Spring 2023

A Mixed Method Study of How Teachers' Racial Bias Relates to Student-Teacher Relationships

Tasha Marie Childs

A MIXED METHOD STUDY OF HOW TEACHERS' RACIAL BIAS RELATES TO
STUDENT-TEACHER RELATIONSHIPS

By

Tasha Marie Childs

Bachelor of Science
The Ohio State University, 2017

Master of Social Work
The Ohio State University, 2019

_____

Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Philosophy in

Social Work

College of Social Work

University of South Carolina

2023

Accepted by:

Aidyn L. Iachini, Major Professor

Nikki R. Wooten, Committee Member

Bongki Woo, Committee Member

Mark D. Weist, Committee Member

Cheryl L. Addy, Interim Vice Provost and Dean of the Graduate School

ACKNOWLEDGEMENTS

ABSTRACT

Despite the important role public schools serve in students' lives, schools are at the center of racial, socio-economic, and political divide and the epicenter of traumatic events for students who are marginalized based on their racial or ethnic identity. While ample research has demonstrated educational inequities for these students, no study to date has examined the impact of teacher racial bias on the quality of student-teacher relationships within the context of the United States (US) pre-Kindergarten through twelfth grade (PK-12) schools. A cross-sectional convergent mixed methods study was conducted to examine interpersonal racism in the classroom, and to specifically answer the following research questions: 1) Do PK-12 US teachers' perceptions of their own implicit and explicit racial bias predict the quality of their relationships with students? 2) Does teacher-student racial mismatch moderate the relationship between US teacher perceptions of implicit and explicit racial bias and the quality of student-teacher relationships? 3) What are teachers' perceptions of how students' racial or ethnic identity influences the development and maintenance of student-teacher relationships? Current teachers ($N = 124$; $n_{quant} = 115$; $n_{qual} = 100$) representing 29 states responded to an online computer survey during Fall of 2022, which included measures of explicit racial bias, implicit racial bias, teacher-student racial mismatch, the quality of student-teacher relationships, and demographics. Quantitative data were analyzed using multiple linear regression in SPSS. Qualitative data were analyzed using a qualitative content analysis approach in MaxQDA. Results show teachers' explicit racial bias was a statistically

significant predictor of the quality of student-teacher relationships with higher levels of racist attitudes predicting lower quality student-teacher relationships. Teacher-student racial mismatch, however, did not moderate this relationship. Qualitative data indicated that teachers primarily described strategies for developing and maintaining interpersonal relationships with students from diverse racial and ethnic backgrounds. However, two-thirds of teachers reported they "treated every student the same" when working with students from diverse racial and ethnic backgrounds. Implications are discussed related to advancing school social work and educational research and practice to create more equitable student outcomes for students from marginalized racial and ethnic identities.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Youth and adolescents spend most of their time in educational settings during a critical developmental period of their life (Irwin et al., 2021; National Center for Education Statistics [NCES], 2008). In the United States (US), students spend an average of 1,195 hours a year in school, amounting to over 15,538 hours over their thirteen years in pre-Kindergarten through twelfth grade (PK-12) grade (NCES, 2008). While the US public education system remains central to the social, political, and economic structures in the country, educational inequities have emerged, where students' experiences and success in school vary greatly based on students' race and ethnicity (Condron et al., 2013; Hung et al., 2020; Lagana-Riordan & Aguilar, 2009).

Racial discrimination in schools is one contributor to these growing inequities (Bañales et al., 2021; Benner & Graham, 2013). Racial discrimination begins as early as elementary school, and only increases as youth progress into middle and high school (Hughes et al., 2016). Students who are marginalized based on their racial or ethnic identity experience racial discrimination through harsher disciplinary action and are suspended or expelled at a rate of two to three times higher compared to their White peers (Skiba et al., 2011; Staats et al., 2015). On average, Black adolescents experience racial discrimination five times a day (English et al., 2020), and students who are racially discriminated against by school personnel receive lower course grades (Benner & Graham, 2013). As a result of this differential treatment, students who identify as

Hispanic or Black are more likely to drop out of high school (Gale, 2020; McFarland et al., 2019) and have high school graduation rates that are 9-15% lower compared to their White peers (Irwin et al., 2021). Students' experiences of racial discrimination in school not only impact students' feelings of safety and academic success (Golden et al., 2018; McWhirter et al., 2018), but also impact students' mental health (Weeks & Sullivan, 2019) and health outcomes (e.g., physical symptoms, childhood illness, and high blood pressure; Priest et al., 2013). These rates and experiences of racial discrimination are alarming as over 26 million students in US PK-12 schools who identify as being from a historically marginalized race or ethnicity (52%), may be experiencing daily occurrences of racism in their schools, and most of these students are taught by a predominantly White (79%) teaching workforce (Irwin et al., 2021; NCES, 2021).

Racism is defined as implicit (unconscious) and explicit (conscious) biases toward a race or ethnicity that result in unequal subordinate treatment, to include discrimination, prejudice, and differential treatment that exist in daily life and are perpetuated by social norms (Crenshaw et al., 1995). Racism occurs at two levels, at the systemic level and at the individual level (Race Forward, 2014a). At the systemic level, racism manifests in institutional and structural racism. Institutional racism involves the policies and practices in place that perpetuate racism, whereas structural racism is the cumulative effect of discriminatory policies and practices across society. However, the terms are often used interchangeably (Race Forward, 2014a). At the individual level, interpersonal racism involves holding oppressive negative and stereotypical beliefs towards a particular racial or ethnic group, known as racial biases, that impact views and actions toward individuals (Race Forward, 2014a). Interpersonal racism functions within systemic forms of racism,

2

whereby policies and practices can create an environment which allows or condones racist attitudes, beliefs, and outright discrimination. Systemic forms of racism are more readily discussed due to their de-personalized nature allowing individuals to contend with issues of racism without viewing themselves as a part of the issue. In contrast, interpersonal racism may be more difficult to recognize and confront in school settings because it requires individuals to reflect on their own personal contributions to racism in schools and students' experiences of racial discrimination (Dixson & Rousseau Anderson, 2017; Kohli et al., 2017; Solorzano & Yosso, 2001). Further, interpersonal racism may occur due to teachers' implicit or unconscious racial biases, where teachers are unaware of the beliefs or attitudes they hold and therefore act on these unknowingly (Benson & Fiarman, 2020). Additionally, due to the controversial nature of discussing race and racism in the broader contexts of attacks on public education, teachers may be hesitant and even fearful of consequences from engaging in discussions about race, racism, and racial biases (Tropp & Rucinski, 2022).

Unfortunately, then, despite the important role schools serve in students' lives, schools, at times, may be the center of racial, socio-economic, and political divide and the epicenter of traumatic events for students who are marginalized based on their racial or ethnic identity (Bernard et al., 2020; Henderson et al., 2019; Henderson et al., 2021; Hughes et al., 2016; Kohli et al., 2017). School closures due to the coronavirus (COVID-19) pandemic and elevated socio-political and racial tensions in the US only have further highlighted schools as a critical environment that either perpetuates or dispels racism (Ball, 2021; Crutchfield et al., 2020; Liu & Modir, 2020). Therefore, schools, and in

particular teachers, have been called to critically examine their direct contribution to the

marginalization and racism students may experience in schools (Verhoeven et al., 2019).

     This mixed method study focuses specifically on one form of racism,

interpersonal racism, and in particular, teachers' perceptions of their implicit and explicit

racial biases and how these biases may relate to the quality of student-teacher

relationships in the classroom given the central role teachers serve in students' racialized

experiences in schools. In addition, this study seeks to gain a better understanding of the

ways in which teachers develop and maintain relationships with students who are racially

and ethnically different from themselves.

Teacher Racial Bias as a Form of Interpersonal Racism in the Classroom

     Teacher racial bias is a form of interpersonal racism that can occur in the

classroom, and is defined as the implicit and explicit attitudes, beliefs, and assumptions

held based on students' racial and ethnic identities (Chin et al., 2020; Staats, 2014;

Warikoo et al., 2016). Unlike explicit biases which are overt (Warikoo et al., 2016),

implicit biases may not be consciously recognized, but still play an important role in

shaping teachers' beliefs about, judgements of, and actions toward students who are

marginalized based on their race or ethnicity (Chin et al., 2020; Benson & Fiarman, 2020;

La Salle et al., 2020; Staats 2014; 2016). More specifically, implicit racial bias is the

beliefs, attitudes, or associations teachers hold based on someone's race or ethnicity that

occur automatically and unconsciously because of socialization and impact actions or

decision-making (Benson & Fiarman, 202020; La Salle et al., 2020; Staats, 2014; Starck

et al., 2020). Whereas implicit bias is covert, explicit racial bias is overt and conscious in

that these forms of bias can be self-reported or disclosed by the individual holding these

beliefs or attitudes (Warikoo, 2016). Teacher racial bias has been found to influence several aspects of students' experiences in school, including students' behavioral (Davis, 2003; Pena-Shaff et al., 2019) and academic outcomes (Davis & Dupper, 2004; Gershenson et al., 2016; Peterson et al., 2016; Quinn, 2020; van der Burgh et al., 2010). In a recent study of students' experiences of racial discrimination in schools, 79% of students reported experiencing interpersonal racism in their school with students in the US South reporting experiencing racism twice as often as other regions of the US (e.g., Midwest, Northeast, West; Bañales et al., 2021).

Together, teacher implicit and explicit racial bias can lead to several covert and overt actions by teachers, such as discrimination, differential treatment, and prejudice. Prior research has examined teacher implicit and explicit racial bias as it relates to their evaluations of student performance, academic ability, as well as behavioral and educational student outcomes, such as test scores and disciplinary action (Chin et al., 2020; Denessen et al., 2020). However, no study to date has examined how teacher implicit and explicit racial bias relate to a critical outcome essential for student learning and success in school – the quality of student-teacher relationships.

The Power of Student-Teacher Relationships

Within schools, teachers serve a critical role in shaping student-teacher relationships, which are the bi-directional relationships between students and teachers characterized by caring, closeness, acceptance, and support (Bottiani et al., 2016; Brinkworth et al., 2018; Della-Dora, 1962; Lin et al., 2021; Saft & Pianta, 2001; Wubbels & Brekelmans, 2005; Yoon, 2002). Although relationships between students and teachers are only one aspect of education, the quality of student-teacher relationships can have an

impact on larger school experiences such as students' perceptions of school support, engagement, connectedness, and climate (Bottiani et al., 2016; Lin et. al., 2021; Pham et al., 2021; Roorda et al., 2011). Teachers also hold a vital role in their relationships with students by shaping students' academic motivation, self-efficacy, and identity through their unintentional messaging and appraisal of students' worth (Verhoeven et al., 2019), which may lead to internalization of negative racial stereotypes (Call-Cummings & Martinez, 2017; Cooper, 2003; McKown, 2013).

Thus, teacher interactions with students in the classroom and in the larger school setting are crucial to student success, and these relationships may be negatively impacted when teachers hold negative racial biases based on students' race or ethnicity. However, no study to date has examined how teacher racial bias relates to the quality of student-teacher relationships. Therefore, this study will be the first to identify if there is a relationship between teachers' racial biases (implicit and explicit) and teachers' perceptions of the quality of their student-teacher relationships in US PK-12 public schools. In addition, this study will explore how teachers develop and maintain relationships with students who differ from their own race or ethnicity in an effort to learn more about the strategies teachers use in schools to build relationships with students who are marginalized based on their racial or ethnic identity.

Teacher-Student Racial Mismatch

In addition to the role of teacher racial bias, teacher-student racial mismatch, defined as when teachers of one racial or ethnic identity instruct students of a different racial or ethnic identity, may moderate the influence of teachers' racial bias on the quality of student teacher relationships (Gershenson et al., 2016; La Salle et al., 2020). In the US,

rates of teacher-student racial mismatch remain high, as the teaching workforce does not mirror the student population and remains largely White (79%) and female (76%), despite the student population identifying mostly as Hispanic, Black, Asian, American Indian/Alaskan Native, or two or more races (52%; Irwin et al., 2021; NCES, 2021). Teacher-student racial mismatch is a concern as mismatch has already been directly linked to negative outcomes for students who are marginalized based on their racial or ethnic identity, including worse evaluations of student behavior, lower academic outcomes, and lower quality student-teacher relationships (Baker, 2012; 2019; Egalite et al., 2015; Fox, 2015; Irizarry, 2015; Schoener & Mckenzie, 2016; Yarnell & Bohrstedt, 2018; Saft & Pianta, 2001).

However, prior research examining the moderating effects of teacher-student racial mismatch between teacher expectations or perceptions of students and student outcomes have been inconclusive. Some recent studies found teacher-student racial mismatch moderated the relationship between classroom diversity and academic indicators (e.g., social and emotional skills, class engagement, and attendance; Rasheed et al., 2020). Yet, another study also found teacher-student racial mismatch between African American students and their teachers did not moderate the relationship between students' perceptions of teachers' warmth and their academic expectations of students and their academic growth (Sandilos et al., 2017). Still, students' perceptions of teachers vary when racial mismatch is considered. In one study, students who shared the same racial or ethnic identity with their teachers rated those teachers higher in terms of classroom climate and instructional support (Osei-Twumasi & Pinetta, 2019). Further, additional research has demonstrated the negative influence teacher-student racial mismatch may

7

have on teacher expectations of classroom behavior and students' academic ability, therefore suggesting it is possible that this mismatch could intensify teachers' racial biases (McGrady & Reynolds, 2013). For example, McGrady and Reynolds (2013) found that White teachers who teach high school students predominantly from other racial and ethnic backgrounds than themselves could act on the racial biases they may hold, underestimating students' academic ability (i.e., Math and English abilities), and causing harm to this relationship.

Given teachers' crucial role in the classroom, the racial match between students and teachers has been suggested to impact the actions teachers take in the classroom and expectations teachers, who are predominantly White, hold of students of different racial or ethnic backgrounds (Morris, 2005; McCoy, 2006; Solorzano & Yosso, 2001; van den Bergh et al., 2010; Valencia, 2010a; 2010b). Understanding the effect of teacher-student racial mismatch as a moderator is important as few studies have directly examined the role teacher-student racial mismatch may have in intensifying or mitigating teachers' racial biases on student outcomes (Chin et al., 2020; Dávila, 2015; Warikoo et al., 2016). Therefore, in addition to examining the relationship between teacher implicit and explicit bias and the quality of student-teacher relationships, this study will be the first to examine whether teacher-student racial mismatch at the classroom-level serves as a moderator between teacher implicit and explicit racial bias and the quality of student-teacher relationships.

Theoretical Foundation for the Study

Beyond the empirical findings from prior studies on teacher racial bias and teacher student racial mismatch, there are four theories that provide a theoretical

8

foundation to better understand the relationships between teacher implicit and explicit

racial bias, student-teacher relationships, and teacher-student racial mismatch in the

context of the larger social system of education. Critical Race Theory (CRT; Crenshaw et

al., 1995; Ladson-Billings & Tate, 1995) and Bronfenbrenner's Ecological Systems

Theory (EST; 1977, 1979) suggest that the individual is centered in increasingly larger

systems (i.e., families, schools, communities, societies), and within each layer, there are

interwoven structures and norms that influence individual outcomes. In addition to

recognizing the context in which students experience racism in schools, CRT provides

guiding tenets including the recognition that racism is inherent to our societal structures

(Howard & Navarro, 2016; Solorzano & Yosso, 2001). Together, these two theories

highlight how individuals' experiences, in particular those of racism in school, are not

limited to their interpersonal relationships, but also shaped by tangentially related

institutional policies and societal structures.

Two additional theories – Deficit Thinking (Valencia, 2010a; 2010b) and the

Theory of Racialized Organizations (Ray, 2019) – help explain the ways in which

interpersonal and systemic racism may occur within the educational system and manifest

in the classroom. The Theory of Deficit Thinking (Valencia, 2010a; 2010b) denotes

assumed deficits or weaknesses though to be inherent of particular racial, ethnic, socio-

economic and other subgroups. This framework helps theorize how these assumed

negative traits of particular groups contribute to the ways in which racism and differential

treatment emerge and through which individuals, for instance teachers, see and interact

with their student and families from marginalized populations (Sharma, 2018). The

Theory of Racialized Organizations (Ray, 2019) suggests that larger organizations, for

instance school systems, in and of themselves may be racist by reinforcing systems and standards that perpetuate whiteness as property and unequal opportunities, yet operate under the guise of equal, rather than equitable, decision-making. While this study focuses on interpersonal racism, the Theory of Racialized Organizations incorporates the larger context of racism in schools, such as the school policies or procedures (e.g., particular dress codes, or banning hairstyles common among certain racial or ethnic groups), which teachers and other school stakeholders operate under in their individual classrooms. Together, these four theoretical frameworks help illustrate the micro-macro continuum of the educational context, and how racism may operate in the context of schools.

Conceptual Model of Teacher Racial Bias and Student-Teacher Relationships

Based on prior research evidence and the four theoretical frameworks described above, this study tests a new conceptual model, titled the *Conceptual Model of Teacher Racial Bias and Student-Teacher Relationships* illustrated in Figure 1.1. This model conceptualizes how teacher racial bias may relate to the quality of student-teacher relationships, and the possible moderating role of teacher-student racial mismatch. Further this model is part of a larger theoretical review and conceptual model conceptualizing student, teacher, and school-level factors contributing to racial educational inequities in both student and school-level outcomes (Childs, Wooten, & Iachini, in progress).

Racism in Schools

Interpersonal Racism in Schools

Teacher-Student Racial Mismatch

Teacher Implicit Racial Bias

Teacher Explicit Racial Bias

Quality of Student-Teacher Relationships
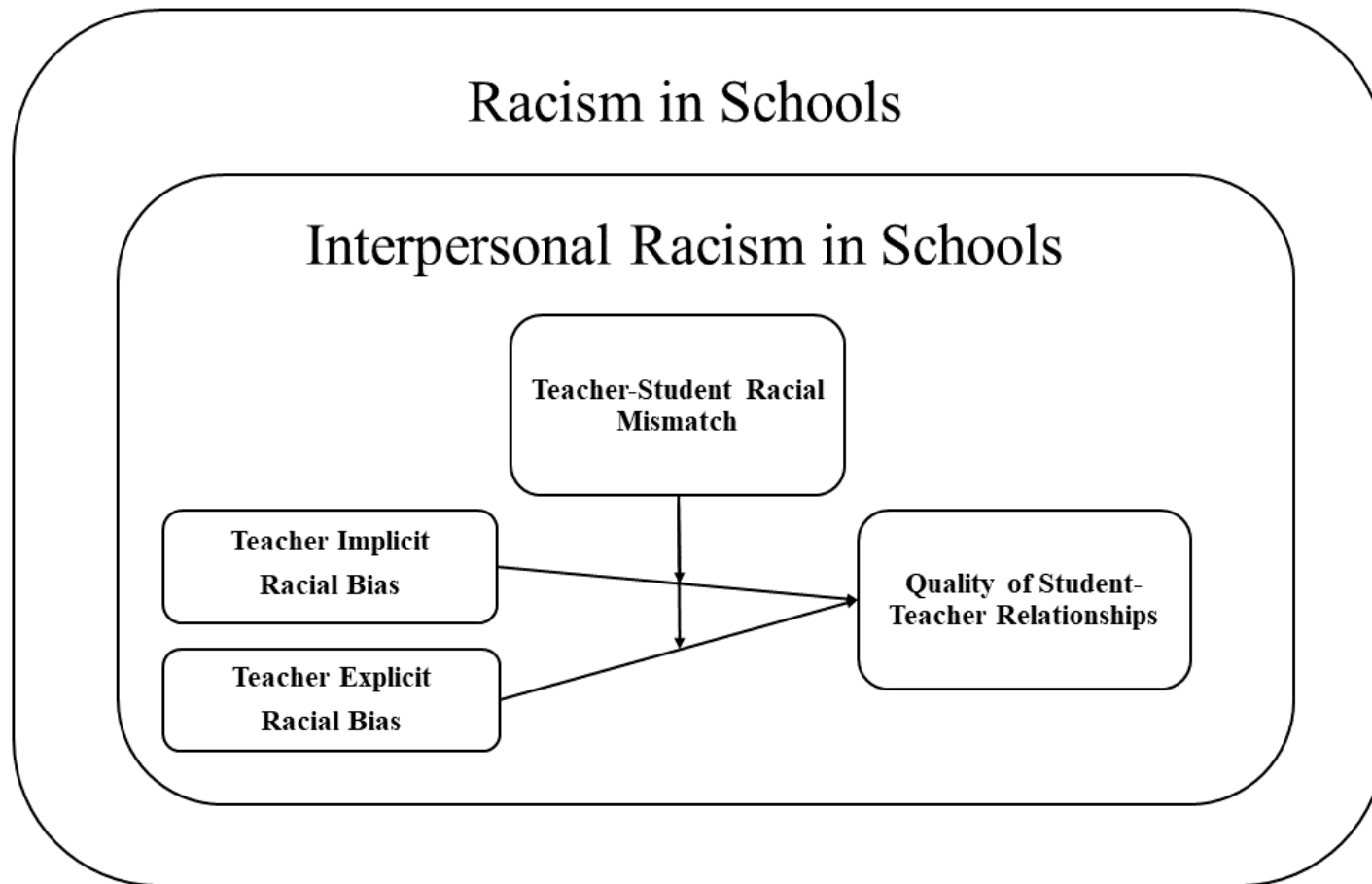
Figure 1.1 Conceptual Model of Teacher Racial Bias and Student-Teacher Relationships

In the conceptual model, there are two layers shown in increasingly central rings, beginning with racism in schools, which includes both systemic and interpersonal racism, then an inner circle representing interpersonal racism in the classroom. This conceptualization acknowledges the structural and institutional policies and context of schools that teachers operate within, while also illustrating the central focus in this particular model on interpersonal racism in the classroom. The inner most circle of interpersonal racism in the classroom represents the hypothesized relationships between three critical components that include teacher implicit and explicit racial bias, teacher-student racial mismatch, and the quality of student-teacher relationships. Prior research provides evidence that teachers do hold inherent implicit and explicit racial biases towards their students, with negative perceptions of their students from diverse racial or ethnic identities (Chin et al., 2020; Denessen et al., 2020; Quinn, 2020) and these biases can influence the actions they take towards these students (Chin et al., 2020; Denessen et al., 2020; La Salle et al., 2020; Pit-ten Cate & Glock, 2019; Starck et al., 2020).

Evidence also points to teacher-student racial mismatch impacting educational expectations and outcomes for students (Gershonsen et al., 2016; Yarnell & Bohrstedt, 2018), and others argue deficit thinking mindsets are particularly present within majority-minority power structures (e.g., White teacher and students who identify as a racial or ethnic minority). Therefore, teacher-student racial mismatch may be the missing component in understanding how changing the classroom context or demographic ratio of teachers to students may moderate (e.g., increase or decrease) the impact of teacher implicit and explicit racial biases on the quality of student-teacher relationships, ultimately shaping students' experiences of interpersonal racism in the classroom. For

example, teachers who hold negative implicit and explicit racial biases toward their students who are from diverse racial and ethnic backgrounds, but largely teach students of their own race or ethnicity (e.g., low mismatch) may have higher quality relationships with their students despite holding biases, compared to if these teachers taught students largely of a different race or ethnicity from themselves. Together, this model shows the hypothesized relationship between teachers implicit and explicit racial biases and the quality of student-teacher relationships, and how the match between teachers' own racial or ethnic identity and that of their students may change this relationship.

Current Study

Racism in schools is evident across the US historical timeline of schooling (Kohli et al., 2017; Ladson-Billings & Tate, 1995), and there is widespread evidence highlighting racial discrimination, differential treatment, and educational inequities for students who are marginalized based on their racial or ethnic identity (English et al., 2020; Hughes et al., 2016; Irwin et al., 2021; Skiba et al., 2011). No study to date, however, has examined the ways in which teacher racial bias as a form of interpersonal racism in the classroom may be related to the quality of student-teacher relationships and how teacher-student racial mismatch at the classroom level may moderate this relationship (Denessen et al., 2020). In addition, this study also extends the literature by exploring how teachers develop and maintain relationships with students based on their racial or ethnic identity. This study specifically examined the following three research questions:

1) Do PK-12 US teachers' perceptions of their own implicit and explicit racial bias predict the quality of their relationships with students?

2) Does teacher-student racial mismatch moderate the relationship between US teacher perceptions of implicit and explicit racial bias and the quality of student-teacher relationships?

3) What are teachers' perceptions of how students' racial or ethnic identity influences the development and maintenance of student-teacher relationships?

Overall, this study aimed to build on the historical context of schools as racial spaces in which inequities are perpetuated or dispelled with a focus on one mechanism - the quality of student-teacher relationships. Understanding the ties between teacher racial bias (both explicit and implicit), the quality of student-teacher relationships, and the possible moderating factor of teacher-student racial mismatch are critical to improving educational experiences and disrupting experiences of interpersonal racism in the classroom for students who are marginalized based on their racial or ethnic identity. Further, the ways in which teachers develop and maintain relationships with students who identify as a different race or ethnicity than their own may provide insight into intervention points in the classroom or specific areas where teachers can receive coaching and professional development to improve the strategies they utilize, and ultimately enhance relationships with their students from diverse racial or ethnic identities. Additionally, findings could demonstrate areas where teachers hold deficit or colorblind views towards students who are marginalized based on their racial or ethnic identity, or examples of strength-based strategies teachers are employing to create high quality student-teacher relationships with these students.

CHAPTER 2

LITERATURE REVIEW

This literature review first centers the historical context of educational inequities in US schools, discusses how COVID-19 has exacerbated existing racial inequities in schools, and then describes the educational justice movement to address these inequities. Next, this review focuses on racism in schools, teacher racial bias, the relationships between teacher racial bias and student outcomes, the quality of student-teacher relationships, and student-teacher racial mismatch. Finally, this review shares the theoretical frameworks guiding the study, the proposed conceptual model and rationale for the study, along with the study research questions.

