptions of school connectivity, I am answering the call of connecting education and health by exploring the fundamental factors that may underlie and influence school completion.

When measuring a complex construct such as school connectedness, researchers should consider the contextual factors that impact student perceptions. By considering these factors, the valuation of the construct increases, which in turn, may inform stakeholders of appropriate actions to take, especially to realize more equitable schooling environments that support connectivity and student success. The results of this study may advance our understanding of how African American students conceptualize their interactions and relations within schools, given the macrosocial factors that impact and shape school and community ecologies. This examination may support teacher educators, school and district administrators, and in-service

teachers in examining the construct of school connectedness and inform pedagogies and practices that center on- and reaffirm- the creation of school environments that are welcoming, engaging, harmonious, intellectually safe, and respectful of all learners. Next, I present my positionality and then close the chapter by describing the theories and conceptual orientations informing this dissertation.

Positionality: "I am where I'm supposed to be"

As I write, I consider the current state of the world as "others" begin to think deeply and grapple with the symbolic phrase, "Black Lives Matter." We are in the midst of a global pandemic that has illuminated the multitude of racially disparate education, economic, and health conditions that largely impact people of color, in particular African Americans (Krishnan et al., 2020). Added to the list of disparate conditions plaguing African Americans was the murder of George Floyd, an African American male that died a slow death as a white police officer, Derek Chauvin, constrained Floyd by kneeling on his neck for more than 8 minutes. These "justifiable homicides" of African Americans males and females by police officers (Gilbert & Ray, 2016) have garnered global attention resulting in widespread protests against systemic state-sponsored racist brutality. These racialized, unjust experiences that I am a witness to and a victim of is the source of my motivation to question, seek, and discover answers that support a more just world. Significant milestones and life experiences have brought me to understand more about school connectedness for African American youth. The events and experiences have shaped my identities and taught me about myself, family, peers, community, and about the people that populate our world.

As a Daughter

My first lessons on social justice and seeking equity comes from a lineage of matriarchal bonds. I am the daughter of a street-level pioneer that was the first to desegregate the Clarke County School District in Athens, Georgia as she bravely walked by white protestors expressing their disdain the entire year. To add, I am the granddaughter of a community activist and secretary of the National Association for the Advancement of Colored People (NAACP) during the civil rights era. Most importantly, I am the great-granddaughter of a sharecropper, Bible school teacher, and night school graduate at age 54 – a program she helped organize with the support of academicians from the University of Georgia. I acknowledge and honor the sacrifices and dedication of my ancestors to create a more just and equitable world. It is their stories and teachings that provided an invaluable education shaping my character into the African American woman I am today. I too value and understand education as an act of liberation. In a socially-just world, the institution of education is accountable to the students. Conceptualizing school connectedness for African American youth may illuminate policies that are accountable to students.

As a Student

As a student, my first racialized experiences began the first year I transferred to a district-wide magnet school. As a fifth-grade student at a majority-white magnet school, I vividly recall my social studies teacher telling the class, "Slaves were happy." I quickly retorted, "NO THEY WERE NOT!" The older-white teacher was not happy with my challenge. In fact, she pointed her finger twelve inches away from my face and went on a wordy tirade that ended with, "PERIOD, POINT, DOT, BLANK, AMEN". It was here that I learned how living a double-consciousness feels (DuBois, 1903). It was here that I experienced the "two sets" of rules for Black and white students. My community shaped me into a young, ardent pro-Black girl which

contrasted with the submissive, passive anti-Black girl I felt they wanted me to be. I constantly fought the two-sets of rules. For example, one morning the principal walked me to her office and called my mother to pick me up. The offense I committed was wearing close-fitting pants called stirrups, which were the teen fashion craze at the time. Once the bell rang for class, I quietly stepped out of the office and into the hallway. Without providing an explanation, I coerced three of my white classmates into the office, turned to the principal and said, "Call their moms too! They also have on stirrups." Needless to say, the moment that wearing stirrups became a problem for white girls, the problem disappeared, and *everyone* returned to class. Connecting to school in a hyper-racialized context was difficult for me. However, my educational resilience was stronger and prevailed. Although I disconnected from school and begged my mother every year to leave, I fought the institution with stellar grades and performances for four years. I am intimately aware that high academic achievement may have a negative relationship with school connectedness.

As an Educator

As an educator, I experienced structural racism with my all-Black high school science class. A district-wide policy required science teachers to participate in an annual lab activity located at the district's science center. This particular year, I decided to take my first period, 9th grade Biology class to attend a skin epidermal lab. Although they were excited to attend, I required them to provide a "make up" list of assignments to complete on the bus. The fieldtrip was an exchange for classwork as they would miss their morning classes. After arriving at the science center and preparing for lab, racism reared its ugly head. We could not start the lab because we had to wait for the bell to ring at the all-white high school located in the north end of town. While my class was ready to start the lab, we patiently waited for the white students to

enter science class at their respective school and settle into their desks before starting the lab assignment.

A district policy required that I take my students away from school and classes while the all-white students across town had the technology and resources to perform the lab virtually. Unlike myself, their teacher never had to worry about students missing classes and not making up work. Her students did not have the extra burden of completing assignments without the instructional support of a teacher. I can still see the hurt on the faces of my students once they realized the calamity of what occurred. A few of us locked eyes in solidarity as a silent acknowledgement of the multiple ways racism is ever present in our daily lives.

As a Policymaker

As a policymaker at two state-level education agencies, I always felt the need to question, discuss, and express the possible implications policy changes may have on children that have a history of marginalization. I have continuously negotiated my identity for an opportunity to have a "voice at the table". In fact, while advocating for children of color, I was relegated to the fringes and experienced my own systemic oppression. For instance, after reviewing a policy that quantified disciplinary referrals and suspensions at the school-level to determine a school's discipline and cultural climate, I inquired about the policy that incentivizes "out of school" suspension for a student that could be labeled a "troublemaker." I also asked about the demographics of the initial committee that developed and supported the policy. After the meeting, I expressed concerns with my supervisor, and although the validity of my argument was acknowledged, I was "uninvited" to future meetings. I could sense the discomfort of talking about racism without ever mentioning the word. And yet, my request to have a discussion on potential disparities was ignored. It is well documented that perceptions of unfair discipline

policies by African American students is negatively related to school connectedness (Skiba et al., 2011). However, as the only person of color in the room, my voice was marginalized and invalidated. This is one of many instances that pushed me to understand the creation of policy beyond the numbers but to focus on the measurements that produce the numbers. I question if measurements accurately capture the epistemological and ontological notions of race and culture. If they are void of these notions, then can we call them valid?

As a Mother

As a mother, this cycle of racism and racialized experiences in schools has come full circle with my own children. As my children shared their schooling experiences, I became more aware of their interactions with teachers, peers, and curriculum. Not only did I witness their personal struggles with connecting to school, but I came to realize the generational cycle of racialized trauma in schools.

This is the story of how I came to do this work. I am unapologetically Black and unafraid of embarking on a transformative approach to research. My mother's personal mantra, "Where I am is where I'm supposed to be," was developed as a result of her experiences. I too have adopted this mantra as I research, grapple, and understand Black school connectivity.

Theoretical Framework

In social science research, a theoretical perspective helps to predict, or explain, phenomena that occur in the world (Creswell, 2014). In this study, I layer multiple theoretical perspectives to understand how African American youth connect to schools. Critical race theory, phenomenological variant of ecological systems theory (PVEST), and a framework proposed by the World Health Organization (WHO) are integrated to form a multi-theoretical framework. This blended approach allowed me to examine the complex nature of school connectedness. I

draw on tenets from critical race theory to examine issues of race and racism (Bell, 1992; Crenshaw, 1989; DeCuir & Dixson, 2004; Delgado & Stefancic, 2005; Ladson-Billings, 1998; Matsuda, 1993), PVEST to understand how students, more specifically African Americans, make meaning of their interactions and reactions within their schools and communities (Spencer, 1999; Spencer et al., 1997; Velez & Spencer, 2018), and the WHO framework introduces hierarchical structures to understand the role of "power" in shaping our interactions and social conditions (Solar & Irwin, 2010). A discussion of each perspective is provided in the following sections.

Critical Race Theory

Because of my specific focus on race in this study, I have chosen to foreground Critical Race Theory (CRT). CRT offers an academic lens to center race while engaging in candid, courageous discourse and research about race and education. Introduced to educational research by Ladson-Billings and Tate (1995), CRT allows me to examine the interconnections among race, racism, and power (Delgado & Stefanic, 2012) while studying school connectedness. The six tenets of CRT include:

1. The permanence of racism is the notion that race governs all structures of society—as Whiteness as a social construct, and the definition of success continues to control the structures of school policy. Racism is pervasive and interwoven into the fabric of society (Bell, 1992; DeCuir & Dixson, 2004).

2. Critique of liberalism is the expression of skepticism toward dominant legal claims of neutrality, meritocracy (belief in equal access and opportunity), color blindness (absence of race), and incremental change (the need to make small changes over systemic changes) (Crenshaw, 1988; Gotanda, 1991).

3. Interest convergence is the juncture of white interests for Black needs (Bell 2005a,

2005b, 2009).

4. Counter-storytelling gives voice and credence to historically marginalized voices. When the voices of those affected are not included it is often the dominant or majoritarian narratives that ensue.

5. Whiteness as property describes how the values, traditions, beliefs, and social and political capital of whites dominate how schools operate. History and policy have shown us how whites have the right to possess, use, dispose, transfer, enjoy and exclude others without any political or legal ramifications (DeCuir & Dixon, 2004). As previously discussed, the foundational measurements of school connectedness were developed and validated using middle-class white-normality as the standard rendering the perceptions of others as insignificant.

6. Intersectionality examines the intersection of identities, such as how race and gender, operate jointly to create a compounding effect of oppression (Crenshaw, 1989).

The use of CRT in educational context allows the researcher to expose African Americans' experiences with racism to promote transformational change and bring about equity (Ladson-Billings & Tate, 1995; DeCuir & Dixon, 2004). Often, instead of being intellectual spaces that nurture and support all students, schools perpetuate racism through policies such as zero tolerance, student tracking, and special education placements with African American youth often facing the worst ramifications of racism in schools (Leonardo, 2012). Critical race theorists' focus on how racism at multiple levels and in various forms, affects peoples' experiences.

CRT is concerned with how race is systematically tied to the allocation of resources – social, political, and economic (Horsford, 2011). This allocation leads to social hierarchy infused

with power allowing white domination. According to Horsford (2011), "…overlooking or ignoring racism's relationship to American hegemony and resource allocation undermines our ability to effectively examine white supremacy and the role of race and power in society and its institutions" (p.29). As such, this theoretical lens allows an understanding of how racism, past and present, manifest in policies for maintaining social order, impacting the interactions and experiences of African American youth in schools.

Phenomenological Variant of Ecological Systems Theory (PVEST)

Bioecological systems theory is one of the theoretical pillars of school climate and connectedness research because it emphasizes how multiple environments and features of the school environment can interact across different age periods to influence human growth over time (Bronfenbrenner, 1979, 1986; Maxwell, 2016; Wang & Degol, 2016). Ecological theorists, such as Bronfenbrenner (1977, 1986; 1979a), posit that the environments surrounding a child, proximal and distal, are relevant in assessing the development of a child. Specifically, the cognitive development and the interactions within the family, school, neighborhood, and church, inform how an individual will develop, cognitively and mentally, as well as how they will behave and the choices they make.

Bronfenbrenner's theoretical framework of assessing human development is contextually rooted to explain environmentally influenced outcomes. For a homogenous, white school environment, this model is appropriate for examining school connectedness because it explains how children develop within their proximal and distal environments and how these environments shape their perceptions and understandings of their relationships and interactions. However, the utility of this model in African American communities has limitations. For instance, the ecological model is useful in providing a framework for understanding how the school ecology

might influence youth's development, yet, it does not account for the racialized context of child development. In fact, some researchers critique the failure to incorporate race as a critical factor for contextualizing and understanding the development of minoritized youth (Spencer et al., 1997). Phenomenological Variant of Ecological Systems Theory (PVEST) answers this oversight by expanding Bronfenbrenner's conceptualization to include the interrogation of how students make meaning in broader contexts through the interpretation and explication of feedback from the environment, with particular attention to individual differences of race, class, skin color, gender, and maturational differences (Spencer, 1999; Spencer, Dupree & Hartmann, 1997).

As a theoretical lens, PVEST allows for researchers to integrate an individual's ability to comprehend bias, stereotypes, and societal expectations, whether they endorse or self-fulfill, during recursive acts (re-thinking and synthesizing experiences) to make meaning. In essence, PVEST centers culture in the cognitive processes of how an individual begins to shape their identity in how they respond and interact based on the repetition of their reactions given their social context. An individual's emerging identity, whether adverse or productive, has implications for life expectancy outcomes in behavior and health (Spencer, 1999; Spencer et al., 1997). As an identity-focused, bi-directional, recursive explanatory framework, PVEST emphasizes individuals meaning making processes and identity-based coping responses to complex systems of power, oppression, and marginality within society (Velez & Spencer, 2018). Research that fails to address how macrosocial factors, such as racism, impact individuals at the micro-level, inadvertently blame individuals for adverse outcomes and subsequently contribute to deficit-based research (Bishop et al., 2004). As such, this framework provides an understanding of how African American adolescents interpret, understand, and react to discrimination, disrespect,

bullying and other social experiences that impact school connectedness and may lead to school dissonance.

However, PVEST is not without limitations. While I agree with Velez and Spencer (2018) that phenomenological relation to oppression and interconnected systems of power are critical components of youth identity development, I also recognize youth resistance to normalized patterns of systemic oppression also shape identities. Specifically, individual or collective forms of protest to unjust systems are a form of transformational resistance – a critique of oppression coupled with a desire for social justice (Solorzano & Bernal, 2001). It is the notion that African Americans react to, and demand change within, oppressive structures in ways that do not conform, nor perpetuate social reproduction of oppression.

As this study is concerned with contextualizing the environments that impact human development, I layer CRT with an ecological frame, PVEST. This union affords an understanding of how students are racialized - a process influenced by historical, social, and political factors impacting school environments. Also, this framework provides a schema for examining how school contexts vary according to race, ethnicity, and culture and how these factors shape human development and impact how students are connected to school environments. To emphasize, this framework includes a focus on race and the interconnected experiences of African American students with school connectedness.

World Health Organization Framework for addressing Social Determinants of Health (SDOH)

PVEST is used to explain the behavioral and emotional outcomes that are impacted by macrosocial factors; however, the ecological frame does not provide a conceptual understanding for how social hierarchies of power, prestige, and access to resources influence youth's response

to their environment. Furthermore, it does not center equity. Therefore, I add the World Health Organization's (WHO) SDOH framework as a mechanism for bridging race, ecology, and equity to contextualize how macrosocial factors work in tandem to impact, shape, and drive youth interactions. This framework contextualizes the school environment and provides a mechanism for understanding pathways to life outcomes that are impacted by the political, social, and historical context of schools within communities. As noted in the introduction, studies suggest that African Americans are less connected to schools than white and Latino students (Niehaus et al., 2016); however, research has relied heavily on examining connectedness measures among student-level factors such as race, SES, and gender (Biag, 2016). Yet, efforts to understand community ecologies in racialized political and social contexts that impact and shape school connectivity for African American youth is lacking. Specifically, by negating the role of racism in schools and communities, factors that have the potential to explain disparate outcomes between African American and white students remain invisible. This model conceptualizes the status of a community by considering the racialized political and socioeconomic context in which communities, schools, and individuals operate.

In this section, I will explain why I chose a health equity framework as an entry point for understanding school connectedness as a critical construct for shaping youth outcomes. First, I will provide a brief history of the development of the framework commissioned by the World Health Organization (WHO). Next, I will describe each section of the framework and the relationship to school connectedness. Last, I present a modified framework that includes school connectedness and pathways to student health and education outcomes.

The World Health Organization (WHO) Director-General Lee Jong-wook established the Commission on Social Determinants of Health (CSDH) to explore how social interactions, norms,

and institutions within societal hierarchies affect population health (Solar & Irwin, 2010). Jong-wook's aim of seeking global health equity in the spirit of social justice undergirds the commission's goal to "advance health equity, driving action to reduce health differences among social groups, within and between countries" (Solar & Irwin, 2010, p. 9).

Three reasons I consider this framework pertinent for understanding school connectedness are related to the core values of WHO that is foundational to the development of the framework. First, the development of this framework was funded by the World Health Organization, a global entity founded in 1948 on the principle that "health is a human right and all people should enjoy the highest standard of health" (World Health Organization, 2019). Second, everyone should have equal access to health. WHO defines health inequities as "health differences that are socially produced, systematic in their distribution across the population, and unfair" (p. 12). This core tenet is an antiracist stance against the systematic oppression of African Americans.

Third, this framework foregrounds the central role of power in creating, mandating, and perpetuating social hierarchies that generate health inequities. The conceptualizations of power (power over and power to) are synthesized and understood that in order to reduce health inequities, the redistribution of power within societies must be done to the benefit of disadvantaged groups. Compounded with a human rights perspective that asserts it is the government's responsibility to address social and environmental determinants for citizens to exercise their rights to attain high standards of health, the "spirit" of social justice is foundational to the framework. In other words, for groups and populations of people that are marginalized through systemic forms of structural oppression, the government must develop and support mechanisms that empower marginalized groups to make structural changes. As schools are social determinants of health, they have the capacity to, directly and indirectly, shape education and

health outcome trajectories of students. This tenet values the position of power in the hands of disadvantaged communities to restructure institutions for more equitable outcomes. In essence, to critically analyze measures of school connectedness for African American youth, researchers should consider levels of power for policy-making decisions that operationalize macrosocial factors in school contexts. In addition, the power dynamics in the governance of schools should reverse and emanate from disempowered oppressed communities, as opposed to those in power, to support equity. As previously mentioned, diverse schools are largely managed by a majority, white governance. The addition of this framework supports a conceptual analysis of racial, social, and cultural incongruencies shape, define, and possibly limit school and community dynamics.

Figure 1. 1 The Commission on Social Determinants of Health Framework
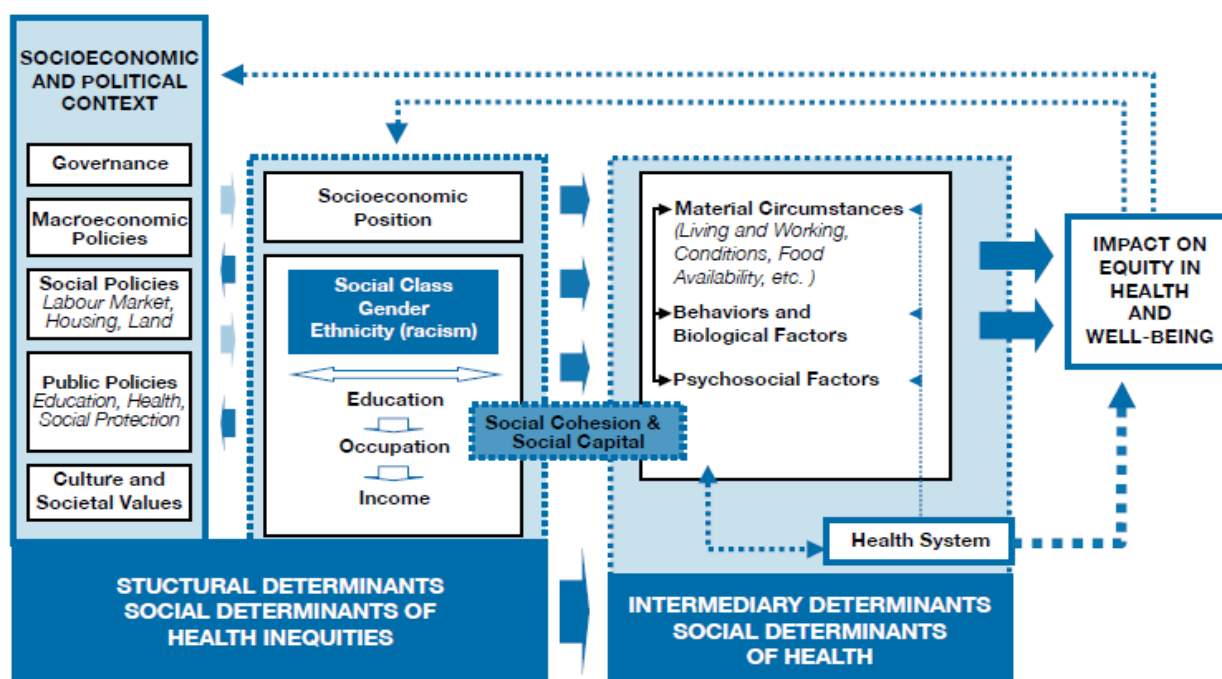
Note. The Commission on Social Determinants of Health (CDHS Framework) from Solar, O., & Irwin, A. (2010). *A conceptual framework for action on the social determinants of health*.

To understand the framework intimately, I address each section for clarity. The "CSDH framework", commissioned by WHO, contains three major components: socioeconomic and political context; structural determinants of health inequities; and intermediary determinants of health (see Figure 1.1 CDHS Framework). WHO broadly defines social determinants "as the full set of social conditions in which people live and work" (p.9). This framework demonstrates how the political and socioeconomic context influences socioeconomic positions and social stratifications that in turn, shape specific determinants of health status (intermediary determinants) reflective of an individual's position within a social hierarchy. The intermediary determinants then impact health equity and well-being.

Socioeconomic and Political Context. The macrosocial factors are components of a social system that influences an individual's health. These factors are related to the structural, cultural, and functional dictates of society that directly influences (and manages) the social contexts in which we live. Solar and Irvin (2010) identified five components of macrosocial factors. The first factor, *governance*, consists of the methods by which a society is regulated and managed. It involves the values, policies, and institutions that set forth rules and processes by which citizens must operate. Governance establishes the political, social, and economic parameters for citizens to advocate their interests and exercise their legal rights. The second factor, *macroeconomic policy,* includes fiscal, trade, and labor market management. Third, *social policies* regulate the distribution of housing, land, labor market. An example of regulating the distribution of housing for low-income families through "affordable housing" policies and programs. In a welfare state, *public policies*, the fourth factor, seek to protect and support the "governed" citizens. Public policies include free public education and provisions for health services and insurance, housing, and food. Public policies also include social and racial protection of civil rights. All citizens have the right to free and public education. For instance, in the state of Georgia, youth that reach the age of 5 by September 1 of each year, are required to attend a public, charter, private or home school in general education until the age of 20 or in special education until the age of 21 (Georgia General Assembly, n.d.). Given the exorbitant amount of time youth are required to attend school through graduation, it is conceivable that student connectivity to school has a positive relationship with attendance, achievement, and completion. Also at play at the macro-level is the fifth factor, *cultural ideologies and societal values* — factors that influence the societies which in turn, influences the local educational system. Taken

in sum, the macrosocial factors are identified as structural determinants that shape the living conditions of individuals and communities creating social stratifications.

Socioeconomic Position. The CSDH framework posits the previously discussed structural determinants shape and reinforce class divisions that define socioeconomic position within social hierarchies of power, privilege, prestige, and access to resources. Structural stratifiers associated with the distribution of health and well-being include social class, gender, race/ethnicity, and income given an individual's occupation and educational attainment. Health inequities are rooted in the structural mechanisms that shape social hierarchies. As such, this framework conceptualizes structural determinants as social determinants of health inequities (Solar and Irvin, 2010). However, the framework lacks a direct connection to racism and governance within social hierarchies that reinforces structural racism located within public institutions, like schools.

In the CSDH framework, *education* and income are understood as a "dose-response" and are directly related to a person's occupation. In other words, education is a qualifier for an occupation—the greater the education, the better the *occupation*, the more income a person may receive. *Income* is a measure of material living standards. According to Solar and Irwin (2010), income and education are social outcomes of stratification processes and occupation is a proxy for social stratification.

Race, gender, and sexual orientation. Race, gender, and sexual orientation are social stratifiers that are linked to systemic discrimination (Solar & Irwin, 2010). Although this framework did not identify sexual orientation as a social determinant of health, lesbian, gay, bisexual, transsexual, and queer or questioning (LGBTQ) individuals experience disparate mental health outcomes when compared to their heterosexual counterparts (Lewis, 2009). Additionally,

disparate health outcomes for LGBTQ youth is well documented and demonstrates the presence of Gay-Straight Alliance (GSA) clubs at schools reduces drinking, suicide attempts, truancy, and sex with casual partners (Heck et al., 2016; Poteat et al., 2013). While school connectedness of LGTBQ youth is not specifically addressed in this proposal, the experiences and conceptualization of connectedness of all students in the school environment contribute to the overall health of the school. The inclusion of ***sexual orientation*** in the framework addresses student's membership in a socially stratified group. Figure 2 is an illustration of Solar and Irvin (2010) conceptualization of structural determinants of health, and the right side of the picture is my conceptualization of individual and community contextual factors that shape school environments.

Since my research is focused on student perceptions within schools and across schools nested in school districts, I have added neighborhood and school/education to the framework and removed the occupation and education attainment relationship (see Figure 2). Additionally, since income in the CDHS framework is at the household level, it remains as a socioeconomic position in my framework. ***Family wealth/income*** is an indicator of the socioeconomic status (SES) of students and their respective family. In most education research, the SES of a school is determined by the number of students that qualify for free or reduced lunch fares. ***Neighborhoods*** and ***schools*** are also indicators of socioeconomic status. However, this relationship can be tricky. For instance, Lofton and Davis (2015) conducted an ethnographic study collecting data from African American students and parents living in a poor African American neighborhood attending a predominately white school. They discovered that African American parents perceived the school personnel and other residents outside of their neighborhood employed stereotypical notions of African American life and were negatively

characterized. In addition, African American parents perceived their neighborhood was associated with unemployment, crime, and illegal drugs while white neighborhood membership did not have the same associations. Although African American students have a small presence in the school, their "Blackness" and neighborhood association created a stratified group within the broader context of the school environment. Parent perceptions of feeling stigmatized by their white counterparts because of their African American neighborhood association highlights the importance of illuminating groups within larger, densely white populations. I have included neighborhoods and schools in this framework. An individual's neighborhood and school are possible indicators of socioeconomic status. A side-by-side comparison is listed below in Figure

Figure 1.2

CSDH Structural Determinants: The Social Determinants of Health Inequities
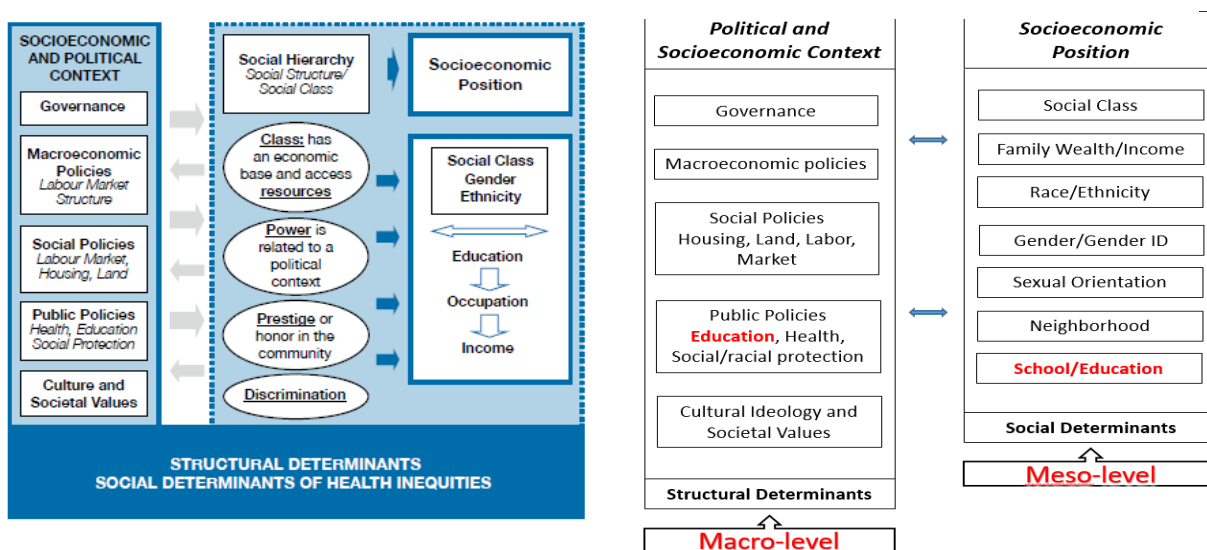
(Solar & Irvin, 2010)

1.2. Again, the framework I am developing is located on the right. This framework contains the macro- and meso- levels; however, I will return to the framework and add the micro-level factors at the completion of the review of literature that follows.

2 REVIEW OF THE LITERATURE

In this literature review, I first explore the historical and current conceptualizations of school climate and school connectedness, giving attention to the origins, evolution, and emergence of the constructs. Particularly, I explore the extent to which school connectedness constructs and conceptualizations may be valid for African American students. Second, I review commonly used measures of school connectedness, again exploring validity for African American students. Finally, I conclude with a synthesis of the literature and propose a conceptual framework of school connectedness for African American students drawing both on this literature and the theories I detailed in Chapter 1.

Development of the School Climate Construct

Researchers have examined relationships between student performance and school-level demographics such as race, socioeconomic status, urbanicity, financial resources, mobility, and teacher attrition (Guhn, 2009; Kotok, 2017; Lee, 2007, Caldas & Bankston, 1997; Anderson, 2017; Ingersoll, 2001); however, a paucity of research exists on statewide school rating and accountability systems and the ways in which school- and district- level characteristics impact these ratings. There is a current wave in educational systems across the country to incorporate school climate as a variable to assess school quality.

Origins of the School Climate Construct

School climate is a broad construct that includes the belief systems and shared meanings, physical aspects, and the patterns of social relationships of individuals within the school (Anderson, 1982). Researchers define school climate as the quality and character of school life based on patterns of people's experiences of school life that reflect established norms, alignment (or not) of values and beliefs, and the nature of interpersonal relationships (Cohen et al., 2009; Thapa, Cohen, Guffey & Higgens-D'Allessandro, 2013). In this broad conception of school

climate, school connectedness is embedded, yet restricted to only interpersonal relationships, a linkage that I complicate later. In short, school climate reflects the experiences, interpretations, and interactions of individuals involved with the school (students, parents, teachers, staff, and administrators). In a sense, it is the school's personality that has direct and indirect impacts on individual and school-level outcomes. School climate, as an assessment indicator variable, has a lineage that began with the theoretical conception of school culture.

The idea of *school culture* – the type of emotion and thought that is characteristic of individuals in a school environment – is considered to shape life and academic experiences of students and is not a novel concept. Early education reformers such as John Dewey and Arthur Perry grappled with the notion that social institutions, such as schools, have a unique culture that influence life outcomes for students in these institutions. Perry (1908) asserted that schools are systems in which the function of the principal is to influence the system through relationships to produce desired outcomes. He theorized that establishing *school culture* was a function of pedagogic relations with teachers and students produces a culture of success in developing the morality of students. Perry set the stage for examining schools in a business-like manner and the school building leader as the person responsible for setting the atmosphere that promotes success, which then "trickles down" into the classroom. To assess the school environment, Perry suggested the principal evaluate the local community influences and institutions that make up the social life of the community. In this evaluation, the principal must be prepared to act with these forces and conversely, upon these forces. Yet, Perry did not mention race or varying ethnicities and ideologies in his book. He referenced the classroom climate as a reflection of the teacher's personality that should encourage "moral refinement" as opposed to "meanness and vulgarity" (p. 320). His idea of a top-down, teacher-driven cultural climate is in stark contrast to a harmonious,

axiological stance of African worldview of a collective belief and value systems that are supported and reinforced across institutions within a community (Kambon, 2012; King & Swartz, 2016).

Writing a few decades later, Dewey (1930) theorized that a teacher's intimate acquaintance with the conditions of the local community, economy, and history informs learning experiences in the classroom. For Dewey (1930), education is a function of the social environment. Beliefs and attitudes are not drilled into students; instead, the environment influences dispositions, given the interactions and reactions of individuals within a "*social environment*" (p. 10). He posited that a student's actions are dependent upon the expectations, demands, approvals, and condemnations of other individuals to which the student is connected. Both theorists, Perry and Dewey, asserted that children's actions are influenced by connections to individuals and other institutions in which they interact – establishing the idea of a school culture comprised of external interactions and influences. Yet again, the recognition and analyses of students from different cultures and races, specifically African Americans, was nonexistent. This practice of generalizing theoretical orientations based on white European norms is problematic. A sentiment Carter G. Woodson expressed in *The Mis-Education of the Negro* when he writes, "Negroes have no control over their education and have little voice in their other affairs pertaining thereto" (p. 19). Whitewashing of African American ways of knowing in research is noted by African American scholars. Joseph Baldwin (1986), a Black psychologist, noted Euro-American psychology has defined the social pathology of black behavior, rather the distortion of Black people's reality, based on their views of white normality.

Evolution of the School Climate Construct in Educational Measurement

Between 1911 and 1925, educational efficiency experts emerged and began to measure efficiency within schools and the effectiveness of teachers by developing scales for rating teacher efficiency and administering achievement tests to students (Callahan, 1962). Although school climate has been around for at least a century (Perry, 1908), the effort to provide an empirically-based and grounded definition has not yielded a consensus definition. A challenge in educational research arena is the numerous ways school climate is defined and assessed.

The scientific study of school climate began in the 1950s with the emergence of organizational climate research (Zullig et al., 2010). Organizational climate researchers focused on analyzing correlations between an organized school environment and outcomes such as morale, productivity, and turnover (March and Simon, 1958; Argyris, 1958). Additionally, educational researchers began to systematically study the effects of school organizational climate on student development and achievement.

School climate research blossomed in the 1960s with the development of the Organizational Climate Description Questionnaire (OCDQ) by Halpin and Croft (1962), a scale that relied on the perceptions of the participants to define school climate. In this instance, the participants are teachers and the principal. Students are not included in the OCDQ measure. This instrument was initially developed for use in the elementary school for the purposes of faculty self-evaluation and describing the school climate. The scale contained a total of 69 items to assess teachers' and principals' behavior. Items that assessed the teacher's behavior contained four subtests focusing on the following constructs: disengagement, hindrance, esprit, and intimacy. Additionally, the items that assessed the principal's behavior contained four subtests focusing on aloofness, thrust, consideration, and production emphasis (Halpin & Croft, 1962). These sub-constructs, for the principal and teachers, did not include interactions with students. On the

contrary, this assessment focused on how the principal manages the teaching staff and how teachers interact with other teachers. For instance, a factor under the "aloofness" construct assess if the principal is organized and running faculty meetings in a business-like manner. Whereas the "intimacy" construct marginally evaluates if teachers are social and personal with other faculty members. The intimacy construct does not go in-depth of understanding relationships but clearly inquiries about the social actions of the teacher. (e.g., Teachers have fun socializing together during school time, teachers invite other faculty members to visit them at home).

This scale was widely used in over 100 studies between 1963 and 1976 (Anderson, 1982). However, in a comprehensive review of school climate research, Anderson (1982) found empirical studies that identified the OCDQ as "inconsistent and theoretically meaningless" while others reported a "significant relationship between some of the OCDQ climate dimensions and student achievement" (p. 375). Brown and House (1976) and Thomas (1976) reviewed published and unpublished studies and concluded the OCDQ did not consistently associate climate and student achievement, suggesting the measurement or the theory may be flawed. Thus, this early measure of school climate received mixed reviews from organizational climate researchers and raised questions about the validity of the scale.

Halpin and Croft's (1962) scale evaluated climate from a leadership perspective whereas Tricket and Moos (1973) extended the organizational climate to include student-level variables, such as academic aptitude and intelligence, personality, and family factors – the school environment – that influence outcomes (Lee et al., 2017). This scale was administered in both middle and secondary schools to teachers and students as climate is viewed as a function of all participant's perceptions of classroom interactions (Anderson, 1982). Tricket and Moos attempted to capture the psychosocial environment – the interpersonal relationships within the classroom

and the structural aspects of the classroom (i.e., classroom rules). However, these measures lacked any indicators using race as an independent variable; thus, we cannot make definitive conclusions regarding how different racial groups respond and interact within different classroom environments.

Evolving Conceptualizations and the Search for a Consensus. In the 1970s, school climate definitions continued to evolve with the development of new measurement instruments. Brookover and colleagues (1978) examined school climate – defined as a set of norms and expectations perceived by teachers and students within the school – and concluded the greatest indicator of achievement is how students felt within themselves about the school environment. In this examination of majority African American schools, majority white schools, and a representative sample of public schools in Michigan. With this shift from analyzing the climate at the school-level, the researchers shifted the unit of measurement to the individual student-level therefore, implying the assessment of school climate is a student-level construct and beginning to blur the lines between school climate and school connectedness. Using interviews, observations, and questionnaires, the researchers concluded that in the majority African American schools, racial composition nor socioeconomic status does not explain the variation in student achievement above and beyond school climate. It was noted that teacher commitment and the teacher's perception of student commitment accounted for more of the differences in achievement in the African American schools than white schools. This research suggests that in African American schools, teacher's perceptions of students and their commitment, variables associated with school climate and teacher-student connections, are strong predictors of African American student achievement. Equally important, school climate is more about student interactions and

experiences within the social context of school, inviting school climate researchers to grapple with student perceptions of social relations (i.e. connectedness) in schools.

In the last few decades, educational researchers have continued to be challenged with establishing a definition of school climate, as well as identifying constructs that measure or mediate school success. In a *Review of Educational Research* article published in 1989, Jeremy Finn examined the "problem of school dropout" that he described as a "national obsession" (Finn, 1989, p. 117). Synthesizing the behaviors of students "at-risk" for dropping out of school, Finn's analysis focused extensively on research about individual behaviors such as skipping class and truancy, disruptive classroom behavior, juvenile delinquency, and other behavior problems – behaviors categorically reserved for low-income, minority students. When describing "early school leavers," Finn (1989) states, "it compounds the problem that disproportionate numbers of minorities and children from homes of low socio-economic status leave school without graduating; these youngsters will be all the more handicapped without a high school diploma or the literacy skills it represents" (1989, p. 117). He further connotes these youth as burdens on social welfare programs. At the time of his publication, Finn discovered that no empirical studies focused on student participation and school identification for students identified as having behavior problems that lead may to school withdrawal. Finn (1989) cites literature that pervasively demonstrates that the correlations between dropping out, attendance problems, disruptive behavior, and delinquencies are statistically associated with school performance, SES, native language other than English, or undiagnosed learning disabilities; yet the research did not examine the developmental processes throughout the schooling years that may lead to dissonance and dropping out. As a result, he called for research to focus on student participation and school identification as students mature through grades, the relationship between school participation,

school outcomes, and how varying levels of student identification are perceived. More importantly, he calls for a research emphasis on two constructs (school identification and participation) examining the correlations between school performance, educational aspirations, expectations, attitudes toward school and school subjects, and academic self-concept. Finn's review of research invited researchers to theorize on the actions associated with school participation and membership that lead to school dissonance.

Shifting from School Climate to School Connectedness

Carol Goodenow (1993) hypothesized that belonging or sense of psychological membership influences motivation and mediates effort, participation, and subsequent academic achievement. Goodenow (1993) defined a sense of belonging to school as the extent to which students feel personally accepted, respected, valued, included, and supported by others in the school environment. Drawing on Finn's (1989) conception of belonging and Wehlage and colleagues (1989) theory of school membership, Goodenow conceptualized school connectivity and membership as a salient variable in gauging student success. However, in the same decade, Freiberg and Stein (1999) defined school climate as the "quality of a school that helps each individual feel personal worth, dignity, and importance, while simultaneously helping create a sense of belonging to something beyond ourselves" (p.1). Here, we see a divergence in researcher definition and terminology as scholarship expands. Both definitions center an individual's sense of feeling valued in their school environment. However, one definition delineates climate as a dichotomous noun that identifies the atmosphere as a driver of harmonious interactions among all individuals in the building. For the second definition, connectivity is student-centered, focusing on student connections and feelings of self. Freiberg and Stein (1999) define belonging within the context of school climate – the "essence of a school that leads a child, teacher, an administrator, a

staff member to love the school and to look forward to being there each school day" (p. 11). For these researchers, school connectedness is a sub-dimension of school climate. While Goodenow (1993) situates school connectivity as a unidimensional construct, school membership, based on Wehlage and colleagues (1989) theory of students that are isolated from others, especially adults, are more likely to withdraw or drop-out of school. Although the blurred lines, as previously discussed, between school climate and school connectedness still exists, a chasm in the line of research between the two emerges. One must begin to ask the question: What is the centripetal force driving student success in schools? Is it a bottom-up, student-centered or top-down perspective? What is more important: school climate or school connectedness?

Emergence of the School Connectedness Construct in Educational and Public Health Research

The divergence in research led to an expansion of literature in health and education focusing on student connections to school – connections that are student-centered. According to the Centers for Disease Control (2010), school connectedness is the belief by students that adults in the school care about their individual well-being and learning. Students with strong connections to school have lower rates of participation in health-risk behaviors including substance abuse, acts of violence involving weapons, and early sexual experiences (Catalano, Haggerty, Oesterle, Fleming, & Hawkins, 2004). Moreover, students perform better in school and report fewer absences, higher test scores, and grades (Blum, 2005). Students' perceptions of having a positive relationship with adults and peers and their sense of valuation within the school ecology impact their sense of belonging. It encompasses the belief that students have a positive relationship with adults, peers, curriculum, and the school building.

A subsequent literature review found numerous definitions for school connectedness in health and education research. For instance, in a review of school connectedness measures and constructs, Libbey (2004) discovered school attachment, bonding, connectedness, and engagement are commonly used terms in health and education literature. She discovered that researchers using the same dataset used different scales to measure the same construct. For example, the National Longitudinal Study of Adolescent Health (Ad Health) dataset contains different measures used by different researchers. Resnick and colleagues (1997) coined the term "school connectedness" as a dimension containing six questions in the Ad Health survey, while Moody and Bearman (2004) refined the school connectedness scale into a three-item scale under the construct *school attachment* to investigate the relationship between friendships and suicidality adolescents. McNeely, Nonnemaker, and Blum (2002) examined the relationship between *school connectedness* and the school environment using five items from the survey. Two years later, Galliher, Rostosky, and Hughes (2004) used five items from the Ad Health data to examine the associations of *school belonging*, self-esteem, and depressive symptoms with sexual attraction. Table 2.1 details the ambiguity of the school connectedness construct and the many terms and variation of questions used to assess connectedness from the Ad Health dataset.

Table 2. 1

Ad Health Dataset for Different Scales with Varied Questions Measuring School Connectedness

Author/Source	Construct/Dimension	Items	
Resnick et al. (1997)	School	1.	I feel close to people at this school
		2.	I am happy to be at this school.
	Connectedness	3.	I feel like I am part of this school.
		4.	The teachers at this school treat students fairly.
		5.	How much do you feel that your teachers care about you?
		6.	I feel safe in my school.
Moody and Bearman (2004)	Attachment to School	1.	I feel close to people at this school
		2.	I feel like I am part of this school
		3.	I am happy to be at this school
McNeely et al. (2002)	School	1.	I feel close to people at this school
	Connectedness	2.	I feel like I am a part of this school
		3.	I am happy to be at this school.
		4.	The teachers at this school treat students fairly.
		5.	I feel safe in my school.
(Galliher et al., 2004)	School Belonging	1.	I feel close to people at school
		2.	I am happy at my school
		3.	I feel like I am a part of this school.
		4.	The teachers at this school treat students fairly.
		5.	I feel safe in my school.

Note: Examples of variations of school connectedness constructs using the Ad Health data set.

Hierarchical Complexities of the School Connectedness Construct

The identification of school climate as a separate construct or a sub-dimension of school climate added to the complexity of defining the construct. According to the National School Climate Council (2007), school climate is based on patterns of people's experiences of school life and reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures. In a review of school climate research, Cohen, McCabe, Michelli, and Pickeral (2009) added that norms, values, and expectations support individuals feeling

emotionally, socially, and physically safe. Cohen and colleagues extensively reviewed school climate education research and the implications for policy, practice, and teacher education. Cohen and colleagues extensively reviewed school climate education research and the implications for policy, practice and teacher education. Their review of research identified four essential dimensions of school life and experiences that shape climate: Safety (social and emotional), Teaching and Learning (instructional quality, professional development, and leadership), Relationships (connectedness, school and community collaboration, and respect for diversity) and Environmental-Structural (cleanliness, extracurricular offerings, inviting aesthetic quality, space and materials). School connectedness is not a separate sub-dimension. In this conception, connectedness refers to student as engaged learners, connected to one or more adults, and possess good feelings about the school and school community. Although school connectedness is not clearly defined as a sub-construct, elements of connectedness are located in each of the sub-dimensions – further validating the importance of connectedness. Student perceptions of teacher expectations, respect for diversity, emotional support, and personal safety are associated with how students grapple with- and understand their interactions with others.

Also, Cohen and colleagues' (2009) review of research highlights the emergence of school climate in school accountability measures. In addition to identifying major constructs, the researchers used document analysis and descriptive statistics to analyze legislative documents, state standards, and state accountability practices that contained climate-related policies. They concluded that many states do not include state climate policy in general accountability plans and of the 22 states with an integrated climate policy into their improvement and accreditation systems, the vast majority of the states understood climate as a health, special education, or school safety issue. A profound finding included the lack of psychometrically sound and valid

school climate scales used to assess climate as many "homegrown" assessments are used by schools (Cohen et al., 2009, p. 192). Additional school climate reviews found definitions, measurements, models, and experimental methodologies problematic (Thapa et al., 2013). Adding to the school climate research reviews previously conducted, Thapa and colleagues (2013) recommended that "school climate measurement initially be conducted with the use of reliable and valid surveys and observational measures that assess how students, parents/guardians, school personnel, and community members perceive school life in four major areas: safety, relationships, teaching and learning, and the institutional environment" (p.371). Not only is school connectedness, nor climate as an overarching construct clearly defined in the research, states are using this data to inform school and instructional practices begging the need for educational researchers to clearly define, measure, and contextualize factors that influence education outcomes.

For Thapa, Cohen, Guffey, and Higgins-D'Allessandro (2013), school climate reflects "students', school personnel's, and parents' experiences of school life socially, emotionally, civically, and ethically as well as academically" (p. 369). In their review of school climate research, Thapa and colleagues evaluated five sub-dimensions of school climate: safety, relationships, teaching and learning, institutional environment, and the school improvement process. Safety, relationships, and teaching and learning were similar to the previous review by Cohen and colleagues; however, the institutional environment included the physical layout of the school and school connectedness/engagement. Here, the idea that school connectedness/engagement is listed under institutional environment suggests a linkage to the school that exists outside of interpersonal relationships. Instead, school connectedness is associated with school size. Studies centered on the correlation of school size to perceptions of

school connectedness, safety, and number of bullying incidents. In short, the school is more than a setting for academic learning; is it a space for students to form prosocial relationships, learn independence, and develop socially, emotionally, behaviorally, and cognitively (Cohen et al., 2009; Wang & Degol, 2016). Connectedness with the institutional environment infers that students have a bond to their school institution and the aesthetics of the building is important to how students perceive this space. However, as these contemporary definitions expand, the conception school connectedness is grounded in student and adult perceptions of their relationships, feelings of respect and dignity, social norms, and classroom experiences with teaching and learning.

In a subsequent review of school climate instruments and their development, Zullig, Koopman, Patton, and Ubbes (2010) discovered historically common school climate measures were developed 20 years prior without any reported psychometric properties in peer-reviewed journals. Additionally, their review identified school connectedness as a separate and fifth dimension of school climate; removing this sub-dimension from relationships as previously mentioned. The other four dimensions included academic outcomes, social relationships, school facilities, and order, safety, and discipline. In this conception, social relationships included student-teacher, student-student, and helpfulness of school staff while school connectedness included feelings about school, emotional expressions toward school, and students feeling valued for their input. While I agree with the finding that school connectedness is a sub-dimension of school climate, I'm cautious about the delineation between school connectedness and social relationships. In this review of research, school connectedness is less about relationships and more about student behavior, their feelings toward school, and feeling intellectually safe to contribute to the learning environment. Students that are enthusiastic, excited, and engaged

learners express positive feelings about school. But one must ask, what are the interactions, relationships, and experiences in school that lead to positive feelings of connectedness?

In a recent report by EdQuest Georgia (2017), a safe and respectful climate includes students and teachers feeling safe and comfortable in school without the threat of violence. In addition, the construct considers the extent to which teachers and students show mutual respect to one another and the school. This language is about body protection and does not refer to safe environments for the discussion of intellectual thought of diverse minds, but more of a protectionist view from violence. Moreover, the discussion on high expectations in the report is focused on high expectations for student behavior and student performance that encourages "pupils to work hard and follow the rules to continue with their academic progress" (EdQuest, 2017, p.52). This language relates more to developing a positive work environment for students to thrive. Yet, the previous review identified school connectedness as creating a space in the school environment for intellectual thought. Connectedness through reciprocal relationships of mutual respect, as a sub-dimension, is implied.

Still, a positive atmosphere is contingent on student perceptions of feeling connected to school. According to Furrer and Skinner (2003), "…secure attachments and their corresponding internal representations function as a safe haven, allowing children the freedom to explore and to engage constructively in activities and interactions with others" (p.148). Furrer and Skinner (2003) examined connectedness across different social partner relationships (peers, teachers, and parents) and children's academic motivation and performance during middle childhood. The researchers concluded that children's sense of belonging plays an important role in their academic engagement and motivation. They found that children with a higher sense of connectedness show greater behavioral and emotional engagement in school. However, the

results of this study are limited to white students as they made up 95% of the population sample (n = 948). The researchers characterized the students in the school as "generally doing well, reporting high relatedness to all social partners, and showing constructive engagement and good school achievement" (Furrer & Skinner, 2003, p. 159). This characterization suggests that connected students equate to a positive climate. Furrer and Skinner (2003) state, "Moreover, it is likely that the *majority* of children in this sample felt a solid sense of being *welcome* in *their* school" (p. 160). This statement points to the need for this research. white students (i.e. the *majority*) are abundantly *welcome* and connected to "*their*" schools; however, the question remains about the African American, Hispanic, and other children's sense of connectedness in a school where their existence is in the margins.

In the EdQuest Georgia report, the idea of school climate is about controlling and managing student bodies to ensure rules, policies, and procedures are followed. This report also discusses attendance as an element of an effective system that produces a supportive learning environment. The report underscores that "many of the factors that influence student attendance correspond to the health and home life of students" (p.51) without commenting on the mechanisms that may lead to school dissonance or disengagement and the macrosocial factors that impact families and students. Here, school climate is about perpetuating "law and order" policies to create a positive climate through student control and management. The positive climate is an outcome. However, as noted previously, factors that influence positive school behaviors, such as attendance, is rooted in school connectedness. Again, positioning school connectedness as the primary construct for understanding health and education outcomes.

Measuring School Connectedness

Looking across the last century, African American students are invisible in early research and examination of school climate. In fact, examination of socioeconomic status, race, and student achievement did not appear until the 1970s (Schneider & Brookover, 1974). Additionally, in early climate research, the term "culture" is used to describe the emotional atmosphere of the entire school body. As Perry emphasized, the principal needed to harness a "culture of success." This concept of culture is still prevalent in contemporary research and is observed as a "top-down" principal-established set of norms, customs, and beliefs. This is evident in school accountability jargon as principals are still evaluated on school climate, suggesting it is their responsibility to establish a positive climate, inclusive of shared, positive social norms, values, and goals.

Similar to the evolution of school climate constructs, African American students are missing from foundational research on school connectedness (Nasir et al., 2011). For instance, Resnick and colleagues (1997) coined the term school connectedness (students perceive they are a part of the school, teachers treat them fairly, and they are close to someone) to the school after analyzing data from the National Longitudinal Study of Adolescent Health (Ad Health) to understand the relation between family, school contexts, and health. The researchers reported the categories of race (Black and white, non-Hispanic) and ethnicity (Hispanic: white or Black, Asian/Pacific Islander, or American Indian). It is important to note that within the Hispanic ethnicity, 98% reported white and 2% reported African American, further denoting the eminence of racial hierarchies and proximity to whiteness. The sample was weighted to reflect a national representation of race and ethnicities. This suggests that 13-15% of the sample represents African American students; however, we are unaware of their school and community contexts which leads

to inquiries about the interpretation of the results for this group. The results of the study are not reported by race, rather demographic variables such as grade band, gender, geography, region, and poverty are reported. While the researchers concluded "that perceived caring and connectedness to others is important in understanding the health of young people today," the salience of African American connectivity is difficult to ascertain.

In sum, school connectedness, as a construct in and of itself and as a sub-construct of school climate, is still developing as researchers grapple with defining school climate, and a consensus on the definitions of school climate and connectedness does not exist. Additionally, psychometric properties of commonly used school climate scales are absent from research literature, and many mandated school climate measurements are locally developed and do not undergo rigorous validation methods (Thapa et al., 2013, 2013; Zullig et al., 2010).

Conceptualizing School Connectedness for African American Students

African American scholars have examined African American connectivity of communal and school ecologies of African American students before and after school desegregation in the United States. The connections described by educational historians examining black schools tell a story of creative opposition to a racist society.

School Connectedness and Valuing

African American scholars have expanded our historical knowledge of African American connectivity in segregated Black schools in the south. Siddle Walker (2002) reviewed education research on the history of African American education in the south from 1935 through 1969 to extrapolate the valued characteristics of the Black segregated school. She discovered a certain type of schooling that emerged from struggles with inequality and racism. These struggles defined the purpose of schooling in Black schoolhouses. She stated, "The schools operated with

a well-defined purpose for African American uplift that was shared by teachers, principals, and community members" (Walker, 2002, p. 276). The closed system of segregation created microcosms of shared connections across institutions marked by beliefs and values among students, parents, and community members. According to Walker, "Black segregated schools were characterized by self-efficacious, committed, and well-trained black teachers; extracurricular activities that encouraged students to utilize their multiple talents; strong leadership that engaged parents in the support of the children's education; and institutional and interpersonal forms of caring that encouraged students to believe in what they could achieve" (Walker, 2009, p. 273). Black segregated schools were valued for the impact on students and their civic contributions to society, despite a racist society. As Horsford (2010) states, "…much of the literature on all-Black schools captures the communal bonds, collective work, and caring that characterize the type of safe, supportive, learning environment that many Negro students enjoyed pre-Brown" (p.37).

Past and present research underscores the value, utility, and importance African Americans place on education as a form of liberation (King & Swartz, 2016; Siddle Walker, 2002). Equally important are the positive classroom behaviors of African American students. And yet, African American youth persistently score school connectedness low. For example, Niehaus, Irvin and Rogelberg's (2016) research on school connectedness and valuing as predictors of behavioral engagement (i.e., classroom behaviors such as tardy to class, completes homework, number of absences, and if the student was attentive) in Latino Youth provided support that African American students continue to value school. Using data from a nationwide study, they discovered African Americans value school at higher rates than their white and Latino counterparts even though school connectedness was scored the lowest. In addition,

teachers rated African American students the lowest on Behavioral Engagement while rating white students the highest. In this study, school connectedness is operationalized as a relative construct assessing the relationships between teachers and students at the school-level. Interest in school, future aspirations, and utility of education for future prospects were indicators of School Valuing. Although the school connectedness construct is limiting, it does provide insight into the relationships between the teachers and African American students. The results suggest that while African American students are interested, see the value and need for an education at higher rates than their white, Asian, and Latino counterparts, they perceive teachers to be less interested in students.

In a similar study using data from the national Ad Health survey, Johnson, Crosnoe, and Elder (2001) also found that African Americans students scored lowest on measures of school connectedness in comparison to white and Hispanic students. Johnson and colleagues measured school connectedness by student's perceptions of feeling close to people at school, feeling a part of their school, and being happy at their school. Again, this definition is limited for African American students. Similar to the aforementioned study, African American students were more likely to exhibit positive behaviors of school engagement, such as complete homework, attend classes, and pay attention, than their white and Latino counterparts.

Alternately, Nasir, Jones, and McLaughlin (2011) conducted a mixed-methods case study in a predominately African American urban high school. The researchers found varying levels of behavioral engagement among students. For students that demonstrated low levels of behavior engagement (i.e., number of tardies, absences, missing assignments, lack of attention), the teachers exhibited low expectations where students were allowed to fail and had little access to resources on college preparation. Poor class attendance was an outcome of low expectations, a

school-wide characteristic. Although teacher demographics were not reported, all studies demonstrate the role of teachers as academic gatekeepers (Swartz, 2009) to school connections and positive behavior outcomes. More importantly, these studies do not provide a full assessment of how race and racism in different school contexts may impact perceptions and expectations which in turn, may result in disparate behaviors between African American and white students. Furthermore, the limited conception of school connectedness limits further analyses of other factors that impeded Black connectivity in schools.

Connectedness, Discrimination, and Racial Context

In the process of desegregating schools, African American students, teachers, and the community suffered significant loss, including a cohesive relationship between the school and members of the community (Morris, 2009). Despite the divestment of Black segregated schools – the systematic firings of African American teachers - during the desegregation process (Horsford, 2011; V. S. Walker, 2009), the connections to- and with- schools remain central to the success of African American students (Ewing, 2018; Nasir et al., 2011; Sojoyner, 2016; Tomek et al., 2017). This was evident in the rise of student protests during school integration as school district leaders were met with demands for more African American teachers in administrative positions, reinstatement of African American teacher contracts, and African American studies courses. Students were also concerned about a lack of understanding of African American culture and backgrounds by white teachers and white domination and control, as well as, attempts to dehumanize, degrade and destroy African American children's feelings of worth (Harris, 2012). Not surprisingly, the systematic disbanding of Black segregated schools and removal of African American teachers resulted in critically low numbers of present-day African American educators.

African American student's perception of discrimination, differential treatment, and exclusion by adults in tandem with school racial composition are associated with low school connectivity. For instance, Dotterer and colleagues (2009) found that experiences with teacher and peer discrimination were negatively related to school bonding in a sample of African American middle and high school students. Adding school racial context, Walsemann, Bell, and Maitra (2011) found that as the percentage of white students increased, African American students in the school were more likely to report unfair treatment by teachers and were less likely to report feeling part of the school, feeling happy to be at school, or feeling close to people at school.

To add, unfair treatment, biases, and perceived discriminatory policies that lead to disparate outcomes are associated with low school connectedness for African American adolescents. For example, disparate racial gaps in out-of-school suspension between African American and white students were negatively associated with African American students' perceptions of a supportive school environment. Bottiani and colleagues (2017) found that in schools where African American students have a high risk of out-of-school suspensions, they reported lower levels of school connectedness (i.e., "I feel like I belong," "I feel close to people," and "I feel like I am a part of this school"), whereas this association was not significant for white students. The researchers operationalized school support into three dimensions: *caring* – warmth and regard for students as individuals; *high expectations* – a student's ability to meet a high standard; and *equity* – all students are treated the same and the school provides instructional material that reflects my culture. In a separate examination of the relationships between supportive relationships with adults at school and racial composition, the same research group found that African American student's perceptions of a supportive teacher relationship were the

lowest among racial groups (Bottiani et al., 2016). In particular, as student diversity increased, African American students' perceptions of teacher support decreased.