Historical Context of Educational Inequity in US Schools

Historically, schools have played a crucial role in perpetuating discrimination and racism throughout our larger American community. Schools were constructed in the early years of the US democracy to groom upper class males into leadership positions and educating people of color was not only limited, but could result in punishments or fines (Tate, 1997). Schooling for other children, usually females, included education around mainly domestic duties and stopped after the primary grades (Madigan, 2009). For instance, compulsory education laws instituted in the early 1900s aimed to combat child labor and ensure youth from different socio-economic backgrounds have access to public education (Rauscher, 2015).

During initial implementation of compulsory education laws, school attendance increased among males of lower socio-economic status (Rauscher, 2015). However, schools were not always used to fostering student learning, but instead to acculturate indigenous and Black students to White norms (Petrone & Stanton, 2021). As Petrone and Stanton (2021) suggest, the same acculturation approach that took place in the residential schools for indigenous students occur today on minoritized students, where schools can be a harmful rather than educational space.

The following subsections of this literature review describe the education of marginalized students, and three critical education issues facing students who are marginalized based on their racial or ethnic identity – modern day school segregation, the achievement or opportunity gap, and the school to prison pipeline. Finally, the educational justice movement is discussed as one example of an emerging movement toward eliminating educational inequities and racism in schools.

Education of Students from Diverse Racial and Ethnic Backgrounds. Formalized school opportunities for Black students were not federally or state funded until the late 1800s. And, even into the early 1900s, the funding provided was not funneled into schools that served Black students and therefore communities were forced to create private school options for Black students (Franklin, 2002). Inequities were apparent and persisted well into the mid-1900s, even as educational policies emerged in an attempt to combat the differences in access to and the quality of education for students who are marginalized based on their racial or ethnic identity (US Department of Education, 2008).

Today, the most widely discussed court case that outlawed segregated schools was the *Brown v. Board of Education* (1954) court decision that declared separating students based on race into separate schools was inherently unequal. The larger court case was composed of five smaller state level cases, in which the *Plessy v. Ferguson* separate but equal decision had been upheld, requesting that Black and White schools be equal in terms of what they provided to students. However, the ultimate *Brown v. Board* (1954) decision determined equal opportunities could not be provided so long as the schools were separated based on race. Therefore, although the *Brown v. Board* decision (1954) mandated the end to physical separation of students based on their race, segregation would continue for decades afterwards as state and local jurisdictions had authority over interpreting and implementing changes. Even though desegregation was mandated, forms of school segregation persist today.

Educational policies operate under the influence of systemic racism. For instance, recent federal policies exert colorblind or race-neutral stances (e.g., NCLB, ESSA), pointing toward individual characteristics as reasons for difference in outcomes by student sub-groups. In turn, school-level policies also perpetuate inequities, by targeting students from different racial or ethnic identities based on their "non-conforming" appearance and behavior in school (e.g., "Zero Tolerance" discipline policies, dress codes). These school policies center the deficit in the individual based on their race or ethnicity, as performing lower than peers due to their "inherent" qualities (Kohli et al., 2017). As a result, in combination with teachers' own racial biases, manifest into interpersonal racism in the classroom (Kohli et al., 2017; Leonardo, 2007; Pak, 2021). In the classroom, then, teachers and students are influenced by the federal and school-level

17

policies, which influence several student outcomes that require teachers' subjective decision-making including student evaluations and grades, disciplinary action, and referral to academic and behavioral health programs and supports.

Modern Day School Segregation. Researchers argue that modern day school segregation has continued through *de jure*, or policies implemented to maintain racial segregation (e.g., state, county, school board or court sanctioned decisions; Davis 2004; Donato & Hanson, 2012) since the landmark *Brown v. Board* decision, including mechanisms such as under-funding school zones (Baker, 2018; Condron et al., 2013). As a result of these policy decisions, racially segregated schools often have poorer or low quality teaching staff (Cherng et al., 2021; Hanselman & Fiel, 2017) in schools that serve predominantly students groups who are marginalized based on their racial or ethnic identity. At the same time, modern day segregation also occurs through *de facto*, or natural, mechanisms such as individuals choosing to live in racially or ethnically homogenous communities (Donato & Hanson, 2012) or parents choosing to send their children to schools with students of their own racial or ethnic identity. However, these two mechanisms of modern day segregation are not mutually exclusive, but rather operate in tandem with one another. For instance school district and local geographic school feeder and district boundaries (Martin & Varner, 2017), are drawn along already divided racial and ethnic community lines further preventing integration of students from different racial or ethnic identities and White students in schools, despite mandates to desegregate schools (Donato & Hanson, 2012; Martin & Varner, 2017). In turn, these practices are used to maintain inequities in school financial investments, which differ greatly between school districts, maintaining an "equal" but lower funding level of

schools with students who are marginalized based on their racial or ethnic identity

(Baker, 2018, p. 158). Alemán (2007) also examined school finance policies and found in

Texas that schools with a high composition of students identifying as Mexican Americans

were underfunded in comparison to majority White student schools due to school funding

guidance, which allotted more funding to already resource rich districts. In this case,

schools with higher ratios of low-income students are only entitled to the same amount of

funding as higher income school districts, due to the financial formula which relied on a

greater proportion of funding coming from state resources, rather than local property

taxes (Alemán, 2007). Additionally, schools serving predominantly students who are

marginalized based on their racial or ethnic identity, have teachers who are often under-

qualified and less-experienced, due to resource pooling of more advantaged school

districts and the recruiting of highly experienced and qualified teachers to these districts

(Hanselman & Fiel, 2017).

Bierbaum and Sunderman (2021) conducted a one-year case study using

interviews with school and community stakeholders, and an analysis of school policies

and popular media, to examine the role of school zoning in segregating or desegregating

schools in two Maryland school districts. In their study, they found state and county-level

decision-making prioritized school district capacity over the racial composition of its

district and schools, articulating the reason for racial segregation emerging in school

districts were due to personal choices of the neighborhood and communities.

Policymakers upheld norms of maintaining segregated schooling by using the same

zoning processes, over dismantling homogenous racial composition in their schools. This

study also highlights the intersectionality of educational decision-making to include those

in public governance (i.e., school boards, community coalitions) and land-use governance (e.g., zoning particularly for schools or community-centers; Bierbaum & Sunderman, 2021).

Further, McCoy (2006) conducted a two-year ethnography with 41 math teachers at 12 high schools in the south concerning their perceptions of the barriers to academic success in their school. Teachers in the study largely described instances of modern day school segregation, where Black and White students attend separate schools despite living in the same areas (McCoy, 2006). Recently, a review of several model desegregation court cases showed that schools were classifying students based on their presenting racial or ethnic identity, rather than asking parents or students to self-identify their own identities, in a failed effort to desegregate local schools using policy racial category options (Olden, 2015).

Despite efforts to desegregate, schools today are equally as segregated as 70 years ago immediately after the *Brown v. Board* (Orfield & Frankenberg, 2014; Reardon & Owens, 2014). Orfield and Frankenburg (2014) used national student composition rates and provided an overview of the status of segregation since *Brown v. Board* (1954). They point out that despite its widespread reference, the decision only confirmed that schools were indeed segregated, but provided no deadline, guidance, funding, and little policy support on how states should work to desegregate their schools (Orfield & Frankenburg, 2014). In the US South, particularly, nearly all schools (98%) remained segregated until 10 years later when school funding was cut from schools not adhering to the court decision (Orfield & Frankenburg, 2014). The intention of desegregation was to equalize educational opportunity; however, minority serving schools were often the ones closed

and students were integrated into schools with historically only White students (Baker, 2006).

An unintended result of desegregation efforts, then, was the creation of possibly the first instances of widespread teacher-student racial mismatch, as teaching populations remained largely White, yet students became increasingly diverse. Further, across racial and ethnic groups, comparisons of NCES school composition data show students are more likely to be in schools with only their own racial group than in a school with a diverse racial and ethnic student population, describing this phenomenon as racial isolation in schools (Orfield & Frankenburg, 2014). Additionally, they found White and Black students are the most racially isolated in schools (Orfield & Frankenburg, 2014), whereby a majority of students who identify as Black, Hispanic/Latino, and White attend schools where the school population is homogeneous, and the majority of the students identify as the same race or ethnicity (Irwin et al., 2021). In comparison, students who identify as Asian, Hawaiian or Pacific Islander, Alaska Native, and Two or More Races are racially isolated, in the sense that a majority of their classmates will not hold the same racial or ethnic identity as themselves (Orfield & Frankenburg, 2014; Irwin et al., 2021). Modern day school segregation remains a critical educational concern with explicit negative impacts on students (Reardon & Owens, 2014) and leading to amplified educational inequities in both resources and student lifelong outcomes, including most recently decreased life expectancy by nine years (Hahn, 2022), mirroring the economic and social discrepancies seen across racial communities in the larger US (Condron et al., 2013; Ray, 2019). Increasingly, researchers caution school segregation threatens the US democracy (Marin & Varner, 2017).

Achievement or Opportunity Gap. Inequities in educational outcomes have been referred to as the achievement gap, where students of marginalized racial groups, low-income students, and students with disabilities have poorer educational outcomes than their White normative peers (Hung et al., 2020; Lagana-Riordan & Aguilar, 2009). By the age of three, educational inequities are seen in students' readiness for school and the academic achievement between Black and White students, pointing to the need for a structural examination of the role of segregation and racism early in students' lives (Burchinal et al., 2011).

Educational policies have emerged at the federal level to address the achievement gap, beginning with the National Defense of Education Act (1958; Kessinger, 2011). This policy was created to better address preparing students to enter the workforce and post-secondary education. In addition to this policy, the Elementary and Secondary Education Act (ESEA, 1965) was introduced to address the achievement gaps by providing guidance on five areas of improved educational support: low-income student subgroups, increased resources and educational centers, introduced additional areas of educational research needed, and shifted control back to the states (Black, 2017; Wolfe, 1965). Another goal of the ESEA aimed to address desegregation and low-income achievement gaps through improving funding and providing loose guidance to support desegregation of schools well beyond the *Brown v. Board* decision (Black, 2017). Since 1965, the ESEA has been reauthorized and renamed, generally under major shifts in administration with the most recent policies including the No Child Left Behind Act (NCLB; 2001), and the current most recent educational policy – the Every Student Succeeds Act (ESSA; 2018). The NCLB Act (2001) emphasized schools' responsibility to close the

achievement gap by monitoring annual yearly progress and reporting disaggregated data based on race, ethnicity, gender, and other student subgroups, to the public as soon as it is made available to the school or district. The ESSA (2018) added requirements for schools to report on a new measure of school and student success of their choosing, which could include school climate, student engagement, or another outcome that moves beyond academic outcomes to help assess and monitor students' experiences in their schools. However, these policy approaches largely focused on examining student-level characteristics and systems of funding for underperforming schools, yet did not address or examine teacher and school-level contributors to these inequities.

Despite the increased pressure on school accountability and educational progress, the achievement gap persists today (Cohen-Vogel, 2005; Duncombe, 2008; Kessinger, 2011). Horsford (2019) argues that schools focused on racial integration and equal opportunity ignore the educational inequities by emphasizing the same opportunities are available to all students regardless of race or ethnicity. Yet, racial scholars argue that the achievement gap dominates and disguises the true issue facing students who are marginalized based on their racial or ethnic identity in schools, historical racism in schools and against communities of color, communicating the issue without acknowledging systemic or interpersonal racism that contributes to negative and disproportionate inequities in student outcome (Kohli et al., 2017). Recent literature has considered a rephrasing of the achievement gap to a more accurate description as an *opportunity gap* for students who are marginalized based on their racial or ethnic identity, identifying differences in achievement are due to limited access to resources and educational opportunities (Hung et al., 2020). In another study, Schoener and Mckenzie

(2016) explored underlying reasons for students who are marginalized based on their racial or ethnic identity not being tracked into foreign language courses. In the study, teachers were asked about their perceptions of held deficit views of students from different racial or ethnic identities, limited enrollment of these students in foreign language courses, and reasoned through deficit views that it was due to students living in poverty, with limited parent engagement, or assumed students did not value foreign language classes (Schoener & Mckenzie, 2016). Additionally, teachers presented a colorblind perspective arguing all students in the school regardless of race had the same opportunities (Schoener & Mckenzie, 2016). Research surrounding the achievement or opportunity gap has increasingly looked to the role of teachers, as the primary evaluators and instructors, in educational spaces to examine how their beliefs and attitudes may be contributing to these longstanding inequities in student educational outcomes (Starck et al., 2020). In addition to the achievement or opportunity gap, students who are marginalized based on their racial or ethnic identity face barriers within the school that may prevent academic success and put them at an increased risk of involvement in the juvenile justice system. Given teachers hold immense power in the classroom over students' evaluations, progression to advanced coursework, and referral to additional academic and behavioral supports, it is important to further distinguish their role in contributing to, or helping to prevent, the opportunity gap among students from different racial and ethnic groups.

      School to Prison Pipeline. The school to prison pipeline is a phenomenon where students are pushed out of school, through expulsion or suspension, and are in turn more likely to be involved in juvenile justice and then the larger justice system as they enter

adulthood (Wald & Losen, 2003). This begins with the disproportionate disciplinary action taken towards students who are marginalized based on their racial or ethnic identity, specifically Black male students, as receiving discipline action reduces the likelihood of graduating high school (Irwin et al., 2021). Over the past decade, teacher biases and other teacher characteristics have been directly examined in relationship to disproportionate school discipline outcomes, as concerns continue to grow about how teachers may be evaluating students' behavior through an unequal lens, and taking differential actions towards students based on their race or ethnicity. Additionally, increased disciplinary action towards students has pushed students into rigid charter schools and alternative school settings after multiple disciplinary actions have contributed to the phenomenon of the school to prison pipeline (Horsford, 2019).

Carter and colleagues (2017) argue disproportionate disciplinary action is the result of the modern day stereotype of "dangerous Black men" stemming from the era of slavery and Jim Crow Laws, that has evolved into school disciplinary action taken against Black males at a greater rate than any other racial or ethnic group of students (p. 212). Research provides evidence of Black students disciplined at rates of two (elementary students) and four (secondary students) times higher than their White peers (Skiba et al., 2011). Additionally, students who are marginalized based on their racial or ethnic identity also receive greater punishments than their White peers, and are more likely to be suspended or expelled for the same behavior a White student displays (Skiba et al., 2011). However, action to address the root cause of inequities, racism, and move toward action are lacking (Carter et al., 2017). Instead, remedies for the school to prison pipeline focus on students' behaviors, and place blame on students who are marginalized based on

their racial or ethnic identity for the differential response teachers and school stakeholders take against them (Carter et al., 2017).

Given the school to prison pipeline is perpetuated by disciplinary action, which are often subjective to the teachers and other school stakeholders administering disciplinary actions, this educational concern is inherently relational. Therefore, teachers must also work on improving the quality of student-teacher relationships and school climate, better understanding how their own biases can shape their daily interactions and evaluations of students who are marginalized based on their racial or ethnic identity behavior in classrooms (Carter et al., 2017). Further, to address the school to prison pipeline, researchers suggest several actions are needed including examining school disciplinary data by race, analyzing the contexts in which disciplinary actions are taken, and intervening using restorative practices (Carter et al., 2017; Huguley et al., 2020). Today, the school to prison pipeline is among many barriers facing students who are marginalized based on their racial or ethnic identity in schools, including the recent and ongoing impact of the COVID-19 pandemic on schools, families, and students.

COVID-19 Exacerbating Existing Racial Inequities in Schools

The COVID-19 pandemic illuminated racial educational inequities and exacerbated racial and ethnic divides in terms of access to education, technology, and internet services (Fortuna et al., 2020; Liu & Modir, 2020). People from marginalized racial groups were disproportionately impacted by COVID-19, and following associated social and economic impacts, and may have faced a dual pandemic experiencing medical trauma in their experiences during treatment (Fortuna et al., 2020; Liu & Modir, 2020). Already under-resourced schools, often those schools predominantly serving students

who are racially and ethnically marginalized, faced greater impacts during COVID-19,

and those already facing teacher shortages and reliance on non-certified teachers have

been pushed to the brink (Muñiz, 2021). In addition to educational inequities rising due to

COVID-19, students also faced increased mental health concerns with a 24-31% rise in

mental health related emergency room visits (Leeb et al., 2020). Despite the

disproportionate impact COVID-19 has had on students from racially and ethnically

marginalized groups and their families, Muniz (2021) examined existing educational laws

and policies to determine whether any protections existed for students experiencing

educational inequities due to COVID-19, but did not find any supporting legislation

parents or schools might leverage to support students during this time. Increased public

outcry during COVID-19 has drawn attention to a need to re-examine the inequities

students who are marginalized based on their racial or ethnic identity, face in schools

today, calling for an educational justice movement across US schools to provide

equitable educational opportunities.

Educational Justice Movement

In recent years, schools have been on the foreground of taking action, pressured

by the movement toward educational justice to promote racial equity in response to

widespread socio-political unrest in the US (Horsford, 2019). The goal of educational

justice is to address the educational inequities students face, but despite this, a recent

study of school social workers found few engaged in macro-level educational justice

practice in their schools (Ball & Skrzypek, 2020). And, despite the ample research

surrounding the racial achievement gap, recent interdisciplinary scholarship from

education, social work, and other disciplines have drawn attention to the lack of literature

directly assessing the role of racism in modern schooling (Ball & Skrzypek, 2020; Crutchfield et al., 2020; Reardon & Portilla, 2016). Further, scholars have argued that school social work research must center on the critical role race plays in students' experiences in schools (Ball, 2021).

In the social work profession specifically, calls to action have emerged as Grand Challenges for the profession to address include the elimination of racism (Teasley et al., 2021). Leaders in social work argue for immediate and critical action where social workers self-reflect on their own involvement in racism, ability to recognize the pervasiveness of racism, and enact anti-racist practices (Teasley et al., 2021). It is recommended that school social workers and other school personnel implement structural interventions in schools to address educational inequities (Crutchfield et al., 2020), which may include leading efforts to address interpersonal racism between peers, and from teachers and other school stakeholders.

In summary, this overview of the complex historical context of education in the US and ongoing barriers to students who are marginalized based on their racial or ethnic identity, including modern day school segregation, the school to prison pipeline, and COVID-19 has shown the urgent need to move beyond a discussion of educational concerns and inequities, and toward addressing the root cause, racism in schools.

Racism in Schools

Despite repeated efforts to reform the educational system and equalize educational opportunity, inequities persist due to racism in schools (Condron et al., 2013; Kohli et al., 2017). Racism occurs at two levels, systematically across institutions and

society that perpetuate it, and interpersonally between individuals (Race Forward, 2014a; 2014b).

Systemic Racism. Systemic racism is synonymous with institutional or structural racism and is defined as the policies and nature of certain institutions to limit opportunities based on an individuals' race and ethnicity, and support and reinforce racism across society (Blaisdell, 2016; Race Forward, 2014a). In schools, policies that create structural inequities, including discipline policies, student behavior expectations (e.g., dress code, hair style requirements), and academic tracking (Blaisdell, 2016; Zimmerman & Astor, 2021) are forms of systemic racism. Blaisdell (2016) explored teachers' understanding of structural racism and the ways in which students who are marginalized based on their racial or ethnic identity have access to curriculum, teacher efforts, and other educational opportunities based on the way they are perceived in school and existing school structures that determine student success, such as standardized tests. Teachers in the study described separations of students in school and within classrooms even, based on academic tracking, which influenced what types of curriculum and opportunities students who are marginalized based on their racial or ethnic identity were presented (Blaisdell, 2016). Blaisdell (2016) suggests that teachers may be complicit in structural racism in schools by following policies that result in inequitable opportunities and outcomes for their students from racially and ethnically marginalized groups. In another study, teachers identified structural racism in their schools, noting Black students were consistently funneled into the behavioral and special education secluded units (Jupp & Slattery, 2010). Inherent policies in schools such as academic tracking, or disciplinary policies which perpetuate inequitable outcomes based on students' race or ethnicity, are

not the only form of racism students experience in schools. Student also can face interpersonal racism.

Interpersonal Racism. Interpersonal racism, which includes internalized racism, is when students are treated differently by an individual based on their race or ethnicity, and can take on several forms including racial discrimination, prejudiced attitudes, microaggressions, and teacher racial biases (Bañales et al., 2021; Benson & Fiarman, 2020; Crutchfield et al., 2020; Nunn, 2011; Race Forward, 2014a). In a literature review of 186 research articles that examined racism in US K-12 settings and characterized a "New Racism" which they described as covert interactions in the school that contribute to discrimination, prejudice, and microaggressions that occur against students from different racial and ethnic backgrounds inherently in the school environment (Kohli et al., 2017). Microaggressions are one common form of interpersonal racism, defined as covert and overt actions (e.g., verbal and non-verbal) toward marginalized individuals based on their unconscious or conscious beliefs (Gilliam & Russell, 2021; Kohli & Solorzano, 2012; Dixson & Rousseau Anderson, 2017; Soumah & Hoover, 2013). These can be carried out based on any identity an individual may hold, including their race, ethnicity, gender, and primary language (Gilliam & Russell, 2021; Kohli & Solorzano, 2012). A specific subtype of microaggressions may include verbal statements that undermine the racial or ethnic identity of someone and perpetuate notions of colorblindness, referred to as "microinvalidations" (Gilliam & Russell, 2021, p. 3).

A common microaggression students who are marginalized based on their racial or ethnic identity face in schools are teachers mispronouncing names of non-white students in class (Kohli & Solorzano, 2012; Davila, 2015; Soumah & Hoover, 2013). In a

qualitative write-in response study conducted through listservs, Kohli and Solorzano (2012) gathered responses from adults and asked them to reflect on their experiences in school regarding microaggressions. Questions included, "Describe any incidents that involve mispronouncing, changing or disrespect of your name as it relates to school" and "How did this experience make you feel about your name, your family, and your culture?" (Kohli & Solorzano, 2012, p. 449). Participants recalled instances of teachers mispronouncing their names, failing to try to pronounce their names and "renaming" them Eurocentric names (e.g., Frank), and voicing frustrations at the students for not responding to the mispronounced name (Kohli & Solorzano, 2012). While mispronouncing names may seem minimal in terms of students' school experiences, repeated mispronouncing and minimal or no effort to call the student by the correct name was described as leading to internalizing the racial microaggressions. In this way, students also faced racial battle fatigue after repeated instances of trying to stand up for themselves to peers and teachers, and then they would give into accepting an easier to pronounce name shifting their own identity (Kohli & Solorzano, 2012). This is particularly concerning as interpersonal racism may lead to internalized racism, where students feel de-valued by the teacher and their classmates, and may disengage from their teachers and peers (Carter et al., 2017; Golden et al., 2018; Henderson et al., 2021).

Soumah and Hoover (2013) conducted interviews with Black and Hispanic students who shared they faced other microaggressions, such as differential treatment and lower expectations from their teachers. Students expressed frustration and were discouraged by teachers' low expectations mentioning their own decrease in academic motivation and engagement because of how their teachers treated them in the classroom

(Soumah & Hoover, 2013). Their negative experiences in the school made it difficult to see the school as a welcoming or resourceful environment, leading students to feel dismissed rather than stimulated by the academic environment. Students did not share specific comments teachers made to them, instead they described the covert expectations or lack thereof characterizing the school environment (Soumah & Hoover, 2013).

Carter and colleagues (2017) describe several forms of interpersonal racism experienced by students from diverse racial and ethnic backgrounds, including being treated as "less than" their White peers by teachers, or told not to discuss race as an issue in the classroom (p. 214). In a cross-sectional study of high school students, Golden and colleagues (2018) found students who were stereotyped by teachers had poorer academic outcomes. They also found that students' experiences of discrimination, prejudice, and stereotyping contributed to students' reporting lower feelings of positive school climate (Golden et al., 2018). Students who are marginalized based on their racial or ethnic identity may also face interpersonal racism from their peers in school, as Nunn (2011) interviewed high schools regarding their racialized experiences in schools and found peers held deficit views of their Latino peers, assuming they were of lower intelligence and had low motivation to excel in school. Nunn (2011) also observed differential treatment by teachers in their teaching styles where they invited participation from certain groups of students over others (Nunn, 2011).

Henderson and colleagues (2021) interviewed 20 students who were marginalized based on their racial or ethnic identity about their experiences with racial stressors (e.g., slurs, discrimination) over their time in PK-12 schools and found that students relied on familial support, feeling little support from teachers, and on their own in majority White

schools. Students in the study also expressed teachers holding deficit views of their academic ability, questioning their placement in advanced and gifted programs (Henderson et al., 2021). As a result of feeling excluded in class and from peer groups, students described feelings of low self-esteem and wanting to quit advanced classes altogether (Henderson et al., 2021). Further, researchers argue that racial discrimination in schools is a form of racial trauma experienced by students who are marginalized based on their racial or ethnic identity with lasting health and mental health outcomes (Henderson et al., 2019).

Kohli and colleagues (2017) conducted a literature review of 186 research articles that examined racism in the US K-12 settings, characterizing a form of "New Racism" which they described as covert interactions in the school that contribute to discrimination, prejudice, and microaggressions that occur against students from different racial and ethnic backgrounds inherently in the school environment. They found these microaggressions included belittling of students and families based on their racial or ethnic identity, devaluing input from students who are marginalized based on their racial or ethnic identity in the classroom, and deficit-based language used regarding students' names, identity, and academic abilities (Kohli et al., 2017). Another study found up to 75% of the students who responded to the survey had experienced interpersonal racism in their school, through discrimination, microaggressions, and overt racial slurs (Bañales et al., 2021). Qualitative responses in the study showed that students reported teachers holding color-blind views, or avoidance of conversations around race in their classrooms (Bañales et al., 2021).