Taken together, this research demonstrates that schools where peers, teachers, and other adults create a school environment that communicates fair treatment and fewer experiences of discrimination, may increase school connectedness for African American youth. We can assume that post-desegregation, African American students' experiences with differential treatment and discrimination increased. It is conceivable that for African American students, predominately Black schools may function as a protective buffer against perceived acts of discrimination and may increase school connectedness. However, conceptions of school connectedness across racial groups are still unclear. This may inform us that school connectedness is operationalized differently for groups based on race.

Connectedness and Community

Some of the research has focused on the cultural connectedness shared among the pillars of the African American community, specifically the church and schools at the meso-level. For instance, James Morris conducted an ethnography of two successful African American urban schools during the 2000s with deep connections with African American families. He discovered these schools maintained intergenerational bonding with families through creative methods that spanned forty years. Through communal bonding (Morris, 2004), the African American community demonstrated a conceptualization of connectedness with schools that supported African American success. Morris (2004) discovered an urban space where students were valued, respected, and intellectually safe.

Currently, predominately Black schools face threats of school closure, or school repurposing, as charter schools emerge in historically African American communities. A

discontinuity of existing communal bonds and interpersonal connections within schools is challenged. Ewing (2018) provided a historical conception of racist ideology undergirding infrastructure on the south side of Chicago, specifically housing and schools. This contemporary example illuminates how students, parents, teachers, and community members argued at school board hearings that "the value of care and relationships: that the bonds shared within each school mattered, that they were tangible and irreplaceable" (Ewing, 2018, p. 121). For African Americans, interpersonal, communal, and institutional connections are valuable, necessary, and a life-line for survival in a racist society. Therefore, the need to understand school connectedness – conceptualizations and methods – as a critical construct that supports the success of African American youth is warranted.

Relationships with adults in the community and schools can strengthen school connectedness for adolescents. For instance, in a multilevel model examining the link between life satisfaction and personal and ecological assets, Oberle, Schonert-Reichl, and Zumbo (2011) found that supportive and positive relationships with non-related adults in the community and a strong sense of school connectedness were significantly and positively related to well-being in youth. Concerning African American adolescents, community connections continue to play a salient role in their health. For example, Matlin, Molock, and Tebes (2011) found that family support, peer support, and community connectedness are protective factors against suicidality in a sample of African American youth. Furthermore, there is also evidence that community engagement in extracurricular activities is associated with school connectedness. Creative engagement outside of the classroom through extracurricular activities influences school connectedness (Sojoyner, 2016).

School Connectedness and Praxis

Acosta and colleagues (2018) developed a conceptual framework reflecting the African American Pedagogical Excellence (AAPE). This framework focuses on the ideology, beliefs, and instructional practices of African American educators. Grounded in African American epistemology that shapes teacher behavior and attitudes, AAPE acknowledges connectedness as practical enactment of effective teaching and learning for students with a history of disenfranchisement, as well as, Euro-American students (Acosta et al., 2018).

Similarly, Molefi Asante's (2017) conception of revolutionary pedagogy is grounded in the study of African and African American history and cultures. Asante (2017) characterizes his pedagogical framework as a political and cultural act of teaching that challenges the status quo by confronting Eurocentric epistemologies. In the same manner, King and Swartz demonstrate the importance of an emancipatory pedagogy that promotes communal bonds by centering student's culture in the curriculum. Teachers may create a sense of connectedness and cultural continuity when using student's culture as a "medium for interaction around what knowledge and teaching mean" (King & Swartz, 2016). Consequently, African American school connectivity is about what is taught, how it is taught, and the facility in which it is taught. Within the context of teaching and student preparation, school connectedness is about preparing youth for a globalized world that devalues the African existence, as seen in current curricula and school policies. These political structures do not center the histories of African and African Americans, thus valuing European ways of knowing and doing (Asante, 2017). Without a connection to culture, students are not connected to the adults in social spaces they attend daily.

Nasir and colleagues (2011) conducted a 2-year ethnographic case study at a predominately African American, high poverty urban high school. Using an ecological and sociocultural frame, they conducted the study by assuming school connection is "always an

interaction between the individual and his or her school and broader social context" (p.1761). The researchers contextualized school connectivity within social, cultural, and institutional processes. Challenging the validity of current and previous school connectedness research was core to this study. They stated, "the racial and demographic makeup of studies that measure and interpret the meaning of various indicators of connectedness often do not adequately represent students from non-dominant groups" (Nasir et al., 2011, p. 1759). Specifically, they focused on processes that are traditionally viewed as individual processes situated within the larger, contextualized school ecology.

Interpersonal Connections. Interpersonal connections represent the relationships students have with peers and other adults (Nasir et al., 2011). Student interactions with teachers are important, as factors like connectedness to teachers have been shown to affect outcomes such as attendance, achievement, and completion (Niehaus et al. 2016; Sakiz et al., 2012). Additionally, students that are connected to at least one adult in the school are more likely to experience a sense of belonging and academic enjoyment (Sakiz et al. 2012). Student interactions with peers and adults in the school are experienced as stressors or supports and may indirectly impact academic outcomes and mental well-being. For instance, a student that is connected to an adult in the school may experience low episodes of violence, resulting in a state of happiness and academic achievement.

Institutional Connections. Institutional connections relate to a student's behavioral interactions, given their level of engagement and interest in the programmatic offerings in the school. Students that are connected to their schools display positive behaviors such as attending class, being prepared for class, paying attention, completing assignments, and participating in extracurricular activities (Nasir et al., 2011). While Nasir and colleagues identify student actions

as evidence of connections to school, I argue these behaviors are outcomes of school connectedness (see Figure 2.1). I will return to this argument after the literature review, where I offer a conceptual framework for school connectedness.

Figure 2.1

Figure 2. 1 Conceptualizing an Integrated Model of School Connectedness

(Solar & Irwin, 2010)   (Nasir, Jones, & McLaughlin 2011)
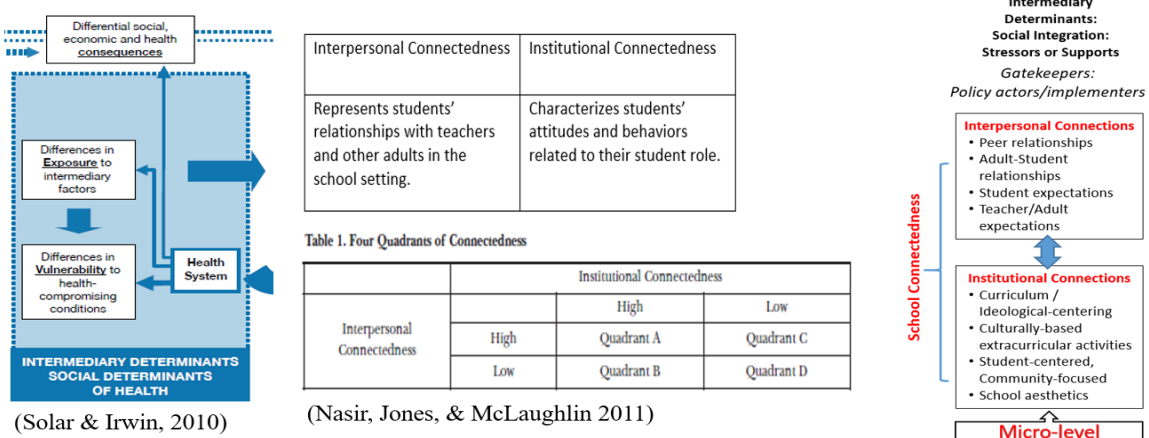
School Connectedness and Race, Gender, and Grade-Level

Student perceptions of school connectedness may be confounded by pre-existing differences in student's background characteristics. Research that includes student background factors, such as race, gender, grade-level, and socioeconomic status, is commonly used in school climate and connectedness studies (Karcher & Sass, 2010b; Tomek et al., 2017; Zhu, 2018). There is some evidence that rates of school connectedness differ across race/ethnicity, gender, and grade level. Studies on school connectedness often report African American/Black students are less connected to school than their white counterparts. For example, Anyon, Zhang, and Hazel (2016) found that African American, Native American, Asian, Latino, and Mixed-race students reported lower levels of school connectedness when compared with their white counterparts. Similarly, Niehaus and colleagues (2016) reported that African American youth are less connected to schools than their white and Latino counterparts. With respect to gender,

studies have suggested that girls are more connected to school than boys (Karcher & Sass, 2010b; Tomek et al., 2017). While other studies have found gender was not associated with feelings of school connectedness (Atkins et al., 2014; La Salle, Parris, et al., 2016). And yet, in the previously discussed study by Anyon and colleagues (2016), males were more connected than females. Grade-level differences in perceptions of school connectedness were also noted in some studies (Johnson et al., 2001; Tomek et al., 2017). Johnson and colleagues (2001) found that while girls are more connected than boys to middle schools, girls are less connected than boys to their high schools. While Tomek and colleagues (2017) discovered that school connectedness, in general, decreased as students advanced from middle school to high school.

However, studies at the intersection of race, gender, and grade-level provide different results. Hughes, Im, and Allee (2015) found that while girls reported a higher sense of school connectedness than males, the effect was not consistent across different racial groups. They found that girls and African American boys continued to report higher levels of school belonging than white and Latino males across middle school. Variables in this study include the independent variable race/ethnicity, along with two covariates: gender and grade-level.

Commonly Used Measures for School Climate and Connectedness

School climate and school connectedness scales are widely used to assess student and teacher perceptions of the school environment. In this section, I review two assessment scales commonly found in school connectedness literature. The Ad Health School Connectedness Scale appears most frequently in studies that use a nationally represented sample. The second measure, the Georgia Student Health Survey 2.0 has two versions administered statewide to students in grades 3-5 and 6-12 in Georgia. This review provides context from a national and state-level perspective of the empirical research that grounds the school connectedness construct.

The National Longitudinal Study of Adolescent Health's (Ad Health) School Connectedness

Scale – Student (SCS)

The School Connectedness Scale was born out of the first report from the Ad Health study conducted by Resnick and colleagues (Resnick et al., 1997). The purpose of the study was to identify risk and protective factors at the family-, school-, and individual-level that relate to 4 domains of adolescent health and morbidity: substance abuse, violence, emotional health, and sexuality. In doing so, the researcher grouped variables they coined "school connectedness" to examine the relationship of youth involvement in high-risk behaviors. The researchers concluded that "school connectedness" or the idea that adults at school cared about students, was a strong protective factor in the reduction of high-risk behaviors (Furlong et al., 2011; Resnick et al., 1997). The school connectedness construct is designed to measure the bond students feel toward school and, as such, measure the psychological and not the academic, behavioral, or cognitive engagement of students. The six-item scale is one of the most widely used scales in research (Furlong et al., 2011; McNeely et al., 2002). Students are asked to respond to the following items with a Likert scale ranging from "strongly agree" to "strongly disagree" given their level of agreement with the statement:

1.   I feel close to people at this school

2.   I am happy to be at this school.

3.   I feel like I am part of this school.

4.   The teachers at this school treat students fairly.

5.   How much do you feel that your teachers care about you?

6.   I feel safe in my school.

Resnick et al. (1997) identified five items for the SCS scale (α= .75); however, later studies of school connectedness used varying number of scale items (Furlong, O'brennan, & You, 2011). Additionally, Furlong and colleagues (2011) noted that school connectedness terminology and measures were used inconsistently across disciplines, such as education and public health, given a researcher's theoretical orientation. Given that an abundant number of studies have used the SCS as a unidimensional, five-item scale, the researchers have used this model to examine measurement properties, specifically measurement invariance.

In a widely referenced examination of the relationship between school connectedness and school environment attributes, McNeely and colleagues (2002) used a sample from a national data set, the Longitudinal Study of Adolescent Health (Ad Health). Focusing on the relationships of school connectedness and school attributes, such as individual-level demographics, teacher qualifications, discipline policies, school locale and size, student participation, and classroom management, the researchers concluded that students are more connected in racially or ethnically segregated schools, schools with high rates of participation in extracurricular activities, and smaller schools. Conversely, students are less connected to schools where classroom management is weak and harsh discipline practices for minor infractions are enforced. However, it is difficult to ascertain the perceptions of African Americans in this study for several reasons. First, the initial sample was reduced by 11% given the researcher's procedure for handling missing survey data resulting in the removal of students twice as likely to be old for their grade, have a lower grade point average, are males, and of African and Latino descent when compared to students that remained in the study. Second, the majority of the schools in the sample are suburban, further reducing the chances of having more African American students attending all-Black schools located in urban areas. The final sample included 71,515 students, of which only

14% are Black. Racial and ethnic minority data reported in the aggregate masks the uneven distribution of minority students across schools. Third, school connectedness was assessed using five of the six school connectedness items, omitting a question on how students perceive teachers care about them. For African American students, research suggests students are more connected to school when they have relationships with adults and know the adults care about their well-being (Acosta et al., 2018; McKinney de Royston & Madkins, 2019; Slaughter-Defoe & Carlson, 1996). This question is pertinent for conceptualizing connectedness for African American students because it is associated with values of fairness, honesty, equity, and high expectations. Taken together, it is difficult to generalize the results of this study to African American youth. Moreover, this study reaffirms the relevance of research related to African American conceptions of connectedness in relation to their experiences and interactions in educational contexts.

Georgia Student Health Survey 2.0

The Georgia Student Health Survey 2.0 (GSHS 2.0) is a measure of student perceptions of school climate administered annually to students in Georgia's public schools in grades 3 through 12 (La Salle, 2017). The GSHS 2.0 includes additional measures such as mental health, suicidality, peer victimization (La Salle, George, McCoach, Polk, & Evanovich, 2018; La Salle, Parris, Morin, & Meyers, 2016; White, La Salle, Ashby, & Meyers, 2014). The middle and secondary version of the GSHS 2.0 includes a general school climate scale that includes school connectedness as 1 of 8 sub-dimensions. School connectedness on the GSHS 2.0 scale includes five questions assessing individual characteristics of a student. Students rate the following questions using a 4-point Likert scale ranging from "strongly disagree" to "strongly agree."

1. I like school.
2. Most days I look forward to going to school.

3. I feel like I fit in at my school.

4. I feel successful at school.

5. I feel connected to others at school.

In a multilevel examination of relationships between school connectedness, peer victimization, gender, grade, and racial/ethnic groups for students in grades 6-12, La Salle and colleagues (2016) concluded that for African American, white, and Latino youth, race did not have a significant effect on perceptions of school connectedness and peer victimization. However, they noted that grade had a direct impact on school connectedness and peer victimization with middle-school students reporting lower levels of connectedness and higher levels of peer victimization than their high school counterparts.

In a subsequent multilevel study using the GSHS 2.0, La Salle et al., (2018) examined relations among school climate, peer victimization, and mental health among middle school students that self-identified as having an emotional and behavioral disorder. They found that students with emotional and behavioral disorders rated school climate significantly lower than students without disabilities. In addition, peer victimization and mental health problems were significantly higher for students with emotional and behavioral problems. While the researchers included student demographics showing African American students representing the majority of students with disabilities (58%), the results were not reported in disaggregated form. Consequently, school connectedness is subsumed in the multidimensional construct, school climate, further limiting our understandings of African American school connectivity.

For both examinations, nested data and the assumption of independence were addressed. However, the referent for these studies is the individual student and not the school. According to Marsh et al., (2012), school climate variables are based on the shared agreement among students

in the same school and are inherently a higher-level construct. This suggests a multilevel confirmatory factor analysis, as opposed to a multiple-group traditional confirmatory factor analysis may be a better option for addressing measurement and Type 1 errors.

Synthesis of the Literature: A Culturally and Contextually Sensitive Framework for School Connectedness

Researchers have noted that school connectedness is contextually and environmentally influenced (Bandura, 2002; Benner & Wang, 2014; Bottiani et al., 2016; Walsemann et al., 2011). In fact, theorists argue that development in a board ecological context is paramount for understanding child and adolescent development (Bronfenbrenner, 1977, 1979, 1986). Despite the ecological model being a useful framework for school connectivity, it is not without limitations. Specifically, some researchers note the limitations of these frameworks rest in the failure to incorporate factors critical for understanding the development of racialized, minority youth (Spencer et al., 1997; Velez & Spencer, 2018). Therefore, I propose a conceptual framework that incorporates factors for understanding growth and development of ethnic minority youth, specifically African Americans (see Figure 2.2, Conceptual Framework of School Connectedness for African American Students).

I propose an integrative conceptual model that draws on ecological systems and critical race theory. The political and socioeconomic context at the macro-level impacts an individual's socioeconomic position in society. Racism in the U.S. continues to influence the governance of society and social institutions, such as educational institutions (Kendi, 2017). The historical context of racism and racist ideology underlie and influence the current policy atmosphere of the school, from a state-, district-, school-, and individual-level. These structural determinants impact an individual's socioeconomic status within the community. In turn, populations of

people, such as African Americans, are stratified according to race, gender, income, social class, sexual orientation, neighborhood, and schools. By layering the social, political, and historical context of American race relations that shape our societies, I am attentive to the complexities phenomena that informs and influences child development. What's more, I use Nasir, Jones, and McLauglin's (2011) definition of school connectedness as it seems to have the strongest construct validity as the development was grounded in a culturally-sensitive ecological framework (Spencer et al., 1997).

School Connectedness

This conceptual framework draws on Nasir and colleagues (2011) theory of school connectedness operationalized into two categories: Interpersonal Connections and Institutional Connections. These intermediary determinants are contingent upon the level of social integration and support offered by teachers, administrators, and other policy actors at the micro-level. As previously discussed, interpersonal connections predominately with caring teachers, but also with peers and other adults, are critical indicators of positive outcomes for African American students. The implementation of policy at the micro-level and the interactions of adults are experienced by adolescents through perceptions of stressors or supports (Velez & Spencer, 2018). The coping strategies employed by youth when confronted by stressors (including acts of discrimination, bullying, and violence) or supports (including social supports in school) are linked to both social systems and individual interpretation and response (Velez & Spencer, 2018). Moreover, I included a bidirectional arrow between racism and resistance to highlight that students are not simply acted upon by structural racism, but also seek methods to resist the imposition of harmful structures. In this framework, as students make meaning of their interactions within schools

alternatives to simply coping and developing maladaptive behaviors in response to stressors may prevail.

Interpersonal Connections

Interpersonal connections include the relationships students forge with peers, teachers, counselors, and other adults in the building. Relationships include reciprocal feelings of mutual respect, fairness, and valuing, as well as the expectations of the individual student by others in the school.

Institutional Connections

Institutional connections are policy-driven (practices) implemented in the school. It involves the curricular choices, pedagogies, extra-curricular and communal outreach activities offered at the school.

Intermediary Determinants: Social Integration and Supports

Variation in social contexts and experiences within a racial hierarchy are the intermediary determinants that are related to disparities, in education and health (Walsemann et al., 2013). According to Jones and Das (2019) of the National Institute on Minority Health and Health Disparities, "An important reason for differences between white and non-white populations is racism and discrimination" (p. 521). At the proximal (micro-level), the intermediary determinants are operationalized through social integration and support processes. The adults in the building, administrators, teachers, counselors, and staff, are policy actors and implementers. It is at this point, individual ideologies, values, and beliefs intersect with ideologies, values, and beliefs of students. Incongruencies in these interactions may lead to support or stressors.

Quality of Life Outcomes

Feeling connected to school has been shown to relate to both health and well-being (Catalano et al., 2004; Ernestus et al., 2014; Marraccini & Brier, 2017; Resnick et al., 1997). Medical and public health researchers discovered that high school quality, such as measures of attendance, retention, parent involvement, teacher experience, and academic outcomes, significantly predicted adult health outcomes, specifically obesity and depression and "these results align with previous longitudinal studies suggesting school quality may be an under-recognized social determinant of health" (Dudovitz et al., 2016, p. 4).

Figure 2. 2 Conceptual Framework of School Connectedness for African American Students

Conceptual Framework of School Connectedness for African American Students
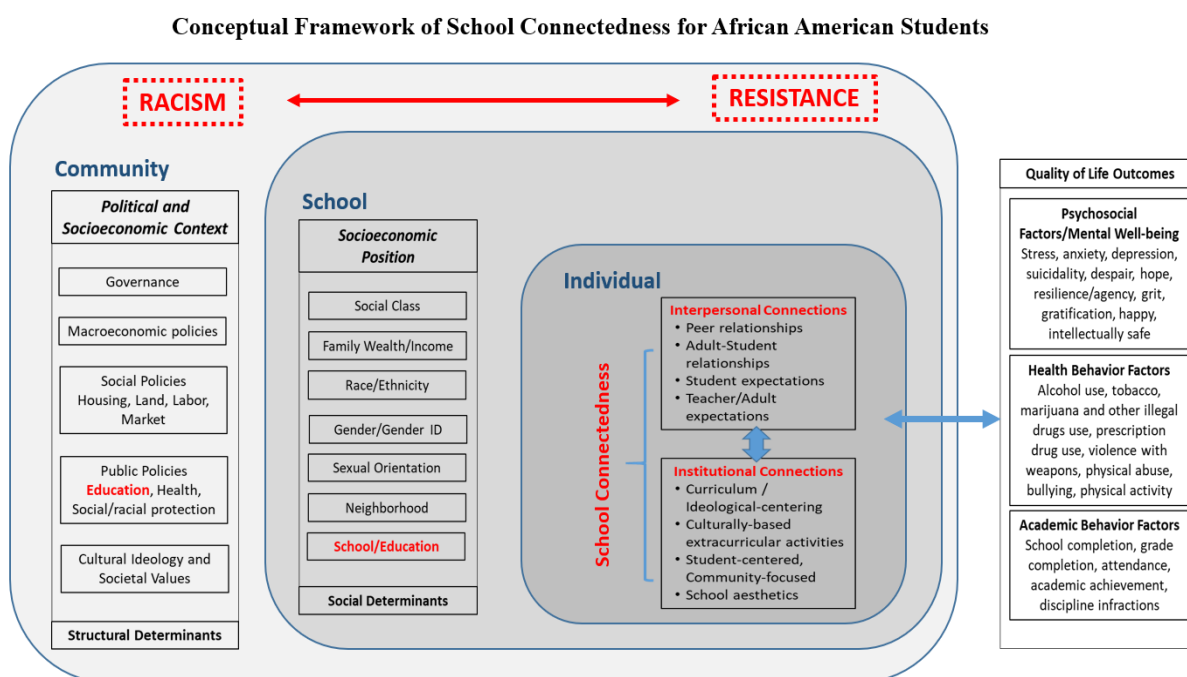
Adapted from Solmar & Irwin, 2010; Nasir et al., 2011

3 METHODOLOGY

This three-part study used statistical methods to advance our knowledge of how students perceive their connections to schools. First, I conducted an analysis of variance (ANOVA) to examine student perceptions of school connectedness across racial groups for all students' grades 6th through 8th in Georgia, as measured by the GHSH 2.0. Second, I used confirmatory factor analysis and multiple-group confirmatory factor analysis to examine the relationships between school connectedness and school-level variables of student racial composition, teacher racial composition, and socioeconomic status for African American and white students. Lastly, this dissertation focused explicitly on African American students. I used multilevel modeling to examine the relationships between school connectedness, teacher racial composition, peer support, adult support, teacher support, discrimination, and expectations. Taken together, findings from this dissertation have the potential to inform practices, policies, and interventions that increase school connectedness among African American students.

Contextualizing Georgia: State Characteristics

In the fiscal year 2017, Georgia recorded 1,716,785 students, of which 37% were African American, 40% white, 15% Hispanic, 4% Asian, and 3% Multiracial. Approximately 49% of students were female. In contrast, the teaching force in Georgia is overwhelmingly white. Of the 115,167 teachers recorded in the same year, 71% were white, 25% African American, 2% Hispanic, 1% Asian, and 1% Multiracial (G.O.S.A, n.d.). In terms of economic diversity, of the total student population, 62% were eligible for free or reduced lunch fares, a proxy for socioeconomic status (G.O.S.A., n.d.). In relation to school administrators (i.e., Principals and Assistant Principals), 63% were white, 35% African American, 1.3% Hispanic, 0.7% multiracial, 0.6% Asian, and 0.1% Native American. These demographics suggest that while the racial make-up of Georgia's public schools is diverse, the student diversity is much higher than administrator

and teacher diversity. According to the National Conference of State Legislatures (NCLS), in 2015, Georgia's legislator's race and ethnicity were recorded at 72% white and 28% Minority (25% African American, 1% Hispanic, and 2% Multiracial) (N.C.L.S, 2015). In education leadership roles, from the state legislators to the teacher workforce, the governance of over 181 school districts containing over 2,200 schools that shape the context of public schools is predominately white.

Participants

The data presented in this study are part of a cross-sectional study that focused on middle school student's perceptions of school connectedness in public schools throughout Georgia. The analysis of secondary data, in the form of surveys, was collected from the 2016-2017 administration of the Georgia Student Health Survey (GSHS) 2.0, a statewide survey for middle and high school students that includes a measure of school climate. Participants' school-level data were retrieved from two sources: the Georgia Department of Education and the Governor's Office of Student Achievement. This study was limited to students located in schools with 6th, 7th, and 8th grade-levels. Therefore, students attending schools within the Department of Juvenile Justice system and two state schools for deaf and blind students were removed from this study. After further data merges and screenings, 309,327 students comprised the study population, of which 51% are female. Furthermore, a review of the survey data revealed students with missing or incomplete data ($n = 18$) that were subsequently removed from the population. Student demographics for the total population are presented in Table 3.1. For each of the investigations presented in this dissertation, I selected a subsample of students. Individual student characteristics used in this investigation included race, gender, and grade. Next, a brief discussion of each study sample is presented.

Table 3. 1.

Summary of Student Demographics for the Total Population as a Percentage

Variable	6th (n=105,744)	7th (n=103,978)	8th (n=99,605)
Race/Ethnicity			
Black or African American	34.1	33.9	34.3
Hispanic or Latino	14.3	13.9	14.1
White or Caucasian	40.7	41.8	41.7
Asian or Pacific Islander	4.5	4.7	4.7
Other	6.4	5.8	5.2
Gender			
Female	50.7	50.6	50.8
Male	49.3	49.4	49.2

Study 1

The analysis sample for the first study included students of from all racial demographics, 34% African American (*n* = 105,233), 14% Hispanic (*n* = 43,532), 41% white/Caucasian (*n* =127,782), 5% Asian/Pacific Islander (*n* = 14,307), and 6% Other (*n* = 18,033), totaling 308,887 students who were 51% female.

Study 2

The second examination in this dissertation was limited to Black/African American and white/Caucasian students (n = 233,015), of which were 51% female.

Study 3

The final study was limited to Black/African American students only, totaling 105,233 students who were 52% female. Student demographics and school characteristics for each study are listed in Table 3.2.

Table 3. 2

Grade 6-8 Student Demographics and School Characteristics

Study	Sample Description	N_{stu} (Students)	N_{sch} (Schools)	Black (%)	Female (%)	Analysis
Study 1	All Races	308,887	580	34	51	ANOVA
Study 2	Black and white	233,015	580	45	51	ML-CFA MG-CFA
Study 3	Black Only	105,233	578	100	52	EFA ML-SEM

Measures

Georgia Student Health Survey (GSHS 2.0)

The GSHS 2.0 is a self-report student survey administered anonymously by the Georgia Department of Education to public school students statewide in grades 6-12. The survey was developed by the Georgia Department of Education in partnership with the Georgia Department of Public Health, and Georgia State University's Center for School Safety, School Climate, and Classroom Management (Georgia Department of Education, 2019b; La Salle, 2017). The survey contains 121 questions (items) and includes an embedded 36-item school climate survey with 8 subscales: school connectedness (5 items), peer social support (5 items), adult social support (4 items), cultural acceptance (5 items) social/civic learning (8 items), physical environment (4 items), school safety (7 items), and peer victimization (7 items). Students rate each item using a 4-point Likert scale based on their feelings toward the school environment: 1 (*strongly disagree*), 2 (*somewhat disagree*), 3 (*somewhat agree*), 4 (*strongly agree*). Evidence of the overall scale's internal consistency indicated high reliability ($\alpha = .92$); (La Salle, 2017; La Salle et al., 2018). Additional sections of the survey include questions on parental involvement, drug and alcohol

use, age of initial engagement with drugs and alcohol, student information, school climate, perceptions of risk/harm, peer/adult disapproval, and mental health. It is estimated that students spend between twenty and twenty-five minutes completing the survey (La Salle, 2017). The data from the survey is used as a guide for consideration of school prevention and intervention programs, as well as grant funding (Georgia Department of Education, 2019b). A copy of the instrument is provided in Appendix A. A discussion on the constructs of the school climate subscales used in statistical analyses in the studies presented in this dissertation is presented next, followed by a description of the other variables used in this dissertation.

School Connectedness. The school connectedness construct has five items that measures student perceptions of feeling connected to their school. Higher scores indicate higher school connectivity. Sample items include "I like school" and "Most days I look forward to going to school." Cronbach's alpha is a measure of internal consistency of items on a survey (Coladarci & Cobb, 2013). Previous research has demonstrated the composite reliability coefficient for connectedness to be adequate ($\alpha = .74$ and .78; La Salle, 2017; La Salle, Parris, et al., 2016). The scale showed similarly adequate reliability ($\alpha = .757$) for the current studies. Higher scores indicate greater connectedness. See Table 3.3 for a description of the study variables used in analyses.

Peer Support. Peer support construct has five items that measure student perceptions of feeling supported by their peers. Higher scores indicate higher feelings of support. Sample items include "I get along with other students at school" and "Students in my school are welcoming to new students." The scale demonstrated adequate reliability ($\alpha = .741$).