Other studies have identified students' experiences of racism in the classroom and microaggressions from peers and teachers lead to internalized racism, where students begin to believe and actualize the stereotypes and deficit views held towards them (Call-Cummings & Martinez, 2017; Soumah & Hoover, 2013). For instance, students in one study described being told the correct and incorrect ways to respond to racist comments from peers in the classroom (Call-Cummings & Martinez, 2017). Teachers described the school racial climate in a post-racialized manner, or one in which racism and racist issues in the classroom are no longer common (Call-Cummings & Martinez, 2017). In the same study, students reported normalizing racial microaggressions from teachers as simply a part of the daily school climate (Call-Cummings & Martinez, 2017). This study showcases the inherent power teachers hold in not only contributing to the racial climate in the school, but also to normalizing racist behaviors in their own classrooms.

Benner and Graham (2013) surveyed high school students who are marginalized based on their racial or ethnic identity to understand the impact and causes of racial discrimination, and found students reported racial discrimination from school personnel in placement into classes based on perceived academic ability, which negatively impacted their academic course grades. A unique approach in this study allowed researchers to measure racial discrimination in 11th grade, capturing their academic grades a year later to look at a longer-term impact of racial discrimination on student outcomes, suggesting long-term academic impacts of students experiencing racial discrimination (Benner & Graham, 2013).

Recent research has also argued for an ecological approach that focuses on the experiences of Black students in schools, including safety as a critical dimension of

school climate which has largely ignored the role of race, or taking a colorblind approach to this point (Edwards, 2021). Edwards (2021) suggests leaving race out of the conversation of school climate jeopardizes the safety of students who are marginalized based on their racial or ethnic identity. Further, Edwards (2021) presents a concept of Black student safety as a dimension of school climate which should consider the racialized experiences of students in schools and include having caring and supportive relationships with teachers and other adults (Edwards, 2021).

Gale (2020) surveyed students and found that experiencing racial discrimination from teachers, such as being disciplined or treated differently in class because of their race results in lower academic persistence, also known as academic motivation. On the other hand, when students reported high levels of teacher support, the effects of racial discrimination were mediated, resulting in higher academic motivation, which suggests a critical role for teachers in relation to racial discrimination (Gale, 2020). McWhirter and colleagues (2018) surveyed Latino students about their experiences of racial discrimination, such as teachers viewing them as less intelligent because of their race and found that higher rates of racial discrimination led to students reporting wanting to drop out of school and feeling low levels of connectedness to their school. These studies begin to emphasize the important role of teachers and how teachers can also be perpetrators of interpersonal racism in schools.

To summarize, interpersonal racism can include differential treatment, racial discrimination, microaggressions, and expressing deficit views based on a students' racial or ethnic identity. Given teachers interact directly with students throughout their time in school, this study focuses on one form of interpersonal racism by teachers, teacher racial

bias – which is the beliefs, attitudes, and prejudices teachers hold towards students based on their race or ethnicity. There are two types of teacher racial bias, implicit and explicit teacher racial bias, and the following section describes each of these forms of bias.

Teacher Implicit Racial Bias

Teacher implicit racial bias is defined as the beliefs, attitudes, or associations held towards others based on their race or ethnicity that occur automatically with no conscious choice (Chin et al., 2020; La Salle et al., 2020; Staats, 2015; Starck et al., 2020). Although implicit biases may be positive or negative, the biases that have garnered attention in education are generally negative implicit biases due to their impact on student outcomes (Dávila, 2015; Denessen et al., 2021; Staats et al., 2015). Additionally, it is suggested that implicit biases stem from societal beliefs or stereotypes of groups, where the interactions observed in daily life are internalized (Payne et al., 2017). Further, teachers within a particular region or school context could hold similar biases due to the shared social structure they experience (Payne et al., 2017). This is concerning in the case of schools as teachers rely on their judgements, initial beliefs, and prior experiences to teach students.

Given the newness of the research on teacher racial bias specifically, prior literature reviews and meta-analyses have only looked at race grouped with other implicit biases more generally, including bias toward several student identities, including gender, sexual orientation, and physical appearance (Childs & Wooten, 2022; Denessen et al., 2021; Pit-ten Cate & Glock, 2019). For instance, in a literature review of 49 articles examining teacher implicit bias, only nine studies (18%) examined teacher racial bias in relationship to students' self-efficacy or academic ability (Denessen et al., 2021). An

additional literature review of 31 peer-reviewed articles revealed similar findings, showing most studies only examined student educational outcomes, such as academic motivation and final grades (Childs & Wooten, 2022).

Peterson and colleagues (2016) modified a common tool which uses images and words to measure individuals' implicit associations towards people or topics, the implicit association test (IAT), as implicit biases cannot be self-reported due to their subconscious or unconscious nature. In their study, teachers completed a survey that included IATs examining their implicit attitudes toward Europeans and Asians, and found teachers' implicit racial biases were related to their expectations of students' math achievement (Peterson et al., 2016). If teachers held positive implicit racial bias in favor of the racial group, the students' math scores improved significantly, though no relationship was found between teachers' implicit racial bias and students' reading scores (Peterson et al., 2016).

In a unique study where teachers were given the results of their racial implicit association tests back after completing the measure, teachers were characterized into five typical responses, one of which was disbelief over the majority holding a White preference (Clark & Zygmunt, 2014). The sample consisted of 302 teachers who primarily identified as White and female, and 96 percent of the teachers' IAT results showed a preference for European American or White (Clark & Zygmunt, 2014). Over 59% of the teachers reported disbelief or denial of those preferences, placing blame or rationale on the IATs measure itself rather than accepting their implicit bias results as true (Clark & Zygmunt, 2014). Nineteen percent believed the results and voiced distress or discomfort, and only 22 percent accepted the results of the implicit association tests

(Clark & Zygmunt, 2014). Even those that "accepted" the results described their limited exposure to diverse racial groups or other lived experiences as the reason for a White preference on the implicit association tests (Clark & Zygmunt, 2014).

Gershenson and colleagues (2016) used longitudinal educational data from secondary teachers' ratings of their students' educational attainment from two different teachers. Teachers had significantly lower educational attainment expectations for Black students in comparison to their White peers (Gershenson et al., 2016). Although teacher biases were measured through their expectations of students' educational attainment alone, Black teachers reported higher expectations of their students than White teachers (Gershenson et al., 2016).

Teachers' implicit racial biases have been linked to negative impacts on the academic and behavioral outcomes of students who are marginalized based on their racial or ethnic identity, including academic test scores, academic motivation, disciplinary action, and educational attainment (Chin et al., 2020; Dávila, 2015; Fix et al., 2021; Marcucci, 2020; Pena-Shaff et al., 2019; Peterson et al., 2016; Warikoo et al., 2016). Although other forms of implicit biases may exist towards students' identities of gender, sexual orientation, physical appearance (Glock et al., 2016), family background and other characteristics, implicit racial bias is the most pervasive in school settings (Blaisdell et al., 2016; Glock et al., 2019). However, less is known about how teacher implicit racial biases may impact other student experiences in school. In particular, no studies to date have explored teachers' implicit biases in relation to the quality of their student-teacher relationships (Denessen et al., 2021; Warikoo et al., 2016). Therefore, this study will examine teacher implicit racial bias as it relates to the quality of student-teacher

relationships. In addition to teacher implicit racial biases, explicit biases from teachers can also exist simultaneously and will also be examined in this study.

Teacher Explicit Racial Bias

Explicit racial biases are the consciously held beliefs or attitudes that can be freely disclosed regarding a positive or negative view towards someone based on their race or ethnicity (Warikoo et al., 2016). Because they are conscious, these beliefs or attitudes can be self-reported through items such as racial attitudes, colorblind attitudes, microaggressions, or stereotypes about a particular group.

Quinn (2017) examined PK-12 teachers and non-teacher adults to examine their racial attitudes and beliefs, finding teachers and non-teachers placed individual blame on students who are marginalized based on their racial or ethnic identity for lacking educational motivation (Quinn, 2017). Using free-response vignettes of racial stereotypes with open-ended and ranked responses, teachers in California were found to have more positive perceptions of Asian students over Black and White students (Chang & Demyan, 2007). In contrast to prior research, racial minority teachers and White teachers held similar racial stereotypes of Asian, White, and Black students (Chang & Demyan, 2007). However, their study confirmed teachers' perceptions of Asian students as a model minority student, viewing them as more intelligent and studious than Black and White students (Chang & Demyan, 2007). Though given the sensitive nature of the topic, teachers may have reported more positive, non-stereotypical attitudes to provide a more socially acceptable response (Chang & Demyan, 2007).

Soumah and Hoover (2013) conducted interviews with Black and Hispanic students who shared they faced other microaggressions, such as differential treatment and

lower expectations from their teachers. Students expressed frustration and were discouraged by teachers' low expectations mentioning their own decrease in academic motivation and engagement because of how their teachers treated them in the classroom (Soumah & Hoover, 2013). Their negative experiences in the school made it difficult to see the school as a welcoming or resourceful environment, leading students to feel dismissed rather than stimulated by the academic environment. Students did not share specific comments teachers made to them, instead they described the covert expectations or lack thereof characterizing the school environment (Soumah & Hoover, 2013).

Similarly, although Latinx students were not found to be disciplined differently, teachers shared perceptions of classifying students as "good" or "bad" based on their race (Rueda, 2015). In this ethnographic study with over a year of elementary classroom observations, Rueda (2015) noted that although Latino students received more discipline than their White peers, Black students still received the most discipline among any racial or ethnic group in the class. Results also supported prior literature in seeing gender as intersectional with consequences of students' particular race or ethnicity, where female students exhibited similar problematic observable behaviors but were not reprimanded the same as male students (Rueda, 2015).

In a phenomenological study, 15 undocumented immigrants who were students in New York schools were retrospectively interviewed to discuss their experiences in schools (Nienhusser et al., 2016). Nine major themes were found which detailed several forms of microaggressions students experienced such as questioning their academic ability and withholding postsecondary resources (Nienhusser et al., 2016). In other instances, participants shared how teachers and other school staff made inappropriate

40

comments about how they got to the US and how certain higher education opportunities were not available to them (Nienhusser et al., 2016).

In a study of German teachers, researchers compared implicit and explicit racial biases to determine whether teachers' implicit and explicit racial attitudes matched (Glock & Klapproth, 2017). Glock and Klapproth (2017) used implicit association tests to examine race and gender preferences and a multicultural beliefs scale to measure explicit biases. They found teachers' grade level influenced whether they held more positive views of students who are marginalized based on their racial or ethnic identity and who identified as a female or male, with primary school teachers viewing females more positively than males (Glock & Klapproth, 2017). Although teachers' explicit attitudes did not align with their implicit attitudes, primary school teachers held more positive views of male students explicitly. Similar to studies employing implicit measures, teachers self-reported their implicit and explicit racial attitudes, though the authors suggest adding classroom observations and qualitative explanations of their held attitudes in future research (Glock & Klapproth, 2017).

Only one study has explored the ways in which the racial context of schools may influence teachers' racial attitudes and beliefs with particular interest in whether the racial context of the school was stable or changing (Frankenburg, 2012). A telephone survey of 1,002 US teachers measured their explicit racial attitudes using four statements asking participants to rate their level of agreement, such as "*African American and Hispanic students have habits that decreased their chances for success* (Frankenburg, 2012)." Two composite variables were created as a proxy to the teachers' racial attitudes, though this is a new measure that was not validated prior to, nor in, the study. Findings

41

from the study suggested that teachers in more racially and ethnically diverse school settings were more aware of race in their schools (Frankenburg, 2012). Teachers in schools with greater proportions of White students had more colorblind perceptions of the role of race in schools than teachers in more diverse school settings (Frankenburg, 2012). Although the study measures teacher's awareness of race, it does not measure teachers' racial preferences for or against certain racial or ethnic groups of students.

In summary, then, both implicit and explicit teacher racial bias can lead to actions such as microaggressions and differential treatment of individuals based on their race or ethnicity. Therefore, these two types of racial bias are inherently linked (Greenwald et al., 2003), but distinct from one another requiring separate measures to investigate the presence of each one. This study will focus on both types of teacher racial bias. Next, the following section describes the current evidence on relationships between teacher implicit and explicit racial bias, one form of interpersonal racism, and student outcomes, including evaluations and grades, gifted, English language learner, and special education programs, behavioral health referrals and outcomes, and school discipline.

Relationship between Teacher Racial Bias and Student Outcomes

Evaluations and Grades. Teacher's expectations of students who are marginalized based on their racial or ethnic identity are associated with differences in graded assignments in English and Math (Harvey et al., 2016) and lower evaluations of the quality of written work (Quinn, 2020). Further, using existing longitudinal data of teachers' reports of elementary school students' literacy skills, teachers were found to perceive higher literacy rates for their White and Asian students (Irizarry, 2015). These findings are concerning given the reliance on teachers to make objective judgements

42

concerning students' academic ability and school readiness, which may be influenced by the racial biases teachers' hold toward their students from different racial or ethnic identities. Recently, Chin and colleagues (2020) used national implicit association tests data from teachers in the US to better understand their Black-White implicit association tests and explicit racial attitudes, finding teachers held pro-White or negative Black implicit racial biases and these biases were linked to higher rates of disciplinary action against Black students (Chin et al., 2020). Interestingly, teachers from schools with a majority of minoritized students were found to have more positive views of their students from different racial or ethnic identities, or lower negative implicit racial biases towards these students, suggesting an area of future research may examine the context of the student body and the characteristics of teachers hired in these schools that may differ from those in majority White student schools (Chin et al., 2020).

Gifted, English Language Learner, and Special Education Programs. In a survey of 370 North Carolina teachers on the school and non-school factors influencing African American male students' referral to gifted programs, White teachers identified home factors, such as the family prioritization of education, while teachers who identified as a minoritized race or ethnicity identified school factors as barriers to referral (Hargrove & Seay, 2011). In another study, teachers and students were observed and 20 students participated in interviews, describing instances of bullying and verbal microaggressions from teachers based on their racial identity as Latinx and status as receiving special education services (Davila, 2015). Additionally, students mentioned not speaking up or out in general as a protective measure to avoid receiving further microaggressions or disciplinary action from their teachers (Davila, 2015). This study

showcases the intersectionality of students racial, gender, and educational identities that may compound into multiple forms of microaggressions against the students based on the combination of their identities.

Behavioral Health Referrals and Outcomes. Evidence of inequitable referrals to behavioral health supports are emerging, in addition to existing evidence of disparities in academic outcomes. Teachers in one study were found to have over-identified students who are marginalized based on their racial or ethnic identity as having Attention Deficit Hyperactivity Disorder symptoms, while minimizing symptoms in White students (Hosterman et al., 2008). Focusing in on a particular group of students' behaviors in the classroom due to the students' race or ethnicity, also led to differences in evaluation of Black boys' behaviors in class and likelihood to refer to services based on the teachers' rating (Ura & d'Abreu, 2021). Student behaviors are subjective to the teachers' interpretation, and therefore at-risk of misinterpretation leading to disciplinary action rather than referral to counseling or other student services (Ura & d'Abreu, 2021). Both minimizing and overstating behaviors of students could lead to a delay or fully prevent students from accessing support services needed.

School Discipline. Teacher racial bias has been linked to school discipline and the disproportionate disciplinary action taken against Black students (Bastable, 2021). Yet, exposing disparities in treatment of particular students disciplinary issues did not improve teachers' awareness of racial bias in school discipline processes (Bastable, 2021). Baker (2012; 2019) is among the few who explicitly name systematic racism as responsible for the inequities in disciplinary outcomes for students who are marginalized based on their racial or ethnic identity, suggesting school characteristics and teachers

44

contribute to these inequities. Finally, in Skiba and colleagues (2011) examination of racial school discipline inequities, teacher-student racial mismatch is named as one possible contributing factor to discrepancies in outcomes and treatment of students who are marginalized based on their racial or ethnic identity.

Largely, studies to this point on teacher implicit and explicit racial bias have focused on academic outcomes such as school grades, test scores, academic achievement, and evaluation of students' academic ability and educational attainment. Increasingly, studies have also examined the role of teacher racial bias on behavioral health and other outcomes impacting students' overall well-being. No study, however, has examined the role of teacher implicit and explicit bias on another critical student outcome, the quality of student-teacher relationships. Therefore, the next section explains the importance of student-teacher relationships as the critical outcome of interest in this study.

Quality of Student-Teacher Relationships

For decades, the student-teacher relationship has held power in the educational setting as teachers have judicial power over students' placement into special programming, disciplinary action, and are influenced by their own lived experiences (Davis, 2003; Della-Dora, 1962). Quality student-teacher relationships are characterized by high levels of closeness, trust, and communication that are bi-directional between students and teachers (Brinkworth et al., 2018; Pham et al., 2021; Saft & Pianta, 2001). Additionally, the quality of student-teacher relationship is critical to other student experiences, such as their perceptions of school belonging (Allen et al., 2018), school climate (Golden et al., 2018), student engagement (Archambault et al., 2009; Roorda et

al., 2011), identity development (Verhoeven et al., 2019), and academic outcomes (e.g., grades; Roorda et al., 2011; high school graduation; Davis & Dupper, 2004).

The quality of student-teacher relationships can be described as "good" when teachers meet students' instructional support needs, contribute to students' academic motivation, and also their interpersonal skill development (Davis, 2003). Further, high quality student-teacher relationships may be especially important in early years of learning and child development, as good student-teacher relationships will also foster emotional support and promote motivation (Davis, 2003). As students progress into adolescence, the relationship becomes increasingly bidirectional as students and teachers contribute to a shared perspective on the relationship quality (e.g., good, or bad; Davis, 2003)

Roorda and colleagues (2011) conducted a meta-analysis of 99 studies examining student-teacher relationships and their influence on student engagement and achievement. Stronger associations were found based on the quality of student-teacher relationships and students' engagement, although weaker associations were found on student achievement (Roorda et al., 2011). In addition to student achievement, positive or high-quality student-teacher relationships may also serve as a protective factor for students' overall well-being (Lin et al., 2021). For instance, teachers reported their own levels of closeness with elementary students, as well as students internalizing and externalizing symptoms, and then students self-reported feelings of hope (Lin et al., 2021). When teachers reported closer relationships with students, students' reports of internalizing and externalizing symptoms decreased (Lin et al., 2021).

Studies have examined student-teacher relationships from adolescents at risk of negative school outcomes and found that student engagement and trust in student-teacher relationships were predictors of positive school bonding or connectedness (Pham et al., 2021). Student-teacher relationships may be an opportunity to support students identified at-risk of high school dropout, by serving as a protective factor for students (Davis & Dupper, 2004).

In developing a new teacher-student relationship scale, Brinkworth and colleagues (2018) synthesized existing literature into key components of these relationships to include caring, conflict, engagement and expectations of students, support, respect and several other characteristics. The piloted scale was used with teacher-student dyads to most accurately represent the student-teacher relationship, given its bi-directional or reciprocal nature (Brinkworth et al., 2018). Further, positive student-teacher relationships were shown to be associated with increased class engagement and student motivation, though non-significant relationships were seen in terms of students' grades (Brinkworth et al., 2018).

Fifty-eight high schools with over 20,000 Black and White high school students in Maryland reported school support on a single scale with subscales addressing caring, high expectations, and equity (Bottiani et al., 2016). Black students perceived less caring relationships with their teachers in comparison to their White peers, even in diverse socio-economic groups (Bottiani et al., 2016). Given student and school characteristics were controlled for in the study, student-teacher relationships themselves may be the context in which further research and intervention are necessary to improve Black

students' actual and perceived caring relationships with teachers in their schools (Bottiani et al., 2016).

Additionally, teacher characteristics may contribute to the quality of student-teacher relationships as teacher stress reduced the quality of student-teacher relationships in one study (Yoon, 2002) and authors argue understanding characteristics that contribute to the quality of student-teacher relationships are important for student and teacher outcomes. For example, Saft and Pianta (2001) surveyed about 200 preschool and kindergarten teachers using the self-report Student-Teacher Relationship Scale and found teachers' racial match was a significant predictor in more positive student-teacher relationships. Teachers with the same racial-ethnic background reported more positive relationships with their students and was the only significant predictor when also looking at student age and gender (Saft & Pianta, 2001).

The quality of student-teacher relationships is a crucial student outcome as it is related to students' feelings of belonging and connectedness to school, academic motivation, and engagement (Brinkworth et al., 2018; Pham et al., 2021). Therefore, gaining a better understanding of how factors such as teacher racial bias relate to the quality of student-teacher relationships could be essential for improving these relationships, and in turn, helping improve student academic outcomes. Additionally, it is not only important to explore the relationship between these study variables quantitatively, but also to begin to explore those mechanisms that may be influencing the quality of student-teacher relationships. Exploring the mechanisms or actions teachers take to develop and maintain relationships with their students is crucial to understanding how to intervene and promote better quality relationships between teachers and students.

As such, this study utilizes a mixed method design to both quantitatively and qualitatively examine these relationships. And, the final variable that is important to this study, and in particular the quantitative component, is teacher-student racial mismatch – as it has been found to influence the quality of student-teacher relationships (Bottani et al., 2016; Saft & Pianta, 2001). This key variable is discussed next.

Teacher-Student Racial Mismatch

Today, most students identify as from a racial or ethnic identity that experience marginalization (52%) and are taught by a majority White (79%) and female (76%; NCES, 2021) teaching workforce (Della-Dora, 1962; Howard & Navarro, 2016; Irwin et al., 2021; NCES, 2019). Students who are marginalized based on their racial or ethnic identity are not likely to be taught by teachers of color at any point during their education (La Salle et al., 2020). This is important as researchers suggest that teachers who differ in race from their students may not bring awareness to racial inequities in schools and are not likely to understand the complexities of students' racialized school experiences (Howard & Navarro, 2016). Teacher-student racial mismatch has been linked to inequities in school discipline (Skiba et al., 2011; Staats, 2014), expectations of students (Morris, 2005), evaluation of students' academic outcomes, students' perceptions of differential treatment (Gershenson et al., 2016; La Salle et al., 2020; Pena-Shaff et al., 2019; Peterson et al., 2016) and identification and referral of students to support services (e.g., accelerated courses, special education, gifted programs, and mental health services; Fox, 2016; Vega & Moore. 2018). Yet, fewer studies have explored the extent to which teacher-student racial mismatch may moderate the impact of teacher characteristics and emerging biases on key student and school outcomes (McGrady & Reynolds, 2013;

49

Rasheed et al., 2020; Sandilos et al., 2017). Therefore, an overview of the impact of teacher-student racial mismatch and emerging evidence of moderation are discussed next.

In a two-year ethnography of a middle school in the south that included 14 interviews with current teachers, Morris (2005) examined teachers' perceptions of students based on their race and socio-economic status, and the ways in which appearing as White may lead to teachers' perceiving students as coming from a higher socio-economic status. Although the study largely focused on the perceptions of White students in a predominantly minority school, African American teachers held more positive views of their students in comparison to White teachers who perceived students as being from lower socio-economic statuses (Morris, 2005). This study showed African American teachers were less likely to stereotype students based on their racial or socio-economic status or hold deficit views of their students in comparison to White teachers, demonstrating differences between White and Black teachers views towards students (Morris, 2005).

Egalite and colleagues (2015) used an existing Florida state dataset with 2.9 million students to determine if teacher-student racial mismatch impacted students' math and reading state test scores. Students were matched to a single teacher using a classroom identifier, though at the middle and high school level students interact with multiple teachers which was noted as a limitation to the study (Egalite et al., 2015). Higher student achievement on math and reading scores were found based on having a teacher of the same race for both Black and White students (Egalite et al., 2015). The findings of this study contrast with the findings of the prior study which found Black teachers did not rate

students differently and provides an example of the mixed evidence regarding the role of teacher-student racial mismatch.

Similar to prior research using teacher biases, Fox (2016) examined teacher-student racial mismatch and teachers' expectations of student educational attainment and referral to accelerated courses. These outcomes were selected as subjective instances where teachers must make decisions on behalf of the student which may impact their long-term academic trajectory (Fox, 2016). Fox (2016) asked teachers two questions regarding the highest degree they expect students to earn and whether they have referred the student to an accelerated course. Although teachers in other racial subgroups reported student expected educational attainment similarly, Black teachers reported higher educational attainment perceptions of their same race students to graduate high school 15% higher than other teachers (Fox, 2016). Though Fox (2016) cautions that this higher educational expectation may come solely from having a Black teacher regardless of the match with students' race. Although this study showcases differential expectations for students based on the teachers' race, the study does not analyze mechanisms, such as racial biases, through which these expectations are formed or communicated to students.

However, differences in student outcomes based on teacher-student racial mismatch may or may not have the same impact on all students. For some minoritized students, such as Asian students, teachers may perceive these students more positively, reporting greater math and English skills for these students due to the stereotype belief teachers hold toward this group as a model minority (McGrady & Reynolds, 2013). They found the majority of students from different racial and ethnic backgrounds (e.g., Asian, Black, Hispanic) were most likely to be taught by White teachers. McGrady and

Reynolds (2013) also found that White teachers' perceptions of students from different racial or ethnic identities mirrored stereotypical beliefs held towards certain racial or ethnic groups, including lower academic abilities among Hispanic and Black students, but teachers also held "model minority" views of Asian students.

Sandilos and colleagues (2017) are among the only research studies to test how teacher-student racial mismatch may moderate the relationship between student reported perceptions of teachers' warmth and high expectations towards students, and students' academic achievement. This study is unique in that the focus is on teachers' specific pedagogy or instructional approach, combined student and teacher perceptions of students' academic ability, and controlled for broader school- and student-level characteristics (e.g., socio-economic status) known to influence teachers' perceptions of and students observed academic outcomes. Students reported their perceptions of non-White and White teachers and researchers considered racial mismatch both at the classroom-level and separately examined teacher ratings for classrooms with predominantly African American students (Sandilos et al., 2017). They found that the proportion of African American students moderated only the relationship between students' ratings of one dimension of teacher demeanor, "challenge" or high expectations (e.g., my teacher pushes me hard) and students' scores on low stakes tests (preparation for state assessments) and high stakes English assessments (state standardized assessments). Yet, teacher-student racial mismatch, or match of African American students with African American teachers did not significantly alter students' perceptions of teachers and their own academic achievement. This study showcased the nuances

between classroom composition and the possible moderation of teacher-student racial mismatch between teacher warmth and student academic achievement.

Similarly, Yarnell and Bohrnstedt (2018) replicated earlier studies to examine the role of teacher race in Black student academic achievement. Using national education data, racial matching was conducted grouping students into classrooms taught by White, Black, and Hispanic teachers. Black students with Black teachers, or same race teachers, had higher rates of academic achievement than those taught by White or Hispanic teachers when academic differences existed by student race (Yarnell & Bohrnstedt, 2018). Meaning, in classes with no racial achievement differences, having a teacher of the same race did not have an impact on academic achievement (Yarnell & Bohrnstedt, 2018). And, although improvements in student achievement were seen when students and teachers' racial identities match, it is not clear what type of relationship contexts or differences in instructional styles may be contributing to these differences, as additional teacher characteristic and beliefs were not measured (e.g., stereotypical attitudes, racial attitudes, racial biases).

Meanwhile, other studies have used classroom racial composition as a proxy variable for teacher-student racial mismatch. Cherng and colleagues (2021) examined whether teaching quality among math and English fourth to ninth grade teachers was related to the classroom racial composition, and whether differences in the quality could be linked to teacher-student racial mismatch. Teachers were observed in their classroom and rated on their teaching quality, then information on students' math and English performance and demographics were captured. Teachers, no matter their race, were found to teach at a lower level of quality when classrooms were composed of students from

marginalized racial and ethnic identities (Cherng et al., 2021). Although this study did not examine the mechanisms which may lead to teachers, regardless of race, instructing less effectively to students who are marginalized based on their racial or ethnic identity. They also suggest that non-Black teachers may harbor views that lead to differential approaches to teaching students who are marginalized based on their racial or ethnic identity and building quality student-teacher relationships, which need to be explored and intervened upon (Cherng et al., 2021).

Based on prior research, teacher-student racial mismatch is directly related to differences in student test scores, expected educational attainment, and teacher quality. Research suggests that the presence of racial mismatch in the classroom may amplify racial stereotypes held, particularly regarding students' academic abilities, achievement, and test scores. However, no study has examined how teacher-student racial mismatch may change the influence of teacher implicit and explicit bias on the quality of student teacher relationships. Therefore, this study will explore this potential relationship, in which it is hypothesized that the presence or absence of teacher-student racial mismatch will moderate the impact of teachers' racial biases (implicit and explicit) on the quality of student-teacher relationships.

In summary, then, this study focuses on teacher implicit and explicit racial bias, teacher-student racial mismatch, and the quality of student-teacher relationships as key variables. Next, the theoretical frameworks informing this study and the conceptual model for how these variables relate are described.

Theoretical Frameworks

54

This study focuses on the aforementioned constructs of teacher implicit and explicit racial bias, the quality of student-teacher relationships, and teacher-student racial mismatch. Four theoretical frameworks lend to understanding the hypothesized relationship between these variables. Critical Race Theory (CRT; Ladson-Billings & Tate, 1995; Tate, 1997) recognizes the pervasiveness of racism and has been contextualized to the educational setting in recent decades. Deficit Thinking (Valencia, 2010a; 2010b) and the Theory of Racialized Organizations (Ray, 2019) provide evidence of how policies at an organizational level and individuals' beliefs may influence their own actions and the outcomes of those they engage with. Finally, Bronfenbrenner's Ecological Systems Theory (1977; 1979) is used to illustrate the inter-relatedness of racism in its many forms across contexts in which students engage. Each will be discussed in more detail next.

Critical Race Theory in Education

Although CRT originated in the 1980s across the legal scholarship arena, over the past several decades CRT has been leveraged as a framework to specifically understand the contextualization of the racialized education of people who identify as Black or African American in the US (Dixon et al., 2017; Ladson-Billings & Tate, 1995; Tate, 1997). The main aim of CRT is to "achieve racial justice" (Tate, 1997, p.234). CRT emerged as a theoretical framework of use in educational spaces to specifically examine being "raced," or the role race plays in how students are viewed (Tate, 1997, p. 196). In CRT, there are several central theoretical concepts and five central tenets. One central theoretical concept of CRT is a concern for individuals and policies perpetuating race neutral views, thereby not acknowledging or addressing racial inequities seen in terms of

funding, segregation, and other educational issues (Anderson, 2015; Tate, 1997).

Additionally, CRT acknowledges that racial progress and equity are not linear, despite

changes to policy, administration, or pedagogical approaches (Dixson & Rousseau

Anderson, 2017).

Another key theoretical concept of CRT is "race as property" or "whiteness as

property" constituting a claim and access to better goods (e.g., economic and school

opportunities) based on race and where one is allowed to purchase or gain property

(Ladson-Billings & Tate, 1995, p. 59; Dixson & Rousseau Anderson, 2017). Although in

the history of the US, property rights largely referred to physical land holdings, today,

property can encompass physical and intellectual goods (Ladson-Billings & Tate, 1995).

This phenomenon of whiteness as property happens automatically, and whether an

individual recognizes the occurrence of this phenomenon, they can still benefit from their

inherent status as a person who is White, holding more power and opportunity over any

other race (Dixon & Rousseau Anderson, 2017). Finally, CRT posits that race, although a

societal construct, has tangible consequences and outcomes not only based on how one

identifies themselves, but also when they are automatically characterized as a particular

race based on their physical appearance implicitly (Anderson, 2015; Ladson-Billings &

Tate, 1995).

Within CRT in education, there are five central tenets: centrality of race and

racism, challenging the dominant perspective, commitment to social justice, valuing

experiential knowledge, and interprofessional lens (Howard & Navarro, 2016; Kohli &

Solorzano, 2012; Solorzano & Delgado Bernal, 2001; Solorzano & Yosso, 2001; Yosso,

2005). Ladson-Billings and Tate (1995) suggested that telling one's own story of

oppression can influence those perpetrating acts of oppression by casting a lens on the impact of the lived experiences of which oppressors may be unaware. Especially in educational research, race and racism should be considered as prevalent and intersectional in nature with other identities such as class, gender, and language (Kohli & Solorzano, 2012). In addition, CRT lifts the voices of those generally marginalized to tell the counter story with respect to their perspectives and responsiveness to social justice needs (Kohli & Solorzano, 2012).

Largely, the use of CRT in educational research has utilized qualitative approaches with storytelling, however research is needed employing quantitative and mixed methods to critically examine racial issues in education (Baber, 2017). At the same time, storytelling and therefore qualitative focused research within CRT in education is still preferred as leading researchers in the field caution against defaulting to the pitfalls of quantitative research as synonymous for rigorous research (Dixson & Rousseau Anderson, 2017). Additionally, given the uptake of CRT in name only across multiple contexts, it is important to clearly articulate how each new piece of research is centered within the tenets of CRT not only in design, but also in analysis and interpreting implications and actions to take (Dixson & Rousseau Anderson, 2017). Additionally, despite the prevalence of CRT educational research and growing interest in addressing school racial inequities, still limited intervention and school improvement strategies exist to actively dismantle racism in schools (Howard & Navarro, 2016; Yosso, 2005). Lastly, CRT is also linked to other theoretical frameworks regarding the experiences and perceptions of marginalized groups, as groups other than the racial majority are commonly viewed as having less in terms of social and economic capital (Yosso, 2005).

Deficit Thinking

The Theory of Deficit Thinking originated in the 1600s over racial genetic discourse and biological arguments that humans could be less intelligent or hold different intelligence capacities based on their race (Valencia, 2010b; Davis & Museus, 2019). Although these biological deficit arguments have been disproven, conversations were perpetuated into the mid-1900s circulating an explanation for racial educational inequities being due to racial inferiority among certain groups of students (e.g., Black, Mexican; Valencia, 2010b). Valencia and Solorzano (1997) suggest that deficit thinking stems from a belief that a racial or ethnic group, or socio-economic group, have inferior intelligence. Scholars across several professions attempted to make causal relationships between intelligence and genetic differences between White and non-White students (Valencia & Solorzano, 1997; Valencia, 2010b).

Although unfounded, these proclaimed genetic differences and pathologizing of students based on their race or ethnicity were well publicized and accepted as one reason to continue school and other societal segregation policies (Valencia & Solorzano, 1997). Further, class-based deficit thinking emerged without regard to the overlapping relationship with racism and segregation causing those in perpetual poverty, no matter the reason, to be viewed as less capable and intelligent (Valencia & Solorzano, 1997; Valencia, 2010b). They articulate one of the most common myths of deficit thinking is that low-income parents of color do not care about or value their child(ren)'s education (Valencia & Solorzano, 1997).

The Theory of Deficit Thinking has six tenets which include, "blaming the victim," oppression, pseudoscience, temporal changes, educability, and heterodoxy

(Valencia, 2010b, p.7). These six tenets illustrate how deficit thinking occurs at the individual level and can be perpetuated by summarizing root causes of several issues into a single explanation, the individuals' culture or other identity (Valencia, 2010b). Oppression through laws and school segregation were used to perpetuate the myth of racial differences in terms of learning capabilities, suggesting that students from different racial groups should not interact with one another (Valencia, 2010b). Then, pseudoscience was used to prove certain dispositions in terms of learning outcomes and abilities across student subgroups, ignoring researcher bias and drawing causal relationships despite encountering significant limitations (Valencia, 2010b). Temporal changes and educability refer to deficit thinking models perpetuated and possibly self-fulfilling, where students are performing lower due to the historical period or ability to be taught in schools from the onset (Valencia, 2010b). Finally, heterodoxy is the term used to describe this model of thinking stemming from the majority perspective or lens (Valencia, 2010b).

To summarize, deficit thinking is when teachers or others hold the belief that students, based on a particular identity, perform at a lower rate or ability level than their non-minority or upper-class peers (Bartolome, 1994; Solorzano & Yosso, 2001). Despite the ongoing concern with deficit thinking toward students who are marginalized based on their race or ethnicity, deficit thinking has become deeply engrained in the educational system ignoring institutional discriminatory policies and instead "victim blaming" against students who are marginalized based on their race or ethnicity for inequitable educational outcomes (Bartolome, 1994; Davis & Museus, 2019; Gillborn, 2010; Solorzano & Yosso, 2001; Valencia, 2010a). The notion of deficit thinking communicates that families and

students who are marginalized based on their race or ethnicity simply do not put in enough effort or see education as important, which are false deficit thinking narratives held of these students and families (Solorzano & Yosso, 2001; Valencia & Solorzano, 1997). Valencia and Solorzano (1997) concluded their summary of the history and contemporary use of deficit thinking disguised in a new group of "at risk" students, used synonymously with groups thought to be inherently less intelligent or willing to participate in education based on their race and class (p. 196).

Overall, deficit thinking is taking a view that only individual differences in the race or otherwise status of an individual and family for the exhibited differences in educational outcomes, providing no indication of the systemic, both institutional and structural, barriers to educational and economic success through this framework (Valencia & Solorzano, 1997). Scholars across educational research have advocated for immediate shifts to culturally relevant pedagogy and active discussion of longstanding discriminatory processes in schools through characterizing students as at-risk due to their individual or family characteristics (Valencia, 2010a; 2010b). However, schools and school policy still use cultural deficit language, where families of anything but the majority group are seen as inherently unequal as communicated through racial stereotyping (Solorzano & Yosso, 2001).

Today, the Theory of Deficit Thinking is used to frame stakeholders view of students who are marginalized based on their race or ethnicity holding two notions as truths, that students enter school at a learning and socio-cultural deficit, and that parents and families have no regard for their child's education (Davis & Museus, 2019; Yosso, 2005). Garcia and Guerra (2004) suggest that focus move beyond teachers holding

60

deficit-based views of students to recognize the systemic factors that perpetuate deficit thinking. Without recognizing systemic factors, teachers and other school stakeholders continue the model of deficit thinking by holding generalizations of students and families based on their race and class (Garcia & Guerra, 2004).

Theory of Racialized Organizations

The concept of racialized organizations is the idea that certain mechanisms employed within institutions or organizations either perpetuate or dispel racial inequities (Ray, 2019). These racialized organizations can be further examined from multiple levels: "institutional (Macro), organizational (Mezzo), and individual levels (Micro)" to better understand the influence of race and racism across these organizational contexts (Ray, 2019, p. 28). In examining the individual level of racialized institutions, common subcomponents include implicit bias, prejudice, racial attitudes and differential treatment (Ray, 2019). Ray (2019) introduces the theory of racialized organizations that includes the assumptions that organizations perpetuate the unequal distribution of resources, illegitimate agency of racial groups, use "whiteness as a credential," and use racialized policies (p.41). Rather than viewing race as a secondary component within organizations, the Theory of Racialized Organizations argues that organizations themselves are racialized and cannot be separated or function in a colorblind manner (Ray, 2019).

Ecological Systems Theory

Bronfenbrenner's Ecological Systems Theory (EST; 1977; 1979), suggests that development occurs in nested systems including the micro-, meso-, exo-, macro-, and chrono-systems. A key concept within the microsystem presented in Bronfenbrenner's (1977) proposed EST is that of reciprocal relationships between the "subject" at the

61

center and others within each of the nested systems (p. 519). The initial theoretical model evolved over time into multiple versions, though the initial ecological model is often referenced (Rosa & Tudge, 2013). Although the theory emerged out of family science and human development as a way of understanding parent attachment, today, EST has been used to examine and understand a range of phenomenon from an ecological perspective (Rosa & Tudge, 2013).

In Bronfenbrenner's (1979) early work the inter-relatedness and centrality of schooling in child development is suggested to be a concern of not only parents, but also of larger societal wellbeing. Stern and colleagues (2021) reconceptualized the initial model to include examples of experiences from the perspective of Black youth development, including systemic racism, historical trauma, cultural strengths, and racial identity. Viewing each of these systems as inter-related can provide insight to how experiences or influences in the increasingly external systems impact the innermost micro-system of relationships. The next section describes how each of the theories have informed the conceptual model developed for this study.

Conceptual Model of Teacher Racial Bias and Student-Teacher Relationships

The proposed *Conceptual Model of How Teacher Racial Bias Relates to Student-Teacher Relationships* is informed by the four theoretical frameworks outlined above. CRT and EST are used in the conceptual model to help illustrate the hypothesized influence and perceptions teachers hold towards students based on their race or ethnicity. Then, the Theory of Racialized Organizations and Deficit Thinking help demonstrate where interpersonal relationships between teachers and students are situated. This model centers teachers' racial bias within the construct of interpersonal racism in the classroom,

situating the relationship between teacher implicit and explicit racial bias as proposed to be directly related to the quality of student-teacher relationships. In addition, teacher-student racial mismatch is shown as moderating the relationship between both teacher implicit and explicit racial bias and the outcome of the quality of student-teacher relationships. For instance, it is hypothesized that teachers who have negative racial biases toward Black students but identify as the same race or ethnicity of their student may have more positive student teacher relationships.

Rationale for the Current Study

It is evident that educational inequities exist for students who are marginalized based on their racial or ethnic identity, in terms of academic and behavioral outcomes in schools today (Irwin et al., 2021; Skiba et al., 2011). In an attempt to create more equitable opportunities and outcomes, racism in schools and the ways in which teachers contribute to interpersonal racism in the classroom must be understood and dispelled (Bastable et al., 2021; Blaisdell, 2016; Denessen et al., 2021; Warikoo et al., 2016). However, school reforms and equity movements have largely used a deficit-based lens to articulate deficiencies in students and families by racial/ethnic subgroup, rather than examining systemic and interpersonal racism as barriers to student success (Baker, 2019; Chang & Demyan, 2007). To this point, the focus of educational inequity research has largely been on student academic and behavioral outcomes, for which schools are held responsible for improving, rather than relationships within the classroom and school (Egalite et al., 2015). Because of this, this study focuses on racism in schools, and in particular, the way in which teachers may contribute to interpersonal racism in the

classroom through their own racial biases, and how this relates to the quality of student-teacher relationships.

The purpose of the current study is to leverage the results of this study into social change by designing interventions and reinforcing current strategies teachers are employing to build relationships with their students, as anti-racist research aims to lead to actions that interrogate the current systems of oppression (Doucet, 2021). Teacher implicit and explicit racial biases have repeatedly been found across large samples of teachers in the US, but researchers have only examined student achievement and disciplinary actions that result from these biases (Chin et al., 2020; Skiba et al., 2011). Therefore, this study tests the proposed *Conceptual Model of Teacher Racial Bias Relates and Student-Teacher Relationships* which conceptualizes teacher implicit and explicit racial bias as forms of interpersonal racism that occurs in the classroom which could be related to the quality of student-teacher relationships. In addition, teacher-student racial mismatch has emerged as a possible contributor to changes in additional student outcomes, such as student-teacher relationships, as having the same race teacher or Black teachers seems to increase students' performance and perceptions of educational attainment (Egalite et al., 2015; Fox, 2016; Gershenson et al., 2016; McCoy, 2006; Morris, 2005). However, no study has examined how teacher implicit and explicit racial bias relate to the quality of student-teacher relationships. And, no study to date has examined teacher-student racial mismatch as a moderator between teacher racial bias and the quality of student-teacher relationships. Therefore, this study examined how each of these study variables relates to one another as proposed in the conceptual model, and also

explored the mechanisms through which teachers develop and maintain student-teacher relationships with students whose racial or ethnic identity differs from their own.

Overall, the findings of this study have important implications for addressing interpersonal racism in the classroom, by providing a better understanding of how teacher implicit and explicit bias might negatively impact the quality of student-teacher relationships. In turn, these findings can help inform teacher professional development and schoolwide training interventions aimed at supporting teachers in becoming aware of and addressing their racial biases. Lastly, by exploring the ways in which teachers develop and maintain student-teacher relationships, findings will help identify specific actions teachers are taking that may be helping or harming their relationships with students who are marginalized based on their racial or ethnic identity. These findings will inform future areas of school social work practice and future research on how these phenomena are viewed from the students' perspective.

CHAPTER 3

METHODOLOGY

The purpose of this study was to answer the following three research questions: 1) Do PK-12 US teachers' perceptions of their own implicit and explicit racial bias predict the quality of their relationships with students? 2) Does teacher-student racial mismatch moderate the relationship between US teachers' perceptions of implicit and explicit racial biases and the quality of student-teacher relationships? 3) What are teachers' perceptions of how students' racial or ethnic identity influences the development and maintenance of student-teacher relationships? This section describes the methodology of the study and specifically provides details about the procedures, measures, pilot testing, data collection, and data analysis.

Procedures

Institutional Review Board approval [Pro00120689] was obtained prior to engaging in any research activities. This study used a convergent mixed method design and employed a cross-sectional survey for data collection. A convergent mixed method design allows for simultaneous collection of quantitative and qualitative data, where the data are analyzed separately and integrated when interpreting overall findings (Creswell & Creswell, 2018). This study design extends the methodological approaches of prior studies that have explored teacher racial bias and the quality of student-teacher relationships, as those studies used solely qualitative data, such as ethnographies (McCoy, 2006), interviews, and focus groups (Beaulieu, 2016; Schoener & McKenzie,

2016) and helps answer the research questions that guide the study. The cross-sectional survey included quantitative measures of teacher racial bias (implicit and explicit), teacher-student racial mismatch, and the quality of student-teacher relationships. Open-ended questions were also included that allowed for additional insight into how teachers maintain and develop relationships with students who are marginalized based on their racial or ethnic identity.

Eligible Participants

This study aimed to gain one perspective, that of teachers, within the US who work in PK-12 public schools. A purposive sampling strategy was used to recruit teachers who currently work in a US, PK-12 school. To be eligible to participate in the study, teachers had to be currently employed in a PK-12 school in any US state regardless of grade level taught or teaching experience. Teachers from outside of the US, those who work in private schools, those who participated in the pilot test of the instrument for this study (see *Pilot Testing* below), and those working in higher education institutions were not eligible to participate in the study.

<div align="center">

Measures

</div>

Full Study Questionnaire Measures

The survey included seven sections (e.g., implicit black-white racial bias, explicit racial bias, teacher-student relationships, teacher-student racial mismatch, open-ended questions, demographics, and future research participation) with approximately 50 questions, including three open-ended questions. Measures are detailed in the following sections organized by study construct with information on reliability in this study (Table 3.1 summarizes the advantages and disadvantages to each measure). The *Pilot Testing*

section, which follows this section, denotes the process used to pilot the survey and identifies which revisions were made to the survey before use in the study. This section details the final study measures. The entire survey questionnaire is in Appendix A.

Implicit Bias Measure

       Implicit Association Tests (IATs). IATs (Greenwald et al., 1998) are a common method for evaluating implicit biases and were used to measure teachers' implicit bias toward students' race. IATs are one measure that uses reaction time to garner participant attitudes, beliefs, and assumptions that are unconscious or subconscious towards a particular topic or group (Carpenter et al., 2019; Gawronski & De Houwer, 2014; Greenwald et al., 1998; De Schryver, 2018; Quinn, 2020). IATs have not been widely used in educational research or online surveys given the limitations of most data collection tools requiring use of Project Implicit or other third-party collection services (e.g., PsychTools) to administer the IAT (Carpenter et al., 2019). Despite these limitations, IATs have proven feasible to conduct in an online format using the Qualtrics platform. Best practices on constructing the IATs were followed in this study, including removing responses that take too long to complete (greater than 10 seconds) and asking participants whether they have taken any implicit association tests previously (Carpenter et al., 2019; Glock et al., 2016). These strategies reduce concerns about the reliability of participants' responses, given participants who have already taken the test or take too long to answer may be responding in a more socially desirable way rather than instantaneously, as is designed in the IATs.

68

Table 3.1 Advantages and Disadvantages to Study Measures

Measure	Advantages	Disadvantages
Teacher Implicit Racial Bias		
Implicit Association Tests (Greenwald et al., 1998, Carpenter et al., 2019; Quinn, 2020)	Provides insight to metacognition, or unconscious choice/preferences.	Requires third party tools outside of survey software generally. Results may be impacted if IATs have been taken prior. Not to be used pre/post. Low test-retest reliability ($r = .54$), r ranges -1 to 1 with scores closer to 1 better.
Teacher Explicit Racial Bias		
Feelings Thermometer (Chin et al., 2020; Leitner et al., 2016; Starck et al., 2020)	Asks respondents to rate 0-11 Differences are computed between responses (warmth toward European Americans minus warmth toward African Americans).	Not a validated measure.
Bayesian Racism Scale (Harvard Project Implicit; Axt, 2018; Uhlmann, 2010)	15 items, 1-6 Likert scale	Situational statements and is not specifically Black-White.
Color-blind Racial Attitudes Scale (CoBRAS; Neville et al., 2000; Johnson & Williams, 2015; Rudnick, 2019)	20 items, 1-6 Likert scale	Validated mainly in a college student sample, though used in a wide range of studies since its creation.
The Quality of Student-Teacher Relationships		
Student-Teacher Relationships Scale (Pianta, 2001)	15-items, two subscales: conflict and closeness.	Originally for use to measure relationships between a single teacher and student dyad.
Teacher-Student Racial Mismatch		
Teacher Racial Identity	Self-report the race or ethnicity they identify with.	---
Student Racial Enrollment	Questions and categories are from the National Center for Education Statistics.	Self-report by teachers, may not be an accurate representation of the students' demographics. Asks teachers to assume race and ethnicity of their students.

The IATs were programmed into Qualtrics (n.d.) following Carpenter et al.'s (2019) detailed procedures for using IATs in survey collection software. This approach was used to increase the likelihood of retention of survey participants and completion of the online questionnaire by keeping participants in a single survey collection software. Alternative approaches to using IATs in empirical research navigate respondents to the Project Implicit (n.d.) or other psychological testing sites. In addition to having an associated cost for use and analysis in these software packages, participants may be required to download additional software which can serve as a barrier to participation (Carpenter et al., 2019).

The IATs used images depicting the construct of interest (e.g., race, gender, age) and ask participants to associate a dichotomous word (e.g., good, bad) to the image (Carpenter et al., 2019; Greenwald et al., 1998). Participants' responses were measured using both the word chosen and the amount of time it takes for participants to respond. Positive words include, "Joy", "Happy", "Laughter", "Love", "Friend", "Pleasure", "Peace", "Wonderful", while negative words include, "Evil", "Agony", "Awful", "Nasty", "Terrible", "Horrible", "Failure", and "War" (Carpenter et al., 2019).

Participants were presented with seven blocks of questions, where the images and word associations are introduced. In this study, which utilized Black-White IATs, participants were asked to pair "Black" and "White" with "Good" or "Bad" words (Carpenter et al., 2019; Greenwald et al., 1998; Starck et al., 2020). Two images were shown side by side and participants must choose which "matches" the word in the center using the keyboard (Carpenter et al., 2019; Greenwald et al., 1998; Starck et al., 2020). Due to the required use of a keyboard, this measure could only be completed on a

computer (Carpenter et al., 2019). Receiving a zero indicates no preference, while a positive or negative d-score indicates a preference toward one group over another (e.g., Black, White; Carpenter et al., 2019). In this study, a positive d-score indicated preference towards individuals identifying as Black, while a negative d-score indicated a preference towards individuals identifying as White. Only blocks three, four, five, and seven were used as data with the other blocks serving as primers (Carpenter et al., 2019). Attempts that take longer than 10,000 milliseconds or shorter than 10s per prompt are removed as errors (Carpenter et al., 2019; Greenwald et al., 2003).