Adult Social Support. Adult social support construct has four items that measure student perceptions of feeling supported by their teachers and adults in the school. Higher scores indicate

higher feelings of support. Sample items include "Teachers treat me with respect" and "All students are treated fairly by the adults in my school." The scale demonstrated good reliability (α = .915).

Cultural Acceptance. The cultural acceptance construct has five items that measure student perceptions of peer's acceptance of cultural, academic, and racial differences. Higher scores indicate higher feelings of acceptance. Sample items include "Students show respect to other students regardless of their academic ability" and "All students in my school are treated fairly regardless of their appearance." The scale demonstrated good reliability (α = .887).

School Climate. Adult social support construct has seven items that measure student's sense of the general school atmosphere in relation to high standards for achievement, behavior, and support. Higher scores indicate higher feelings of a positive school climate. Sample items include "I feel my school has high standards for achievement," "The behaviors in my classroom allow the teacher to teach so I can learn," and "I know an adult at school that I can talk with if I need help." The scale showed good reliability (α = .828).

School and Teacher Racial Composition. The school racial composition is based upon the percentage of students that identify in one of five racial/ethnic categories. This is a school-level variable. The teacher racial composition is based upon the percentage of teachers that identify in one of five racial/ethnic categories at a school. Teacher and school racial composition data for all schools in Georgia is publicly available data. I retrieved this data for the 2016-2017 academic year from the Governor's Office of Student Achievement (GOSA). GOSA is Georgia's P-20 education agency responsible for data accountability and reporting. Both school and teacher racial composition are school-level variables.

School Socioeconomic Status (SES). School SES is based upon the percentage of students certified by the state to receive free or reduced-priced meals (FoRMs). High FoRMs indicate a higher concentration of low SES students at the school. Data were retrieved from GOSA.

Table 3. 3

Independent and Dependent Variables

Academic and Demographic Variables	Variable Description	Study
Grade	A categorical IV variable with three levels: 6th, 7th, or 8th.	2, 3
Connectedness$_{comp}$	A composite DV of school connectedness. This score is a composite representing the average of each students' score of five school connectedness questions.	1
Race/Ethnicity	A categorical IV variable with five levels: Black or African, Hispanic or Latino, white or Caucasian, Asian or Pacific Islander, other.	2, 3
Gender	A dichotomous IV variable with two levels: female or male.	2, 3
Student Racial Composition	A continuous IV based upon the percentage of students from each of the non-white, race/ethnicity categories referenced above. This variable will represent the % of non-white minority students at the school.	2, 3
Teacher Racial Composition	A continuous IV based upon the percentage of teachers from each of the non-white, race/ethnicity categories referenced above. This variable will represent the % non-white minority teachers at the school.	2, 3
School Socioeconomic Status (SES)	A continuous IV variable of the percentage of students certified by the state of Georgia eligible to receive free or reduced-price meals (FoRM) at school. Higher forms indicate a higher concentration of low SES students.	2, 3
Connectedness	A latent construct from a subscale of the GSHS 2.0 with five questions (items).	2, 3
Peer Social Support	A latent construct from a subscale of the GSHS 2.0 with five questions (items).	3
Adult Social Support	A latent construct from a subscale of the GSHS 2.0 with four questions (items).	3
Cultural Acceptance	A latent construct from a subscale of the GSHS 2.0 with five questions (items).	3
School Climate	A latent construct from a subscale of the GSHS 2.0 with seven questions (items).	3

Procedures

Study 1

This study concerns the first step of exploring student perceptions of school connectedness construct across racial subgroups. An analysis of variance (ANOVA) was used to evaluate the means (i.e., the sum of scores for each racial group divided by the total number of scores within the group) for each of the five racial groups with respect to one independent variable, school connectedness. According to Coladarci and Cobb (2013), ANOVA is an appropriate test when analyzing more than two groups, as opposed to conducting multiple *t*-test (one for each racial group), as the probability of a Type I error – the chance of falsely declaring two means are statistically different – increases when multiple tests are employed.

An ANOVA measures the variability of the scores in two classes: between racial groups and within racial groups. To determine the between-group variance for each racial group, this test calculates the mean of each racial group and measures the magnitude of difference between a racial group from the overall mean, inclusive of other racial groups. For instance, if all five racial groups have similar means, then the group means are expected to be similar to the overall mean. Further, the between-group variance is expected to be small. This is the null hypothesis:

H_0: all racial group population means are equal (i.e., $\mu_{black} = \mu_{hispanic} = \mu_{white} = \mu_{4asian} = \mu_{5multi}$)

The null hypothesis indicates there are no differences between the racial groups reporting of school connectedness, suggesting that racial groups experience similar interactions within their schools and, subsequently, have similar ratings for school connectedness. Conversely, if the group means are different and vary in relation to the overall mean, then the racial group means are statistically different from each other. The ANOVA test will account for any variation across the scores of individuals within the same racial group, the within-group variance, also referred to

as the error variance. For instance, a group of African American students may perceive their connectedness to school the same as all members of the group are experiencing similar interactions. However, an African American student within the Black racial group may have different histories and social skills that may impact their individual school connectedness score, which is not aligned with the overall group's score. This source of error variance – variation from the group's average – reflects idiosyncrasies students bring with them into the school building. An ANOVA is a robust test that will account for this variation when assessing the group's mean (Coladarci & Cobb, 2013). As such, if the Black racial group's mean is statistically different from another racial group mean, then the alternative hypothesis is accepted. For this study, the alternative hypothesis was:

H_A: at least one racial group population mean is different (i.e., $\mu_{black} \neq \mu_{hispanic}$)

Prior to running any tests, I checked the data to determine if a one-way ANOVA is the best tool for estimating difference between means. First, I created a composite score variable of the five school connectedness score ratings. For each student, the composite variable is the sum of their scored responses to the five items representing an individual's connection to school, others, and sense of success. This satisfied the first requirement of having one dependent, continuous variable. The dependent variable in the analysis were the five racial subgroups each student self-selected on the survey. Box plots and histograms of the data were created to assess for outliers and normality. Since the ratings for the GHSH 2.0 are ordered categorical, it is common in social sciences for data to exhibit non-normality for which the one-way ANOVA is robust to violations of normality (Weiss, 2006). A Shapiro-Wilk test for normality and Levene's test of equality of variances was performed to assess the assumption of normality and homogeneity of variances, respectively. Given extant literature, I would expect African

American students are least connected to schools when compared to students of other races and ethnicities.

Study 2

This investigation sought to understand the relationships between African American and white student perceptions school connectedness and school-level variables of student racial composition, teacher racial composition, and socioeconomic status, such as the percent of students receiving free and reduced-price meals. I assessed these relationships with two steps. The first part of the investigation used multilevel confirmatory factor analysis (ML-CFA) to confirm the measurement structure posited by the GSHS 2.0. Race was included as a covariate in this investigation. However, to examine the associations with school connectivity across Black and white racial groups, I used multigroup confirmatory factor analysis (MG-CFA). In this examination, the analyses were conducted simultaneously with separate results for Black and white racial groups.

Multilevel Confirmatory Factor Analysis. A confirmatory factor analysis (CFA) is used to study the relationships between a set of indicators (e.g., items from a questionnaire) and a set of continuous latent variables (factors) (Muthén & Muthén, 2017). The purpose of the CFA is to estimate model parameters (e.g., correlations between indicators and latent variables) and to assess the fit of the model (Hox & Bechger, 1998). For example, school connectedness is the latent variable that is also described as an unobserved variable (Schreiber et al., 2006). The statement, "I like school," is an indicator, also described as a measured variable, of the latent variable, school connectedness. One goal of CFA is to estimate how well the indicators explain or account for the latent variable. In this instance, the researcher specifies the number of latent variables and the pattern of indicators based on empirical knowledge. This hypothesized factor

structure is then evaluated on how well it reproduces the sample variance-covariance matrix of the measured variables (Brown, 2015). A second goal of the CFA is to assess if the relationships between the factors and indicators function differently across groups, hence the multigroup CFA. It is an a priori assessment of a hypothesized model. In sum, it is a statistical analysis that involves assessing how well the items on a survey explain an unobserved phenomenon, such as school connectedness. Connectedness is a theoretical construct that is not directly measured. Instead, it is measured by an individual's perception of feeling connected to school. The terms latent factor and construct are used interchangeably to describe connectedness as an unobserved, latent variable in this study.

To assess the measurement (factor structure) posited in this study, a stepwise approach to building the measurement model was employed. A total of six models were used to assess model fit. A one-level CFA, as modeled in Figure 3.1, was assessed. This model included the items (indicators) from the survey and the latent variable, connectedness. This model was freely estimated without indicator covariances or cross-loaded indicators. Model 2, a more restricted single-level model, included an error covariance between two indicators. Building on Model 2, an adjustment to Model 3 included a second error covariance between two additional indicators. The covariates (i.e., race, gender, grade-level, racial composition, and school SES) were introduced in the fourth model. However, prior to evaluating Model 4, I assessed the need to estimate a two-level model. Lastly, Models 5 and 6 were two-level models with estimations at the individual and school level. At each step of model building, the model fit was evaluated, and the theorized model was modified.

Model Fit Evaluation. During model fit evaluation, I used empirically-based methods (e.g., modification indices) and theoretical knowledge to guide model specification (Brown,

2015). While the chi-square statistic is widely reported in SEM research, other fit indices are emphasized in the evaluation of model fit. The chi-square test measures the difference between the hypothesized model (covariance matrix) and the data (sample covariance matrix) by testing the degree to which the matrices differs as a result of sampling error (Hu & Bentler, 1999). A significant chi-square value indicates the magnitude of the difference between the matrices is great, and that the hypothesized model should be rejected. However, the chi-square statistic is sensitive to large sample sizes, leading to rejection of models when slight divergences from the data are minimal (Brown, 2015). Since this examination includes a large sample size (N > 500), model fit is evaluated by means of additional fit indices (van Prooijen & van der Kloot, 2001), such as the root mean square error of approximation (RMSEA), the comparative fit index (CFI) and the Tucker-Lewis Index (TLI). According to Hu and Bentler (1999), RMSEA is an absolute fit index evaluating how well the hypothesized model reproduces the sample data. The cutoff value for RMSEA is less than .06. Conversely, incremental fit indices (e.g., CFI and TLI) measures improvement in fit by contrasting a target model with a more restricted, nested model (Hu & Bentler, 1999). Hu and Bentler (1999) suggest cutoff values for both CFI and TLI to be greater than .95.

In addition, CFA models 1 through 3 used the chi-square difference test. This test is used to statistically compare two nested models against each other. Recall the tendency in social sciences research for ordered, categorical data to exhibit non-normality. Since the difference between the chi-square values between two, nested models do not follow a chi-square distribution, transformations that rescale or adjust the data to approximate a chi-square distribution were developed by Satorra and Bentler (1986). The data transformation provides a scaled difference in chi-square and allows for nested model comparisons (Wang & Wang, 2020).

According to Wang and Wang (2020), for Model 2 to be nested within Model 1, Model 2 must have fewer free parameters and, therefore, a larger number of degrees of freedom than Model 1. Furthermore, Model 2 may not have new parameters that are not included in Model 1. Following recommendations by Muthén and Muthén (2017), I used the WLSMV (weighted least squares with mean- and variance- adjusted chi-square test) estimator for categorical indicators in the Mplus 8.4 statistical program. Mplus provides a two-step approach to conduct a model, chi-square comparison test.

Common in traditional CFA, a single-level factor analysis on the covariance matrix derived from the entire data set is performed given the assumption of independent observations. However, the nature of this study violates the assumption of independence. Recall, the nested nature of the data and the observed ratings of school connectedness were based on a four-option, categorical Likert scale, ordered from *strongly disagree* to *strongly agree*. Modeling latent variables in SEM/CFA/, the lack of a continuous measurement scale imposes estimation issues, including biased standard errors (Brown, 2015). The Mplus WLSMV estimator also

mediates estimation issues (Muthén & Muthén, 2017). To account for possible biased estimates and standard errors associated with nested data, I estimated the fourth model using the M*plus* General Complex function. This function adjusts model fit statistics to account for error dependencies due to the hierarchical structure of the data (Brown, 2015). Models 5 and 6 were estimated as two-level models.

An assessment of student- and school-level variance is a standard starting point for determining the need for multilevel climate studies (Marsh et al., 2012). Preliminary analyses included the evaluation of the intraclass correlation coefficients (ICCs) in determining if the group (school) data is appropriate for multilevel modeling. The ICC1 gives an indication of how strongly individuals in the same school are similar to one another in regard to a given variable.

Figure 3. 1

CFA Model 1 of Connectedness Factor Structure
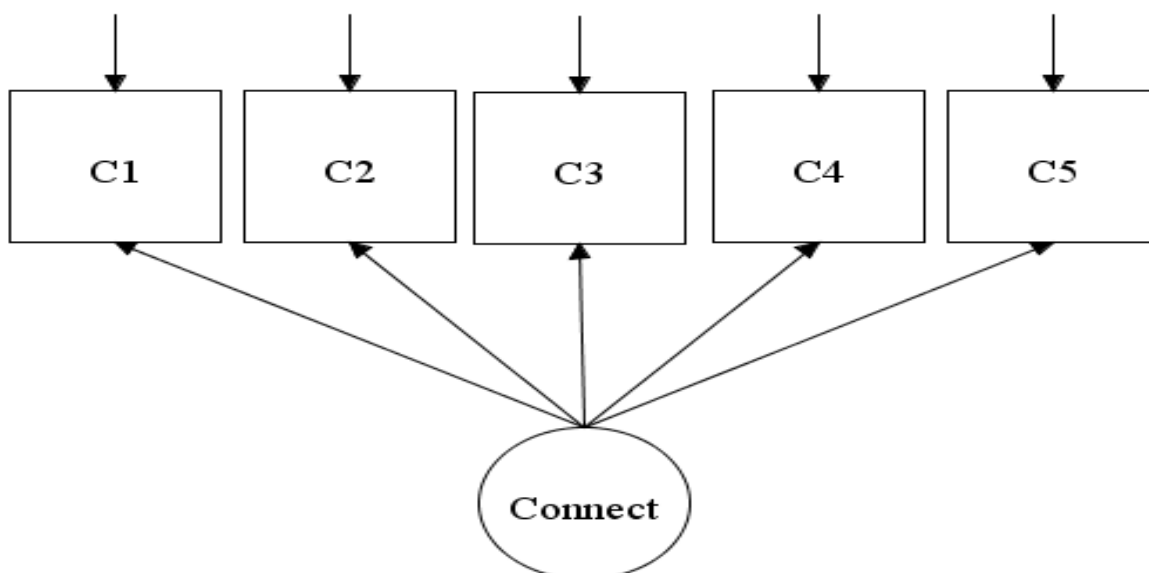
Assessing the need for Multilevel Modeling. The ICC1 also reflects the proportion of the total variance that occurs between schools and was calculated as follows:

$$\frac{\tau_x^2}{\tau_x^2 + \sigma_x^2}$$

where τ_x^2 is the between-school (L2) variance and σ_x^2 is the within-school (L1) variance. As such, significant variation between schools suggests, there is more agreement among students within the same school than between students from different schools. Marsh and colleagues (2012) report that values for ICC1 in multilevel studies, climate variables are commonly less than .10 and seldom greater than .30. Generally, ICC1 values greater than .05 (or 5%) warrant use of multilevel modeling methods (Brown, 2015). The reliability of the aggregated data, $\overline{X}_{.j}$ (ICC2) was estimated by applying the Spearman-Brown formula to the ICC1, with n_j being the average size of students per school (Lüdtke et al., 2008; Marsh et al., 2012). ICC2 was calculated as follows:

$$L2\ Reliability\ (\overline{X}_{.j}) = \frac{n_j \cdot ICC}{1 + (n_j - 1) \cdot ICC}$$

The higher the ICC1 and the larger the number of students, the more reliable the school connectedness variable is in relation to sampling error. Also, since the school-level construct is an aggregate value of student perceptions of connectedness at the school-level, I used the ICC1 (variation within each school) to estimate group-level measurement error which could exist given how individual students may rank an item (Lüdtke et al., 2008; Marsh et al., 2012). To examine reliability, measurement error at the student- and school-level depends on having an adequate number of indicators that also have a high correlation. Again, an assessment of the ICC1 and ICC2 is a standard starting point for multilevel climate studies (Marsh et al., 2012). A baseline model was used to estimate the amount of variance in the observed indicators at each level of

analysis. To do so, I estimated the connectedness latent construct at each level (e.g., individual and school) holding the indicators equal at both levels.

Multigroup Confirmatory Factor Analysis. As mentioned previously, a confirmatory factor analysis (CFA) is used to study the relationships between a set of indicators and a set of continuous latent variables (factors) (Muthén & Muthén, 2017). Also, as a multivariate regression measurement model, multigroup CFA is used to assess measurement invariance. Although this assessment is beyond the scope of this dissertation, configural and metric invariance tests were conducted for African American and white student groups. Configural invariance tests whether the same factor structure holds for both groups while metric invariance tests the extent to which the five indicators and the school connectedness factor are equal across groups (Campbell et al., 2008). Preliminary tests found the factor structure to be invariant across African American and white groups.

As already noted, this examination included a subsample of African American and white students (N=233,015), accounting for 45% and 55% of the total sample, respectively, nested in 580 schools. Two models were used to examine the associations between connectedness and individual and school-level characteristics across Black and white groups. The first model included the connectedness subscale and the respective five questionnaire items. This model was estimated as a traditional, one-level confirmatory factor analysis. The second model included the addition of five variables: two individual-level variables (gender and grade-level) and three school-level variables (percent of minority teachers, percent of minority students, and percent of students the qualify for free or reduced-price meals). The statistical analysis was performed with Mplus 8.4 (Muthén & Muthén, 2017). Preliminary analysis revealed the data violates the assumption of independence (see Study 1 procedures). To overcome estimation issues with non-

normal, categorical data, I used the Mplus WLSMV estimator for all models (Muthén & Muthén, 2017). To account for possible biased estimates and standard errors associated with nested data, I estimated the second model using the Mplus General Complex function.

Expectations. In accordance with research, I expect females to be more connected to school than males. In addition, students in higher grades are expected to be less connected than students in lower grades. Based on the literature, I anticipate disparate perceptions of school connectedness between white and African American students with African American students rating school connectedness lower. Further, I expect that the less diverse the teaching staff and student body, the less students feel connected to school; and the higher the percentage of low SES students, the less students feel connected to school.

Study 3

The aim of study 3 is twofold. A central goal is to propose a theoretical model to improve our understandings of the historical and socio-political contexts that impact African American youth perceptions of school connectedness. A peripheral goal is to unpack African American youths' conceptualizations of school connectedness while exploring construct validity for currently used measures. As previously noted, GSHS 2.0 is a school climate survey that includes school connectedness as one of 8 sub-dimensions. Five indicators constitute the school connectedness sub-dimension. However, given the previously reviewed literature, conceptions of school connectedness for African American students may be far more encompassing. Therefore, to accomplish my research goals, Study 3 was completed in three parts. First, I return to *Conceptual Framework of School Connectedness for African American* students presented in the literature review (see figure 2.2). Using this conceptual framework and the limitations of the GHSH 2.0 survey data, I solely focused on the interpersonal connections (i.e., relationships) to

propose a theoretical model for Study 3. Second, I used five subscales (connectedness, peer support, adult support, cultural acceptance, and school climate) of the GSHS 2.0 in an exploratory factor analysis (EFA) to explore the empirical factor structure for African American students. Third, I used the resulting factor structures from the EFA in a multilevel model to examine relationships with school-level characteristics (teacher racial composition, student racial composition, and school socioeconomic status). I detail each part of this study in the following sections.

Theoretical Model. Given the synthesis of the literature on school connectedness in Chapter 2, it is conceived that African American students may connect to schools through interpersonal and institutional connections. Moreover, school connectedness is a crucial variable for improving education, health, and psychosocial outcomes for African American students. Previous research that center African cultural tenets, ontology, and epistemology, underscore the value, utility, and importance African Americans place on education (Asante, 2017; Siddle Walker, 2002; Swartz, 2009). Consistent with this idea, many individuals of the African diaspora tend to value social connectedness and interdependence, including relationships and attachment to school (Ani, 2013; Henderson et al., 2017; King & Swartz, 2016). Furthermore, the myriad of ways African American students and families are connected to schools through communal bonds (Morris, 2004), praxis (King & Swartz, 2016; Ladson-Billings, 1995), and interpersonal connections (Nasir et al., 2011) is well documented.

Moreover, African American perceptions of discrimination, differential treatment, and exclusion by adults and peers that lead to disparate outcomes appear to also play a role in school connectedness (Bottiani et al., 2016, 2017; Niehaus et al., 2016; Walsemann et al., 2011). For African American students, school connectedness appears to capture the overall spirit, quality,

character, and cohesiveness of school life. Therefore, a theoretical model of school connectedness includes hypothesized relationships among connectedness, interpersonal relationships, discrimination, and expectations (see Figure 3.2). In this model, discrimination, interpersonal relationships and expectations are the independent variables that predict school connectedness, the dependent variable.

Figure 3. 2

Theoretical Model for School Connectedness
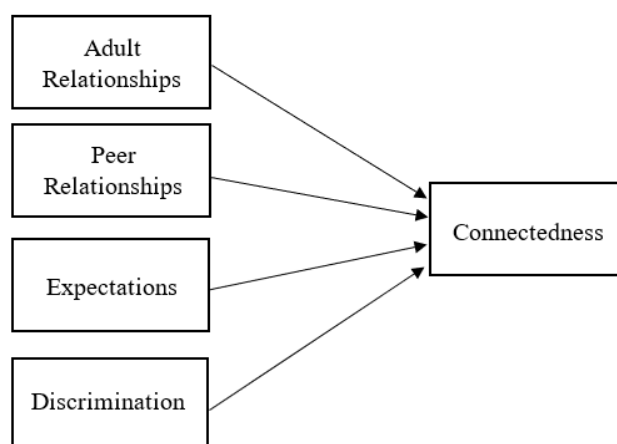
Mapping the GSHS 2.0 to the Theoretical Model. While the GSHS 2.0 has five indicators of school connectedness, the scale captures other indicators of interpersonal connections identified in the theoretical model. Consequently, the GSHS 2.0 has utility in measuring other areas of connectivity with regards to relationship, expectations, and discrimination, rendering the scale a viable instrument for gathering evidence connected to theory. Using the GSHS 2.0, I selected the following subscales: Connectedness, Peer Social Support, Adult Social Support, Cultural Acceptance, and School Climate. These subscales, and respective items, aligned to the theoretical model for school connectedness (see Table 3.4). For

three subscales, *Connectedness, Peer Relationships,* and *Adult Relationships,* I retained all items

for each subscale (see the complete GSHS 2.0 Survey in Appendix A). Two theoretical

constructs, *Cultural Acceptance* and *School Climate*, contained more items in the GSHS 2.0

survey that were not necessarily aligned to the proposed theoretical framework. For instance, the

subscale *Cultural Acceptance* listed three items that may underline the theoretical construct,

Discrimination, as these items are concerned with acceptance regardless of race, ethnicity,

culture, appearance, and academic ability. However, two items, "*Students at my school treat*

each other with respect" and "*Students treat one another fairly*" did not meet the threshold of

being treated as different from or inferior to others on the basis of racial, cultural, or academic

factors and were eliminated. The remaining twenty items were included in the second part of the

analysis described in the next section.

   Exploratory Factor Analysis. I used exploratory factor analysis (EFA) to further

explore the dimensions of the five subscales. According to Brown, the purpose of EFA is to

"evaluate the dimensionality of a set of multiple indicators (e.g., items from a questionnaire) by

uncovering the smallest number of interpretable factors needed to explain the correlations among

them" (2015, p. 19). Since EFA is "exploratory" in nature, there are no *a priori* restrictions on

the patterns of relationships between the indicators and the latent variables (e.g., constructs).

Although using an EFA assumes I have no specific structure of the model linking the indicators

to the latent variables, it is also understood that having preconceived theoretical notions

regarding the latent structures underlying the data can provide input for the hypothesized

structure (Brown, 2015; Finch & Bolin, 2017).

Table 3. 4

Mapping the Theoretical Model of School Connectedness to the Five Subscales of the GSHS 2.0

Theoretical constructs	GSHS 2.0 subscales
Connectedness	*Connectedness* I like school. Most days I look forward to going to school. I feel like I fit in at my school. I feel successful at school. I feel connected to others at school.
Peer relationships	*Peer social support* I get along with other students at school. I know a student at my school that I can talk to if I need help (e.g., Homework, class assignments, projects). I know a student at my school that I can talk to if I am feeling sad or down. I have a group of friends at school that I have fun with and are nice to me. Students in my school are welcoming to new students.
Adult relationships	*Adult social support* Teachers treat me with respect. Adults in this school treat all students with respect. All students are treated fairly by the adults in my school. Teachers treat all students fairly.
Discrimination	*Cultural acceptance* Students show respect to others students regards of their academic ability. Students at this school are treated fairly by other students regardless of race, ethnicity, or culture. All students in my school are treated fairly regardless of their appearance.
Expectations	*School climate* I feel my school has high standards for achievement. The behaviors in my classroom allow the teacher to teach so I can learn. I know an adult at school that I can talk with if I need help.

Hence, the interpretability of the factor solution is based on the extent to which a simple

structure is achieved. During the analysis, an item correlation matrix is examined to find overall

patterns that exist among the indicators (e.g., items). In this initial step, the estimation of these patterns reflects the relationships between an extracted latent factor and indicators with values ranging between -1 and 1. These estimates are called factor loadings. Ideally, each indicator is highly associated with one factor and has loadings near zero on other factors (DeVellis, 2012; Finch, 2020).

Mplus 8.4 (Muthén & Muthén, 2017) was used to fit three EFA models and obtain fit statistics. Following recommendations by Brown (2015), I reviewed the GSHS 2.0 to decide which indicators to use in the analysis and determined the sample size. The selection of indicators was discussed in the previous section. A random subsample ($n = 20,912$) of observations were drawn from the 105,233 cases. To increase the robustness of the data, a larger sample size was selected as smaller samples may produce unstable correlational estimates (DeVellis, 2012). Secondly, I considered the categorical nature of the observed variables and selected the WLSMV estimator. Twenty survey items using a four-point Likert scale were selected from the GSHS 2.0 (see Table 3.4). This estimator is robust in scale factor extractions when one or more dependent variables are non-normal and categorical (Muthén & Muthén, 2017). Lastly, I chose an oblimin (oblique) rotation for this analysis because the school climate dimensions (factors) are hypothesized, by some researchers, to be correlated (La Salle, Parris, et al., 2016; La Salle, Zabek, et al., 2016).

Factor selection was determined after assessing model fit indices, meaningfulness and interpretability of factors, and replication of the factor solution for reliability. When generating the first EFA model, I specified a one-level extraction of three to seven latent factors. Next, I reviewed the analysis output to evaluate model goodness of fit statistics in combination with two traditional indicators used to determine the number of factors to retain: eigenvalues greater than

1.0 (Kaiser, 1991) and the inspection of Cattell's scree plot test (Cattell, 1966). Also, I used the comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square error of approximation (RMSEA) to assess model fit. According to Hu and Bentler (1999), cutoff values for acceptable model fit are as follows: CFI and TLI should be ≥.95, RMSEA should be ≤ .06, and SRMR should be ≤ .08. For categorical variables, CFI and TLI provide the most accurate estimate followed by RMSEA (Finch, 2020; Garrido et al., 2016). In addition, factor indicators (items) with small loadings across factors and indicators with high loadings on more than one factor were eliminated. After the factors were eliminated, I replicated the EFA analysis with the same sample to check the reliability. Lastly, the final factor selection was conducted after replicating the EFA analysis in an independent sample (n = 1,815). The resulting factor solution was used in the multilevel modeling step of this analysis.

Multilevel Modeling. The third part of the study concerned the examination of relationships between school connectedness, interpersonal relationships, expectations, and discrimination, as proposed in the theoretical model described above. School-level covariates included in the model were the percent of students qualified to receive free or reduced lunch, the racial composition of teachers, and the racial composition of students attending each school. To assess the relationships, I used a doubly-latent multilevel structural equation modeling (ML-SEM) approach. Marsh and colleagues (2012) suggest an integrated conceptual and analytical approach for evaluating contextual and climate effects in educational research. Their multilevel-structural equation modeling (ML-SEM) approach integrates confirmatory factor analysis (CFA), structural equation modeling (SEM), and multilevel modeling (MLM) into a comprehensive, statistical framework (Marsh et al., 2012). A CFA is used to identify factors that account for the variance and covariance among a set of indicators (Brown, 2015). In contrast to EFA, the factors

are predetermined empirically or by conceptual foundation to guide the specification and evaluation of the measurement model. Hence, I used the final EFA factor solution as an initial measurement model for this analysis. Generally, SEM is a term used to describe the use of empirical data to evaluate the validity of substantive theories by way of statistical models (Lei & Wu, 2007). MLM is a statistical process that accounts for the hierarchical or nested structure of the data. In a doubly-latent multilevel model, the ratings of school-wide latent factors by individual students are aggregated at the school-level, and the resulting means are used as an indicator for the school's collective perception of the connectedness sub-dimension (Lüdtke et al., 2008).