IATs, though common, have several validity critiques. Given the IATs measure unconscious beliefs and values at a single point in time, the measure is not able to capture how these biases influence actions or behaviors (Gawronski et al., 2020; Marcucci et al. 2020). Another known limitation of this measure is the instability of the measurement results over time, which relates to the suggestion that IATs should not be used as a pre-post measure (Gawronski et al., 2020). One specific limitation of the IAT for survey software developed by Carpenter and colleagues (2018) is the tool can only be used within the Qualtrics survey platform and has a limited range of available adaptations which may be done with additional coding. However, implicit measures such as the IAT may more accurately capture implicit associations than self-report, as implicit associations are inherently unconscious or subconscious, and are consistent whether provided before or after explicit measures (Nosek et al., 2005). IATs showed good reliability ($\alpha = .82$) in this study.

Explicit Bias Measures

Feelings Thermometer. The feelings thermometer has been commonly used to measure explicit bias towards race by asking participants to rate on a scale of 1 to 10 how they feel about White people and Black people (Chin et al., 2019; Leinter et al., 2016; Starck et al., 2020). Then, the response to Black people is subtracted from their response to White people resulting in a final explicit bias score. This measurement has been used in combination with IATs and seems to be one of the more commonly used measures of explicit bias among current studies. One limitation of these items is there is no construct reliability and validity on these items (Harvard Project Implicit, n.d.; Leitner et al., 2016).

Bayesian Racism Scale (BRS). The BRS (Uhlmann et al., 2010; α = .74) is a measure developed to assess "endorsement of racial stereotypes," a form of explicit bias grounded in the belief that there are justifications or rationales for holding people who identify as different races to different standards and/or justification of discrimination or prejudice towards certain races/ethnicities (Litam & Balkin, 2021). It is suggested that people who score high on the BRS are more likely to have negative explicit biases toward minority groups (Litam & Balkin, 2021; also used in Project Implicit, n.d.). The BRS has two versions, a validated 6-item and non-validated 15-item scale, which includes the six validated items, rated on a Likert scale of 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). Response options include, 1 "Strongly disagree," 2 "Disagree," 3 "Somewhat disagree," 4 "Neither agree nor disagree," 5 "Somewhat agree," 6 "Agree," and 7 "Strongly agree." The 6-item scale, recently validated by Litam and colleagues (2021) using factor analysis and estimated good reliability (α = .80; α = .57 in this study). Sample items include, "*When forming an impression of someone, you should consider the general tendencies of*

the ethnic group to which they belong." And "*If you want to make accurate predictions, you should use information about a person's ethnic group when deciding if they will perform well*." Higher scores indicate more racist attitudes.

        Color-blind Racial Attitudes Scale (COBRAS). The COBRAS scale is a 20-item scale (α = .75 in this study) on a Likert scale from 1 to 6 (*Strongly Agree* to *Strongly Disagree*) and consists of three subscales: Racial Privilege, Institutional Discrimination, and Blatant Racial Issues (Neville et al., 2000). Neville and colleagues (2000) suggest that colorblind attitudes are part of racial expressions and a held attitude or belief that race does not play a role in inequitable outcomes. Sample items include, "*Race plays a major role in the type of social services (such as type of health care or day care) that people receive in the US*" and *"It is important that people begin to think of themselves as American and not African American, Mexican American or Italian American.*" Higher scores indicate more colorblind views.

Awareness of Implicit and Explicit Bias, Exposure to IATs

        Given participants' awareness of their own implicit and explicit biases may influence their responses to the online survey measures, a series of yes or no questions were asked to understand whether participants consciously recognize any implicit or explicit biases they might hold, and whether they have taken a race or skin tone IAT before. Questions included, "*I am aware of any implicit racial biases I may hold (Implicit Awareness)*", "*I am aware of any explicit racial biases I may hold (Explicit Awareness)*", and "*I have taken a race or skin tone implicit association test in the past (Exposure to IATs).*"

Quality of Student-Teacher Relationships Measure

Student-Teacher Relationship Scale (STRS). The STRS short form (Aboagye et al., 2019; Jerome et al., 2008; Pianta, 1992; 2001; Pianta & Stuhlman, 2004; Whitaker et al., 2015) assesses two dimensions of the quality of student-teacher relationships: conflict and closeness. The 15-item measure asks participants to rate items on a scale of 1 (*Definitely does not apply*) to 5 (*Definitely applies*). The STRS was adapted so that statement language replaced "child" with "students" to capture teachers' perceptions of their relationships with students overall. Sample items include, "*My students and I always seem to be struggling with each other*" and "*My students openly share his/her feelings and experiences with me*." In addition, participants were provided with instructions to "Please reflect on the degree to which each of the following statements currently applies to your relationship with your students." Higher scores indicate higher quality student-teacher relationships. This scale demonstrated good internal reliability in past studies ranging from 0.86 to 0.89 (Pianta, 2001; Pianta et al., 1995; Pianta & Steinberg, 1992), acceptable reliability in this study ($\alpha = .87$ and $\alpha = .85$), on closeness and conflict subscales, respectively.

Teacher-Student Racial Mismatch Measure

Teacher-Student Racial Mismatch. The concept of teacher-student racial mismatch is difficult to represent on a single item given the diverse makeup of US primary and secondary school student enrollment. Therefore, teacher-student racial mismatch was measured using a set of questions that allowed a final mismatch variable to be calculated based on teachers' responses. The National Center of Educational Statistics (n.d.) commonly uses five categories for students' and teachers' report of race and/or

ethnicity, including, Black, Hispanic, Asian, Pacific Islander, American Indian/Alaska Native, White, and of Two or more races). These five categories were used with the exception of "Two or more races," which was changed to "Biracial" and "Multiracial" in this study. This adaptation was made to distinguish multiracial students as their own unique racial/ethnic group, which is one of the fastest growing in the US and distinct from biracial students (Atkin et al., 2022). Teachers were also asked to estimate the percentage of students from each racial and ethnic group in their primary classroom. Finally, teachers were asked their own racial or ethnic identity and to what extent that identity matches the identity of their students.

Similar to Renzulli and colleagues (2011) racial match categories were developed, where 60% or more of a particular race/ethnicity student population constituted the majority. Responses were categorized into two categories, *mismatch* or *no-mismatch*, which differentiated whether teachers' reported race matched the reported race of the majority of their primary classroom students, or not. For instance, a White teacher who reported teaching a majority of African American students in their primary classroom were classified as mismatch [i.e., Mismatch (White Teachers-Majority Minority Students (e.g., Asian Pacific Islander, Native American/Alaskan Native, African American/Black, Hispanic/Latinx)]; No Mismatch (White Teacher-Majority White Students). This means that teachers of different racial or ethnic backgrounds were categorized into the same group, depending on whether their identity matches with their students. For instance, White teachers who taught non-White students *and* Black teachers who taught non-Black students would both be categorized as having teacher-student racial mismatch.

Qualitative Measures

Open-Ended Questions. Participants were asked three open-ended questions to explore teachers' perceptions of how they engage in student-teacher relationships and the role of students' race or ethnicity in those relationships. Questions included the following:

1. *How do you develop relationships with students who's racial or ethnic identity differs from your own? Please give one or two specific examples.*

2. *How do you maintain relationships with students who's racial or ethnic identity differs from your own? Please give one or two specific examples.*

3. *Does a student's racial or ethnic identity influence the types of actions you take to develop or maintain relationships with your students?*

    a. *If yes, could you share more about how a student's racial or ethnic identity influences your actions?*

    b. *If no, could you share more about why a student's racial or ethnic identity does not influence your actions?*

Bot Protection Questions

Measures were taken to prevent malicious actors in the set-up of the online survey using Qualtrics reCAPTCHA bot detection settings. This feature added a reCAPTCHA question that participants completed before progressing onto the eligibility questions for the survey. The reCAPTCHA data provides a score from 0 to 1, where responses under 0.5 indicate a likelihood of a malicious actor (e.g., bot).

In addition to the survey settings, two questions were included to help ensure integrity of the data collected in the online survey. The first was a "honey pot" question,

which only appeared if participant responses mirror bot responses (uses html coding feature in Qualtrics to not appear to a human participant). The second question aimed to ensure a human participant is completing the survey and asked participants to enter a ten digit number.

Demographic Variables, Incentive Raffle, and Participation Future Research

Survey questions also included teacher and school demographics, such as gender, race/ethnicity, age, grade-level, school-level (e.g., elementary, middle), years of teaching, years at current school, and self-awareness of explicit and implicit racial biases. Five of the demographic questions were used as control variables (teacher gender, age, years teaching, years at current school, and awareness of explicit racial biases) in this study due to prior research which found differences in student outcomes (Hill et al., 2019; Muñoz & Chang, 2007; Phillippo et al., under review; Spector & Brannick, 2011; Wayne & Youngs, 2003). Additionally, participants were asked if they are interested in participating in future related studies, participating in member checking later in the analysis stage, or would like to be entered into the gift card raffle. If interested, participants provided their name, email, and phone number.

Pilot Testing

Procedure for Pilot Testing the Questionnaire

Prior to launching the full study data collection with the aforementioned measures outlined in the *Full Study Measures* section, pilot testing was conducted to ensure the mechanics of the survey were working (e.g., question logic, accessibility), to increase validity (i.e., question wording, comprehension; Collins, 2003; DeVellis, 2003; Rogers, 2009), and to estimate the response burden (expected to take between 30 and 45 minutes;

Ruel et al., 2016). Pilot testing participants were recruited by email using a convenience sample of approximately 10 teachers who had a prior history of working with the researcher. Similar to Mellin and colleagues (2014), pilot participants completed an additional set of questions after each survey section to 1) assess functionality for prior validated scales, and 2) assess understanding of adapted scale items (e.g., student-teacher relationships scale). On prior validated scales, teachers were asked,

> "For the section you just completed, select "yes or no" for each question below, and please provide an explanation for your response. 1) Was the survey section easy to understand? Yes or No, Why? 2) Is there any other feedback you would like to share about this survey section? Yes or No, Why?"

On adapted scales, teachers were asked to consider the clarity of each item in the scale (DeVillis, 2003), to indicate any awkward or confusing items and potentially suggest alternative phrasings. Participants were asked,

> "Please rate each of the following items from the prior section on their clarity and provide suggestions for alternative wording if you believe that would help enhance the clarity of the item. 1) Rate the clarity of the above item (1=Not Clear, 2=Somewhat Clear, 3=Very Clear). 2) If unclear (e.g., rated 1 or 2), which parts of this item are awkward or confusing? 3) What alternative wording would you recommend?

The complete pilot-testing questionnaire is denoted in Appendix A as part of the full survey. Participants who completed the pilot survey were ineligible to complete the final study survey due to the possible reduced validity of their final responses due to the "pre-

testing effect" (Ruel et al., 2016, p. 117). Feedback from pilot test participants was critical to improving the clarity of adapted items and the overall design of the survey.

Pilot Survey Results

A total of 10 participants completed the survey from June 27th to July 31st, 2022. Although 13 respondents opened the survey, two did not proceed past the letter of informed consent, and one only completed the implicit association test portion. On average, participants completed the survey in 40 minutes (*SD*: 19.09), including providing responses to the clarity of items in each section. All participants confirmed eligibility, answering "yes" to "2) Are you a preschool through 12th grade public school teacher in the United States?" – which was one of two required questions on the survey. Participants mostly identified as Female ($n = 9$, 90%; Male, $n = 1$, 10%) and White ($n = 9$, 90%; African American or Black, $n = 1$, 10%). On average, participants were 37 years old (*SD*: 10.85). Pilot participants were from several different states, representing three distinct geographic regions, the Southeast, Midwest, and South, including South Carolina ($n = 3$, 30%), Illinois ($n = 3$, 30%), Ohio ($n = 2$, 20%), Indiana ($n = 1$, 10%), and Texas ($n = 1$, 10%). Eighty percent of participants held a master's degree with the remaining 20% holding a bachelor's degree. Participants had an average teaching experience of 14 years (*SD* = 10.21) and were also employed on average for 10 years at their current school (*SD* = 8.39). Three out of 10 participants entered teaching through an alternative certification program, while 70% entered teaching through traditional means. Eighty percent of participants were union members. Finally, 70% of the participants had not taken an implicit association test prior to this survey.

The following sections describe pilot participant feedback to each of the survey questionnaire sections. Then, questionnaire revisions are also noted.

Teacher Black-White Implicit Bias Association Tests. Nine participants (90%) reported that the implicit bias association survey section was easy to understand. Those who described it as easy to understand shared that the directions were simple and straightforward. One person who described is as easy to understand also noted not understanding initially and then gaining clarity as they continued. This is typical of the measure, as the multiple test blocks allow participants to become familiar with the task before completing the sections used to calculate their implicit bias. The one participant who noted the section was not easy to understand described it may have been due to misunderstanding the instructions. In addition, participants were also asked if they would like to provide any additional feedback. Three participants provided additional feedback, sharing that the directions were clear, they had an interest in how the measure works, and they had taken a similar test before. Therefore, no changes were made to this survey section based on participant responses.

Feelings Thermometer. All participants reported this section was easy to understand (*n*=10, 100%). Two provided explanations, stating the "Written directions clearer" and "The questions were clear." When asked to provide any other feedback, two participants shared that "These aren't individuals I know, just asking how I feel about people I meet" and "Possibly consider defining what 'warm' means." Pilot participants did not note any changes to improve understanding, and other recommendations have been noted as a limitation of the measure. No changes were made to this survey section.

Bayesian Racism Scale. All participants reported the section was easy to understand. One elaborated that "Most questions seemed easy to answer." Three participants noted wanting to provide additional feedback (30%), though only two provided written feedback. They shared, "The question about police 'attention' was unclear. No group should be singled out, yet there may need to be extra security in areas of high crime rates." and "…I had trouble understanding what "performance" was referring to... grades?" In checking the participant responses, the neutral response option from the validated scale was missing in the pilot survey option responses. Therefore, the response option, <u>"Neither agree nor disagree" was added to the Likert of 1 to 7</u>.

Colorblind Racial Attitudes Scale. Ninety percent of participants reported the scale items were easy to understand. As one stated, "I felt the questions were direct." Four participants also provided additional feedback though largely reflecting their feelings towards items, sharing:

- *Saying white people having advantages because of the color of their skin seems incorrect. They have advantages because of racism and white supremacy.*

- *There were several questions I wasn't sure how I felt... so I would have preferred a neutral selection.*

- *Question 2- I wasn't sure how I was evaluating success, ie if we were talking about intelligence/hard work defining success or things like wealth/titles. My answer would be different in those 2 cases*

- *#2 and #3 were tough because I'm not sure what you mean by "play a role"...play a role in deciding who receives services or punishment? And #16,*

the word unnecessary was confusing. Talking about racial issues causes

tension but it isn't unnecessary.

Participants seemed to have an emotional response to items two and three: "Race is very important in determining who is successful and who is not" and "Race plays an important role in who gets sent to prison."

Given most of the pilot participants were White, they may have experienced shifts in attitudes and self-awareness taking these study measures. The opportunity to provide reasoning behind participants choice selection could be an area for future research. These responses were noted as important to consider during data analysis, as participants are picking up on key constructs the items aim to measure, such as Racial Privilege, Institutional Discrimination, and Blatant Racial Issues. No changes were made to this section.

***Bot Protection Questions*.** There were two questions to ensure integrity of the data collected in the online survey. No participants were presented with, nor responded to the "honey pot" question which only appeared if participant responses mirror bot responses (uses html coding feature in Qualtrics to not appear to human participant). However, the second question aimed to ensure a human participant is completing the survey and asked participants to enter a ten digit number. The question was not clear, as some participants did enter a number with 10-digits while others simply entered a number greater than 10. To remedy this confusion an example number was provided in the question. <u>Revising the question to state</u>, "Enter a ten digit number into the text box (*<u>e.g.,</u>* *<u>4,589,321,876</u>*)."

Student-Teacher Relationships Scale. Unlike the other survey sections, participants responded about the scale overall and to each of the 15-items in the scale, as the scale items were adapted from the original version. Overall, 100% of participants found the scale easy to understand. One participant provided an additional explanation of why, sharing "First graders share a lot!" Although they found the scale easy to understand, three participants shared added feedback describing difficulty with making selections keeping in mind their whole classroom, rather than a particular student. For example, two shared, "As a group many students are wonderful. There may be one or two that struggle with rules and act out severely" and "It's hard to answer these because every student is so different, so I had to make large generalizations. Also, physical touch question was awkward to answer because I avoid physical touch normally unless a student initiates so a student could be uncomfortable with it, but I won't know."

Individual item clarity varied slightly between scale items (See Appendix B for complete responses to the STRS language adaptations). Participants reported most items were very clear or somewhat clear (70-90%) on all items, except for item four, where one participant reported the item was not clear. Given the adaptations to the items were made to generalize the items to "my students" instead of an individual student (e.g., this student, his/her recommendations to change language to be specific to one on one student relationships were not used. However, participants provided useful insight into which questions teachers feel are not representative of their relationships, but rather a part of the students' developmental stage or larger context. In addition, one participant shared concern for the generalizability of one item to high school teachers, "This wording isn't completely appropriate for the high school level because high school teachers only have

students for one period a day. Therefore, if high school students come in a bad mood I know we're just in for a long and difficult class period, not a day." Therefore, one question was revised to be generalized to all school settings (e.g., elementary, middle, high) by replacing "day" with "time" in item 12, "*When my students arrive in a bad mood, I know we're in for a long and difficult time*."

   Open-Ended Questions. Similar to the STRS, pilot participants were asked to respond regarding the clarity of the questions overall and provide feedback on each of the open-ended questions individually. They were also asked to provide alternative wording in addition to their perceptions of question clarity. All participants ($n = 10$, 100%) reported that overall, the open-ended questions were easy to understand. One shared in addition, "These are things we speak about a lot in first grade." Pilot participants rated individual open-ended questions as somewhat clear or very clear, with the exception of one participant. One participant also shared additional feedback that "It was clear but hard to answer, I have been teaching in this building for so long I just do it and it is very hard to identify specific things I do."

   The only exception to question clarity was one participant rating the second open-ended question, "2) How do you maintain relationships with students whose racial or ethnic identity from your own? Please give one or two specific examples" as not clear. They suggested alternative wording to state "continue" rather than "maintain." To improve clarity, the question was revised to include both maintain and continue, as these are seen as synonymous in this open-ended question. The revised question read, "2) How do you maintain or continue relationships with students whose racial or ethnic identity from your own? Please give one or two specific examples." Additionally, though no

changes were suggested for the follow-up questions based on whether students' race or ethnicity influence the ways teachers develop and maintain relationships, participant responses were evenly split between "yes" and "no" suggesting the additional open-ended question provided insight into this decision-making step for teachers.

Teacher-Student Racial Mismatch. All participants rated the questions regarding the student racial and ethnic demographic make-up of their primary class as easy to understand. Three participants also responded they would like to provide additional feedback. Only one participant shared, "I think it's important to note that at my school we have a specific ESL homeroom. I do not have that homeroom." In addition, one participant also noted in a separate pilot response section that "How the first question was phrased about the minority make up of my class was odd." All participants were able to estimate the percentage of students from each racial or ethnic group, but two of the participants over-estimated the percentages resulting in a percentage greater than 100 (e.g., 105%, 156%). This was also important to consider in the data analysis, the question regarding the race or ethnicity of most of their students in the classroom was easily answered by participants. Teacher-student racial mismatch was measured and created using this question and teachers' report of their own racial and ethnic identity as intended. Instructions were added to note that the total percentage estimates should equal 100%: "Please estimate (%) the percentage of students in your primary classroom belonging to each racial or ethnic group, totaling to 100%."

Demographics. Nine out of 10 participants rated the teacher characteristics section as easy to understand. The one participant who responded "no" provided an explanation for a change in the prior survey section, not the teacher demographic section.

When asked if the response options made sense, 90% of participants responded "yes."

The participant who responded "no" did not provide an explanation for this response.

Additionally, all participants reported the education and professional experience

demographic section as easy to understand and that response options made sense,

providing no additional suggestions. As one participant noted, "High school teachers

typically teach more than one grade level and content area. You might want to revise the

survey to allow for multiple grade levels and contents." Also, all participants were able to

select their school district name without issue. Although all participants reported the

school characteristics were easy to understand, one participant suggested that grade-level

and subject matter should be revised to a "select all that apply" rather than a single-

answer response question. This change was made to the survey allowing participants to

select more than one grade-level and more than one subject area.

   Self-Awareness of Implicit/Explicit Racial Biases and Prior Exposure to IATs.

All participants reported these "yes/no" questions as easy to understand, and though four

participants noted wanting to provide additional feedback, only one provided an

explanation. They shared, "I had to look up these definitions [implicit and explicit racial

bias] and I hope I have them straight in my head!" Although consideration was given to

adding definitions for each of the questions asking about their awareness of implicit and

explicit racial bias, it was decided this could influence participants' answers. Rather than

reporting whether they know, they may be more likely to respond in a socially desirable

manner with the definitions present. Therefore, no changes were made to these questions.

After the survey was piloted, revisions were made to the survey questionnaire, as

indicated in each respective questionnaire section. Then, teachers were recruited to take the finalized online survey (described in the *Full Study Measures* section above).

Data Collection

An online Qualtrics (n.d.) survey was administered to *PK-12 teachers* in the US from August to December 2022. The survey was only available for completion on a computer due to the Black-White implicit association tests used to measure implicit racial bias and how the test measures reaction time using key strokes on a keyboard (Carpenter et al., 2019). After taking the online survey, participants had the opportunity to provide information to be contacted for a follow-up interview for future studies and enter the gift card raffle. Participants who met the criteria for the raffle (i.e., only completed the survey once, answered required bot protection question, less than 2 malicious actor indicators) and provided their information to be considered were entered into a random number generator. Six participants were selected and an initial email confirming their correct email address for the e-gift-card was sent. Upon receiving confirmation of the participants preferred email for the gift card, an Amazon e-gift-card in the amount of $50 was sent to each of the six participants.

Recruitment

Participants were recruited across three phases. Closed networks (e.g., personal communications to managed listservs) were used prior to expanding recruitment in later stages to broader audiences using social media and national newsletters. First, from August until mid-September 2022 (Phase 1), participants were recruited using personal email communications to individuals, schools, and listservs (e.g., USC College of Social Work, National Center for School Mental Health, Southeastern Behavioral Health

Network). These efforts resulted in 161 survey responses. Then, mid-September to mid-October 2022 (Phase 2), participants were also recruited using social media (e.g., Twitter, Facebook), in addition to prior recruiting methods. This additional recruitment phase resulted in 480 additional responses. Finally, from mid-October through December 2022 (Phase 3), participants were also recruited through districts, offering districts to receive evaluation reports with aggregate data if at least 50 teachers in their district completed the survey. In addition, during this phase of recruitment, due to the high rates of respondents dropping from the survey during the implicit association tests, this measure was moved after the explicit racial bias scales, but before the quality of student-teacher relationships measure, to increase likelihood of participants completing the survey. This placement also ensured equal priming to the same study constructs prior to eliciting teachers' perceptions of the quality of their student-teacher relationships. An additional 456 responses were collected from mid-October to mid-December. A total of 1097 raw responses were collected, though completion rates varied greatly (see *Data Preparation and Management* section below).

   A priori and Post-hoc Power Analyses. Prior to beginning recruitment, an *a priori* power analysis was conducted using G*Power (n.d.) to estimate the sample size needed to detect statistical significance. Given Pit-ten Cate and Glock (2019) found a moderate effect size on average across their meta-analysis of studies using teacher implicit attitudes, a moderate effect size was expected in this study. With four predictors (five with moderator), an alpha of 0.05, anticipating a moderate effect size (f^2 at .02 (small), 0.15 (medium), 0.35 (large); Cohen, 1992), at an acceptable power of 0.80, estimated sample sizes were calculated. An estimated 647 participants were needed to

capture results with a small effect size, 92 participants were needed to capture results with a medium effect size, and 43 participants were needed to capture results with a large effect size. Then, preliminary analyses were conducted prior to concluding study recruitment to determine if an adequate sample size was reached. Post-hoc preliminary power analyses showed adequate power 0.98 to 0.99. Final power analyses were included for each model (See *Results* section).

<div align="center">**Data Analysis**</div>

Data Preparation and Management

Online survey data were downloaded from Qualtrics and imported into the statistical software, SPSS (Version 27.0.1.0; Pituch et al., 2015). All research files were stored on a secured, password-protected network drive. Responses were de-identified by creating a unique case identifier for all responses. A key for unique case identifiers was created and managed by the Principal Investigator only. Prior to data cleaning procedures, the initial data file ($n = 1097$) was screened to ensure participants met the eligibility criteria for this study (e.g., US public PK-12 teachers). First, 164 responses were excluded as the participant did not proceed past the letter of consent page ($n = 933$). Then, additional responses were excluded on eligibility items ($n = 99$), where the participant responded "No" to the eligibility question ($n = 18$) or did not answer the eligibility question ($n = 81$).

Once screened for eligibility, the data ($n = 834$) were then reviewed to check for malicious actors (e.g., bot, human intention to receive multiple study incentives) by using the Qualtrics reCAPTCHA bot detection settings and 16 criterion noted in prior research as indicative of malicious actors or bot activity, including discrepancies in answers to

<div align="center">89</div>

identical questions, identical names, emails, and phone numbers, duplicate IP addresses, unusual open-ended questions, and several additional criteria (Teitcher et al., 2015; Webb & Tangney, 2022; Xu et al., 2022; see Table 3.2). For each indicator, a variable was created and coded a "1" for yes if the individual case was suspected as a malicious actor. Then, a final variable with the total number of malicious actor indicators was created and used to determine inclusion in the final analytic sample, where participants with two or greater malicious actor indicators were excluded *(n = 349)*. After reviewing all qualitative responses, eight additional cases were excluded because the participants had the exact same response to another participant on an open-ended question. The flow diagram in Figure 3.1 displays the sample criteria for inclusion in the study, and frequency counts for each of the 16 malicious actor variables are provided in Table 3.2.

Full Study Participant Characteristics

Quantitative Sample. Survey participants who responded to all of the quantitative measures – IATs [not faster than 10s on a single block], BRS, COBRAS, and STRS and control variables – were included in the quantitative sample ($n = 115$). Participants represented 29 different states with the majority from South and Southeastern states. Most participants held a Bachelor's ($n = 43$, 38%) or a Master's degree ($n = 54$, 46%). Participants had a range of teaching experience from one to 35 years with an average of 10 and a half years of experience ($SD = 8.3$). In addition, the majority of participants on average had been employed by their school for 6 years ($SD = 4.93$). Participants were split between entering the teaching profession through a traditional certificate program ($n = 58$, 50%) or through an alternative certification program ($n = 57$, 50%). The percentage of participants who received their certification through an alternative program is higher

```
┌─────────────────────────────────────────────────────┐
│          Total Online Survey Respondents            │
│                  (N = 1,097)                        │
└─────────────────────────────────────────────────────┘
                         │
                         │──────►┌──────────────────────────────────┐
                         │       │ Total Responses Excluded as they │
                         │       │ did not proceed past the letter  │
                         │       │ of consent page (n = 164)        │
                         │       └──────────────────────────────────┘
┌─────────────────────────────────────────────────────┐
│        Survey Respondents Prior to Data Checks      │
│                   (n = 933)                         │
└─────────────────────────────────────────────────────┘
```

Total Responses **Excluded** as they did not proceed past the letter of consent page (*n* = 164)

Survey Respondents Prior to Data Checks
(*n* = 933)

Total Responses **Excluded** on Eligibility response (*n* = 99)
- "No" to eligibility question (*n* = 18)
- Did not answer eligibility question (*n* = 81)

Survey Respondents Meeting Study Eligibility Criteria
(*n* = 834)

Total Responses **Excluded** on 2+ Malicious Actor Indicators
(*n* = 349)
- Frequencies provided for the 16 Malicious Actor Indicators in Supplemental Table 2.

Survey Respondents for Analysis
(*n* = 485)

Analysis

Respondents with complete and valid responses to all model variables (*n* = 115)

Respondents with Open-Ended Responses
(*n* = 100)
- Excluded individuals with same exact response to another participant on open-ended questions (n=8) cases
- Odd open-ended responses not related to question asked (*n* = 8)

Figure 3.1. Flow Diagram of Sample Criteria for Full Study Inclusion

Table 3.2 Frequency of Malicious Actor Indicators during Data Preparation

Indicator for Possible Malicious Actor	Frequency
Suspicious Name and Email Address	298
Illogical Responses to Open-Ended Questions	228
Duplicate Name and Email Address	45
Logic Bot Detection Question	37
Symbols in any Response Item	15
Suspicious Date/Time of Survey	4
Native American as Teacher Race*	139
IP address duplicate	189
Low (<.05) reCAPTCHA	118
Unlikely State (e.g., AK, HI, PR, VI)*	64
Duplicate Phone Number	17
Duplicate Name	31
Inconsistency across Identical Questions	
• States Don't Match (e.g., live, teach)	108
• School-Level and Grade don't match	66
• Names Don't Match	28

Note: Although 16 indicators were checked during data cleaning, no flags were found for improbable duration of survey completion. *A sole indicator was not used to eliminate participants from the sample.

than the national level of 18% (NCES, 2022). However, Texas, where a majority of participants reported living, has over 100 alternative certificate pathways for teachers and 34% of their current teachers received their teaching certificate through an alternative program (about two times the national rate; Texas Education Agency, n.d.).

Qualitative Sample. Participants who completed at least one open-ended question were included in the qualitative sample ($n = 100$). On average participants were 38 years old ($SD = 12.5$). Most participants identified as Female ($n = 65$, 65%), followed by Male ($n = 32$, 32%) and Non-binary ($n = 1$, 1%). Participants were from 26 states with most currently teaching in South Carolina. Most participants had earned an advanced degree, with many holding a Master's Degree ($n = 47$, 47%), followed by a Bachelor's degree ($n = 35$, 35%) and Associate's degree ($n = 11$, 11%), and Doctorate ($n = 4$, 4%). On average, participants had 12 years of teaching experience ($SD = 8.55$) ranging from 1 to 35 years. Participants had been currently employed by their school for an average of six years ($SD = 5.17$; 1-21 years). Participants taught a range of subjects, though the majority of teachers taught at the Elementary school-level ($n = 55$, 53%). Demographics for each analytic group are provided in Table 3.3.

Table 3.3 Participant Characteristics

	Quantitative Analysis Sample (N = 115)		Qualitative Analysis Sample (N = 100)	
	n	%	*n*	%
Gender[a]				
Male	42	36.5%	38	36%
Female	72	63%	67	63%
Non-Binary	1	1%	1	1%
Age Group				
20 to 29 years old	32	27%	24	24%
30 to 39 years old	44	38%	33	33%
40 to 49 years old	22	19%	21	21%
50 to 59 years old	15	13%	15	15%
60 to 69 years old	4	3%	4	4%
Racial or Ethnic Identity[b]				
African American or Black	18	16%	17	17%
Asian	6	5%	5	5%
Native American or Alaska Native	3	3%	1	1%
Native Hawaiian or Pacific Islander	2	2%	2	2%
White	86	75%	74	74%
Another race or ethnicity	2	2%	2	2%
Biracial	4	3.5%	2	2%
Latinx or Hispanic Origin	20	17%	14	14%
School Type				
Traditional Public	102	87%	84	84%
Charter School	11	10%	12	11.5%
Alternative School	3	3%	1	1.5%
School Level				
Preschool	5	4%	3	3%
Elementary	58	51%	52	50%
Middle	33	29%	22	22%
High	17	15%	19	19%
Alternative	-	-	1	1%
Grades Taught[b]				
Pre-Kindergarten	11	10%	9	8%
Kindergarten	13	11%	12	11%
1st Grade	18	15%	15	14%
2nd Grade	20	17%	18	17%
3rd Grade	30	26%	25	23%
4th Grade	21	18%	20	19%
5th Grade	23	20%	18	17%
6th Grade	11	10%	11	10%
7th Grade	14	12%	15	14%

	Quantitative Analysis Sample ($N = 115$)		Qualitative Analysis Sample ($N = 100$)	
	n	%	*n*	%
8th Grade	13	11%	11	11%
9th Grade	5	5%	5	5%
10th Grade	11	10%	10	9%
11th Grade	4	3.5%	6	6%
12th grade	8	7%	8	7%
Special Education	5	5%	7	7%

[a] No participants identified as transgender man nor transgender woman. [b] Percentages exceed 100% because participants were allowed to choose more than one response option; no respondents identified as Multiracial.

Quantitative Data Analysis (RQ1)

Prior to creating the model and running the multiple regression analysis, assumptions (independence, homoscedasticity, normality, linearity, fixed X, and noncollinearity; Hahs-Vaughn & Lomax, 2020) were checked, and no violations were found (see *Results*). Case-wise deletion was used to identify complete responses on key study variables (i.e., implicit and explicit racial bias measures and the quality of student-teacher relationships) resulting in the final dataset (Afghari et al., 2019). Out of the 485 eligible survey participants, 156 had completed and valid IATs (implicit racial bias measure), and only 115 participants had complete responses to items representing all model variables (IATs, BRS, COBRAS, STRS, Teacher-Student Racial Mismatch, and five control variables). Missingness on key study variables ranged from 59-69% out of the total survey respondents eligible for analysis ($n = 485$) and it appeared most of the missingness was due to participants ending the survey in the middle of a scale. Instances where there were missing responses on single items within larger scales were minimal (3-5 cases per scale). More advanced strategies were considered to address this missingness (e.g., multiple imputation; Little et al, 2022). However, the majority of survey respondents who completed the implicit racial bias measure (required to be in the final analytic dataset) were not missing specific items on the quantitative key study variables, but were instead missing demographic questions used to create the moderator variables (e.g., teacher-student racial mismatch) and control for teacher demographics (e.g., gender, age, years teaching). As the study questionnaire did not collect information on teachers' schools or school districts, it was not possible nor appropriate to approximate

the race or ethnicity of students at the classroom level nor the teachers' own race or ethnicity given the vast differences in demographics from school to school in each state. Similar to Osei-Twumasi and Pinetta (2019), and following recommendations of QuantCrit research approaches, which note social constructs such as race and ethnicity in particular have infinite responses that cannot be easily substituted (see Garcia et al., 2018 and Gillborn et al., 2018). Therefore, neither multiple imputation nor probability weighting were used to address missingness. This approach reduced the total number of cases in the study and introduced the possibility of sample bias, if the removed cases were not missing at random (MAR; Little et al., 2022), these limitations have been noted (see *Discussion*). However, *post hoc* power analyses showed adequate power to conduct the statistical analyses described. Descriptive statistics were conducted for all included variables, including correlations and the creation of subscales and calculation of scale reliability using Cronbach's alpha (reported in *Full Study Measures*).

All analyses were conducted in SPSS (Version 28.0.0.0). Multiple regression was used to examine the relationship between teacher racial implicit and explicit biases and the quality of student-teacher relationships with teacher-student racial mismatch as a moderator. The null hypotheses included: 1) The percent of variance explained by the overall model does not differ significantly from 0 (Ho: $R^2=0$) and 2) Each regression predictor's coefficient does not differ significantly from 0 (Ho: $B_k = 0$). Following the multiple regression, the distribution of the residuals was also examined.

Table 3.4 Frequency of Missingness by Study Model Variable

Study Variables of Interest		Missing Values n (%)
		Percent out of Respondents for Analysis (n = 485)
Controls	Gender	329 (68%)
	Age	333 (69%)
	Years Teaching	332 (68%)
	Years at Current School	332 (68%)
	Explicit Bias Awareness	332 (68%)
DV	Quality of Student-Teacher Relationships	317 (65%)
Predictors	Black-White Implicit Association Test (*d-score*)	329 (68%)
	Feelings Score (White – African American)	285 (59%)
	Bayesian Racism Scale	289 (60%)
	Colorblind Racial Attitudes Scale	298 (61%)
	Teacher-Student Racial Mismatch (TSRM)	331 (68%)

Moderation (RQ2)

To evaluate whether teacher-student racial mismatch was a moderator, Baron and Kenny's (1986) method where the moderator is a categorical variable, and the independent variable is a continuous variable was used. The overall regression model was conducted by first adding in five control variables from teachers' reported demographic characteristics (teacher gender, age, years teaching, years at current school, and awareness of explicit racial biases). Then, main study predictors, including implicit and explicit racial bias measures were added to the model. Following the control variables and predictors, interactions terms were created by mean-centering the predictor variables to reduce issues of multicollinearity and multiplying by the moderator variable, teacher-student racial mismatch (e.g., Black-White IATs, Feelings Score, Bayesian Racism Scale, and Colorblind Racial Attitudes; Memon et al., 2019). This process resulted in four interaction terms that were then input into the regression. Although this method may not provide the strongest evidence of predictive outcomes as a result of the moderator, both the Baron and Kenny (1986) and alternative approaches to assessing moderation are especially helpful for establishing strong hypotheses of moderating effects to be examined in future more rigorous research approaches (e.g., randomized control trials or quasi-experimental designs; Kraemer et al., 2008; Memon et al., 2019) when prior research demonstrates there may be a moderator present in the relationship (Memon et al., 2019). Descriptive results are provided in the *Results*, including diagrams of the hypothesized relationships and the moderating effect.

Qualitative Data Analysis (RQ3)

To analyze the open-ended responses from the survey, a master datafile was created in MaxQDA (n.d.; Version 20.2.2), a qualitative data analysis software. All responses were imported and labeled with their respective unique case identification numbers. Each of the participants' open-ended responses across all questions were brought in as a single document and all other survey responses (i.e., the quantitative data) were linked to the document with qualitative open-ended responses as a "document variable" (Radiker & Kuckartz, 2020, p. 7).

A qualitative content analysis approach was used to analyze the qualitative data (Schreier, 2012). In contrast to grounded theory, qualitative content analysis allows for flexibility in using a combination of inductive and deductive coding to create initial codes, categories, or themes (Cho & Lee, 2014). Three strategies were used to analyze the open-ended responses, including analytic memos, thematic analysis, and categorization in MaxQDA (Maxwell, 2013; Saldana, 2015). Survey responses to each question were read in full (per Schreier's (2012) qualitative content analysis recommendations) and memos were created in MaxQDA to track any emergent codes for each question and overall. A deductive approach was used to create structural codes denoting the distinct open-ended survey questions, followed by an inductive approach which allows codes to emerge organically from the data (Maxwell, 2013; Ryan & Bernard, 2003). Additionally, categorizing and connecting strategies were used to create codes based on relationships or connections across codes and participant groups (Maxwell, 2013). The flexibility and systematic nature of qualitative content analysis is commonly used for larger sets of qualitative data (e.g., open-ended survey questions,

policy documents, etc.), and unlike with grounded theory, this analysis supports the use of quantifying qualitative data based on their prevalence among the overall responses (Cho & Lee, 2014; Schreier, 2012). More detail is provided next on the development of the codebook and calculating inter-rater reliability.

Codebook Development and Inter-Rater Reliability

After reading all qualitative responses an initial emergent codebook was developed. The codebook included definitions, exclusion and inclusion criteria, and exemplar quotes (Saldana, 2015; Syed & Nelson, 2015; See *Results*). Once the initial codebook was finalized, all open-ended responses were coded by the primary coder (author). Then, in order to conduct inter-rater reliability, a reliability coder was recruited, completed IRB training, and trained on how to use the codebook (Syed & Nelson, 2015). Next, the reliability coder coded a subset consisting of 20% of the data to calculate inter-rater reliability and to increase trustworthiness of the findings (Syed & Nelson, 2015). Inter-rater reliability was calculated by examining whether the two coder's coding segments matched to 90%, applying the same code to the same coded segment (sentence-level units). This approach allows for deviation of a word or short phrase without a false identification of a mismatch in coding between the coders. After coding the initial subsample, the initial inter-rater reliability score (Kappa) indicated 71% overall agreement between the two coders (see code specific reliability in Table 3.5).

Based on these results, the codebook was then revised with particular attention on codes that did not have strong reliability between the two coders (e.g., less than 80%). Codes with less than 80% reliability included, *Treating Every Student the Same*, *Self-Reflection on Personal Attitudes or Beliefs About Students*, *Positive Communication with*

Students, *Create an Inclusive Environment*, *Diversify Class Content, Hold Frank Conversations about Racism and Discrimination*, *Work to Understand Students Racial or Ethnic Identity*, *Show Sincerity Toward Students*, *Ask About Students and Their Families*, *Share Personal Information about Themselves*, and *Use Student-Level Data*. After conversations between the two-coders and reviewing analytic coding memos from each, several codebook revisions were made. First, two codes with similar definitions, *Ask About Students and Their Families* and *Asking Students to Share their Cultural or Racial Experiences*, were merged after a discussion between the two coders. Clarifications were also made to two code definitions, *Show Sincerity to Students* and *Positive Communication*, distinguishing the former as describing caring or empathetic responses to students, and adding an exclusion to *Positive Communication*. Additionally, specific exclusion criteria were added to three codes which distinguished between different aspects of discussing or learning about racial or ethnic identities. For example, any mention of having a specific conversation about race, racism, or discrimination was coded into *Hold Frank Conversations about Racism* but not into *Work to Understand Students Racial or Ethnic Identity* (e.g., no double-coding of participant responses). A discussion between coders surrounding these two codes emphasized adhering to the code definition, only coding instances where teachers explicitly discuss learning about specific races, ethnicities, and cultures, which included prior engagement or formal education. Finally, both coders discussed the new codebook definitions, and whether any additional revisions were needed, resulting in the final codebook (See *Results*).

After the codebook was revised, a new subsample of 5% of the responses were coded by the two coders. The random subsamples of participant responses did not include

102

every code in the final codebook. Both samples represented about 20 of the 24 total codes. However, the goal of coding random subsamples is to ensure reliability by coding a portion of the responses, in comparison to alternative methods, such as consensus coding where two coders agree on all coded responses. Inter-rater reliability was calculated on the new subsample and resulted in reliable coding with 89% overall agreement between the two coders (Kappa = 0.88, deemed reliable; McHugh, 2012; Miles & Huberman, 1994).

Researcher Reflexivity

Prior to describing details of the main data analysis, it is important to reflect on the position of the researcher, influence on conducting the research study, analyzing data collected, and the strategies used increase transparency and reliability of study results. To begin, as a researcher trained as a school social worker and educator, my interests were in discovering the relationship between teachers' implicit and explicit racial bias, and what relationship this phenomenon has on the quality of student-teacher relationships. My goal in understanding this phenomenon was to contribute to ongoing efforts to intervene and prevent the academic and non-academic barriers that lead to racial inequities in education among students who are racially and ethnically marginalized. Given my experience in schools as a student teacher, school social work intern, and more recently as a graduate assistant implementing classroom-based prevention and intervention programs, these naturally influenced my interpretation of educational experiences and the larger PK-12 school context in the US.

Table 3.5 Sub-Sample Inter-Rater Reliability

Code	Percent
First Sub-Sample of Responses	**Initial 20%**
Support Students Inside and Outside of the Classroom	100%
Add Physical Materials used in Classroom	100%
Don't know/Not sure	100%
NONE/NA	100%
Understand Students Interests	80%
Respect Student Perspectives	80%
Praising Students	80%
Treating Every Student the Same	77%
Self-Reflection on Personal Attitudes or Beliefs About Students	73%
Positive Communication with Students	67%
Create an Inclusive Environment	67%
Diversify Class Content	67%
Hold Frank Conversations about Racism and Discrimination	57%
Work to Understand Students Racial or Ethnic Identity	57%
Show Sincerity Toward Students	44%
Ask About Students and Their Families	25%
Share Personal Information about Themselves	0%
Use Student-Level Data	0%
Total (Kappa)	**72.43% (0.71)**
Second Sub-Sample of Responses	**Additional 5%**
Understand Students Interests	100%
Show Sincerity Toward Students	100%
Praising Students	100%
Build Trust	100%
Self-Reflection on Personal Attitudes or Beliefs About Students	100%
Work to Understand Students Racial or Ethnic Identity	100%
Ask about students and their families (+)	82%
Treating Every Student the Same	80%
Diversify Class Content	80%
Total (Kappa)	**89.36% (0.88)**

These foundational experiences along with coursework in Critical Race Theory and Ecological Systems Theory underpinned my conceptualization of teacher racial bias, the quality of student-teacher relationships, and teacher-student racial mismatch in this study.

Recognizing positionality prior to and while engaging in research is critical for to recognize researcher bias and prevent possible researcher bias in analysis strategies. While my personal views of educational institutions as racial spaces influenced the design and interpretation of results in this study, my understanding of racial discrimination and racism in schools is also limited by my experience navigating these spaces as a White woman. The nature of this study required openness and trust of the researcher, due to the ongoing attacks on teaching and public education, particularly surrounding racial equity. Therefore, in the study informed consent letter, I briefly disclosed my experience and specific interest in conducting the current study in an effort to ensure participants' understanding of the goals of this research prior to their participation in the study. Finally, I acknowledge my personal experiences impacted the ways in which the data were analyzed from this study, and as such I employed bias mitigation strategies including ongoing memo notetaking (e.g., analytic memos) on both the content and the processes of the study, providing a thick description with the qualitative data to avoid potential research bias, and member checking with a teacher (Glesne, 2015; Maxwell, 2013).

Member Checking

A member check was conducted after all analyses were completed to elicit feedback on the study's qualitative findings (Miles et al., 2020). While the member check was to be completed by four teachers (two identifying as White and two identifying as

Black or African American), six total teachers were contacted twice, but only two

teachers responded to the request. Once the qualitative results were finalized, the two

teachers who indicated willingness to participate in a member check on the survey

questionnaire, and responded to member check email inquiries, were asked to provide

feedback on the conclusions drawn from the open-ended questions (Maxwell, 2013).

However, only one of the two participants who agreed was able to complete the member

check. The one teacher, who self-identified as White, was asked to review a brief

overview of the qualitative results of the study and answer three overarching questions,

including "1) Can you please comment on whether the description of the results is

accurate based on your experience? 2) Do the codes in the table seem appropriate to

include in the results? If not, please indicate which ones and the concern. 3) Are the

interpretations drawn in the results representative of your experience?" (Creswell, 2005;

Candela, 2019; Thomas, 2017). The teacher, shared that:

> Based on my personal experience and those I've witnessed in other classroom
>
> settings, the results descriptors are relevant and accurate. Interpretations in the
>
> results do represent my experiences. I agree with the codes in the table, and feel
>
> they are appropriate for the results. The exemplar quotes used support the codes
>
> and their meanings. The results of this study, in my opinion, would be a good
>
> basis for professional development opportunities for teachers.

The participant who participated in the member check was in agreement with all of the

findings, and as such, no codes were changed.

CHAPTER 4

RESULTS

Research Question One

Using the valid and complete survey responses ($n = 115$), a multiple regression was conducted to understand if the quality of student-teacher relationships was predicted by teachers' implicit association test d-scores (implicit racial bias measure), Feelings score (explicit racial bias measure), Bayesian racism scale score (explicit racial bias measure), Colorblind racial attitudes scale score (explicit racial bias measure), and then moderated by teacher-student racial mismatch (5 predictor variables, 4 interaction terms). There were five control variables in the model, and these included teacher gender, age, years teaching, years at current school, and awareness of explicit racial biases. The null hypotheses tested were: 1) The percent of variance explained by the overall model does not differ significantly from 0 (Ho: $R^2=0$); and 2) Each regression predictor's coefficient does not differ significantly from 0 (Ho: $B_k = 0$). Following the multiple regression, distribution of the residuals were also examined and appeared normally distributed. In addition, no indicators of multicollinearity were found, as tolerance values were greater than 0.20 and variance inflation factors were below 10 (Hahs-Vaughn & Lomax, 2020). The descriptive statistics and model results are presented next.

Descriptive Statistics

Descriptive statistics, including correlations, were conducted on all of the variables using SPSS. On average, participants showed a preference for White in the

Black-White Implicit Association Tests (*d*-score *M* = -0.36; *SD* = .34). On the explicit

measures, participants had mixed self-reports. Participants showed little to no difference

in their reported feelings of warmth toward European Americans and African Americans

on a scale of 1 to 10 (Feelings Score: *M* = 0.28; *SD* = 1.67). Yet, participants on average

held moderate racist views (BRS *M* = 3.30; *SD* = 1.01; Likert 1-7) and moderate

colorblind views (COBRAS *M* = 3.10; *SD* = 0.65; Likert 1-6). Participants reported the

quality of student-teacher relationships across two-subdimensions, closeness and conflict.

On average, participant scores showed high levels of closeness (M = 4.18; SD = .60) and

moderate levels of conflict (M = 2.58; SD = .80). The overall quality of student-teacher

relationships was calculated by subtracting the sum of the conflict dimension from the

sum of the closeness dimension, and in this sample, there was overall self-reported higher

quality student-teacher relationships (Closeness – Conflict; *M* = 15.37; *SD* = 8.70;

Possible sum between -30 to 35). Table 4.1 provides descriptive statistics for each of the

variables of interest in the study.

Correlations

In examining the correlation table, all control variables (teacher gender, age, years

teaching, years at current school, and awareness of explicit racial biases) showed weak to

moderate statistically significant correlations with the outcome variable. Of the three

explicit racial bias variables, two had a statistically significant weak to moderate negative

relationship with the quality of student-teacher relationships, including the Bayesian

Racism Scale (*r* = -.456, *p* = <.001) and Colorblind Racial Attitudes (*r* = -.228, *p* = .008).

However, another measure of explicit racial bias, the Feelings Score (*r* =.105, *p* = .225),

was not significantly correlated with the quality of student-teacher relationships.

Table 4.1 Descriptive Statistics for Variables of Interest

	Study Variables of Interest	Mean *(SD)* and Frequencies	Range
Controls	Gender	37% (Male) 63% (Female) 1% (Non-Binary)	-
	Age	37.37 (10.85)	21- 69 years old
	Years Teaching	10.50 (8.30)	1 - 35 years
	Years at Current School	5.91 (4.89)	1 - 22 years
	Explicit Bias Awareness	58% (Yes) 42% (No)	-
DV	Quality of Student-Teacher Relationships	15.37 (8.70)	-3 - 33
Predictors	Black-White Implicit Association Test (*d-score*)	-.37 (0.34)	-1.38 - .47
	Feelings Score (White – African American)	0.28 (1.67)	-5 - 5
	Bayesian Racism Scale	3.30 (1.01)	1.5 - 5.5
	Colorblind Racial Attitudes Scale	3.10 (0.65)	1.75 - 4.45
	Teacher-Student Racial Mismatch	38% (No) 62% (Yes)	-

Similarly, teacher implicit racial bias ($r = .023$, $p = .789$) and teacher-student racial mismatch ($r = -.005$, $p = .956$) also were not significantly correlated with the quality of student-teacher relationships. In reviewing all predictor variables, none showed a strong statistically significant relationship with other predictor variables, which indicated no concern regarding multi-collinearity at this stage of the analysis. However, there were weak to moderate statistically significant correlations between the three explicit racial bias measures (Feelings score, Bayesian Racism Scale, Colorblind Racial Attitudes). Correlations between all study variables are provided in Table 4.2.