As mentioned, this examination included a sample of Black/African American students (N=105,233), nested in 578 schools. A graphic representation of the doubly-latent SEM model is illustrated in Figure 4.1. With a focus on school connectedness as a school-level construct, I regressed *Connectedness* on four latent factors (peer support, adult support, expectations, and discrimination). Consistent with the hypothesized theoretical model, the four latent factors served as the independent variables and *Connectedness* was the dependent variable. Also shown in the school-level portion of Figure 4.1 are three school-level demographic variables (i.e., %Minority$_{Student}$, %Minority$_{Teacher}$, and %FoRM) that served as covariates on *Connectedness*. To examine these relationships, I estimated four models using Mplus 8.4 (Muthén & Muthén, 2017). This analysis included four main steps. First, I conducted a traditional confirmatory factor analysis of the connectedness construct. Second, the assessment of the need for multilevel modeling discussed in Study 2 was replicated in this investigation. Third, I modeled a doubly-latent ML-SEM, consistent with the hypothesized theoretical model, with four latent factors (e.g., peer support, adult support, expectations, discrimination) as the independent variables and

one factor, *Connectedness*, as the dependent variable. The final model included school-level variables. In the next section, I discuss procedures used to establish the need to assess the degree of difference in variables examined at the school-level.

Assessing the need for Multilevel Modeling. A multilevel analysis of school connectedness is needed for multiple reasons. First, one assumption underlying the use of many single-level analyses is the independence of errors, where similarities between observations are random (Pedhazur, 1997). Violating this assumption may result in biased estimates of both variances and standard errors, resulting in models that inaccurately represent the data. Since the data in this study are collected from students nested in schools, the assumption of independence is violated. Statistical methods, such as multilevel modeling, have been developed to address data from a hierarchical structure (McNeish & Stapleton, 2016). For example, in schools, a hierarchical structure includes students nested in schools, which are nested in districts or regions, and so forth.

Second, the unit of interest for this study is the school. For any given dependent variable, such as school connectedness, measured for students, there may be some effect on that variable from being in a particular school. Student responses on the GHSH 2.0 are intended to measure a construct as a shared characteristic of the school (i.e., a reflection of the construct at the individual-level) or as a configural characteristic (i.e., the cluster aggregates of individual responses) (Stapleton et al., 2016). In essence, the data collected on the GHSH 2.0 from students include inferences about a higher-level unit of analysis (e.g., teachers, school, etc.). An evaluation of school connectedness at the student-level confounds the effects of the individual student and school and implies that both effects are the same (Morin et al., 2014). To control for this, a multilevel analysis allows for the decomposition of the total variance into components at

the group level (between schools) and at the individual-level (within schools). This decomposition allows modeling the school connectedness latent construct at the student-level independent of the school-level to obtain unbiased estimates. Lastly, Marsh and colleagues (2012) argue that school context and climate variables are inherently school-level constructs and are appropriately examined in multilevel models. Following the procedures for assessing the need for multilevel modeling in Study 2, I established the need for multilevel modeling. Accordingly, I this approach specifying students nested within schools.

Multilevel Confirmatory Factor Analysis. A confirmatory factor analysis (CFA) is used to study the relationships between a set of indicators and a set of continuous latent variables (factors) (Muthén & Muthén, 2017). It is a multivariate regression, measurement model where the relationship between factors and indicators are used to assess measurement invariance. Common in traditional CFA, a single-level factor analysis on the covariance matrix derived from the entire data set is performed given the assumption of independent observations. However, the nature of this study violates the assumption of independence. Recall the nested nature of the data and that the observed ratings of school connectedness were based on a four-option categorical Likert scale, ordered from *strongly disagree* to *strongly agree*. With latent variable modeling, the lack of a continuous measurement scale imposes estimation issues, including biased standard errors (Brown, 2015). To overcome estimation issues with non-normal, categorical data, I again used the Mplus WLSMV estimator for all models (Muthén & Muthén, 2017). To account for possible biased estimates and standard errors associated with nested data, a multilevel confirmatory factor analysis (ML-CFA) was performed.

Expectations. Given the exploratory nature of this study, there were no specific hypotheses regarding the measurement model of connectedness for African American students.

However, it was expected that increased perceptions of school connectedness would be positively associated with increased perceptions of high expectations, equitable and fair treatment, and supportive adult and peer relationships. The results of this study are discussed in the next section.

4 RESULTS

Study 1

This study examined the mean differences of perceived school connectedness across student racial groups. As expected, due to the categorical nature of the data, initial analyses revealed the assumption of homogeneity of variances was violated, as assessed by Levene's Test of Homogeneity of Variance ($p < .001$). In other words, the assumption that the population variance for each racial group is the same was not true, meaning there is a greater chance of falsely rejecting the null hypothesis that school connectedness means are equal across racial groups. To account for the different population variances across groups, a Welch ANOVA test was conducted to determine if school connectedness was different for students in different racial groups. On the GSHS 2.0, students self-selected racial group membership: Black or African American, Hispanic or Latino, white or Caucasian, Asian or Pacific, and Multiracial. There were no outliers and the data were approximately, normally distributed for each group, as assessed by boxplot and Shapiro-Wilk test ($p < .05$), respectively. School connectedness score was statistically significantly different between different racial groups, Welch's $F(4, 58724.17) = 148.84$, $p < 0.0005$, $\eta^2 = .002$. See Table 4.1 for a summary of group means.

Although a one-way ANOVA is performed when the assumption of equal variances holds, the Games-Howell post hoc test for unequal variance and sample size is a robust statistic when there is a deviation from the assumption (Games & Howell, 1976). A comparison of Games-Howell post hoc analysis revealed that of the three most populous racial groups, African American ($M = 3.10$, $SD = 0.6$) and white ($M = 3.06$, $SD = 0.6$) student racial groups exhibited

Table 4. 1 Summary of Racial Group Means for School Connectedness

Racial group	*Mean*	*SD*	C.I.	Variance	Min - Max	Skew/Kurtosis
Black or African American	3.10	.605	3.09 - 3.10	.365	1-4	-.866/.915
Hispanic or Latino	3.07	.584	3.06 - 3.07	.341	1-4	-.728/.736
White or Caucasian	3.06	.593	3.06 - 3.07	.352	1-4	-.751/.577
Asian or Pacific Islander	3.13	.566	3.12 - 3.14	.321	1-4	-.737/.923
Other/Multiracial	3.01	.622	3.00 - 3.02	.388	1-4	-.744/.559

Note. Confidence intervals (C.I.) are at 95%, SD is Standard Deviation, Skew = Skewness.

the largest difference in group means. The mean difference between Black/African American and white/Caucasian students is relatively small (-0.04, *SE* = 0.003), although statistically significant ($p < .001$). The results suggest that Black/African American students were more connected to school than their Hispanic and white counterparts. Conversely, white and Hispanic (M = 3.07, SD = 0.6) racial groups had the smallest difference in group means. A difference in school connectedness scores from white to Hispanic racial groups was -0.004, SE = 0.003, which was not statistically significant ($p = 0.729$). Other pairwise comparisons of racial group means are reported in Table 4.2 and were also statistically significantly different ($p < .001$). The results of this analysis appear to confirm that perceptions of feeling connected to schools vary significantly for racial groups, with the exception of white and Hispanic students. However, the interpretation of the data is complicated by the effect size or magnitude of the results. The effect size ($\eta^2 = .002$) suggest the large sample size is inflating the mean differences between groups. According to Wright and Oshima (2015), "Statistical significance does not guarantee practical significance; therefore, an effect size helps quantify … a statistical significant finding with large samples" (p. 339). Hence, although significance was found, the low effect size indicates the

findings were not practically significant. Larger sample sizes present a limitation in inferential statistics, whereas smaller sample sizes inhibit accurate estimation in multilevel modeling (Hox, 2013). Study 2 used multilevel modeling to examine the relationships between student and school characteristics and school connectedness, specifically between African American and white students. The results of Study 2 are discussed in the next section.

Table 4. 2

Games-Howell Pairwise Post-Hoc Analysis Across Racial Groups

Racial group	Mean Difference	SE	P-value
Hispanic and Black	-.034	.003	0.000***
White and Black	-.038	.003	0.000***
Asian and Black	.032	.005	0.000***
Other and Black	-.090	.005	-0.000***
White and Hispanic	-.004	.003	0.729
Asian and Hispanic	.066	.006	0.000***
Other and Hispanic	-.056	.005	0.000***
Asian and White	.070	.005	0.000***
Other and White	-.052	.005	-0.000***
Other and Asian	-.122	.007	0.000***

Note. ***$p < .001$

Study 2

The first part of study 2 examined the relationships between perceptions of school connectedness and individual- and school-level characteristics. To assess the relationships, a multilevel confirmatory factor analysis (ML-CFA) was conducted on the connectedness latent factor structure, inclusive of five survey items posited by the GHSH 2.0 (see Figure 4.1) to

explain connectedness. The second part of Study 2 was an examination of associations between school connectedness and individual and school-level characteristics across African American and white racial groups. For this analysis, a multigroup confirmatory factor analysis (MG-CFA) was conducted. Means and standard deviations for school-level and indicators of connectedness variables are presented in Table 4.3 (see Table 3.2 for within-school variables). The following discussion details the results of the analyses.

Table 4. 3

Descriptive Statistics for School-Level and Indicators of Connectedness Variables

	Mean	SD	Min	Max
Between-School Variables				
% FoRM	34.0	17.97	1.40	81.40
% Minority$_{student}$	59.4	27.98	3.0	100.00
% Minority$_{teacher}$	34.4	30.38	0	100.00
Indicators of Connectedness				
I like school.	2.92	.85	1	4
Most days I look forward to going to school.	2.81	.89	1	4
I feel like I fit in at my school.	3.16	.89	1	4
I feel successful at school.	3.29	.76	1	4
I feel connected to others at school.	3.21	.83	1	4

Note. %FoRM = students eligible for free or reduced-price meals, % Minority$_{student}$ % = Percent of non-white students, %Minority$_{teacher}$ = Percent of non-white teachers.

Multilevel Confirmatory Factor Analysis

Of the five connectedness indicators analyzed, two questions with the lowest mean score ("I like school" and "Most days I look forward to going to school") had the greatest amounts of variation (SD = .85 to .89). Intraclass correlations (ICC1s) for all indicators of connectedness ranged from .02 to .03, and the ICC1 for the connectedness factor was .0456, indicating 4.6% of the variance is at the school level. With an average of 402 students in each school, the ICC2 is

.95, which indicate good reliability. The higher the ICC1 and the larger the number of students,
the more reliable the school connectedness latent variable is in relation to sampling error (Lüdtke
et al., 2008).

Figure 4. 1

Multilevel Confirmatory Factor Analytic Model for the Five-Item School Connectedness Scale
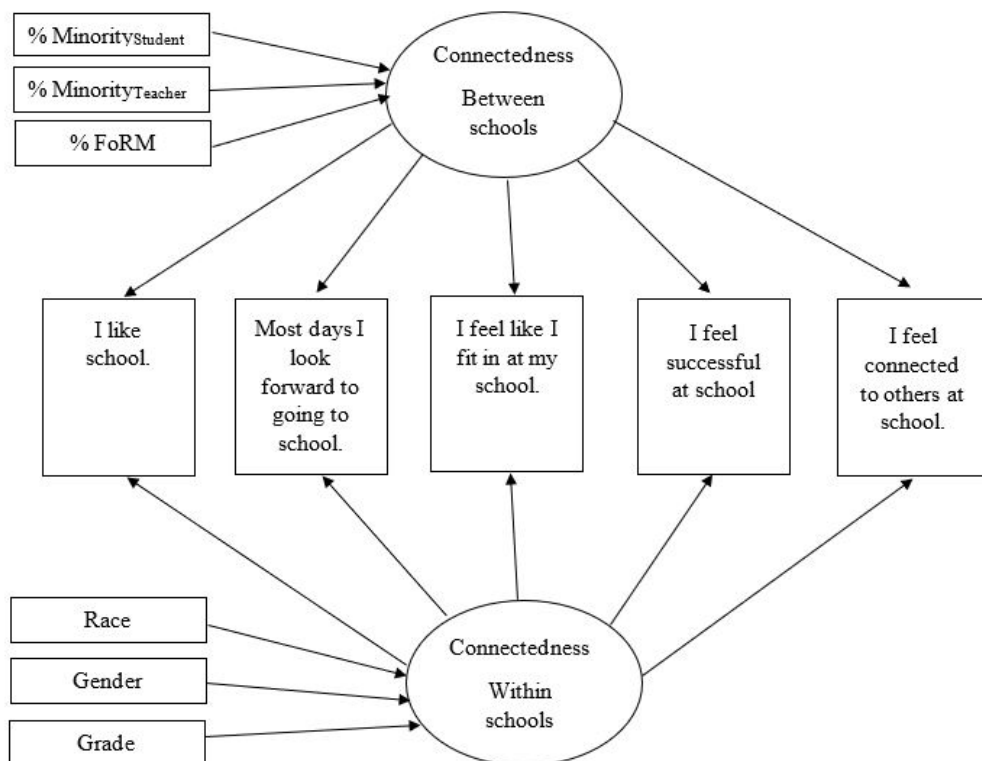
As mentioned previously, a stepwise approach to evaluate model fit was conducted. The
chi-square test of model fit was significant in models 1 – 6. However, this fit statistic is sensitive
to large sample sizes (Hu & Bentler, 1999); therefore, three additional fit indices were used to
assess model fit: comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square
error of approximation (RMSEA). According to Hu and Bentler (1999), cutoff values for
acceptable model fit are as follows: CFI and TLI should be ≥.95, RMSEA should be ≤ .06, and
SRMR should be ≤ .08. For categorical variables, CFI and TLI provide the most accurate

estimate, followed by RMSEA (Finch, 2020; Garrido et al., 2016). Model fit indices are reported in Appendix D.

For CFA models 1 – 3, I relied on CFI, TLI, RMSEA, chi-square (χ^2) difference testing, and suggested modification indices. Models 2 and 3 included an error covariance resulting in two modifications and significant chi-square difference testing indicating the modifications to improve model fit was significant, $\chi^2(5, N = 233{,}015) = 177{,}760.78$, $p < .001$ and $\chi^2(1, N = 233{,}015) = 10{,}133.78$, p < .001, respectively. It is important to note that modifications to the models were only made when theoretically justified. For instance, the largest modification recommendations indicated the need for two error covariances: item 1 ("I like school") with item 2 ("…I look forward to going to school") and item 3 ("…I fit in at my school") with item 5 ("I feel connected to others…"). Since all of these items share the same latent factor, connectedness, adding an error covariance indicates the items share some commonality that was not modeled. To add, the correlation of these unexplained variances was theoretically justified because both involve student feelings of acceptance at- and with going to school. Model 4 was estimated as one-level with nested data using the Complex function of Mplus, which adjust model fit statistics and parameter estimates for error dependencies by accounting for the nested structure of the data (Brown, 2015). Model fit improved after accounting for students nested in schools suggesting a two-level model is appropriate to further decompose the variance in perceptions of school connectedness between- and within- schools (CFI = .980 and TLI = .971; RMSEA = .023). Models 5 and 6 were estimated as two-level, doubly-latent model. Model 5 did not include individual and school-level variables and resulted in minor changes in model fit (CFI = .996 and TLI = .987; RMSEA = .056 and SRMR$_W$ = .013; SRMR$_B$ = .032). However, the SRMR values of final doubly-latent model with covariates

indicated good fit at the individual-level but poor fit at the school-level (CFI = .990 and TLI = .985; RMSEA = .039 and SRMR$_W$ = .026; SRMR$_B$ = .178). This suggests the connectedness factor structure at the school-level may be different from that at the individual-level. These results do not provide a consistent interpretation of acceptable model fit. As noted, several goodness of fit indices were used to evaluate each model. Model 6 had the best fit and was used in subsequent analyses.

The factor loadings within the school were moderately positive ranging from .534 to .785, $p < .001$. The factor loadings between schools were positive ranging from .847 to .950, $p < .001$. Factor loadings are the correlations between the survey items (indicators) and the construct it purports to measure. Factor loadings close to +1 or -1 suggest the indicators are strongly related to and explain the underlying connectedness latent factor. As expected, the factor loadings were higher between schools with residual variance terms (i.e., unexplained variance) close to zero (see standardized factor loadings for the final model in Table 4.4). Reflecting on Study 1, African American and white students exhibited the largest difference among racial group means for connectedness. The first part of this study included race as a variable and further supported the results and Study 1. The results indicate there is relationship between school connectedness and Black/African American and white/Caucasian racial groups. Specifically, Black/African American students rated school connectedness higher than their white/Caucasian counterparts ($\beta = .102$, $p < .001$, 95% CI = .098 — .106). There was no significant relationship between gender and connectedness ($\beta = -.001$, $p = .633$, 95% CI = -.005 — .003). In addition, as students advance in grade-level there is a negative relationship with connectedness. For example, as students advance from 6th to 7th grade, their connectivity to school decreased ($\beta = -.108$, $p < .001$, 95% CI = -.112 — -.105). This negative relationship

continued with a larger decrease in school connectedness at the 8th grade level (β = -.171, p <

.001, 95% CI = -.175 — -.168). Study 2 provided further evidence of connectedness having a

larger difference in the proportion of variance that is not explained in the analyses.

Table 4. 4

Standardized Factor Loadings (and Unstandardized) and Standardized Estimates

	Final Model		R^2	
Indicators of Connectedness	Within	Between	Within	Between
I like school.	.582***	.847***	.338***	.717***
Most days I look forward to going to school.	.543***	.854***	.295***	.729***
I feel like I fit in at my school.	.630***	.929***	.396***	.862***
I feel successful at my school.	.785***	.950***	.616***	.902***
I feel connected to others at school.	.565***	.887***	.320***	.786***
Connectedness	—	—	.033***	.254***
Within-School Variables				
Black	(.146) .102***	—	—	—
Female	(-.002) -.001	—	—	—
7th grade	(-.164) -.108***	—	—	—
8th grade	(-.262) -.171***	—	—	—
Between-School Variables				
% Minority$_{student}$	—	(-.003) -.439***	—	—
% Minority$_{teacher}$	—	(-.001) -.188**	—	—
% FoRM	—	(.003) .296***	—	—
Model Fit Statistics				
RMSEA	.039	—		
CFI	.990	—	—	—
TLI	.985	—	—	—
SRMR	.026	.178	—	—

Note. FoRM = free or reduced-price meals. Dashes indicate effects that were not purposely
estimated. Fit indices for between-level for RMSE, CFI, and TLI are not reported in two-level
analyses in Mplus. *$p < .01$, **$p < .05$, ***$p < .001$.

In relation to student racial composition, there was a negative relationship between school connectedness and the percent of non-white students at the school (β = -.439, p < .001, 95% CI = -.563 — .315). Similarly, there was a negative association between the percent of non-white teachers and student perceptions of connectedness (β = -.188, p < .001, 95% CI = -.321 — -.055). To add, a significant relationship existed between school SES and school connectedness (β = .295, p < .001, 95% CI = .219 — .373). Lastly, a larger proportion of the variance within schools, 25% (R^2 = .254) is explained by the model with less variation explained at the student-level, (R^2 = .033 or 3.3%).

Multiple Group Confirmatory Factor Analysis

The second part of this study examined the variation in perceptions of school connectedness and individual- and school-level characteristics across African American and white students. As the case with a multigroup analysis, the results are reported by racial group (see Table 4.5). The default in the Mplus program for multiple group analyses is to hold the factor loadings and intercepts equal across African American and white students (Muthén & Muthén, 2017). As such, the results of the factor loading estimates can be compared across models. Models 1 and 2 show that for African American and white students, the indicators of school connectedness have a positive, significant relationship to the measured construct. Specifically, the unstandardized values of the residual variance for African American and white students in Model 2 were β_B = .337 (p < .001, 95% CI = .338 — .355) and β_W = .285 (p < .001, 95% CI = .276 — .294), respectively. The unexplained variance for the five questionnaire items is larger for African American students (*M* = .615) when compared to their white counterparts (*M* = .495) suggesting the latent factor better explains the shared variance among the items for white students. Specifically, the residual variance of the five indicators were much greater for

African American students suggesting that the measure better explains school connectedness for white students than African American students. This finding suggests there may be other factors that explain school connectedness for African American students that are not captured in the current measure.

With respect to individual-level characteristics, the relationship between gender and school connectedness is different across racial groups. For African American students, females are less connectedness to schools (β = -.061, p < .001, 95% CI = -.068 — -.054), whereas white females are more connected (β = .021 p < .001, 95% CI = .015 — .028). There were no contrasting results with grade-level. African American and white students show a negative relationship between grade-level and school connectedness. In comparison to 6th grade students, African American students in 7th grade are less connected to school (β = -.093, p < .001, 95% CI = -.105 — -.081) an even less connected at 8th grade (β = -.137, p < .001, 95% CI = -.149 — -.124). White students experienced similar grade-level results in 7th grade (β = -.109, p < .001, 95% CI = -.120 — -.099) and 8th grade (β = -.183, p < .001, 95% CI = -.193 — -.172), respectively, when compared with white students in the 6th grade.

Similar result patterns were seen across school-level covariates, specifically racial composition. The percent of minority teachers at a school has a negative relationship with school connectedness for African American (β = -.073, p < .001, 95% CI = -.107 — -.039) and white students (β = -.059, p < .001, 95% CI = -.082 — -.036). Also, the percent of minority students at school has a negative relationship with school connectedness for African American (β = -.050, p < .001, 95% CI = -.079 — -.021) and white students (β = -.001, p < .001, 95% CI = -.068 — -.016). In other words, as a school becomes more diverse (i.e., the percentage of non-white students- and teachers increase), school connectedness decreases for white and African American

students. To add, among African American students the school's socioeconomic status has a positive relationship with school connectedness ($\beta = .119$, $p < .001$, 95% CI $= .097 - .141$). Whereas, the results show that for white students, the school's socioeconomic status is not significantly related to school connectedness.

Table 4. 5. *Standardized Factor Loadings (and Unstandardized) Standardized Estimates*

Model Estimates	Model 1	Model 2
African American Students		
n = 105,233		
I like school.	.587***	.594***
Most days I look forward to going to school.	.551***	.541***
I feel like I fit in at my school.	.630***	.634***
I feel successful at school.	.778***	.770***
I feel connected to others at school.	.539***	.564***
Mean of factor loadings		.621
Female	—	(-.073) -.061***
7th grade	—	(-.118) -.093***
8th grade	—	(-.174) -.137***
% Minority$_{student}$	—	(-.001) -.050**
% Minority$_{teacher}$	—	(-.001) -.073***
% FoRM	—	(.004) .119***
R^2		.030***
White Students		
n = 127,782		
I like school.	.573***	.580***
Most days I look forward to going to school.	.533***	.545***
I feel like I fit in at my school.	.631***	.635***
I feel successful at school.	.801***	.801***
I feel connected to others at school.	.583***	.576***
Mean of factor loadings		.627
Female	—	(.023) .021***
7th grade	—	(-.126) -.109***
8th grade	—	(-.212) -.183***
% Minority$_{student}$	—	(-.001) -.042**
% Minority$_{teacher}$	—	(-.002) -.059***
% FoRM	—	(.000) -.006
R^2		.035***
Model Fit Statistics		
$\chi^2(df)$	5827.43 (19)***	3949.42 (67)***
RMSEA	.051	.022
CFI	.991	.985
ΔCFI	—	-.006
TLI	.991	.982
SRMR	.015	.028

Note. FoRM = free or reduced-price meals. Dashes indicate effects that were not purposely estimated. $\chi^2(df)$ = chi-square value (degrees of freedom) *p < .01, **p < .05, ***p < .001

Study 3

This study is concerned with exploring the hypothesized theoretical framework (see

Figure 3.2) to understand African American youths' conceptualizations of school connectedness,

as measured by the GSHS 2.0. Specifically, I used exploratory factor analysis (EFA) to establish

empirical constructs of the theoretical model. Next, I used the factors from the EFA in a

multilevel, doubly-latent structural equation model (ML-SEM) to investigate relationships, if

any, between the identified latent factors (connectedness, peer relationships, adult relationships,

expectations, and discrimination) and school-level characteristics, such as teacher racial

composition, school racial composition, and school socioeconomic status. Means and standard

deviations for school-level variables are presented in Table 4.6 (see Table 3.2 for within-school

variables).

Table 4. 6.

Descriptive Statistics for School-level Variables

	Mean	SD	Min	Max
Between-School variables				
% FoRM	34.0	17.97	1.40	81.4
% Minority$_{Student}$	59.5	27.98	3.0	100
% Minority$_{Teacher}$	34.4	30.38	0	100

Note. %FoRM = Students eligible for free or reduced-price meals, % Minority$_{student}$ % =
Percent of non-white students, % Minority$_{teacher}$ = Percent of non-white teachers.

Exploratory Factor Analysis

Initially, the factorability of the 20 GSHS 2.0 items was examined. Three models were

estimated to determine the number and nature of factors as they pertain to African American

students in this study. I used the oblimin (oblique) rotation for the analysis because factors are

allowed to correlate. The first model, EFA 1, was the initial exploration of factor structures

which revealed an extraction of five factors. According to DeVellis, the "goal is to identify relatively few items that are strongly related to a small number of latent variables" (2012, p. 127). Using the recommendations established by Brown (2015), a five-factor solution was extracted from the initial EFA. A review of the factor loading matrix showed a clear pattern of items loading on five factors, see Appendix E. However, three items, "I feel like I fit in at my school," "I feel successful at school," and "I get along with others at school" were cross-loaded on two factors with low to moderate correlations, $r = .237$ to .395. A fourth item, "Students in my school are welcoming to new students" exhibited low communality (i.e., small loadings across factors). These four items were eliminated because they failed to meet a minimum criterion of having a primary factor loading of .4 or above, and no cross-loading of .3 or above on any factor. After the initial EFA, 16 items were retained (see Table 4.9 for list of retained items).

A second EFA analysis was replicated with the same sample. Results revealed similar pattern loadings on five factors. For instance, two items, "I like school" and "Most days I look forward to going to school" were highly correlated with Factor 1, $r = .79$ and .82. The second factor included moderate to high correlations ($r = .463$ to .814). The item, "I feel connected to others at school" had the lowest correlation ($r = .463$) and was retained for Factor 2. Factor 3 had four items that were highly correlated ($r = .811$ to .922), three items loaded onto Factor 4 ($r = .758$ to .797), and Factor 5 had three items ($r = .583$ to .739). The final factor analysis (EFA #3) with an independent sample ($n = 1,815$) supported reliability of the five-factor extraction. In addition to factor loadings, model fit statistics, eigenvalues, and scree plots were evaluated for final factor extraction. In the next section, I discuss model fit and final factor identification.

Model Fit Statistics. Model fit statistics for two- to seven-factor extraction procedures are presented in Table 4.7. CFI/TLI figures support the extraction of three to seven factors. In addition, RMSEA indices suggested the extraction of four to seven factors were adequate. Also noted were the decreases in model fit for a two-, three-, and four-factor solution using RMSEA indices. In a recent Monte Carlo simulation study, Finch (2020) concluded CFI, TLI, and SRMR difference statistics may not be useful in deciding the number of factors to retain. However, the RMSEA statistic, "with a cut-off value of .015 shows promise as a method for identifying the number of factors to retain, particularly when indicators are categorical, and when factor loadings are small" (2020, p. 236). The difference in RMSEA from a 4- to 5-factor solution and 5- to 6-factor solution exceeded this cutoff. Furthermore, subsequent EFA analyses produced similar fit statistics (see Table 4.7) demonstrating the need to assess eigenvalues and scree plots for final factor extraction. Based on the Kaiser criterion (eigenvalues > 1.00), review of eigenvalues for the single-level EFA model 1 and 2 reveal five factors with values greater > 1.0 (see Table 4.8). To add, a visual inspection of scree plots for each EFA analysis supported the extraction of a five-factor solution. Lastly, EFA #1 correlations between factors ranged from $r = .303$ to $r = .626$ and were statistically significant, $p < .05$. Factor correlations for EFA models 1 through 3 are in Appendix E.

Table 4. 7.

EFA Model Fit Statistics

# of Factors	CFI	TLI	RMSEA	90% CI	SRMR
EFA 1					
n = 20,912					
2	.880	.849	.127	.126-.128	.079
3	.932	.903	.102	.101-.103	.055
4	.958	.931	.085	.084-.086	.042
5	.978	.958	.067	.066-.068	.029
6	.995	.990	.033	.032-.034	.011
7	.998	.994	.026	.024-.027	.008
EFA 2					
n = 20,912					
3	.944	.910	.119	.117-.120	.060
4	.970	.943	.095	.093-.096	.036
5	.993	.983	.051	.050-.053	.016
6	.998	.993	.033	.031-.035	.006
7	.944	.910	.119	.117-.120	.060
EFA 3					
n = 1,815					
3	.949	.918	.115	.111-.120	.061
4	.971	.944	.096	.091-.101	.044
5	.988	.971	.068	.063-.074	.024
6	.996	.987	.046	.039-.053	.013

Note. No = number.

Factor Extraction. The names of each factor correspond to the hypothesized theoretical model previously discussed. For instance, *connectedness* has two items that measure student feelings of looking forward to and liking school. Higher scores indicate higher feelings of being connected to school. The scale demonstrated adequate reliability (α = .73). Also, the construct *discrimination* has three items. Higher scores indicate students at the school are accepting of

other students regardless of race, gender, and ability. Lower scores suggest discriminatory

practices are perceived at the school.

Table 4. 8.

Eigenvalues for EFA

Factor	Eigenvalues for Model 1 $n = 20{,}912$	Eigenvalues for Model 2 $n = 20{,}912$	Model 3 $n = 1815$
1	7.80	6.47	6.67
2	2.35	2.08	1.95
3	1.50	1.41	1.37
4	1.13	1.10	1.08
5	1.11	1.04	1.04
6	0.91	0.67	0.74

The scale demonstrated good reliability ($\alpha = .81$). Table 4.9 shows the factor names, number of

retained items for each factor, and the alpha score for each factor. In the next section, I discuss

the results of the ML-SEM using the five-factor solution.

Table 4. 9.

Factor Names, Corresponding Indicators, Codes, Items, and Cronbach α

Factor name	Items	Factor loading	α
Connectedness	2	(C1) I like school.	.73
		(C2) Most days I look forward to going to school.	
Peer relationship	4	(P5) I feel connected to others at school.	.74
		(P7) I know a student at my school that I can talk to if I need help.	
		(P8) I know a student at my school that I can talk to if I am feeling sad or down.	
		(P9) I have a group of friends at school that I have fun with and are nice to me.	
Adult relationship	4	(A11) Teachers treat me with respect.	.91
		(A12) Adults in this school treat all students with respect.	
		(A13) All students are treated fairly by the adults in my school.	
		(A14) Teachers treat all students fairly.	
Discrimination	3	(CL17) Students show respect to other students regardless of their academic ability.	.81
		(CL18) Students at this school are treated fairly by other students regardless of race, ethnicity, or culture.	
		(CL19) All students in my school are treated fairly regardless of their appearance.	
Expectations	3	(S87) I feel my school has high standards for achievement.	.68
		(S89) The behaviors in my classroom allow the teacher to teach so I can learn.	
		(S91) I know an adult at school that I can talk with if I need help.	

Note. The factor loading estimates reflect the primary loading factor from the final EFA Model 3. Values in the last column are Cronbach's alpha reliability score for each factor.

Multilevel Structural Equation Modeling

A five-factor solution from the EFA analyses was used to estimate a doubly-latent multilevel structural equation model. They hypothesized model represents notions of theory and empirical research of school connectedness in relation to African American students. It was

expected that increased perceptions of school connectedness would be positively associated with increased perceptions of high expectations, equitable and fair treatment, and supportive adult and peer relationships.

The results of the analysis are presented in Table 4.10. Previously mentioned model fit indices were used to evaluate the proposed model. The SRMR values of final doubly-latent model with covariates indicated good fit at the individual-level but poor fit at the school-level [χ^2 = 20023.811 (233)***; CFI = .988 and TLI = .985; RMSEA = .028 and SRMR$_W$ = .035; SRMR$_B$ = .227]. Findings revealed school connectedness has a positive, significant relationship with peer relationships (β = .649, p < .05) and discrimination (β = .787, p < .05). Also, school connectedness was not found to be associated with adult relationships and expectations (β = 1.15, p = .07; and β = -1.60, p = .16), respectively. With respect to racial composition, school connectedness was not associated with the percent of non-white students at school. However, higher percentages of non-white teachers were related to decreases in feeling happy about going to and liking school (β = -.051, p < .001).

Table 4. 10.

Between School Unstandardized and Standardized Estimates with Confidence Intervals

	Unstandardized	Standardized (S.E.)	95% C.I.
% Form	.013***	.675 (.05)***	.601 — .748
% Minority$_{student}$	-.001	-.322 (.09)	-.195 — .094
% Minority$_{teacher}$	-.004***	-.051 (.09)***	-.464 — -.181
Peer relationships —> Connectedness	1.57*	.649 (.31)*	.143 — 1.16
Adult relationships —> Connectedness	1.22	1.15 (.62)	.132 — 2.30
Discrimination —> Connectedness	1.13*	.787 (.37)*	.249 — 2.00
Expectations —> Connectedness	-1.63	-1.60 (1.12)	-3.53 — .273
R^2	—	.957 (.08)***	—

Note. FoRM = Free or Reduced-Price Meals. S.E. = Standard Error, C.I. = Confidence Interval. Dashes indicate effects that were not purposely estimated. *$p < .01$, **$p < .05$, ***$p < .001$

Figure 4. 2

Hypothesized Structural Equation Model
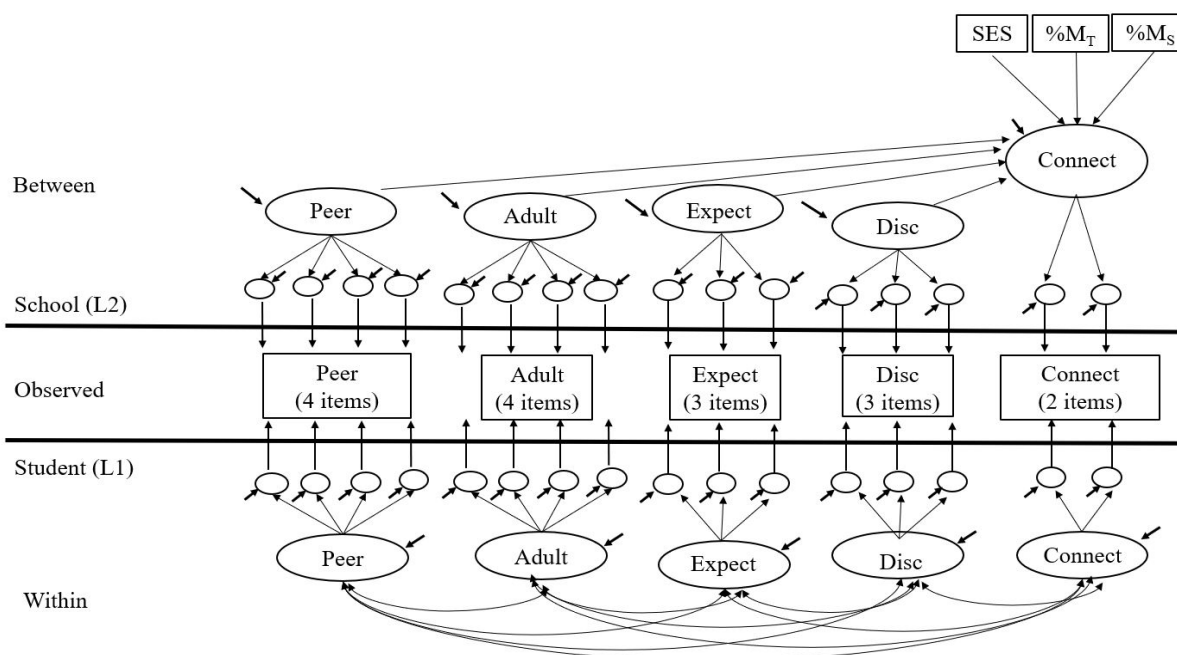
5 DISCUSSION

The emergence of the construct of school connectedness outside of social science research arena, did not provide the opportunity to critically review, challenge, and retest theoretical conceptions of school connectedness. In a review of literature, Zullig and colleagues (2010) noted the prolific use of school connectedness in public health research with measures of questionable psychometric properties. More recently, Hodges et al. (2018) conducted a systematic review of the literature on the psychometric properties of self-reported school connectedness measures for students aged six to 14 years. They concluded the majority of the published validation studies failed to adequately conceptualize the construct of school connectedness. This foundational gap in publication of validity studies has brought us to this point of still trying to understand how African American youth operationalize school connectedness.

Research informs us that when African Americans perceive acts of discrimination, differential treatment, and exclusion in their schools, they are more likely to score school connectivity low (Dotterer et al., 2009; Walsemann et al., 2011) which in turn, increases the risk of experiencing depression (Ernestus et al., 2014; Foster et al., 2017). If education is the tool for liberation, then equitable measures that are racially and culturally sensitive are needed to comprehensively operationalize school connectedness for African American students. I began this research to understand what a robust measure of school connectedness might look like? This examination required an understanding of the multifaceted ways our everyday lives are shaped and influenced by microsocial factors, such as racism, shape our world and influence human development. I used a theoretical framework, informed by critical race theory (Ladson-Billings, 1998), an ecological systems theory (PVEST) (Spencer, 1999), and resistance theory (Solorzano & Bernal, 2001), to understand how racism is interwoven in our everyday lives and how our

reactions to racism influences our identities therefore shaping our actions and how we relate to others. The framework indicates that individuals do not necessary conform to racist ideologies that manifest in discriminatory policies but may counter such acts of oppression.

One of the aims of this study was to examine middle school students' perceptions of school connectedness across racial groups, paying particular attention to African American students. The findings in Study 1 indicated that perceptions of school connectedness vary by racial group. African American students were less connected to Asian students, but more connected than white students. However, the results of this analysis were not practically significant. This suggests that middle school students in public schools across the state of Georgia are scoring school connectedness. This finding supports another study conducted in Georgia that found race was not associated with connectedness (La Salle, Parris, et al., 2016). This result is in contrast to the extant literature, African American students were more connected to schools than their white and Hispanic counterparts. Specifically, looking across studies that used similar measures (Anyon et al., 2016; Johnson et al., 2001; Zhu, 2018) African American students rated connectedness lower than other racial groups. These results were unexpected given the research and theoretical centering. Context influences student interactions and experiences within their racial group (Velez & Spencer, 2018), This outcome suggest that students from each racial group have similar interactions and experiences within schools as if they are one homogenous group, which is not the reality, especially for African American students.

As discussed in the methodology section, the analyses in Study 2 only focused on the school connectedness construct and the 5 indicators (e.g., "I like school") that measure connectedness. Study 2 revealed differences in relationships between gender and school

connectedness. For example, the first part of Study 2 analyzed white and African American students together and revealed a weak significant relationship with gender. In this pooled (aggregate) analysis, female students were less connected to schools than males. These results contrast with Johnson et al. (2001), who found females more connected in a total group analysis using data from the School Connectedness Survey (see discussion on the Ad Health survey in Chapter 2). This may indicate the important role of geographical location and context play in understanding how societal ideologies operate within and across cultural, social, political and environmental contexts. A national sample of students may have varied experiences and interactions which are different from students within Georgia when considering the societal ideologies that control the governance and shape the institutions upon which the students live. The second part of Study 2 was a multigroup analysis that estimated simultaneous, but separate results for each group were more revealing. For African American students, females were less connected than males. White students were opposite; females were more connected to school than males. Here we see an example of the importance of intersectionality and understanding how race and gender operate in tandem to create a compounding effect of oppression (Crenshaw, 1989). It is possible that African American males drew upon cultural and social capital to resist racial microaggressions in school that may include assumptions of deviance, differential treatment in school discipline and debasing views of intelligence (Allen, 2013). But more importantly, the contrasting results of the multigroup analysis when compared to the total group analysis (at the individual-level) supports my contention that large-scale data analyses reported in the aggregate may not provide an accurate picture for racial group differences (Garcia & Mayorga, 2018). Large scale data sets offer limited insight into classroom-level practices, interactions, and relationships. Moreover, the results regarding gender differences across white

and African American students are not consistent across research (Anyon et al., 2016; Atkins et al., 2014; Johnson et al., 2001; La Salle, Parris, et al., 2016; Niehaus et al., 2016; Tomek et al., 2017) suggesting that further development and evaluation of connectedness measures are needed (Appleton et al., 2008; Hodges et al., 2018).

A second contrast between the two analyses in Study 2 are the findings regarding socioeconomic status. Whereas the relationship between the percentage of students qualifying for free or reduced lunch is significant in the pooled study, there was no relationship between school SES and connectedness for white students in the multigroup analysis. The presence of a significant relationship between SES and connectedness for African American students may correlate with the resegregated structure of schools in Georgia (Freeman et al., 2002). As school attendance zones in Georgia are primarily stratified by income, it is likely that predominately white schools are less likely to experience high levels of poverty. If there is an instance that low income, non-white students are attending a mostly white, affluent school, it is possible the experiences of non-white students in these settings are masked in an aggregate data sample.

The racial stratification in schools may account for African American youth in Georgia feeling more connected to schools in relation to school SES than white students. Surprisingly, the diversity of the teaching staff and student body had a negative relationship with school connectedness. This contrasts with Johnson et al. (2001), who found that for middle schoolers, students who attend schools with greater percentages of their own racial identity are more connected to school. Similar studies that examined student and teacher diversity and used a similar school connectedness subscale found that as schools become less diverse, African American students were more likely to feel less connected to school (Atkins et al., 2014; Bottiani et al., 2016; Walsemann et al., 2011). Moreover, it is well documented the benefits of African

American students having African American teachers that are culturally and racially congruent. Some researchers have found that having the same race teacher is a protective factor against unfair, discriminatory practices (Bottiani et al., 2017; Dotterer et al., 2009; Griffin, 2015; Skiba et al., 2011) and that supportive relationships are valued among African American students (Acosta et al., 2018; Ewing, 2018; Nasir et al., 2011; Noddings, 2013). While it may seem unlikely that African American students were less connected as the percent of non-white teachers increased, it is important to remember that Study 2 only analyzed the school connectedness subscale of the GSHS 2.0. This inconsistent finding may be attributed to the limitations of the construct, as previously discussed.

The second aim of this dissertation was to propose a theoretical model of school connectedness for African American students. School connectedness, as the dependent variable, was explored and analyzed in Study 3. For instance, the results of the analyses revealed a different measurement structure for school connectedness. The results of the EFA revealed to indicators that explain connectedness for African American students: "I like school" and "Most days I look forward to going to school." Theoretically, the model was conceptualized in relation to African American epistemologies that identify school connectedness as an outcome of having positive relationships with peers and adults and few experiences with discrimination. Consistent with previous research, peer relationships and equitable practices have a significant positive relationship with school connectedness (Bottiani et al., 2016; Dotterer et al., 2009; Walsemann et al., 2011). Results indicate that when African American students perceive they are being treated fairly, they are more connected to school, meaning perceptions of fairness and indiscriminate treatment were positively associated with school connectedness. The finding that expectations and adult relationships were not significantly correlated with connectivity suggest that for

African American students, social relationships with peers were a greater indication of school connectivity. This aligns with research on African American youth social identity formation in schools (Tatum, 2017; Velez & Spencer, 2018). However, the interpretation of the data is complicated by the limitations of the measurement that I discuss in the next section. Furthermore, I return to Nasir and colleagues' (2011) framework that approached conceptualizing school connectedness for African American students from a mixed-methods approach. The ethnographic methods, inclusive of interviews with teachers and students, provided context for understanding the multifaceted ways African American students may connect with their school environment and how these connections manifest in their academic identities. For instance, a student may have high strong interpersonal relationships with peers and adults while at the same time have a low affinity for completing homework, attending school, and participating in class.

As a consequence of developing measurements based on white normality (Hagborg, 1994) for racially heterogeneous groups, I question the definition, utility of, and contextually applicable indicators of school connectedness measures as a valid and strong indicator of African American youth connectivity in schools. My inclination is that African American students are more connected to school for reasons that are not necessarily explained in the data. For instance, the exploratory factor analysis in Study 3 revealed a different measurement model in relation to the widely used five-item connectedness construct initially proposed by Resnick and colleagues (1997), as well as, the comparable connectedness dimension used in Georgia (La Salle, Parris, et al., 2016). Thus, there is more to learn about how African American students experience school and other factors that may relate to their perceptions of being connected to school.

The Conceptual Framework of School Connectedness for African American students provides a holistic, ecological frame for understanding macrosocial forces that are unseen but

impact every aspect of our lived experiences. The framework acknowledges the inherent racism within society and provides a lens for understanding how students resist oppressive structures and how that may look or manifest in their actions.

Conclusions

After considering the practical significance of school connectedness across racial groups in study 1, the larger magnitude of unexplained variance of the school connectedness indicators for African American students in the multigroup analysis, and the reduction of indicators of connectedness from the exploratory factor analysis, I am still left with the question, "Were students measured with a robust construct?" The current measure does not appear to operationalize school connectedness for African American students. The ambiguity across various measures in research hampers interpretations, which in turn, may lead to ineffective policies and resources for African American students that have a history of not being served well in public schools (Ash & Anderson, 2013). Are there social benefits to segregated schools? Without a robust, valid and reliably measure of school connectedness, we cannot definitively interpret findings, causal or relational. This speaks to African American students that are not served well in schools are missing with measures that do not validate their existence or experiences.

Implications

A significant contribution of this investigation was the multi-theoretical conceptualization of school connectedness. Although research on African American education highlights the multidimensional nature of connectedness (Acosta et al., 2018; Morris, 2004; Nasir et al., 2011), we know very little about how African American students conceptualize school connectivity and national, large-scale studies have rarely examined African American

students exclusively. The development of a culturally appropriate, valid and reliable measure of school connectedness for African American students has the potential to be beneficial for policymaker, school building administrators, and, most importantly, teachers. Next, I discuss the potential of using the *Conceptual Framework of School Connectedness for African American Students* (See Appendix C) in Teaching and Teacher Education.

Developing a Research Agenda

Academicians may use the framework to develop a robust research agenda on school connectedness. The construction of a transdisciplinary research agenda requires collaborators from across disciplines, such as Sociology, African American studies, and Public Health, to coordinate their research efforts around a shared topic meaningfully using multiple methods. This is a call for a deeper dive in the research using qualitative methods that capture the voices of African American youth, families, and communities to conceptualize and operationalize the school connectedness construct. School connectedness is not limited to students. For African Americans whom have a collective worldview, school connectedness extends to families. Using multiple informants and methods (e.g., interviews, surveys, observations) highlights the important role of how race and culture influence youth identity and development. This is particularly important when developing valid and reliable school connectedness measures with strong psychometric properties for African American students.

As a Teaching Tool

Many students in the United States are not taught by teachers who resemble their race nor share their cultural understandings of the operative world as it relates to their position (Gomez, 2014). Misunderstanding a student's cultural, behavioral style can have clear and potential pedagogical consequences that result in errors in the estimation of a student's or cultural group's

intellectual potential such as mislabeling, misplacement, and mistreatment of children (Hilliard, 1992; O'Connor & DeLuca, 2006). Instructional use of the framework in teacher education includes a conceptual approach of blended theories for understanding how systems might impact various aspects of our humanity and engage in critical discourse around institutional accountability to African American students. For in-service teachers, professional development involving the framework may offer ideas or action research proposals, such as understanding ideology and how it shapes teacher dispositions toward African American youth, that may lead to methods for creating inclusive schools, which in turn may increase teacher support and expectations. Additionally, teacher educators, pre-service and in-service teachers may use the framework to guide or engage in critical discourse on institutional accountability to African American students. Moreover, action research proposals may include student narratives about their experiences and interactions (interpersonal and institutional) within schools, especially at the middle school-level, influence individual identity-making processes. With a comprehensive understanding of how structural racism is invisible but ever so present, educators may begin to peel away deficit ideology and truly see how African American students are surviving, thriving, and overcoming oppressive systems.

Informing Policy Development

In addition to developing a rigorous research agenda, the integrated framework has implications for use as a tool to resist or dismantle policy interventions that perpetuate and sustain structural racism. The nestedness of the framework adds value by requiring researchers to think about policy at multiple levels. For example, while research that informs policy may often consider how policy influences individuals, schools, and communities, the consideration of how ideologies influence the way decisionmakers interpret data that inform policy is rarely present in

the literature (Felner et al., 2008). Similarly, the way societal ideologies influence the implementation and outcomes of certain policies need to be taken into consideration during the policy-making process. Robust research that informs policy can help illuminate unintended consequences of decisions by integrating perspectives and practices from varied disciplines. For example, by focusing on addressing school connectedness with interventions from a strictly educational policy perspective, researchers may miss the opportunity to consider how education policy, along with environmental factors and other public policies, may impact a student's relationships and connections to their school. In this fashion, researchers that develop interventions that are shaped by culture and context, will not have to retool a program to be more responsive, as seen with the Positive-Based Intervention Programs – a discipline intervention designed to reduce disparities (Vincent et al., 2011).

Limitations and Suggestions for Future Research

The results of this study provided insight into the complexity of school connectedness. A few limitations should be considered when interpreting the results of the studies. To take advantage of the robust data set, I included a large sample of students in the analyses. Georgia is a unique state with a diverse populous and topography. Students in Georgia experience a multitude of varied contexts, including the mostly white, mountainous foothills of the Blue Ridge in the north to homogenous African American towns in rural counties and metropolitan cities, such as Sparta in Hancock County and the city of Atlanta, respectively. A strength of this dissertation is to have insights into student's perception of school connectedness from students experiencing varied contexts. Nonetheless, increasing the statistical power as a result of increasing the sample size may detect an unimportant effect as statistically significant (Coladarci & Cobb, 2013).

Additional limitations are associated with the survey. First, this study used data from the Georgia Student Health Survey 2.0. The data primarily relies upon self-reported information for students to assess perceptions of school connectedness, which raises concern with respect to validity. For example, students may be influenced to answer questions that are socially acceptable, limiting authentic self-assessment. Questions that may elevate concerns include, "I treat other students fairly," "I complete a task despite the challenges," and "Honesty is an important trait to me" to name a few.

Likewise, the unit of measurement should be clear and consistent in the wording of items. School connectedness is a school-level construct informed by individual student perceptions. Similar to school climate scales, school connectedness measures are designed, so the referent is the school, not the individual (Marsh et al., 2012; Wang & Degol, 2016). In evaluating school connectedness, individual student perceptions were aggregated to the school-level. Aggregating items that reflect individual perceptions (e.g., "Teachers treat me with respect") versus aggregating items that reflect perceptions of the student body (e.g., "Teachers treat all students fairly") lead to different points of reference, and subsequently, may lead to different findings. Marsh et al. (2012) recommends designing measures that assess school climate or connectedness such that the referent is the school, not the individual or a combination of individual and school referents.

Furthermore, the analyses relied solely on the perceptions of students. School ecologies are dynamic and relational with ongoing interaction and communication among and between multiple sources (e.g., students, teachers, administrators, counselors, other school staff, and parents) (Wang & Degol, 2016). The use of multiple informants may provide breadth and depth on perceptions of school connectedness. To add, researchers can examine perceptions of school

connectedness from different groups paying particular attention to when perceptions are similar or dissimilar.

The discussion above demonstrates clearly the need for future research on school connectedness for African American students. The results of these analyses support my contention that current measures of school connectedness do not capture the multifaceted ways that African American students are connected to their schools. The findings presented in this dissertation provide a starting point for a further robust examination of school connectedness with qualitative methods. This includes contextualizing school ecologies through qualitative investigations to understand how middle school students experience, perceive and explain their connections to school. Information gleaned from qualitative data may illuminate significant factors related to school connectivity. Also, the research field could benefit form a more granular statistical approach of examining interaction effects within diverse and racially stratified school systems to layer with qualitative methods.

Lastly, researchers must consider the implications of institutional racism for African American students, specifically how students experience and react to racialized spaces within schools. By developing measures that are culturally relevant, and most importantly informed by African American students, then we are not just repeating "Black Lives Matter" but operationalizing the actions that define it.

REFERENCES

Acosta, M. M., Foster, M., & Houchen, D. F. (2018). "Why seek the living among the dead?"

African American pedagogical excellence: Exemplar practice for teacher education.

Journal of Teacher Education, *69*(4), 341–353.

https://doi.org/10.1177/0022487118761881

Allen, Q. (2013). "They think minority means lesser than": Black middle-class sons and fathers

resisting microaggressions in the school. *Urban Education*, *48*(2), 171–197.

https://doi.org/10.1177/0042085912450575

Ani, A. (2013). In spite of racism, inequality, and school failure: Defining hope with achieving

black children. *The Journal of Negro Education*, *82*(4), 408–421.

https://doi.org/10.7709/jnegroeducation.82.4.0408

Anyon, Y., Zhang, D., & Hazel, C. (2016). Race, exclusionary discipline, and connectedness to

adults in secondary schools. *American Journal of Community Psychology*, *57*(3–4), 342–

352. https://doi.org/10.1002/ajcp.12061

Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school:

Critical conceptual and methodological issues of the construct. *Psychology in the

Schools*, *45*(5), 369–386. https://doi.org/10.1002/pits.20303

Asante, M. K. (2017). *Revolutionary pedagogy: Primer for teachers of Black children*. Universal

Write Publications LLC.

Ash, C. H., & Anderson, C. D. (2013). "Post-Racial" inequality in American public education. In

A.D. Dixson, & J. K. Donnor (Eds.), *The resegegation of schools: Education and race in

the twenty-first century* (pp. 1-26). Taylor & Francis.

Atkins, D. N., Fertig, A. R., & Wilkins, V. M. (2014). Connectedness and expectations: How minority teachers can improve educational outcomes for minority students. *Public Management Review*, *16*(4), 503. https://doi.org/10.1080/14719037.2013.841981

Au, W. (2008). Remembrance: Keeping kids at the center of educational policy. In W. Ayers, G. Ladson-Billings, & G. Michie, *City kids, city schools: More reports from the front row* (pp. 305-310). The New Press.

Au, W. (2009). *Unequal by design: High-stakes testing and the standardization of inequality.* Routledge.

Baldwin, J. A. (1986). African (Black) psychology: Issues and synthesis. *Journal of Black Studies*, *16*(3), 235–249.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.

Bandura, A. (2002). Social cognitive theory in cultural context. *Applied Psychology: An International Review*, *51*(2), 269.

Bearman, P. S., & Moody, J. (2004). Suicide and friendships among American adolescents. *American Journal of Public Health*, *94*(1), 89–95. https://doi.org/10.2105/AJPH.94.1.89

Bell, D. A. (1992). *Faces at the bottom of the well: The permanence of racism*. Basic Books.

Benner, A., & Wang, Y. (2014). Demographic marginalization, social integration, and adolescents' educational success. *Journal of Youth & Adolescence*, *43*(10), 1611.

Biag, M. (2016). A descriptive analysis of school connectedness. *Urban Education*, *51*(1), 32–59. https://doi.org/10.1177/0042085914539772

Bishop, J. H., Bishop, M., Bishop, M., & Gelbwasser, L. (2004). why we harass nerds and freaks: A formal theory of student culture and norms. *The Journal of School Health; Kent*, *74*(7), 235–251.

Blum, R. W. (2005). *School connectedness: Improving the lives of students.* Johns Hopkins Bloomberg School of Public Health.

Bottiani, J. H., Bradshaw, C., & Mendelson, T. (2016). Inequality in Black and white high school students' perceptions of school support: An examination of race in context. *Journal of Youth & Adolescence*, *45*(6), 1176.

Bottiani, J. H., Bradshaw, C. P., & Mendelson, T. (2017). A multilevel examination of racial disparities in high school discipline: Black and white adolescents' perceived equity, school belonging, and adjustment problems. *Journal of Educational Psychology*, *109*(4), 532–545. https://doi.org/10.1037/edu0000155

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, *32*, 513–531.

Bronfenbrenner, U. (1979). Contexts of child rearing: Problems and prospects. *American Psychologist*, *34*(10), 844–850. https://doi.org/10.1037/0003-066X.34.10.844

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*, *22*(6), 723–742.

Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). Guilford Publications.

Callahan, R. E. (1962). *Education and the cult of efficiency: A study of the social forces that have shaped the administration of the public schools.* University of Chicago Press.

Campbell, H. L., Barry, C. L., Joe, J. N., & Finney, S. J. (2008). Configural, metric, and scalar invariance of the modified achievement goal questionnaire across African American and white university students. *Educational and Psychological Measurement*, *68*(6), 988–1007. https://doi.org/10.1177/0013164408318766

Catalano, R. F., Haggerty, K. P., Oesterle, S., Fleming, C. B., & Hawkins, J. D. (2004). The importance of bonding to school for healthy development: Findings from the social development research group. *The Journal of School Health; Kent*, *74*(7), 252–261.

Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research*, *1*(2), 245–276. https://doi.org/10.1207/s15327906mbr0102_10

Clifford, M., Menon, R., Gangi, T., Condon, C., & Hornung, K. (2012). Measuring school climate for gauging principal performance: A review of the validity and reliability of publicly accessible measures. *A Quality School Leadership Issue Brief*. American Institutes for Research.

Cohen, J., McCabe, E. M., Michelli, N. M., & Pikeral, T. (2009). School climate: Research, policy, practice, and teacher education. *Teachers College Record*, *111*(1), 180–213.

Coladarci, T., & Cobb, C. D. (2013). *Fundamentals of statistical reasoning in education*. John Wiley & Sons.

Crenshaw, K. (1989). Demarginalizing the intersection of race and sex: A Black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics. *University of Chicago Legal Forum*, 139–168.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications.

DeCuir, J. T., & Dixson, A. D. (2004). "So When It Comes out, They Aren't That Surprised That It Is There": Using critical ace theory as a tool of analysis of race and racism in education. *Educational Researcher*, *33*(5), 26–31.

Delgado, R., & Stefancic, J. (2005). *The Derrick Bell reader: Introduction*. Social Science Research Network. https://papers.ssrn.com/abstract=2186226

DeVellis, R. F. (2012). *Scale development: Theory and applications*. SAGE Publications.

Dotterer, A. M., McHale, S. M., & Crouter, A. C. (2009). Sociocultural factors and school engagement among African American youth: The roles of racial discrimination, racial socialization, and ethnic identity. *Applied Developmental Science*, *13*(2), 61–73. https://doi.org/10.1080/10888690902801442

DuBois, W. E. B. (1903). *Souls of Black Folk*. A.C. McClurg & Company.

Dudovitz, R. N., Nelson, B. B., Coker, T. R., Biely, C., Li, N., Wu, L. C., & Chung, P. J. (2016). Long-term health implications of school quality. *Social Science & Medicine*, *158*, 1–7. https://doi.org/10.1016/j.socscimed.2016.04.009

Eide, E. R., & Ronan, N. (2001). Is participation in high school athletics an investment or a consumption good?: Evidence from high school and beyond. *Economics of Education Review*, *20*(5), 431–442. https://doi.org/10.1016/S0272-7757(00)00033-9

Ernestus, S. M., Prelow, H. M., Ramrattan, M. E., & Wilson, S. A. (2014). Self-system processes as a mediator of school connectedness and depressive symptomatology in African American and European American adolescents. *School Mental Health*, *6*(3), 175–183. https://doi.org/10.1007/s12310-014-9122-z

Ewing, E. L. (2018). *Ghosts in the schoolyard: Racism and school closings on Chicago's south side*. University of Chicago Press.