Statistical Model Results

The overall model with one implicit racial bias variable (Black-White Implicit Association Tests d-scores) and three explicit racial bias variables (Feelings Score, Bayesian Racial Attitudes, and Colorblind Racial Attitudes), and Teacher Student Racial Mismatch predicted 30% of the variability in the quality of student-teacher relationships ([a.] $R^2 = .302$; Adj. $R^2 = .270$, $p < .001**$; $F[5, 109] = 9.413$, $p < .001$; [b.] $R^2 = .364$; Adj. $R^2 = .303$, $F\varDelta [5, 104] = 2.032$, $p = .080$) while controlling for five teacher demographic variables (e.g., age, gender, years of teaching, years at current school, and self-awareness of explicit racial bias). Therefore, the overall model hypothesis was rejected, meaning that one or more of the predictor variables was significant. Upon examination of the model, only the Bayesian Racism Scale (explicit racial bias measure) was statistically significant. Higher scores on the Bayesian Racism Scale predicted lower quality student-teacher relationships (B = -2.694, $p = .049$). All other predictors in the model were not statistically significant.

Research Question Two

Statistical Model with Moderation Results

Following the addition of controls and predictors in the regression model, interaction terms for each of the four predictor variables with teacher-student racial mismatch were added to the model. The model with moderation showed no significant change in the amount of variance accounted for by the model predictors, nor were any of the interaction terms statistically significant in the model, indicating that teacher-student racial mismatch did not act as a moderator between implicit and explicit racial bias predictors and the quality of student-teacher relationships. Results of the full model are detailed in Table 4.3 below.

Table 4.2 Model Controls, Predictors, and Dependent Variable Correlations

		Controls					Predictors				
	Variable r (p)	Gender	Age Group	Years Teaching	Years at Current School	Explicit Bias Awareness	IAT	Feelings	BRS	COBRAS	TSRM
Controls	Age Group	**.189*** (.041)	--								
	Years Teaching	**.212*** (.022)	**.790**** (<.001)	--							
	Years at Current School	.069 (.462)	**.425**** (<.001)	**.607**** (<.001)	--						
	Explicit Bias Awareness	**-.447**** (<.001)	**-.281**** (.002)	**-.238*** (.010)	**-.058** (.534)	--					
Predictors	Implicit Association Test (IAT)	.098 (.286)	.028 (.765)	.023 (.808)	-.030 (.752)	-.026 (.778)	--				
	Feelings Score (Feelings)	**.304**** (<.001)	-.043 (.643)	-.035 (.705)	.027 (.775)	**-.200*** (.031)	.142 (.099)	--			
	Bayesian Racism Scale (BRS)	**-.382**** (<.001)	**-.390**** (<.001)	**-.366**** (<.001)	**-.290**** (.001)	**.390**** (<.001)	-.011 (.897)	-.063 (.465)	--		
	Colorblind Racial Attitudes Scale (COBRAS)	**-.370**** (<.001)	**-.226*** (.014)	**-.206*** (.026)	.038 (.680)	**.419**** (<.001)	-.036 (.681)	**-.206*** (.017)	**.355**** (<.001)	--	
	Teacher-Student Racial Mismatch (TSRM)	.027 (.770)	.117 (.210)	.032 (.729)	.004 (.962)	-.148 (.111)	-.005 (.960)	.045 (.624)	-.148 (.106)	-.117 (.203)	--
DV	The Quality of Student-Teacher Relationships	**.347**** (<.001)	**.478**** (<.001)	**.454**** (<.001)	**.293**** (.001)	**-.258**** (.005)	.023 (.789)	.105 (.225)	**-.456**** (<.001)	**-.228**** (.008)	-.005 (.956)

Note: Three additional covariates were included in preliminary analyses but were dropped due to non-significant correlations with the dependent variable (i.e., highest degree, school level, and awareness of implicit racial bias). r = Pearson Correlation; r = 0.1 > 0.3, weak; r = 0.3 > 0.5, moderate; r > 0.5, strong. *p < a=.05; ** p<a=.01

Table 4.3 *Multiple Regression of Teacher Racial Bias Predicting the Quality of Student-Teacher Relationships*

Controls (Block 1[a])	**B**	**SE**	*p*
[a.] R^2 = .302; Adj. R^2 = .270, *p* <.001**; F [5, 109] = 9.413, p<.001; Root MSE = 7.44; f^2 = .36; Power = .99			
Constant	.069	4.790	.989
Gender	3.741	1.353	**.007***
Age Group	2.270	1.046	**.032***
Years Teaching	.124	.157	.433
Years at Current School	.140	.180	.436
Awareness of Explicit Racial Bias	-.369	1.611	.819
Controls and Predictors (Block 2[b])	**B**	**SE**	*p*
[b.] R^2 = .364; Adj. R^2 = .303, *F Δ* [5, 104] = 2.032, *p* = .080; Root MSE = 7.27; f^2 = .43; Power = .99			
Constant	11.971	6.730	.078
Gender	2.628	1.421	.067
Age Group	1.908	1.040	.069
Years Teaching	.119	.156	.448
Years at Current School	.057	.185	.759
Awareness of Explicit Racial Bias	.389	1.663	.816
Implicit Association Test	2.404	2.080	.251
Feelings Score	.032	.447	.943
Bayesian Racism	-2.374	.844	**.006***
Colorblind Racial Attitudes	.118	1.266	.926
Teacher-Student Racial Mismatch (0=No, 1=Yes)	-1.676	1.430	.244

Table 4.3 continued.

Controls, Predictors, and Interactions (Block 3[c]) [c.] $R^2 = .368$; Adj. $R^2 = .279$, $F \Delta [5, 100] = .163$, $p = .957$; Root MSE = 7.39; $f^2 = .39$; Power = .99	B	SE	p
Constant	14.027	9.571	.146
Gender	2.427	1.469	.102
Age Group	2.068	1.080	**.058***
Years Teaching	.092	.164	.577
Years at Current School	.050	.191	.792
Awareness of Explicit Racial Bias	.214	1.731	.902
Implicit Association Test	3.320	3.414	.333
Feelings Score	.356	.751	.637
Bayesian Racism	-2.694	1.349	**.049***
Colorblind Racial Attitudes	.037	2.463	.988
Teacher-Student Racial Mismatch (0=No, 1=Yes)	-1.746	1.458	.146
IAT*TSRM	-1.381	4.441	.102
Feelings Score*TSRM	-.543	.958	.058
Bayesian Racism*TSRM	.432	1.607	.577
Colorblind Racial Attitudes*TSRM	.107	2.765	.792

Note: Separate regressions were also conducted individually for each predictor variable prior to running the multiple regression with all controls and predictors as a secondary check for the presence of multi-collinearity. Two additional multiple regression models were conducted with the two sub-dimensions of the outcome – the quality of student-teacher relationships (closeness and conflict) to further examine how the predictors related to each sub-dimension. In all of these regressions, the only significant predictor was the Bayesian Racism Scale. B = unstandardized regression coefficient; SE = standard error. *$p <$ 0.05; ** p<0.01.

Research Question Three

Teacher perceptions were gathered using three open-ended questions to better understand how a students' racial and ethnic identity influenced their development and maintenance of relationships with students who identify as a different race or ethnicity than themselves. Out of the 100 teachers who responded to at least one of the three open-ended questions, teachers primarily discussed specific techniques for developing and maintaining interpersonal relationships with students who are racially and ethnically diverse from themselves ($n = 93$, 93%). Teachers also mentioned other strategies, though less frequently, such as altering teaching practices ($n = 33$, 33%) and engaging in personal preparation ($n = 25$, 25%). All qualitative codes, definitions, frequencies, and exemplar quotes are provided in Table 4.4.

Techniques to Develop and Maintain Interpersonal Relationships

Teachers provided examples of specific techniques they use to develop and maintain interpersonal relationships with students who are racially and ethnically diverse from themselves. The majority of teachers described "treating every student the same" (67%) as a way to develop and maintain relationships with students from diverse racial and ethnic backgrounds. In their responses, they mentioned setting consistent expectations and being fair to students. Some teachers specified that they particularly did not want to use a students' race or ethnicity to change their behaviors or interactions with students. For example, one participant shared, "All students have differences and so I try my best to see them as individuals and not base that on their race alone." Meanwhile, other teachers simply described equal treatment without further explanation, sharing "All of my students are treated equally no matter their racial or ethnic identity" and "I treat

115

everyone the same." Along with describing consistent approaches to forming relationships with all their students, teachers also shared that students' race or ethnicity did not matter in the classroom. One teacher wrote, "I let them know that I believe color is only skin deep, and that when they walk through my classroom door they become my children no matter their skin color, ability level, or any other differences."

While two-thirds of teachers described treating all their students the same or equally, teachers also shared other strategies they use to develop and maintain relationships with students who are diverse in terms of racial and ethnic background from themselves, including *asking about students and their families* (35%) and *using positive communication with students* (24%). Teachers specifically asked students about their racial and ethnic identities and family routines to build relationships and showed a specific interest in understanding how those identities mattered to students. One teacher stated, "I ask my students questions about their family and their family routines as a way into understanding different identities and cultures in the classroom and give a voice to different students in the classroom." Additionally, more common techniques that teachers described related to their positive communication and demeanor with students. About a quarter of teachers mentioned maintaining positive communication with students, some staying in contact with students beyond their time in the teacher's classroom. For instance, a teacher wrote, "I take time to have conversations with my students who are different from me racially/ethnically" and another shared, "I want them to know that they are seen and heard and not just another students in the building."

Similarly, teachers described trying to develop genuine connections with students by *showing sincerity toward students* (18%) and *understanding student's interests* (18%).

Teachers described caring for students, showing sincerity through their actions toward students, and showing empathy. For instance, one teacher stated, "Have a high degree of love for students, with equal, fair, sincere attitude towards students." Teachers also worked to understand students likes, dislikes, and hobbies to become closer with students. For example, teachers shared, "I ask students about their interests and bring them back up later by asking about them" and "I like to get to know my students by talking to them about their likes, dislikes, etc. "

In addition to these aforementioned techniques, teachers also described *supporting students inside and outside of the classroom* (14%), *respecting student perspectives* (13%), and *praising students* (10%). Teachers provided several examples of attending sporting events, afterschool activities, and joining students for lunch in order to show their support for students outside of the classroom. They also mentioned how respecting students and their perspectives was a technique they used. For example, one teacher shared, "I first of all listen and respect different cultures and views." Another common strategy was showing affection or praise towards students, often talking about student success. For example, a teacher wrote, "Celebrating what makes students themselves is a good way to build a trusting relationship with students."

Teachers also described techniques that directly involved recognizing students' racial or ethnic identity and the role that could play in their relationships with students from diverse racial and ethnic backgrounds. These strategies included *holding frank conversations about racism and discrimination* (8%), *building trust* (6%), and *sharing personal information about themselves* (4%). Teachers mentioned how they shared their own opinions on racial equity and engaged students in *frank conversations about racism*

117

and discrimination. One teacher shared, "I do not shy away from frank communication with them about the possible status quo and individual cases of racial discrimination." Similarly, other teachers mentioned *building trust* with students generally, though they did not expand on these strategies. For example, they only shared short statements, such as " They need to know that I am here for them." They also described *sharing personal information*, particularly of family members who were racially and ethnically diverse. One teacher mentioned, "For example, stories about my wonderful bi-racial grandson and nephew as well as my beautiful African-American step granddaughter." Lastly, a few teachers each mentioned other techniques for developing and maintaining interpersonal relationships, such as *conducting home visits* (2%), *using student-level data* (3%), and *correctly pronouncing student names* (2%).

Altering Teaching Practices

Another distinct way that teachers tried to develop and maintain relationships with diverse students was to change practices in their classrooms by *diversifying class content* (27%), *creating an inclusive environment* (12%), and *adding physical materials to the classroom* (3%). Teachers diversified content by providing individualized instruction, including specific materials relevant to students' particular racial or ethnic identity and culture. For example, several teachers mentioned class materials such as, "My district is mainly white, upper middle class, and by using POC [Person of Color] in my lecture notes/pictures, it helps me represent my students who are of different ethnicities/racial backgrounds…" and "I teach high school science and anytime I need to include pictures of people in my lecture notes, they are always mainly People of Color

118

(POC)." Other teachers mentioned selecting specific course textbooks or reading

materials that relate to students' own backgrounds. One teacher shared,

> Understanding their racial or ethnic identity may influence the texts that I choose
>
> to cover so that my students can see themselves in their learning but it does not
>
> directly impact how I go about getting to know them or interacting with them as
>
> individuals.

Additionally, another teacher shared, "We read a lot of diverse books in our classroom so

students can see themselves in stories (because I am not of the same racial/ethnic identity

as them)."

Beyond implementing diverse class content to work with students from different

racial and ethnic backgrounds, teachers also made efforts to make their *classroom*

atmospheres supportive by *creating an inclusive environment* (12%) and *adding physical*

materials to the classroom (3%). Teachers mentioned intentionally creating opportunities

for students from different racial and ethnic backgrounds to work in class together. One

teacher shared how they, "We as a class work to get to know each other - respect what is

different and form bonds over what is the same." Other teachers described changing the

physical classroom materials, such as curating a student library representative of students.

For example, teachers wrote, "I include books in our library that reflect the background

of the students in my classroom" and "My classroom library has diverse books

ALWAYS but I make sure I add books that are representative of students."

Personal Preparation

Two additional techniques that emerged from teachers' responses about how they

developed and maintained relationships with students of a different race or ethnicity than

themselves were *self-reflection on personal attitudes or beliefs about students* (20%) and *work to understand students' racial or ethnic identity* (9%). Distinct from earlier interpersonal techniques regarding asking students about their racial or ethnic identities, teachers engaged in self-reflection, stating an awareness of their own personal beliefs and how students' race or ethnicity should shape the way they are treated in schools. For example, teachers shared statements such as," I try to be aware of my own biases" and "I try to not assume anything about students home lives and learn more about their home culture from each student, even those with what I would assume would be a similar background." Other teachers described how they worked to understand students' racial or ethnic identity, through research on particular cultures and racial or ethnic identities, and prior involvement in racial justice groups or organizations. For instance, a teacher shared about taking the time to develop more cultural awareness, "In order to develop a relationship with students, we must be culturally aware and understand what is acceptable and what is not acceptable."

Other Teacher Responses

Finally, a few teacher responses were categorized as "*Other.*" Some teachers responded with miscellaneous responses that did not answer the question (5%). Other teachers indicated that they were *unsure of how to respond* or *did not know* (6%) of any specific strategies they used to develop and maintain relationships with students who were racially and ethnically diverse from themselves. Similarly, some teachers also wrote *"none" or "NA"* (6%) in response to the open-ended questions.

Table 4.4 Teachers' strategies to develop and maintain relationships with students of a different race/ethnicity than their own

Code	Definition	Frequency[a]	Exemplar Quotes
Techniques to Develop and Maintain Interpersonal Relationships (*n* = 93, 93%)			
Treating Every Student the Same	Being consistent with expectations, treating all students the same, having fair and having consistent expectations with all students. Responses such as everyone is equal, treat all fairly, treat all equally, are all the same, and/or suggest everyone is the same.	67	*"I treat all students in my classroom the same no matter what their racial or ethnic identity is"*
Ask About Students and Their Families	Building or creating relationships with families/parents (e.g., bonds, connections), including asking students to share cultural/racial experiences or asking students to give examples from their own lives or cultures.	35	*"I try to learn more about them as individuals and their backgrounds, I want students to know that I am interested in their racial and ethnic identities"*
Positive Communication with Students	Talking, speaking, and staying in contact with students.	24	*"I maintain relationships by continuing to see or stay in contact with the student and his/her family."*
Show Sincerity Toward Students	Sincere, caring, show affection toward students (e.g., smile every day, let them know I am glad to see them), including empathy or understanding.	18	"I am welcoming and genuinely happy to greet my students every morning."
Understand Student's Interests	Getting to know students' likes and dislikes, interests, and personal goals.	18	*"I also find out what kinds of music, movies and tv, sports, and other pop culture things the students enjoy the most."*
Support Students Inside and Outside of the Classroom	Involvement in activities inside and outside of the school day, such as attendance at afterschool activities, extracurricular activities, games, lunch, football, and community events.	14	*"Attending after school activities such as sporting events or club events also provides another visual level of support."*
Respect Student Perspectives	Respect to students, respecting their perspectives, experiences, and/or personalities	13	*"Respecting them as individuals and for who they are."*
Praising Students	Celebrate, praise, encourage or give attention or paying attention.	10	*"I give praise and encouragement to build confidence."*
Hold Frank Conversations about Racism and Discrimination	Share their opinion or beliefs about racial equity, including an honest exchange of ideas.	8	*"I have also had conversations about hot topics like racism."*

Build Trust	Build trust with students, including maintain student confidentiality.	6	*"The first thing I do is to establish a good, trusting teacher-student relationship with such students,"*
Share Personal Information about Themselves	Make connections to students through sharing about themselves through photos, talking about their families, and world experiences, including specific reference to racially or ethnically diverse family members	4	*"If I feel it will help in certain situations, I will share pictures and stories about my grandchildren and family members who are racially different from me."*
Use Student-Level Data	Uses access to student-level data, including student academic, behavioral, class planning etc. (powerschool; district monitoring software/program), and/or student surveys to better understand student experiences.	3	*"I also do my research with the information provided in Power School so I understand learning needs and living situations to avoid awkward assumptions taking place in class."*
Conduct Home Visits	Visit the students' home or explicitly a 'home visit.'	2	*"Get to know them on a personal level – home visits"*
Correctly Pronounce Student Names	Pronounce student names, not giving a student a nickname to avoid using real name.	2	*"Knowing my students names in the first few weeks of school tends to spark notice since I work with some educators who will assign nicknames to students whose names are 'too difficult to remember'."*
Altering Teaching Practices (*n* = 33, 33%)			
Diversify Class Content	Integrate content and representation from different racial and ethnic groups in class, including changing content in class (e.g., representation in class lectures/powerpoints), curriculum (books, learning materials from their culture or background), morning meetings, offer help 1on1, individualized instruction (i.e., "implement things in my class the surrounds their culture"), check-ins, PBIS, and inclusive holiday celebrations.	27	"If I have students that are multilingual learners, I am going to intentionally find ways to share their culture by sharing holidays, festivals, and their language throughout the year."
Create an Inclusive Environment	Creates a safe space in the classroom where students are listened to and inclusive groups in the classroom (e.g., not separating one racial group from another in the class).	12	*"Provide opportunities for peers to interact with the students whose racial or ethnic identity differs."*
Add Physical Materials to the Classroom	Displays in the classroom, books on class bookshelf, collages, inclusive of traditions/ethnic identities in decorating the room.	3	"Making all students feel welcome by including some of their own traditions/ethnic identities in decorating the room."

Personal Preparation (n = 25, 25%)			
Self-Reflection on Personal Attitudes or Beliefs About Students and their Families	Checks their own assumptions of family compositions, student experiences (e.g., poverty, two-parent, single-parent, heteronormative, understand family structure).	20	*"I also STILL have to check my biases and prejudices when dealing with students of color, because it is so pervasive."*
Work to Understand Student's Racial or Ethnic Identity	Learn about their culture, identity, ethnicity, and/or cultural differences (i.e., "learn about their culture"), including prior engagement or education (undergraduate or graduate) focused on racial justice or diversity, equity, and inclusion.	9	*"I have spent a good deal of time studying racial injustice in America in my own education, working in undergraduate with a theater group called Black Action Theater where we did plays that examined racial injustice."*
Other (n = 17, 17%) .			
Miscellaneous	Responses that did not fit in prior broad codes nor subcodes.	5	
Don't know/Not sure	They don't know or are unsure.	6	"Honestly, if there was an 'unsure' button, I would have hit that."
None/Not Applicable	No, NA, and none.	6	"no"

Note. [a] Frequencies are out of the 100 teachers in the qualitative sample and represent the number of unique individuals represented in each of the codes and subcodes. Subcode frequencies may be greater than the frequencies of teachers represented in the broader codes as a single individual could name three separate techniques but would only be represented once in the frequency of the broader code category.

CHAPTER 5

DISCUSSION

The purpose of this mixed method study was to better understand interpersonal racism in PK-12 public school classrooms and contribute to the growing educational justice movement in the US. Specifically, this study examined the relationship between teachers' implicit and explicit racial biases and the quality of student-teacher relationships, and the possible role teacher-student racial mismatch at the classroom-level could have in moderating this relationship. This study also explored how teachers developed and maintained relationships with students from racial and ethnic backgrounds different from themselves.

Overall, in this study, only one of the three indicators of teacher explicit racial bias – the Bayesian Racism Scale – was a significant predictor of the overall quality of student-teacher relationships. Higher reports of racist attitudes on the Bayesian Racism Scale predicted lower quality student-teacher relationships. This finding aligns with prior research that has found that teachers who hold negative racial stereotypes of students based on their racial or ethnic identity use those beliefs to draw conclusions about students' lack of academic motivation and ability in school (Quinn, 2017; Chang & Demyan, 2007; Rueda, 2015; Soumah & Hoover, 2013). Moreover, the negative impact of explicit racial bias in this study also demonstrates how concepts such as Deficit Thinking, where racial stereotypes are upheld and perpetuated (Valencia, 2010a; 2010b),

may manifest and lead to the continued oppression of students from historically marginalized racial and ethnic backgrounds (Valencia & Solorzano, 1997).

Surprisingly, however, the same effects were not observed for the two additional indicators of explicit racial bias used in this study (Feelings Score and Colorblind Racial Attitudes). It is possible that the overt nature of racist attitudes has a greater impact on the interpersonal interactions between teachers and students compared to colorblind racial attitudes. In contrast to racist attitudes, holding colorblind attitudes or race-neutral views may not alter the quality of student-teacher relationships in the same way as holding racist attitudes. For example, teachers may hold colorblind attitudes under the guise of equality, using these views to support their reasoning for responding the same to students regardless of their race or ethnicity. Teachers who hold racist attitudes, however, may instead be acting on these beliefs, discriminating against students from these backgrounds, lowering expectations, and experiencing more conflict with their students which lead to lower quality student-teacher relationships. Another potential explanation for the differences found between the explicit racial bias measures could be that the Feelings Thermometer is not a validated measure and showed on average no difference between teachers' rating of warmth toward Black and White individuals in this study. Therefore, the Feelings Score may not be a valid measure of explicit racial bias and may need to be further validated before being used in additional research studies. So overall, while this study points to differences in the quality of student-teacher relationships based on teachers' self-reported racist attitudes, there continues to be a need for additional research to investigate how explicit racial bias appears in student-teacher relationships in the classroom, and what strategies may be effective in reducing these types of biases.

Unexpectedly, and in contrast to the findings related to explicit racial bias, implicit racial biases did not significantly relate to the quality of student-teacher relationships. Most teachers in the study showed a preference for White individuals over Black or African Americans (87% held pro-White racial biases), which reinforces the presence of implicit racial bias in the classroom and confirms prior research showing teachers, similar to all people, hold implicit racial biases (Chin et al., 2020; Denessen et al., 2021). Yet, this finding also reflects the mixed evidence on the impact of teacher implicit racial bias on student outcomes (Dávila, 2015; Denessen et al., 2021; Gawronski et al., 2020; Peterson et al., 2016; Staats et al., 2015). In other studies, teacher implicit racial bias resulted in lower or worse academic outcomes such as math scores, but had no effect on reading scores (Chin et al., 2020; Dávila, 2015; Fix et al., 2021; Marcucci, 2020; Pena-Shaff et al., 2019; Warikoo et al., 2016). There are several potential explanations as to why implicit racial bias may not have been a significant predictor in this study. First, due to the unconscious nature of implicit racial biases, teachers may be unaware of these views and report higher quality relationships than their students would report, since recent research found student reports of student-teacher relationships suggest differences in the quality of these relationships based on students' racial or ethnic identity (Burrell-Craft et al., 2022). Additionally, teachers may already be engaging in efforts to reduce or eliminate the implicit racial biases they hold by receiving specific professional development in their schools or possibly working outside of school to better understand their own biases. Therefore, there is a pressing need to further explore these aforementioned alternative explanations more closely to understand whether additional school-level characteristics (e.g., student population composition, racial-equity initiatives,

professional development) and teacher-level characteristics and strategies change the presence of implicit racial biases.

Beyond teacher racial biases, mismatch between teacher and student race or ethnicity was explored to determine if racial mismatch at the classroom level would moderate the impact of teacher racial biases on the quality of student-teacher relationships. In contrast to prior research showing teacher-student racial mismatch at the school and individual-level (direct match between student and teacher racial demographics) could influence teachers' reports of student outcomes, such as academic grades, test scores, and teachers' reports of academic motivation (Fox, 2016; Gershenson et al., 2016; La Salle et al., 2020; Pena-Shaff et al., 2019; Staats, 2014), teacher-student racial mismatch at the classroom-level was not found to moderate the relationship between teacher implicit and explicit racial biases and the quality of student-teacher relationships in this study. This means that teachers having the same race or ethnicity as the majority of their primary classroom students did not offset the impact of teacher racial biases as expected. This finding should be taken in context, however, because while the teacher sample was about evenly split in terms of mismatch, the teacher sample had limited racial and ethnic diversity (about 25% of teachers self-identified as a racially or ethnically marginalized group). As a result, this limited the ability to further examine differences in types of mismatch at the classroom-level based on the race or ethnicity of the teacher (e.g., Black teachers with majority White students). In these particular cases, mismatch may not operate similarly due to a lack of racial biases among teachers from racially and ethnically diverse backgrounds, as Black teachers have been found to hold little to no implicit racial bias against Black nor White students (Chin et al., 2020). For

127

instance, if a teacher who identifies as Black holds no racial biases against White students and is teaching primarily White students, then there may be little to no bias to mitigate through teacher-student racial mismatch. In this study, mismatch was also examined at the classroom-level, however, recent research has demonstrated that the larger school-level racial and ethnic composition can result in lower rates of implicit racial bias among White teachers. This suggests that working alongside more diverse student populations may reduce implicit racial biases among White teachers (Chin et al., 2020), as study correlations indicate that the presence of teacher-student racial mismatch was slightly negatively correlated, though not significantly, with some measures of implicit and explicit racial biases (i.e., implicit association tests, Bayesian Racial Attitudes, and Colorblind Racial Attitudes). Therefore, the lack of moderation of racial mismatch in this study could be explained by the diversity of the larger school population, which was not controlled for in this particular study nor were comparisons made between teachers based on teacher-level (e.g., specific racial or ethnic identities, age) or school-level characteristics (e.g., low versus high composition of students from marginalized racial and ethnic backgrounds). Moreover, additional research should also be conducted to examine the reasons why match between teachers' and students' racial or ethnic group may not act as a strong contributor to differences seen in the quality of student-teacher relationships, and whether this holds true when the quality of student-teacher relationships is measured from student perspectives and additional school-level characteristics are controlled for in the analytic models.