Feagin, J. R. (2013). *The white racial frame: Centuries of racial framing and counter-framing*. Routledge.

Felner, R. D., Bolton, N., Seitsinger, A. M., Brand, S., & Burns, A. (2008). Creating a statewide educational data system for accountability and improvement: A comprehensive information and assessment system for making evidence-based change at school, district, and policy levels. *Psychology in the Schools*, *45*(3), 235–256.

Finch, H. (2020). Using fit statistic differences to determine the optimal number of factors to retain in an exploratory factor analysis. *Educational and Psychological Measurement*, *80*(2), 217–241. https://doi.org/10.1177/0013164419865769

Finch, H., & Bolin, J. (2017). *Multilevel modeling using Mplus*. CRC Press.

Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research*, *59*(2), 117–142. https://doi.org/10.2307/1170412

Foster, C. E., Horwitz, A., Thomas, A., Opperman, K., Gipson, P., Burnside, A., Stone, D. M., & King, C. A. (2017). Connectedness to family, school, peers, and community in socially vulnerable adolescents. *Children and Youth Services Review*, *81*, 321–331. https://doi.org/10.1016/j.childyouth.2017.08.011

Franklin, V. P. (2007). The tests are written for the dogs: "The Journal of Negro Education", African American children, and the intelligence testing movement in historical perspective. *The Journal of Negro Education*, *76*(3), 216–229.

Freeman, C., Scafidi, B., & Sjoquist, D. (2002). *Racial segregation in Georgia public schools, 1994-2001: Trends, causes, and impact on teacher quality* (No. 78; p. 45). Andrew Young School of Public Policy at Georgia State University. https://pdfs.semanticscholar.org/6f93/6a6e0714389c413ebeab3df4363b80a7fa84.pdf

Freiberg, H. J., & Stein, T. A. (1999). Measuring, improving and sustaining healthy learning environments. In *H. J. Freiberg (Ed.), School climate: Measuring, improving and sustaining healthy learning environments.* (pp. 11–29). Falmer Press.

Furlong, M. J., O'brennan, L. M., & You, S. (2011). Psychometric properties of the Add Health School Connectedness Scale for 18 sociocultural groups. *Psychology in the Schools*, *48*(10), 986–997. https://doi.org/10.1002/pits.20609

Furrer, C., & Skinner, E. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology*, *95*(1), 148–162. https://doi.org/10.1037/0022-0663.95.1.148

Galliher, R. V., Rostosky, S. S., & Hughes, H. K. (2004). School belonging, self-esteem, and depressive symptoms in adolescents: An examination of sex, sexual attraction status, and urbanicity. *Journal of Youth and Adolescence*, *33*(3), 235–245. https://doi.org/10.1023/B:JOYO.0000025322.11510.9d

Games, P. A., & Howell, J. F. (1976). Pairwise multiple comparison procedures with unequal N's and/or variances: A Monte Carlo study. *Journal of Educational Statistics*, *1*(2), 113–125. https://doi.org/10.3102/10769986001002113

Garcia, N. M., & Mayorga, O. J. (2018). The threat of unexamined secondary data: A critical race transformative convergent mixed methods. *Race Ethnicity and Education*, *21*(2), 231–252. https://doi.org/10.1080/13613324.2017.1377415

Garrido, L. E., Abad, F. J., & Ponsoda, V. (2016). Are fit indices really fit to estimate the number of factors with categorical variables? Some cautionary findings via Monte Carlo simulation. *Psychological Methods*, *21*(1), 93–111. https://doi.org/10.1037/met0000064

Georgia Department of Education. (2019a). *Georgia Department of Education School Safety and Climate Strategic Plan 2019-2024* (p. 23). Georgia Department of Education.

Georgia Department of Education. (2019b). *Georgia Student Health Survey 2.0*. www.gadoe.org

Georgia General Assembly (n.d.). Retrieved August 2, 2019, from https://advance.lexis.com

Gilbert, K. L., & Ray, R. (2016). Why police kill Black males with impunity: Applying public health critical race praxis (PHCRP) to address the determinants of policing behaviors and "justifiable" homicides in the USA. *Journal of Urban Health*, *93*(S1), 122–140. https://doi.org/10.1007/s11524-015-0005-x

Gillborn, D. (2010). Reform, racism and the centrality of whiteness: Assessment, ability and the "new eugenics." *Irish Educational Studies*, *29*(3), 231–252. https://doi.org/10.1080/03323315.2010.498280

Goddard, H. H. (1911). Two thousand normal children measured by the Binet Measuring Scale of Intelligence. *The Pedagogical Seminary*, *18*(2), 232–259. https://doi.org/10.1080/08919402.1911.10532788

G.O.S.A. (n.d.). *Report Card | The Governor's Office of Student Achievement*. Retrieved August 20, 2019, from https://gosa.georgia.gov/report-card

Gotanda, N. (1991). A critique of our constitution is color-blind. *Stanford Law Review*, *44*(1), 1–68.

Griffin, S. (2015). *Those kids, our schools: Race and reform in an American high school*. Harvard Education Press.

Guhn, M.(2009). Insights from successful and unsuccessful implementations of school reform programs. *Journal of Educational Change*, *10*(4), 337–363. https://doi.org/10.1007/s10833-008-9063-0

Hagborg, W. J. (1994). An exploration of school membership among middle- and high-school students. *Journal of Psychoeducational Assessment*, *12*(4), 312–323. https://doi.org/10.1177/073428299401200401

Harris, T. A. (2012). *Value, networks, desegregation, and displacement at one of Georgia's Black high schools, Athens High and Industrial School/Burney-Harris High School, 1913-1970* [Ph.D., Georgia State University].

Heck, N. C., Poteat, V. P., & Goodenow, C. S. (2016). Advances in research with LGBTQ youth in schools. *Psychology of Sexual Orientation and Gender Diversity*, *3*(4), 381–385. https://doi.org/10.1037/sgd0000206

Henderson, D. X., Baker, A., Goings, R. B., & Gordon-Littréan, B. (2017). Exploring underlying dimensions of social connectedness in the experiences of suspended young people from ethnically diverse populations in the USA. *Children & Society*, *31*(5), 390–402. https://doi.org/10.1111/chso.12210

Hodges, A., Cordier, R., Joosten, A., Bourke-Taylor, H., & Speyer, R. (2018). Evaluating the psychometric quality of school connectedness measures: A systematic review. *PLoS ONE*, *13*(9), 1–27. https://doi.org/10.1371/journal.pone.0203373

Horsford, S. D. (2011). *Learning in a burning house: Educational inequality, ideology, and (dis) integration.* Teachers College Press.

Hox, J., & Bechger, T. M. (1998). An introduction to structural equation modeling. *Family Science Review*, *11*, 354–373.

Hox, J. J. (2013). *Multilevel regression and multilevel structural equation modeling*. Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199934898.013.0014

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Hughes, J. N., Im, M. H., & Allee, P. J. (2015). Effect of school belonging trajectories in grades 6–8 on achievement: Gender and ethnic differences. *Journal of School Psychology*, *53*, 493–507. https://doi.org/10.1016/j.jsp.2015.08.001

Johnson, M. K., Crosnoe, R., & Elder, G. H. (2001). Students' attachment and academic engagement: The role of race and ethnicity. *Sociology of Education*, *74*(4), 318–340. https://doi.org/10.2307/2673138

Jones, J. M. (1997). *Prejudice and racism*. McGraw-Hill Companies.

Jones, K. (2013). #zerotolerance #KeepingupwiththeTimes: How federal zero tolerance policies failed to promote educational success, deter juvenile legal consequences, and confront new social media concerns in public schools. *Journal of Law & Education*, *42*(4), 739–749.

Jones, S. P. (n.d.). *Mapping racial trauma in schools*. Retrieved July 20, 2020, from https://www.facebook.com/mappingracialtrauma/

Kaiser, H. F. (1991). Coefficient alpha for a principal component and the Kaiser-Guttman rule. *Psychological Reports*, *68*(3), 855–858. https://doi.org/10.2466/pr0.1991.68.3.855

Kamau, W., Rintaugu, E. G., Muniu, R. K., & Amusa, L. O. (2015). The effect of participation in competitive sports on school connectedness of secondary school students. *African Journal for Physical, Health Education, Recreation & Dance*, *21*(3:1), 877–890.

Kambon, K. K. (2012). *African/Black psychology in the American context: An African-centered approach*. Nubian Nation Publications.

Karcher, M. J., & Sass, D. (2010a). A multicultural assessment of adolescent connectedness: Testing measurement invariance across gender and ethnicity. *Journal of Counseling Psychology*, *57*(3), 274–289. https://doi.org/10.1037/a0019357

Karcher, M. J., & Sass, D. (2010b). A multicultural assessment of adolescent connectedness: Testing measurement invariance across gender and ethnicity. *Journal of Counseling Psychology*, *57*(3), 274–289. https://doi.org/10.1037/a0019357

Kendi, I. X. (2017). *Stamped from the beginning: The definitive history of racist ideas in America*. Random House.

King, J. E., & Swartz, E. (2016). *The Afrocentric praxis of teaching for freedom: Connecting culture to learning*. Routledge, Taylor & Francis Group.

Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *The Journal of School Health; Kent*, *74*(7), 262–273.

Kramarczuk-Voulgarides, C., Fergus, E., & King Thorius, K. A. (2017). Pursuing equity: disproportionality in special education and the reframing of technical solutions to address systemic inequities. *Review of Research in Education*, *41*(1), 61–87.

Krishnan, L., Ogunwole, S. M., & Cooper, L. A. (2020). Historical insights on coronavirus disease 2019 (COVID-19), the 1918 influenza pandemic, and racial disparities: Illuminating a path forward. *Annals of Internal Medicine*. https://doi.org/10.7326/M20-2223

La Salle, T. P. (2017). *Technical manual for the Georgia School Climate Survey Suite*.

La Salle, T. P., George, H. P., McCoach, D. B., Polk, T., & Evanovich, L. L. (2018). An examination of school climate, victimization, and mental health problems among middle

school students self-identifying with emotional and behavioral disorders. *Behavioral*

   Disorders, *43*(3), 383. https://doi.org/10.1177/0198742918768045

La Salle, T. P., Parris, L., Morin, M., & Meyers, J. (2016). Deconstructing peer victimization:

   Relationships with connectedness, gender, grade, and race/ethnicity. *School Psychology*

   Forum, *10*(1), 41–54.

La Salle, T. P., Zabek, F., & Meyers, J. (2016). Elementary student perceptions of school climate

   and associations with individual and school factors. *School Psychology Forum*, *10*(1),

   55–65.

Ladson-Billings, G. (1995). But that's just good teaching! The case for culturally relevant

   pedagogy. *Theory into Practice*, *34*(3), 159–165.

Ladson-Billings, G. (1998). Just what is critical race theory and what's it doing in a nice field

   like education? *International Journal of Qualitative Studies in Education*, *11*(1), 7–24.

   https://doi.org/10.1080/095183998236863

Lei, P.W., & Wu, Q. (2007). Introduction to structural equation modeling: Issues and practical

   considerations. *Educational Measurement: Issues and Practice*, *26*(3), 33–43.

   https://doi.org/10.1111/j.1745-3992.2007.00099.x

Lewis, C. W., James, M., Hancock, S., & Hill-Jackson, V. (2008). Framing African American

   students' success and failure in urban settings: A typology for change. *Urban Education*,

   43(2), 127–153. https://doi.org/10.1177/0042085907312315

Lewis, N. M. (2009). Mental health in sexual minorities: Recent indicators, trends, and their

   relationships to place in North America and Europe. *Health & Place*, *15*(4), 1029–1045.

   https://doi.org/10.1016/j.healthplace.2009.05.003

Linnenbrink-Garcia, L., Durik, A. M., Conley, A. M., Barron, K. E., Tauer, J. M., Karabenick, S.
A., & Harackiewicz, J. M. (2010). Measuring situational interest in academic domains.
Educational and Psychological Measurement, *70*(4), 647–671.
https://doi.org/10.1177/0013164409355699

Lofton, R., & Davis, J. E. (2015). Toward a Black habitus: African Americans navigating
systemic inequalities within home, school, and community. *The Journal of Negro
Education; Washington*, *84*(3), 214–230.

Lüdtke, O., Marsh, H. W., Robitzsch, A., Trautwein, U., Asparouhov, T., & Muthén, B. (2008).
The multilevel latent covariate model: A new, more reliable approach to group-level
effects in contextual studies. *Psychological Methods*, *13*(3), 203–229.
https://doi.org/10.1037/a0012869

Marraccini, M. E., & Brier, Z. M. F. (2017). School connectedness and suicidal thoughts and
behaviors: A systematic meta-analysis. *School Psychology Quarterly*, *32*(1), 5–21.
https://doi.org/10.1037/spq0000192

Marsh, H.W., Lüdtke, O., Nagengast, B., Trautwein, U., Morin, A.J.S., Abduljabbar, A.S., &
Köller, O. (2012). Classroom climate and contextual effects: Conceptual and
methodological issues in the evaluation of group-level effects. *Educational Psychologist*,
47(2), 106–124. https://doi.org/10.1080/00461520.2012.670488

Matlin, S. L., Molock, S. D., & Tebes, J. K. (2011). Suicidality and depression among African
American adolescents: The role of family and peer support and community
connectedness. *American Journal of Orthopsychiatry*, *81*(1), 108–117.
https://doi.org/10.1111/j.1939-0025.2010.01078.x

Matsuda, M. J. (1993). *Words that wound: Critical race theory, assaultive speech, and the First Amendment*. Westview Press.

McKinney de Royston, M., & Madkins, T. C. (2019). A question of necessity or of equity? Full-Service community schools and the (mis)Education of Black youth. *Journal of Education for Students Placed at Risk (JESPAR)*, *24*(3), 244–271. https://doi.org/10.1080/10824669.2019.1615920

McNeely, C. A., Nonnemaker, J. M., & Blum, R. W. (2002). Promoting school connectedness: Evidence from the national longitudinal study of adolescent health. *Journal of School Health*, *72*(4), 138–146. https://doi.org/10.1111/j.1746-1561.2002.tb06533.x

McNeish, D. M., & Stapleton, L. M. (2016). The effect of small sample size on two-level model estimates: A review and illustration. *Educational Psychology Review*, *28*(2), 295–314. https://doi.org/10.1007/s10648-014-9287-x

Morin, A. J. S., Marsh, H. W., Nagengast, B., & Scalas, L. F. (2014). Doubly latent multilevel analyses of classroom climate: An illustration. *The Journal of Experimental Education*, *82*(2), 143–167. https://doi.org/10.1080/00220973.2013.769412

Morris, J. E. (2004). Can anything good come from Nazareth? race, class, and African American schooling and community in the urban south and Midwest. *American Educational Research Journal*, *41*(1), 69–112. https://doi.org/10.3102/00028312041001069

Morris, J. E. (2009). *Troubling the waters: Fulfilling the promise of quality public schooling for black children*. Teachers College Press.

Muthén, L. K., & Muthén, B. O. (2017). *Mplus: Statistical analysis with latent variables: User's guide* (8th ed.). Muthén & Muthén.

Nasir, N. S., Jones, A., & Mclaughlin, M. (2011). School connectedness for students in low-income urban high schools. *Teachers College Record*, *113*(8), 1755–1793.

N.C.L.S. (2015). *Who we elect: An interactive graphic*. http://www.ncsl.org/research/about-state-legislatures/who-we-elect-an-interactive-graphic.aspx#

Niehaus, K., Irvin, M. J., & Rogelberg, S. (2016). School connectedness and valuing as predictors of high school completion and postsecondary attendance among Latino youth. *Contemporary Educational Psychology*, *44–45*, 54–67. https://doi.org/10.1016/j.cedpsych.2016.02.003

Noddings, N. (2013). *Caring: A relational approach to ethics and moral education* (2nd ed.). University of California Press.

Oberle, E., Schonert-Reichl, K. A., & Zumbo, B. D. (2011). Life satisfaction in early adolescence: Personal, neighborhood, school, family, and peer influences. *Journal of Youth and Adolescence*, *40*(7), 889–901. https://doi.org/10.1007/s10964-010-9599-1

O'Connor, C., & Fernandez, S. D. (2006). Race, class, and disproportionality: Reevaluating the relationship between poverty and special education placement. *Educational Researcher*, *35*(6), 6–11. https://doi.org/10.3102/0013189X035006006

Pedhazur, E. J. (1997). *Multiple regression in behavioral research: Explanation and prediction*. Harcourt Brace.

Perez, M. (2018, August 24). The Georgia superintendent who was allegedly recorded saying racial slurs has resigned. *Newsweek*. https://www.newsweek.com/georgia-schools-superintendent-geye-hamby-resigns-racist-rant-allegations-1090067

Poteat, V. P., Sinclair, K. O., DiGiovanni, C. D., Koenig, B. W., & Russell, S. T. (2013). Gay–straight alliances are associated with student health: A multischool comparison of

LGBTQ and heterosexual youth. *Journal of Research on Adolescence*, *23*(2), 319–330. https://doi.org/10.1111/j.1532-7795.2012.00832.x

Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., Tabor, J., Beuhring, T., Sieving, R. E., Shew, M., Ireland, M., Bearinger, L. H., & Udry, J. R. (1997). Protecting Adolescents from Harm: Findings from the National Longitudinal Study on Adolescent Health. *JAMA*, *278*(10), 823–832. https://doi.org/10.1001/jama.1997.03550100049038

Sakiz, G., Pape, S. J., & Hoy, A. W. (2012). Does perceived teacher affective support matter for middle school students in mathematics classrooms? *Journal of School Psychology*, *50*(2), 235–255. https://doi.org/10.1016/j.jsp.2011.10.005

Satorra, A., & Bentler, P. M. (1986). *Scaling corrections for chi-square statistics in covariance structure analysis.* 303–313.

Schneider, J. M., & Brookover, W. B. (1974). *Academic Environments and Elementary School Achievement*. [Conference paper]. American Educational Research Association, Chicago, IL.

Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, *99*(6), 323–338. https://doi.org/10.3200/JOER.99.6.323-338

Shochet, I. M., Dadds, M. R., Ham, D., & Montague, R. (2006). School connectedness is an underemphasized parameter in adolescent mental health: Results of a community prediction study. *Journal of Clinical Child & Adolescent Psychology*, *35*(2), 170–179. https://doi.org/10.1207/s15374424jccp3502_1

Siddle Walker, V. (2002). Valued segregated schools for African American children in the south, 1935-1969: A review of common themes and characteristics. *Review of Educational Research*, *70*(3), 253–285.

Skiba, R. J., Horner, R. H., Chung, C.-G., Rausch, M. K., May, S. L., & Tobin, T. (2011). Race is not neutral: A national investigation of African American and Latino disproportionality in school discipline. *School Psychology Review*, *40*(1), 24.

Skiba, R. J., Michael, R. S., Nardo, A. C., & Peterson, R. L. (2002). The color of discipline: Sources of racial and gender disproportionality in school punishment. *Urban Review*, *34*(4), 317. https://doi.org/10.1023/A:1021320817372

Slaughter-Defoe, D. T., & Carlson, K. G. (1996). Young African American and Latino children in high-poverty urban schools: How they perceive school climate. *The Journal of Negro Education*, *65*(1), 60–70. https://doi.org/10.2307/2967368

Slomp, D. H., Corrigan, J. A., & Sugimoto, T. (2014). A framework for using consequential validity evidence in evaluating large-scale writing assessments: A Canadian study. *Research in the Teaching of English*, *48*(3), 276–302.

Sojoyner, D. M. (2016). *First strike: Educational enclosures in Black Los Angeles*. University of Minnesota Press.

Solar, O., & Irwin, A. (2010). *A conceptual framework for action on the social determinants of health*. http://www.who.int/social_determinants/en/

Solorzano, D. G., & Bernal, D. D. (2001). Examining transformational resistance through a critical race and latcrit theory framework: Chicana and Chicano students in an urban context. *Urban Education*, *36*(3), 308–342. https://doi.org/10.1177/0042085901363002

Spencer, M. B. (1999). Social and cultural influences on school adjustment: The application of an identity-focused cultural ecological perspective. *Educational Psychologist*, *34*(1), 43–57. https://doi.org/10.1207/s15326985ep3401_4

Spencer, M. B., Dupree, D., & Hartmann, T. (1997). A phenomenological variant of ecological systems theory (PVEST): A self-organization perspective in context. *Development and Psychopathology*, *9*(4), 817–833. https://doi.org/10.1017/S0954579497001454

Stapleton, L. M., Yang, J. S., & Hancock, G. R. (2016). Construct meaning in multilevel settings. *Journal of Educational and Behavioral Statistics*, *41*(5), 481–520. https://doi.org/10.3102/1076998616646200

Swartz, E. (2009). Diversity: Gatekeeping knowledge and maintaining inequalities. *Review of Educational Research*, *79*(2), 1044–1083.

Tatum, B. D. (2017). *Why are all the black kids sitting together in the cafeteria?: And other conversations about race.* Basic Books.

Teven, J. J., & McCroskey, J. C. (1997). The relationship of perceived teacher caring with student learning and teacher evaluation. *Communication Education*, *46*(1), 1–9. https://doi.org/10.1080/03634529709379069

Thandeka. (1999). *Learning to be white: Money, race, and God in America*. Continuum. https://catalog.hathitrust.org/Record/004030581

Thapa, A., Cohen, J., Guffey, S., & Higgins-D'Alessandro, A. (2013). A review of school climate research. *Review of Educational Research*, *83*(3), 357–385. https://doi.org/10.3102/0034654313483907

Tomek, S., Bolland, A. C., Hooper, L. M., Hitchcock, S., & Bolland, J. M. (2017). The impact of

middle school connectedness on future high school outcomes in a Black American

sample. *Middle Grades Research Journal*, *11*(1), 1–12.

Trickett, E. J., & Moos, R. H. (1973). Social environment of junior high and high school

classrooms. *Journal of Educational Psychology*, *65*, 93–102.

https://doi.org/10.1037/h0034823

van Prooijen, J.-W., & van der Kloot, W. A. (2001). Confirmatory analysis of exploratively

obtained factor structures. *Educational and Psychological Measurement*, *61*(5), 777–792.

https://doi.org/10.1177/00131640121971518

Velez, G., & Spencer, M. B. (2018). Phenomenology and intersectionality: Using PVEST as a

frame for adolescent identity formation amid intersecting ecological systems of

inequality. *New Directions for Child & Adolescent Development*, *2018*(161), 75.

https://doi.org/10.1002/cad.20247

Vincent, C. G., Randall, C., Cartledge, G., Tobin, T. J., & Swain-Bradway, J. (2011). Toward a

conceptual integration of cultural responsiveness and schoolwide positive behavior

support. *Journal of Positive Behavior Interventions*, *13*(4), 219–229.

https://doi.org/10.1177/1098300711399765

Walker, M. A. (2016, October 6). Cobb County Schools Superintendent: Kneeling athletes

would be benched. *The Atlanta Journal-Constitution*. https://www.ajc.com/news/local-

education/cobb-county-schools-superintendent-kneeling-athletes-would-

benched/xjs6ad37MJM8VXiHgWj4dP/

Walker, V. S. (2009). Second-Class integration: A historical perspective for a contemporary

agenda. *Harvard Educational Review*, *79*(2), 269–284.

https://doi.org/10.17763/haer.79.2.b1637p4u4093484m

Walsemann, K. M., Bell, B. A., & Maitra, D. (2011). The intersection of school racial

composition and student race/ethnicity on adolescent depressive and somatic symptoms.

Social Science & Medicine, *72*(11), 1873–1883.

https://doi.org/10.1016/j.socscimed.2011.03.033

Walsemann, K. M., Gee, G. C., & Ro, A. (2013). Educational attainment in the context of social

inequality: New directions for research on education and health. *American Behavioral*

Scientist, *57*(8), 1082–1104. https://doi.org/10.1177/0002764213487346

Wang, J., & Wang, X. (2020). *Structural equation modeling: Applications using Mplus* (2nd ed.).

Wiley.

Wang, M.T., & Degol, J. L. (2016). School climate: A review of the construct, measurement, and

impact on student outcomes. *Educational Psychology Review*, *28*(2), 315–352.

https://doi.org/10.1007/s10648-015-9319-1

Wehlage, G. (1989). *Reducing the risk: Schools as communities of support*. Falmer Press.

Weiss, D. J. (2006). *Analysis of variance and functional measurement: A practical guide*. Oxford

University Press.

Welsh, R. O., & Little, S. (2018). The school discipline dilemma: A comprehensive review of

disparities and alternative approaches. *Review of Educational Research*, *88*(5), 752–794.

https://doi.org/10.3102/0034654318791582

White, N., La Salle, T. P., Ashby, J. S., & Meyers, J. (2014). Georgia brief school climate

inventory. *School Psychology Quarterly*, *29*(3), 349–359.

https://doi.org/10.1037/t35341-000

Williams, D. R., Lawrence, J. A., & Davis, B. A. (2019). Racism and health: Evidence and

needed research. *Annual Review of Public Health*, *40*(1), 105–125.

https://doi.org/10.1146/annurev-publhealth-040218-043750

World Health Organization. (2019, May 21). *Milestones for health over 70 years*.

http://www.euro.who.int/en/about-us/organization/who-at-70/milestones-for-health-over-

70-years

Wright, K. D., & Oshima, T. C. (2015). An effect size measure for Raju's differential

functioning for items and tests. *Educational and Psychological Measurement*, *75*(2),

338–358. https://doi.org/10.1177/0013164414532944

Zajacova, A., & Lawrence, E. M. (2018). The relationship between education and health:

Reducing disparities through a contextual approach. *Annual Review of Public Health*,

39(1), 273–289. https://doi.org/10.1146/annurev-publhealth-031816-044628

Zhu, L. (2018). A multi-level analysis on school connectedness, family support, and adolescent

depression: evidence from the National Longitudinal Study of Adolescent Health, 1995–

1996. *Social Sciences*, *7*(5), 72. https://doi.org/10.3390/socsci7050072

Zullig, K. J., Koopman, T. M., Patton, J. M., & Ubbes, V. A. (2010). School climate: Historical

review, instrument development, and school assessment. *Journal of Psychoeducational

Assessment*, *28*(2), 139–152. https://doi.org/10.1177/0734282909344205

APPENDICES

APPENDIX A

Georgia Student Health Survey 2.0

Construct	Question
School connectedness	I like school.
	Most days I look forward to going to school.
	I feel like I fit in at my school.
	I feel successful at school.
	I feel connected to others at school.
Peer social support	I get along with other students at school.
	I know a student at my school that I can talk to if I need help (e.g. Homework, class assignments, projects).
	I know a student at my school that I can talk to if I am feeling sad or down.
	I have a group of friends at school that I have fun with and are nice to me.
	Students in my school are welcoming to new students.
Adult social support	Teachers treat me with respect.
	Adults in this school treat all students with respect.
	All students are treated fairly by the adults in my school.
	Teachers treat all students fairly.
Cultural acceptance	Students at my school treat each other with respect.
	Students treat one another fairly.
	Students show respect to other students regardless of their academic ability.
	Students at this school are treated fairly by other students regardless of race, ethnicity, or culture.
	All students in my school are treated fairly regardless of their appearance.
Social/civic learning	I treat others students fairly.
	Doing the right thing is important to me.
	Patience is an important trait to me.
	I am open towards different opinions and perspectives.
	I believe in helping others.
	Honesty is an important trait to me.
	I show courtesy to other students.
	I complete a task despite the challenges.
Physical environment	My school building is well maintained.
	My instructional materials are up to date and in good condition.
	Teachers in my school keep their classrooms clean and organized.

	Students in my school take pride in keeping our school building (e.g. Bathrooms, classrooms, lockers) in good condition.
School safety	I have felt unsafe at school or on my way to or from school.
	I have worried about other students hurting me.
	I feel safe in my school.
	I have been concerned about my physical safety at school.
	Students at my school fight a lot.
	I have observed a fight at school.
School climate	I feel my school has high standards for achievement.
	My school sets clear rules for behavior.
	The behaviors in my classroom allow the teacher to teach so i can learn.
	Students are frequently recognized for good behavior.
	I know an adult at school that I can talk with if I need help.
	I know what to do if there is an emergency at my school.
	I would help someone who was being bullied.

APPENDIX B

Psychological Sense of School Membership

Table 1
The Psychological Sense of School Membership (PSSM) Scale

1. I feel like a real part of (name of school).
2. People here notice when I'm good at something.
3. It is hard for people like me to be accepted here. (*reversed*)
4. Other students in this school take my opinions seriously.
5. Most teachers at (name of school) are interested in me.
6. Sometimes I feel as if I don't belong here. (*reversed*)
7. There's at least one teacher or other adult in this school I can talk to if I have a problem.
8. People at this school are friendly to me.
9. Teachers here are not interested in people like me. (*reversed*)
10. I am included in lots of activities at (name of school).
11. I am treated with as much respect as other students.
12. I feel very different from most other students here. (*reversed*)
13. I can really be myself at this school.
14. The teachers here respect me.
15. People here know I can do good work.
16. I wish I were in a different school. (*reversed*)
17. I feel proud of belonging to (name of school).
18. Other students here like me the way I am.

Goodenow (1993)

APPENDIX C

Conceptual Framework of School Connectedness for African American Students

Conceptual Framework of School Connectedness for African American Students
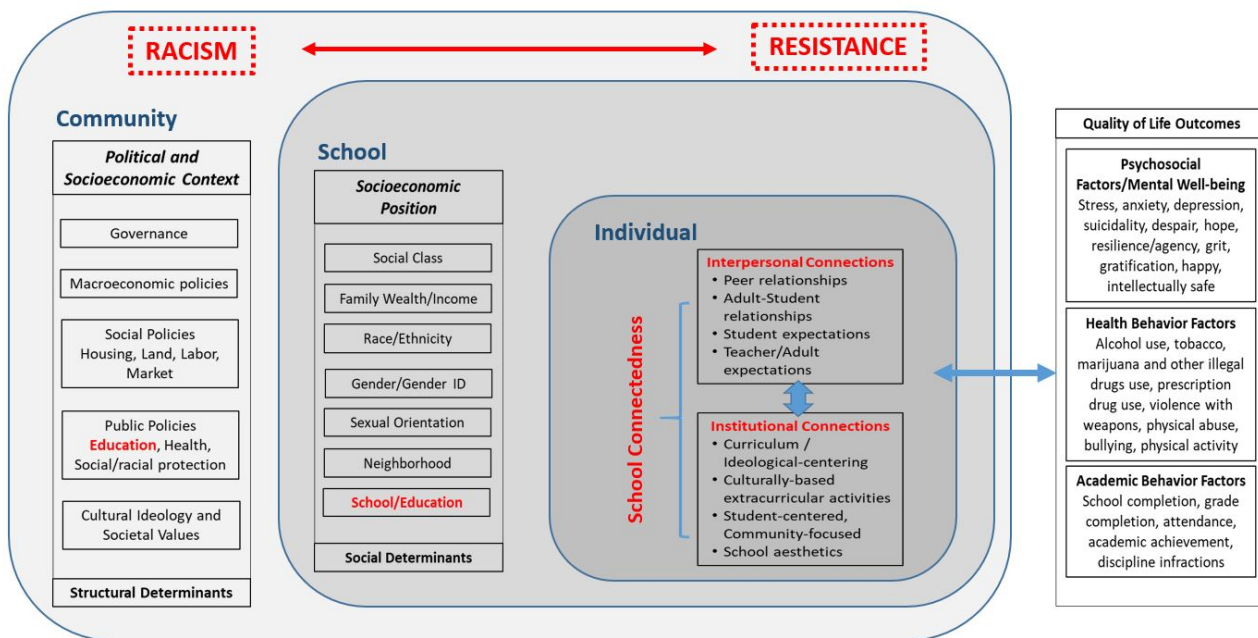
Adapted from Solmar & Irwin, 2010; Nasir et al., 2011

APPENDIX D

Table D1. Model Fit Statistics for Study 2

Model	Description	$\chi^2(df)^a$	$\chi^2\ Diff$ $\chi^2(df)^a$	RMSEA Value	(CI)	CFI	TLI
Model 1	One-Factor, SL, CAT, WLSMV, General	81502.833(5)	—	.264	0.263-0.266	.873	.747
Model 2	One-Factor, SL, CAT, WLSMV, General	17760.77(4)	39895.536(5)	.138	0.136-0.140	.972	.931
Model 3	One-Factor, SL, CAT, WLSMV, General	957.61(3)	10133.78(1)	.037	.035-.039	.999	.995
Model 4	One-Factor, ML, CAT, WLSMV, Complex +Cov	4005.24(31)		.023	.023-.024	.980	.971
Model 5	One-factor, ML, CAT, WLSMV, Two-level	4334.06(6)		.056	-	.996	.987
Model 6	One-Factor, ML, CAT, WLSMV, Two-level+Cov	12353.78(34)		.039	-	.990	. 985

Note. SL = single-level; CAT = categorical variables; WLSMV = Mplus estimator for weighted least squares with mean and variance-adjusted χ^2 statistic; General, Complex, and Two-level = Mplus modeling commands; χ^2Diff = χ^2 difference test, Cov = covariates in the model. Confidence Intervals are not available for Mplus Two-level estimation.
[a]For each chi-square value, p < .001.

Figure D1. Unstandardized Confirmatory Factor Models for Black and White Students

Unstandardized estimates of Model 2 for Black students

Unstandardized estimates of Model 2 for White students
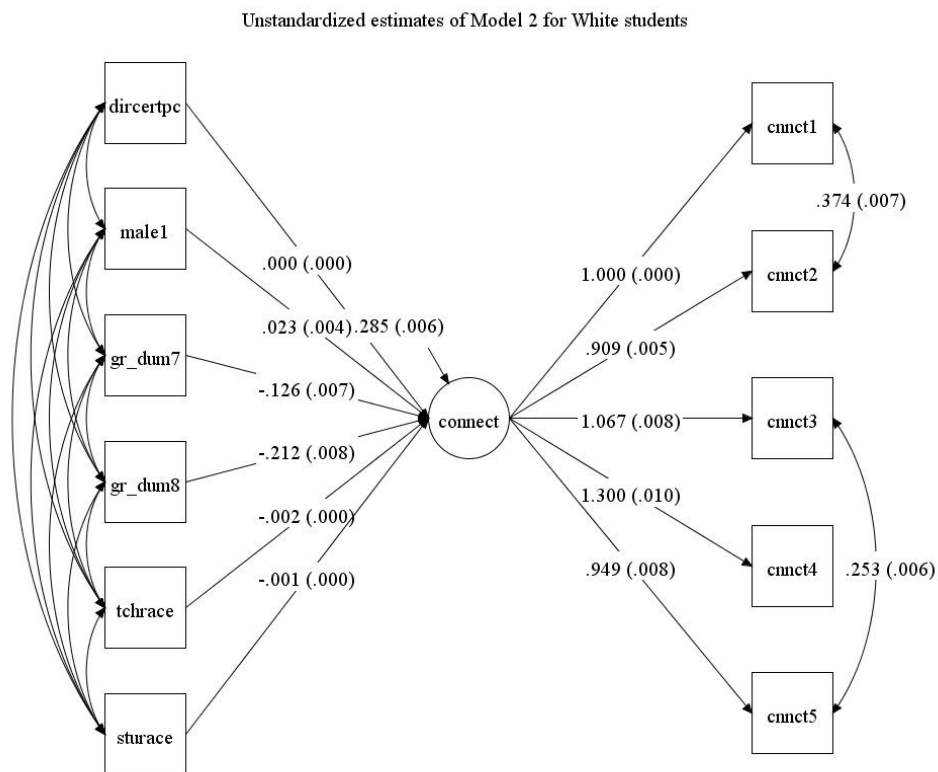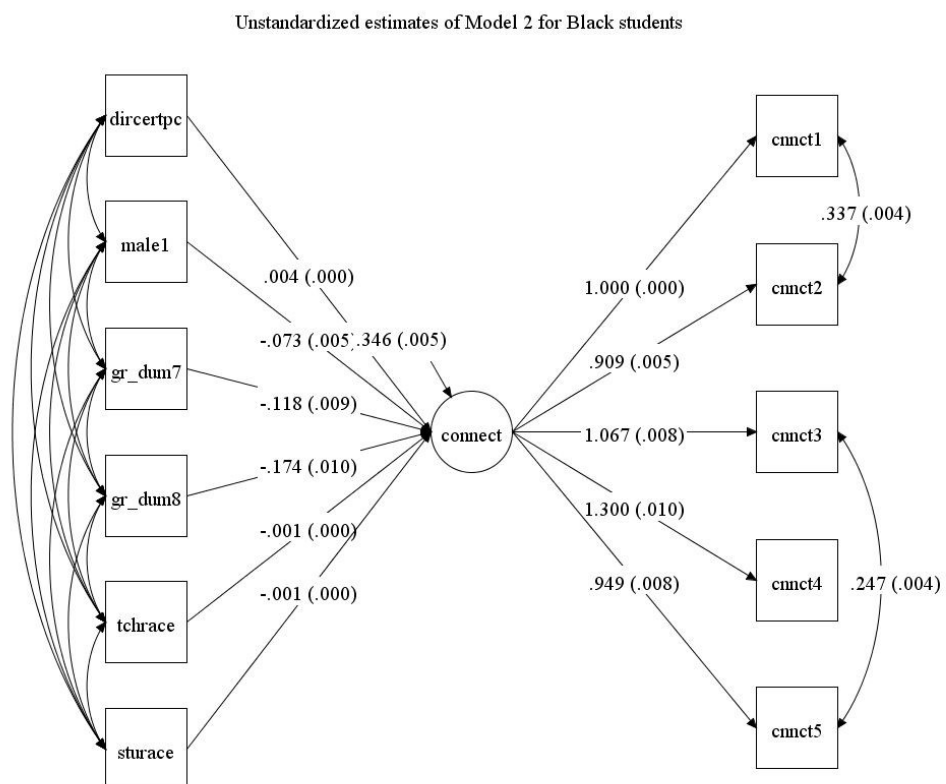
Figure D2. Standardized Confirmatory Factor Models for Black and White Students

Standardized estimates of Model 2 for Black students

Standardized estimates of Model 2 for White students
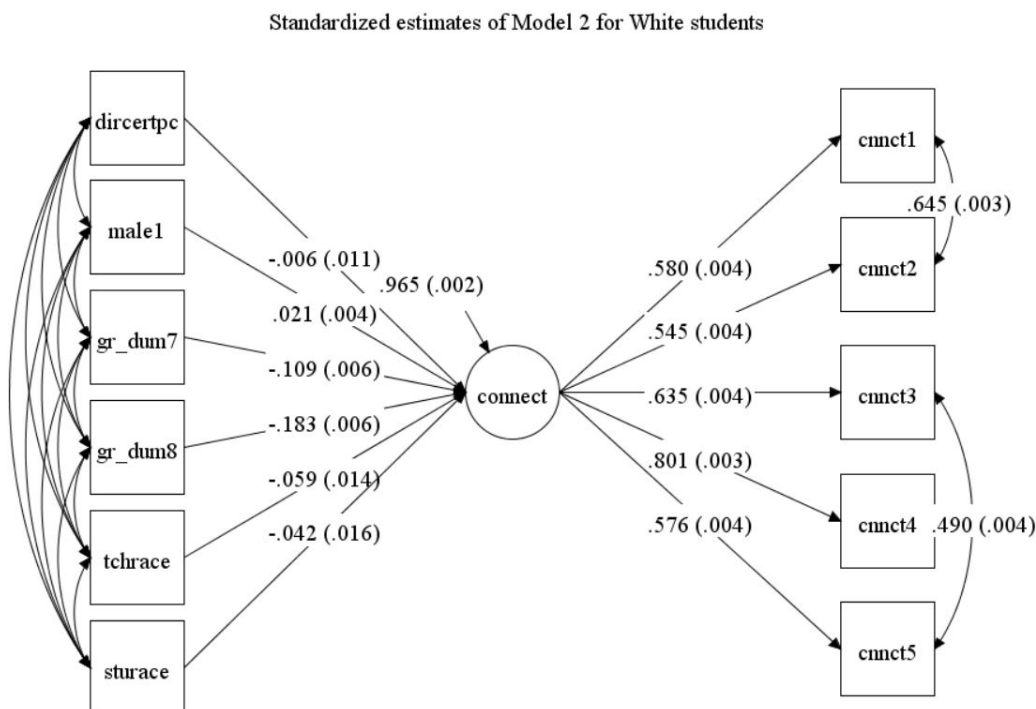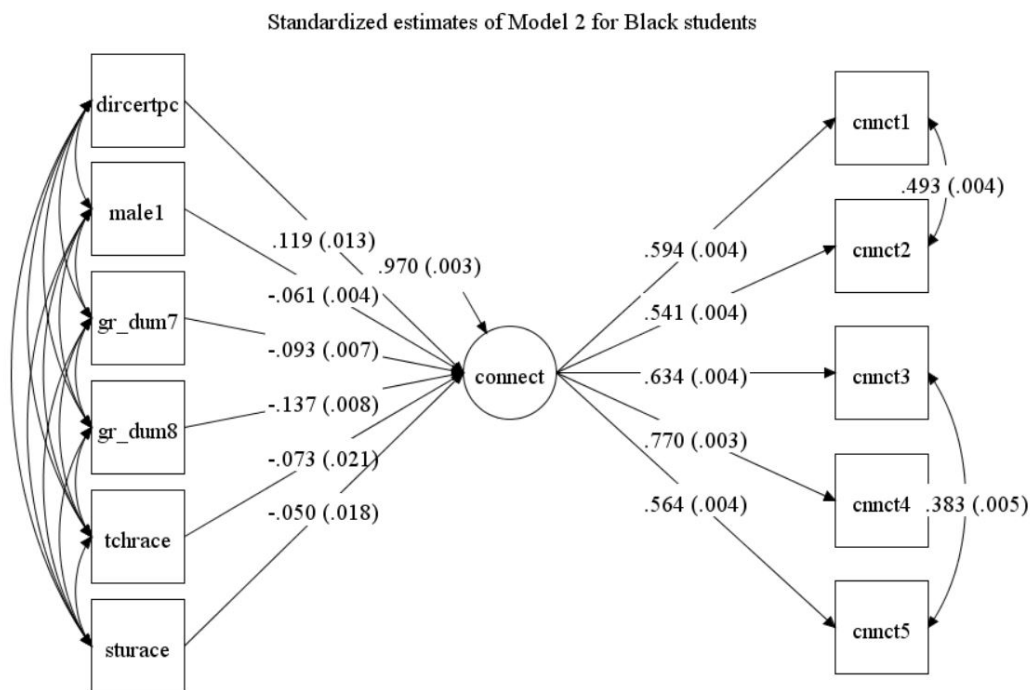
APPENDIX E

Figure E1. Scree Plots from Exploratory Factor Analysis
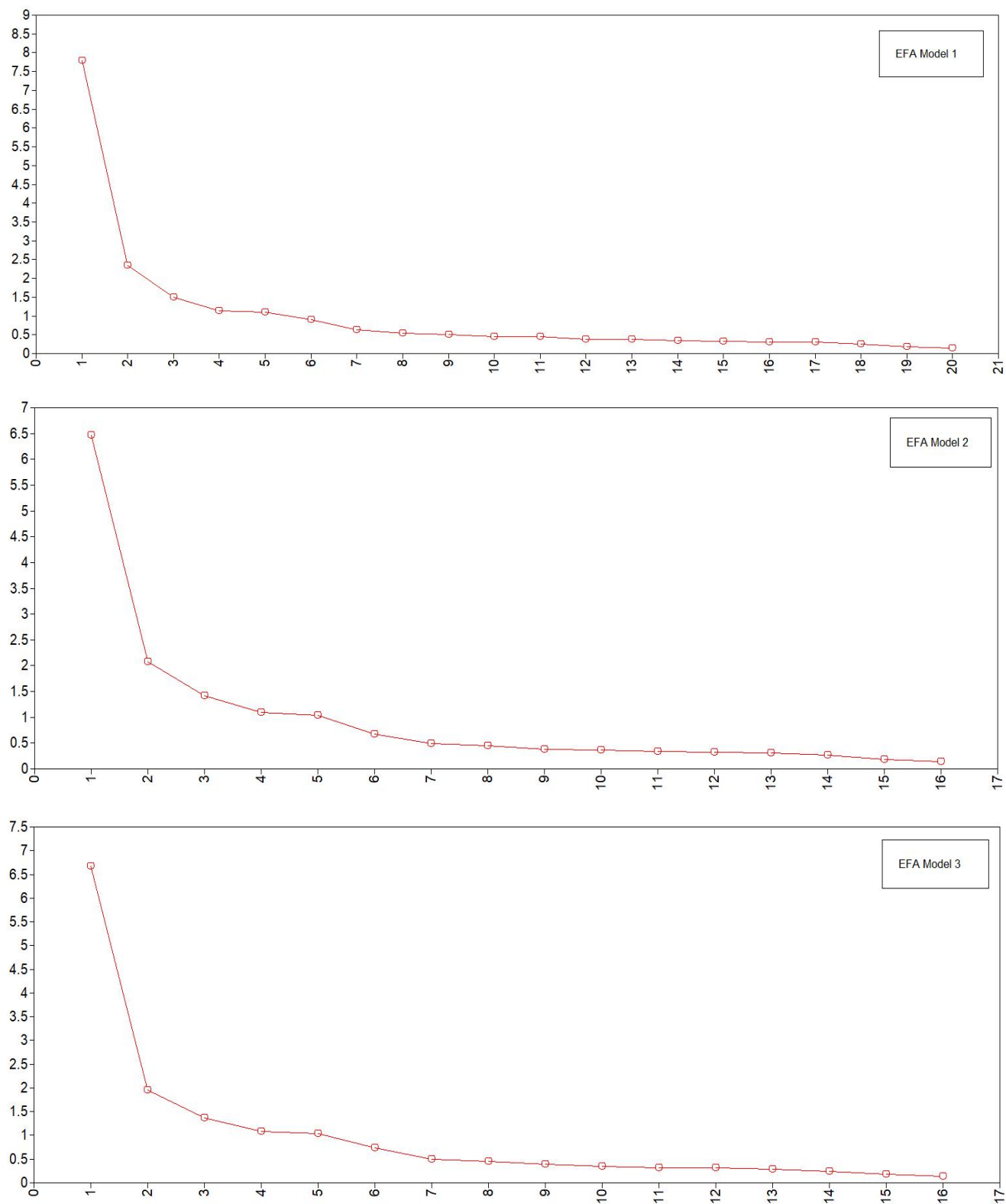
Table E1. Goodness of Model Fit Statistics for EFA Model 1

Number of Factors	CFI	TLI	RMSEA	90% CI	SRMR
EFA #1					
n=20,912					
2	0.88	0.849	0.127	.126-.128	0.079
3	0.932	0.903	0.102	.101-.103	0.055
4	0.958	0.931	0.085	.084-.086	0.042
5	0.978	0.958	0.067	.066-.068	0.029
6	0.995	0.99	0.033	.032-.034	0.011
7	0.998	0.994	0.026	.024-.027	0.008
EFA #2					
n=20,912					
3	0.944	0.91	0.119	.117-.120	0.06
4	0.97	0.943	0.095	.093-.096	0.036
5	0.993	0.983	0.051	.050-.053	0.016
6	0.998	0.993	0.033	.031-.035	0.006
7	0.944	0.91	0.119	.117-.120	0.06
EFA #3					
n=1,815					
3	0.949	0.918	0.115	0.111-0.120	0.061
4	0.971	0.944	0.096	0.091-0.101	.044
5	0.988	0.971	0.068	0.063-0.074	0.024
6	0.996	0.987	0.046	0.039-0.053	0.013

Note.

Table E2. EFA Model #1 Factor Loadings

Factor indicators	Factor Loadings				
	F1	F2	F3	F4	F5
I like school.	0.827*	-0.066*	0.080*	-0.052*	0.072*
Most days I look forward to going to school.	0.743*	-0.018*	0.030*	-0.029*	0.036*
I feel like I fit in at my school.	**0.333***	**0.394***	**-0.091***	**0.263***	**-0.162***
I feel successful at school	**0.395***	**0.237***	**0.125***	**0.069***	**-0.012**
I feel connected to others at school.	0.258*	0.511*	-0.066*	0.229*	-0.200*
I get along with other students at school.	**0.153***	**0.370***	**0.072***	**0.288***	**-0.191***
I know a student at my school that I can talk to if I need help.	-0.051*	0.803*	0.064*	-0.072*	0.113*
I know a student at my school that I can talk to if I am feeling sad or down.	-0.086*	0.794*	0.034*	-0.091*	0.122*
I have a group of friends at school that I have fun with and are nice to me.	0.060*	0.709*	0.004	0.109*	-0.105*
Students in my school are welcoming to new students.	**0.067***	**0.205***	**0.115***	**0.431***	**0.018**
Teachers treat me with respect.	0.084*	0.054*	0.819*	-0.083*	0.027*
Adults in this school treat all students with respect.	0.017*	0.006	0.878*	0.009*	0.020*
All students are treated fairly by the adults in my school.	-0.023*	-0.007	0.913*	0.052*	-0.029*
Teachers treat all students fairly.	-0.019*	-0.026*	0.925*	0.038*	-0.022*
Students show respect to other students regardless of their academic ability.	-0.017*	0.001	-0.006	0.800*	0.046*
Students at this school are treated fairly by other students regardless of race, ethnicity, or culture.	-0.044*	-0.006	0.057*	0.770*	0.026*
All students in my school are treated fairly regardless of their appearance.	-0.011*	-0.058*	0.091*	0.810*	0.039*
I feel my school has high standards for achievement.	0.180*	0.126*	0.076*	0.184*	0.515*
The behaviors in my classroom allow the teacher to teach so I can learn.	0.139*	0.033*	0.002	0.334*	0.497*
I know an adult at school that I can talk with if I need help.	0.160*	0.219*	0.100*	0.068*	0.469*

Note. *Factor loadings are significant at $p < .05$. The factor loadings in bold represent items flagged for removal in EFA #2.

Table E3. EFA Model #2 Factor Loadings

	Factor Loadings				
Factor Indicators	F1	F2	F3	F4	F5
I like school.	0.791*	-0.018*	0.052*	-0.015*	0.034*
Most days I look forward to going to school.	0.821*	0.01	-0.030*	0.015*	-0.028*
I feel like I fit in at my school.					
I feel successful at school					
I feel connected to others at school.	0.149*	0.463*	-0.086*	0.210*	0.034*
I get along with other students at school.					
I know a student at my school that I can talk to if I need help.	-0.01	0.800*	0.046*	-0.032*	0.023*
I know a student at my school that I can talk to if I am feeling sad or down.	-0.024*	0.814*	0.016*	-0.047*	-0.004
I have a group of friends at school that I have fun with and are nice to me.	0.040*	0.695*	-0.043*	0.137*	-0.005
Students in my school are welcoming to new students.					
Teachers treat me with respect.	0.059*	0.037*	0.811*	-0.094*	0.065*
Adults in this school treat all students with respect.	0.009	-0.001	0.872*	-0.002	0.043*
All students are treated fairly by the adults in my school.	-0.016*	0	0.909*	0.061*	-0.028*
Teachers treat all students fairly.	-0.007	-0.015*	0.922*	0.049*	-0.032*
Students show respect to other students regardless of their academic ability.	0.014*	0.035*	-0.025*	0.772*	0.043*
Students at this school are treated fairly by other students regardless of race, ethnicity, or culture.	-0.013*	0.031*	0.040*	0.758*	0.014
All students in my school are treated fairly regardless of their appearance.	0.028*	-0.016*	0.075*	0.797*	0.012*
I feel my school has high standards for achievement.	0.014*	0.023*	0.041*	-0.022*	0.739*
The behaviors in my classroom allow the teacher to teach so I can learn.	-0.005	-0.078*	-0.040*	0.136*	0.718*
I know an adult at school that I can talk with if I need help.	0.043*	0.151*	0.079*	-0.083*	0.583*

Note. *Factor loadings are significant at $p < .05$. The shaded factor loadings represent items not included in the analysis.

Table E4. EFA Factor Correlations

Oblimin Factor Correlations for EFA Model #1

	1	2	3	4	5
1	1.00				
2	0.415*	1.00			
3	0.475*	0.257*	1.00		
4	0.423*	0.379*	0.492*	1.00	
5	0.170*	0.100*	0.357*	0.135*	1.00

Note. *Factor correlations significant at $p < .05$

Oblimin Factor Correlations for EFA Model #2

	1	2	3	4	5
1	1.00				
2	0.397*	1.00			
3	0.498*	0.263*	1.00		
4	0.374*	0.327*	0.489*	1.00	
5	0.493*	0.374*	0.571*	0.490*	1.00

Note. *Factor correlations significant at $p < .05$

Oblimin Factor Correlations for EFA Model #3

	1	2	3	4	5
1	1.00				
2	0.430*	1.00			
3	0.466*	0.303*	1.00		
4	0.379*	0.310*	0.523*	1.00	
5	0.480*	0.426*	0.626*	0.521*	1.00

Note. *Factor correlations significant at $p < .05$

APPENDIX F

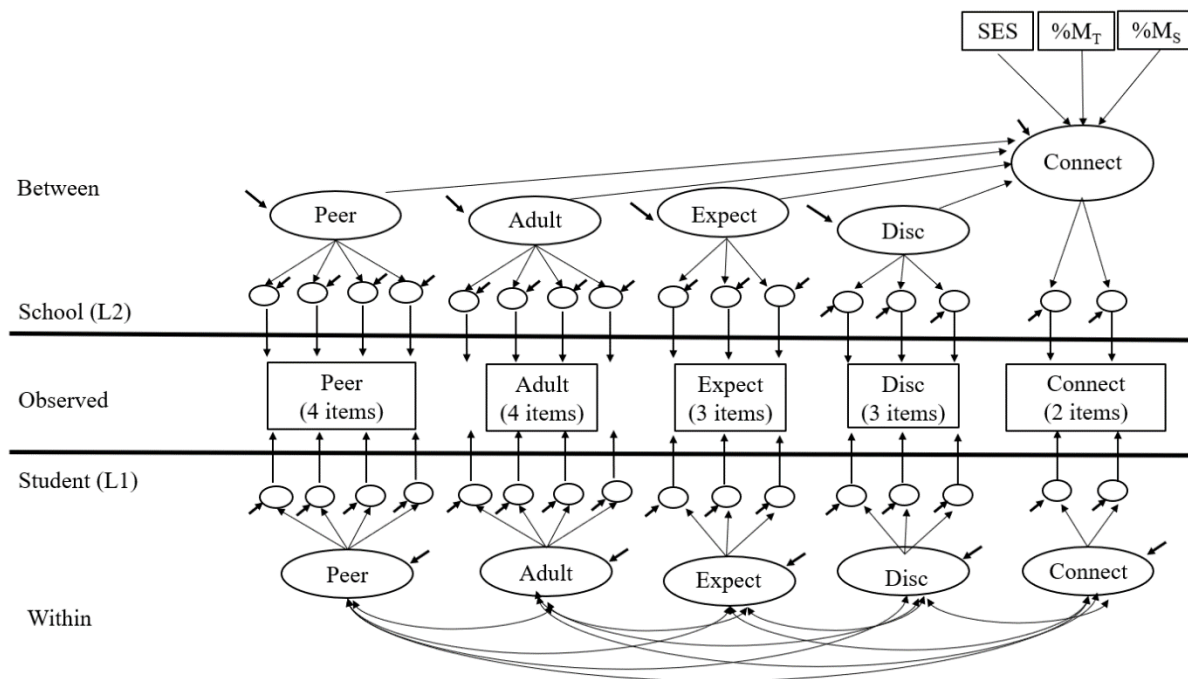Hypothesized Structural Equation Model.

Table F1. Within School Correlation Matrix of Factor Indicators

	C1	C2	P5	P7	P8	P9	A11	A12	A13	A14	CL17	CL18	CL19	S87	S89	S91
C1	1.000															
C2	0.650	1.000														
P5	0.319	0.314	1.000													
P7	0.285	0.278	0.422	1.000												
P8	0.240	0.244	0.391	0.672	1.000											
P9	0.270	0.273	0.556	0.566	0.560	1.000										
A11	0.429	0.351	0.219	0.252	0.183	0.230	1.000									
A12	0.407	0.342	0.219	0.228	0.175	0.206	0.780	1.000								
A13	0.400	0.334	0.227	0.226	0.178	0.209	0.734	0.816	1.000							
A14	0.396	0.329	0.207	0.215	0.166	0.187	0.757	0.805	0.851	1.000						
CL17	0.281	0.261	0.322	0.241	0.204	0.272	0.300	0.360	0.377	0.374	1.000					
CL18	0.261	0.235	0.298	0.226	0.188	0.283	0.334	0.370	0.398	0.386	0.637	1.000				
CL19	0.306	0.279	0.305	0.229	0.188	0.249	0.359	0.425	0.444	0.445	0.678	0.671	1.000			
S87	0.306	0.298	0.263	0.260	0.209	0.260	0.406	0.409	0.398	0.396	0.281	0.308	0.302	1.000		
S89	0.297	0.262	0.228	0.187	0.143	0.184	0.341	0.367	0.364	0.365	0.361	0.327	0.383	0.544	1.000	
S91	0.341	0.303	0.271	0.335	0.321	0.279	0.396	0.387	0.380	0.383	0.263	0.254	0.294	0.525	0.470	1.000

Note. See Table 4.9 for indicator codes.

Table F2. Between School Correlation Matrix of Factor Indicators

	C1	C2	P5	P7	P8	P9	A11	A12	A13	A14	CL17	CL18	CL19	S87	S89	S91
C1	1.000															
C2	0.961	1.000														
P5	0.743	0.757	1.000													
P7	0.673	0.675	0.866	1.000												
P8	0.610	0.680	0.794	0.877	1.000											
P9	0.492	0.495	0.853	0.900	0.811	1.000										
A11	0.752	0.725	0.631	0.492	0.389	0.409	1.000									
A12	0.754	0.760	0.664	0.543	0.421	0.424	0.960	1.000								
A13	0.772	0.773	0.676	0.525	0.415	0.440	0.961	0.993	1.000							
A14	0.765	0.769	0.637	0.465	0.360	0.372	0.973	0.984	0.991	1.000						
CL17	0.752	0.786	0.661	0.608	0.510	0.438	0.662	0.735	0.775	0.753	1.000					
CL18	0.712	0.726	0.723	0.735	0.542	0.595	0.662	0.721	0.728	0.701	0.822	1.000				
CL19	0.789	0.813	0.640	0.590	0.480	0.345	0.720	0.801	0.831	0.805	0.942	0.855	1.000			
S87	0.650	0.609	0.708	0.675	0.509	0.610	0.693	0.739	0.733	0.704	0.648	0.770	0.694	1.000		
S89	0.696	0.705	0.631	0.532	0.403	0.392	0.818	0.845	0.875	0.876	0.796	0.755	0.833	0.778	1.000	
S91	0.673	0.722	0.680	0.638	0.544	0.555	0.730	0.768	0.764	0.748	0.641	0.709	0.690	0.749	0.739	1.000

Note. See Table 4.9 for indicator codes.