This study also explored specific strategies teachers used with students from different racial and ethnic backgrounds than themselves, and whether they changed these

strategies based on their students' racial or ethnic identity. Teachers in this study primarily focused on several active strategies for developing and maintaining interpersonal relationships with students who were from different racial and ethnic backgrounds than themselves. Teachers emphasized trying to understand students and families' unique racial and ethnic identities and cultural values, identifying common or shared values and experiences, and showing support for students outside of the classroom (e.g., extracurricular activities). Among these specific strategies for developing and maintaining interpersonal relationships, some teachers in this study were already integrating strategies that research has found strengthen student-teacher relationships among diverse samples of students (i.e., praise, respecting students' perspectives, conducting home visits, and getting to know students; Kincade et al., 2020). This finding is encouraging as it suggests teachers are focusing on improving student-teacher relationships which are explicitly linked to academic achievement and engagement, high school graduation, and school climate (Allen et al., 2018; Archambault et al., 2009; Davis & Dupper, 2004; Golden et al., 2018; Roorda et al., 2011; Verhoeven et al., 2019).

However, another important finding of this study was that not all of the interpersonal relationship strategies teachers mentioned in this study seem to be driven by evidence-informed practices. Despite describing specific strategies used with students who were racially and ethnically diverse from themselves, teachers also reported among these strategies making no changes to their approaches based on a students' race or ethnicity. Nearly a third of the teacher open-ended responses indicated teachers used an approach where they "treated every student the same." This finding is most concerning because although some teachers infused explanations of an intent to maintain fairness and

129

consistency by approaching developing and maintaining relationships the same as they would with any child, the majority described simply taking no additional measures to develop and maintain these relationships. This finding also emphasizes theoretical concepts from the Theory of Racialized Organizations, which describes how unequal opportunities persist among organizations leveraging equal, but not equitable practices and policies (Ray, 2019). So, while these race-neutral or colorblind approaches emphasized teachers' intentions to be equal in the classroom, these approaches may invalidate students' racial-ethnic identity and leave out the importance of racial socialization in students' development, educational experience, and lifelong intersections of students' racial or ethnic identity and their educational experiences (Del Toro & Wang, 2021). Schools, and therefore teachers, play an important role in helping students develop their racial and ethnic identities, especially during adolescence where critical identity development occurs (Aldana & Byrd, 2015). For instance, colorblind practices noted by teachers, in combination with the explicit racial biases reported, may lead students to internalizing racism where they begin to believe the negative perceptions and stereotypes about their own racial or ethnic identity (Benson & Fiarman, 2020; Kohli & Solorzano, 2012; Liou et al., 2019). In addition, the racial socialization students' experience at school has been linked to important school outcomes (e.g., school racial climate, academic motivation; Byrd & Chavous, 2011) and students' own wellbeing (e.g., depression, anxiety; Willis et al., 2021). Therefore, particular attention is needed to combat these colorblind approaches that teachers report using with students from diverse racial and ethnic backgrounds.

Finally, in contrast to colorblind or race neutral strategies, it is encouraging that teachers in this study also described altering their teaching practices and diversifying class content as a way to develop and maintain relationships with students from diverse racial and ethnic backgrounds. These two approaches more closely mirror effective pedagogical approaches, commonly referred to as culturally responsive pedagogy or culturally responsive teaching practices, which are part of all 50 states' teaching competencies (Gay, 2002; Gay, 2015; Muniz, 2019; Whitaker, 2020; Rychly & Graves, 2012). Therefore, an unexpected but positive finding from this study is that a third of teachers report engaging in culturally responsive teaching practices. However, continued attacks targeting critical race theory, have also threatened culturally responsive teaching practices, conflating it with critical race theory, naming it "the other CRT" (Tugend, 2022). It is important that teachers continue to be able to implement these teaching practices, particularly when working with students from racially and ethnically diverse backgrounds.

Limitations

Several limitations must be noted to the current study. Data were collected only from the teacher's perspectives and at a single time-point. This approach limited the ability to triangulate reports of the quality of student teacher relationships with student perspectives and did not capture the duality of student-teacher relationships as a dyadic relationship between two individuals, the teacher and the students. Future research should evaluate multiple perspectives of the quality of student-teacher relationships and explicit racial biases, allowing for triangulation of results across stakeholders. In addition, use of case-wise deletion in place of more advanced approaches (e.g., multiple imputation,

131

probability weighting) to address missing data may have introduced sample bias in the study. And, while 115 teachers representative of 29 states completed the survey, a broader and more nationally representative sample of US PK-12 public school teachers is also needed in future research to broaden generalizability of study results. Further, critical analysis of how quantitative data can be leveraged to understand complex societal issues of race and racism, while also employing designs and methodological approaches that align with critical methodologies (e.g., QuantCrit; Gillborn et al., 2018), should be considered in future research designs.

Another limitation of the study is the inability to provide a survey response rate due to the recruitment procedures used in this study, which included emails to research and school partners (e.g., school districts, teachers, principals) and posts on social media (i.e., Twitter, Facebook). In addition, recruitment through social media made the online survey vulnerable to malicious actors (e.g., "bots"). Although precautions were taken before conducting the online survey, and data cleaning measures were used after data collection, there is still a risk of lingering malicious actor responses in the final dataset that may influence study results. Therefore, in the future, researchers may consider limiting social media and widespread recruiting and utilize more direct recruitment through schools and emails to teachers to minimize exposure to malicious actors.

Further, there are also measurement limitations to note. Particularly, teachers' implicit racial bias is difficult to measure. Given the sensitive nature of the topic of race in the divisive US political and educational context, and despite the use of implicit association tests to uncover unconscious attitudes, teachers may have worked to select the socially or politically appropriate responses (Carpenter et al., 2019; Greenwald et al.,

1998; Gawronski & De Houwer, 2014). In these instances, participants may have worked to overcome the implicit nature of the test to consciously make a selection based on what is believed to be the "right" or "appropriate" response. Despite prior validation of the measure used in this study, a large number of participants did not complete nor progress through the survey beyond the implicit racial bias measure or were removed from the sample due to completing the measure too slowly or too quickly. Therefore, additional research should consider implicit bias measures which could reduce respondent burden and increase participation rates. Future research might also focus on collecting data regarding teacher beliefs and attitudes toward diversity, equity and inclusion, about specific racial and ethnic groups, or consider measuring school data related to belonging, connectedness, and climate toward racially and ethnically diverse students in the school as a way to determine if there are inequities in student experiences at school. Moreover, teacher-student racial mismatch was measured using a proxy with teacher reports of the racial or ethnic identity of the majority of students in their primary classroom. Therefore, there may be discrepancies in students' actual characteristics. It may also be helpful to more deeply investigate different types of teacher-student racial mismatch occurring in the classroom (e.g., majority minority serving schools and school districts), and the effects on student outcomes. For example, future research could consider additional variations of teacher-student racial mismatch specific to each racial or ethnic subgroup (e.g., teachers who self-identify as Black or African American with a classroom majority of students who self-identify as Hispanic or Latinx), which was not possible in this study given that the majority of the teachers in the study identified as White.

Recommendations for Future Research

While this study was limited in scope to the perspectives of teachers, future research should utilize a more rigorous sampling strategy (e.g., stratified random sampling) to recruit a nationally representative sample of teachers. In addition, teacher-level characteristics, including teaching experience, educational and workforce preparation, and demographic characteristics, could be examined in greater detail to understand if implicit and explicit racial biases differ based on these characteristics. Further examination of teacher-level characteristics may allow for particular subgroups of teachers to be identified and aid in developing more targeted interventions to reduce teacher implicit and explicit racial bias, and improve the quality of their student-teacher relationships with students from diverse racial and ethnic backgrounds. Similarly, school contexts, such as the geographic region, school-level (e.g., elementary, high school), and prior equity-related school-wide efforts, should be analyzed to determine whether these factors may change or reduce the negative impact of the presence of teacher implicit and explicit racial bias on student outcomes.

Further, only a few of the strategies teachers reported using to develop and maintain relationships with students who are racially and ethnically diverse from themselves have been shown in the research to improve the quality of student-teacher relationships. Therefore, it is also apparent that additional research is needed to better understand whether other reported interpersonal strategies and alternative teaching practices are effective for improving the quality of student-teacher relationships, particularly among students who are marginalized based on their race and ethnicity.

More research also should be conducted that examines potential factors which motivate or discourage teachers from engaging in equitable teaching practices and

interventions targeting reducing teacher implicit and explicit racial biases, particularly in the classroom. For instance, only a few interventions do exist that target pre-service teachers in order to reduce teacher racial biases (Whitford & Emerson, 2019), and the uptake, implementation, and effectiveness of these interventions are not yet clear. In particular, intervention development in this area could work to reverse the negative effects of explicit racial bias seen in this study, and possibly leverage other school stakeholders committed to equity and social justice (i.e., social workers). Researchers may also consider partnering directly with schools and school districts to leverage new funding sources from the Center for Disease Control, Institute for Education Sciences, and foundations, such as the Russell Sage Foundation and William T. Grant Foundation, who have each introduced equity and implicit and explicit racial bias-specific funding mechanisms which prioritize research working toward equitable wellbeing outcomes for students in the US (CDC, 2023; NASEM, 2022; RSF, 2023; William T. Grant Foundation, 2023).

Further, accredited social work programs should consider the extent to which social workers are trained to not only engage in, but also lead, racial equity work in their practice. Recent socio-political tensions and divisiveness of social-equity work in the US has showcased the dire need for social workers to be trained in responding to increasing social, economic, and educational inequities (Ball & Skrzypek, 2020; Crutchfield et al., 2020). The 2022 Council on Social Work Education Educational Policy and Accreditation Standards (EPAS; CSWE, 2022) provide explicit outcomes to support social work students in developing competency in anti-racist practice. For example, social work students could be supported in alignment with the current anti-racist

135

competencies within the CSWE EPAS through discovering their own implicit and explicit racial biases and developing their clinical skillset to help teachers and other school stakeholders build awareness and participate in interventions to reduce these implicit and explicit racial biases. Yet, additional research is needed to evaluate existing social work educator practices and understand how course curricula across social work programs are being developed to explicitly meet one of the 13 Grand Challenges in Social Work that focuses on eliminating racism (Teasley et al., 2021). In addition, more research is also needed to determine whether anti-racist competencies lead to anti-racist practice among social workers, and more specifically facilitating implementation of racial bias-mitigating interventions across their practice settings. In addition, researchers may focus on learning from current practicing social workers, particularly in education and youth-serving organizations, through interviews and other qualitative approaches, to better understand current levels of preparedness and engagement in implicit and explicit racial bias work across the US.

Practice Implications

Several recommendations can be made for future school social work and education practice to create equitable student outcomes and minimize teacher biases. This study further reinforces the responsibility and critical role social workers in educational spaces have to elevate concerns regarding teacher implicit and explicit racial biases. Social work is particularly called to support efforts to eliminate racism, and social workers already hold clinical skillsets ideal for dismantling inequitable systems to move toward educational justice for students who are marginalized based on their race or ethnicity (Ball, 2021; Crutchfield et al., 2020; Teasley et al., 2021). More specifically,

136

school social workers and other school stakeholders may consider investigating the presence and impact of teacher implicit and explicit racial bias in their own school setting. For example, schools were recently required to report on one additional non-academic accountability measure with the reaffirmation of ESSA (ESSA, 2018). School social workers could encourage schools to use and disaggregate existing school data, particularly the quality of student-teacher relationships, which traditionally are not reported nor explored by student subgroup in the same ways as academic outcomes. These disaggregated non-academic student success accountability measures (e.g., student-teacher relationships, school climate, student safety) may help schools and school social workers to better understand which student-teacher relationships could be improved by racial and ethnic subgroup.

Social work educators also hold an important role in developing social workers who are prepared to intervene and increase transparency of differences in student outcomes particularly for students who are marginalized based on their racial or ethnic identity, to advocate for system-level change and drive equitable educational outcomes in their schools or youth serving organizations. Additionally, to reduce or eliminate teacher implicit and explicit racial bias and improve student-teacher relationships, school social workers may leverage existing school data to understand intervention points for school-wide or classroom-level intervention and prevention efforts, possibly in particular grade levels or among specific teacher or student groups. Larger-scale advocacy with the support of national social work and school social work organizations may also be mobilized to encourage policymakers to adopt ESSA policy changes to require reporting these outcomes by student racial and ethnic subgroups in order to provide transparency

137

across these key non-academic student outcomes. These approaches are needed to unpack whether these disparities exist due to teacher racial implicit and explicit biases.

Teacher preparation programs are another key point where practical changes could be implemented to add education, pre-service training, and interventions to mitigate teacher implicit and explicit biases. To date, a review of teaching standards indicated only three states have teaching competencies regarding teachers' understanding the forces of institutional racism in schools (Muniz, 2019). However, it is not clear how teachers are encouraged or required to evaluate and mitigate their own personal and interpersonal biases, particularly in relationship to their implicit and explicit racial biases. States and accredited teacher education programs may consider looking toward states with existing specific teaching competencies regarding teacher implicit and explicit racial bias to alter and implement their own competencies. In addition, even state teaching programs currently using competencies that include culturally responsive teaching and recognition of biases, may expand these competencies from only institutional racism to include interpersonal racism. For instance, teachers could be supported, prior to entering the teaching workforce, in identifying and understanding approaches to reduce and mitigate the influence of their implicit and explicit racial biases in the classroom. Together, PK-12 public schools and higher education settings are critical spaces to continue exploration of teachers' implicit and explicit racial biases, support self-exploration, and introduce evidence-informed interventions to help mitigate these racial biases in the classroom.

Conclusion

Overall, in this study, teacher explicit racial bias significantly predicted lower quality student-teacher relationships, while teacher implicit racial bias and teacher-student racial mismatch at the classroom level did not significantly predict this student outcome. Teachers in this study also reported utilizing a mixture of interpersonal relationship strategies, altering their teaching practices, and integrating culturally responsive teaching to develop and maintain relationships with their students from diverse racial and ethnic backgrounds. Together, these key findings point to teacher explicit racial bias as a possible contributor to the interpersonal racism occurring in PK-12 public school classrooms. Critical next steps for research and practice in social work and education involve understanding more about the motivating factors for engaging teachers in bias-mitigating interventions and further examining relevant teacher and school characteristics that change the influence of racial biases in order to help provide equitable school spaces for students from racial and ethnically marginalized backgrounds.

REFERENCES

Afghari, A. P., Washington, S., Prato, C., & Haque, M. M. (2019). Contrasting case-wise deletion with multiple imputation and latent variable approaches to dealing with missing observations in count regression models. *Analytic Methods in Accident Research*, *24*, 100104–. https://doi.org/10.1016/j.amar.2019.100104

Allen, K., Kern, M. L., Vella-Brodrick, D., Hattie, J., & Waters, L. (2018). What schools need to know about fostering school belonging: A meta-analysis. *Educational Psychology Review*, *30*(1), 1-34. https://doi.org/10.1007/s10648-016-9389-8

Archambault, I., Janosz, M., Fallu, J. S., & Pagani, L. S. (2009). Student engagement and its relationship with early high school dropout. *Journal of Adolescence, 32*(3), 651-670. https://doi.org/10.1016/j.adolescence.2008.06.007

Atkin, A. L., Christophe, N. K., Stein, G. L., Gabriel, A. K., & Lee, R. M. (2022). Race terminology in the field of psychology: Acknowledging the growing multiracial population in the U.S. *The American Psychologist,* 1-12. https://doi.org/10.1037/amp0000975

Axt, J. R. (2018). The best way to measure explicit racial attitudes is to ask about them. *Social Psychological & Personality Science*, *9*(8), 896–906. https://doi.org/10.1177/1948550617728995

Baber, L. D. (2017). Beyond the "tenets": Reconsidering critical race theory in higher education scholarship. In *Critical Race Theory in Education* (1st ed., pp. 182–199). Routledge. https://doi.org/10.4324/9781315709796-11

Baker, T. L. (2012). *Student and School Characteristics: Factors Contributing to African American Overrepresentation for Defiance*. ProQuest Dissertations Publishing.

Baker, B. D. (2018). E*ducational Inequality and School Finance: Why Money Matters for America's Students*. Harvard Education Press.

Baker, T. L. (2019). Reframing the connections between deficit thinking, microaggressions, and teacher perceptions of defiance. *The Journal of Negro Education*, *88*(2), 103–113. https://doi.org/10.7709/jnegroeducation.88.2.0103

Ball, A. (2021). Calling social work to the movement for educational justice. *Social Work Research*, *44*(4), 267–277. https://doi.org/10.1093/swr/svaa014

Ball, A., & Skrzypek, C. (2020). School social work and the educational justice movement: A snapshot of practice. *Children & Schools, 42*(3), 179-186. https://doi.org/10.1093/cs/cdaa014

Bañales, J., Aldana, A., Richards-Schuster, K., & Merritt, A. (2021). Something you can see, hear, and feel: a descriptive, exploratory mixed-methods analysis of youths' articulations about racism. *Journal of Adolescent Research*, 1-35. https://doi.org/10.1177/07435584211062117

Baron, R. M. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Bartolome, L. (1994). Beyond the methods fetish: Toward a humanizing pedagogy. *Harvard Educational Review*, *64*(2), 173–194. https://doi.org/10.17763/haer.64.2.58q5m5744t325730

Bastable, E., McIntosh, K., Falcon, S. F., & Meng, P. (2021). Exploring educators'
commitment to racial equity in school discipline practice: A qualitative study of
critical incidents. *Journal of Educational and Psychological Consultation*, 1-31.
https://doi.org/10.1080/10474412.2021.1889194

Beaulieu, R. (2016) A critical discourse analysis of teacher-student relationships in a
third-grade literacy lesson: Dynamics of microaggression. *Cogent Education, 3*,
1-20.

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

Benson, T. A., & Fiarman, S. E. (2020). *Unconscious Bias in Schools: A Developmental
Approach to Exploring Race and Racism*. Harvard Education Press.

Bernard, D. L., Calhoun, C. D., Banks, D. E., Halliday, C. A., Hughes-Halbert, C., &
Danielson, C. K. (2020). Making the "C-ACE" for a culturally-informed adverse
childhood experiences framework to understand the pervasive mental health
impact of racism on black youth. *Journal of Child & Adolescent Trauma*, *14*(2),
233–247. https://doi.org/10.1007/s40653-020-00319-9

Black, D. W. (2017). Abandoning the federal role in education: The every student
succeeds act. *California Law Review, 105*(5), 1309-1374.

Blaisdell, B. (2016). Schools as racial spaces: Understanding and resisting structural
racism. *International Journal of Qualitative Studies in Education*, *29*(2), 248-272.
https://doi.org/10.1080/09518398.2015.1023228

Bierbaum, A. H., & Sunderman, G.L. (2021). School desegregation, school re-zoning,

    and growth management in two Maryland counties. *Education Policy Analysis*

    Archives, 29(165), 1-34. https://doi.org/10.14507/epaa.29.6111

Bottiani, J. H., Bradshaw, C. P., & Mendelson, T. (2016). Inequality in black and white

    high school students' perceptions of school support: An examination of race in

    context. *Journal of Youth and Adolescence*, *45*(6), 1176–1191.

    https://doi.org/10.1007/s10964-015-0411-0

Brinkworth, M. E., McIntyre, J., Juraschek, A. D., & Gehlbach, H. (2018). Teacher-

    student relationships: The positives and negatives of assessing both perspectives.

    Journal of Applied Developmental Psychology, *55*, 24–38.

    https://doi.org/10.1016/j.appdev.2017.09.002

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development.

    American Psychologist, 32(7), 513–531. https://doi.org/10.1037/0003-

    066X.32.7.513

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

Brown v. Board of Education, 347 U.S. 483 (1954).

Burchinal, M., McCartney, K., Steinberg, L., Crosnoe, R., Friedman, S. L., McLoyd, V.,

    & Pianta, R. (2011). Examining the black-white achievement gap among low-

    income children using the NICHD study of early child care and youth

    development. *Child Development*, *82*(5), 1404–1420.

    https://doi.org/10.1111/j.1467-8624.2011.01620.x

Burrell-Craft, K., Eugene, D. R., & Nmah, J. (2022). A look at race, skin tone, and high

school students' perceptions of teacher–student relationship quality. *Social*

Sciences, *11*(7), 1-14. https://doi.org/10.3390/socsci11070274

Call-Cummings, M., & Martinez, S. (2017). "It wasn't racism: it was more

misunderstanding." White teachers, Latino/a students, and racial battle fatigue.

Race, Ethnicity and Education, 20(4), 561–574.

https://doi.org/10.1080/13613324.2016.1150830

Carpenter, T.P., Pogacar, R., Pullig, C., Kouril, M., Aguilar, S., LaBouff, J., Isenberg, N.,

& Chakroff, A. (2019). Survey-software implicit association tests: A

methodological and empirical analysis. *Behavior Research Methods, 51*, 2194-

2208. https://doi.org/10.3758/s13428-019-01293-3

Carter, P. L., Skiba, R., Arredondo, M. I., & Pollock, M. (2017). You can't fix what you

don't look at: Acknowledging race in addressing racial discipline

disparities. *Urban Education*, *52*(2), 207–235.

https://doi.org/10.1177/0042085916660350

Center for Disease Control and Prevention, Healthy Schools (2023). *Notice of Funding*

Opportunity CDC-RFA-DP-23-0002, School-Based Interventions to Promote

Equity and Improve Health, Academic Achievement, and Well-Being of Students.

Retrieved from

https://www.cdc.gov/healthyschools/nofo/nofo.htm#:~:text=The%20Centers%20f

or%20Disease%20Control%20and%20Prevention%20%28CDC%29%2C,Improv

e%20Health%2C%20Academic%20Achievement%2C%20and%20Well-

Being%20of%20Students.

Chang, D. F. & Demyan, A. (2007). Teachers' stereotypes of Asian, Black, and White students. *School Psychology Quarterly, 22*(2), 91–114. https://doi.org/10.1037/1045-3830.22.2.91

Cherng, H. Y. S. (2017). If they think I can: Teacher bias and youth of color expectations and achievement. *Social Science Research*, *66*, 170–186. https://doi.org/10.1016/j.ssresearch.2017.04.001

Cherng, H. Y. S., Halpin, P. F., & Rodriguez, L. A. (2021). Teaching bias? Relations between teaching quality and classroom demographic composition. *American Journal of Education*, 128(2). https://doi.org/10.1086/717676

Childs, T.M. & Wooten, N.R. (2022). Teacher bias matters: An integrative review of correlates, mechanisms, and consequences. *Race Ethnicity and Education*. https://doi.org/10.1080/13613324.2022.2122425

Childs, T.M., Wooten, N. R., & Iachini (in progress). Understanding contributing factors to racial inequity in schools: A theoretical review and conceptual model.

Chin, M. J., Quinn, D. M., Dhaliwal, T. K., & Lovison, V. S. (2020). Bias in the air: A nationwide exploration of teachers' implicit racial attitudes, aggregate bias, and student outcomes. *Educational Researcher, 49*(8), 566-578. https://doi.org/10.3102/0013189X20937240

Cho, J. & Lee, E.-H. (2014). Reducing confusion about grounded theory and qualitative content analysis: Similarities and differences. *Qualitative Report, 19(32), 1-21*. https://doi.org/10.46743/2160-3715/2014.1028

Clark, P., & Zygmunt, E. (2014). A close encounter with personal bias: Pedagogical

    implications for teacher education. *The Journal of Negro Education*, *83*(2), 147-

    161. https://www.jstor.org/stable/10.7709/jnegroeducation.83.2.0147

Collins, D. (2003). Pretesting survey instruments: An overview of cognitive

    methods. *Quality of Life Research*, *12*(3), 229–238.

    https://doi.org/10.1023/A:1023254226592

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155–

    159. https://doi.org/10.1037/0033-2909.112.1.155

Condron, D. J., Tope, D., Steidl, C. R., & Freeman, K. J. (2013). Racial segregation and

    the Black/White achievement gap, 1992 to 2009. *Sociological Quarterly*, *54*(1),

    130–157. https://doi.org/10.1111/tsq.12010

Cooper, C. W. (2003). The detrimental impact of teacher bias: Lessons learned from the

    standpoint of African American mothers. *Teacher Education Quarterly*, *30*(2),

    101-116.

Cohen-Vogel, L. (2005). Federal role in teacher quality: "Redefinition" or policy

    alignment? *Educational Policy, 19*(1), 18-43.

    https://doi.org/10.1177/0895904804272246

Crenshaw, K., Gotanda, N., Peller, & Thomas, K. (1995). *Critical Race Theory: The Key*

    Writing that Formed the Movement. The New Press.

Creswell, J.W. & Creswell, J.D. (2018). *Research Design: Qualitative, Quantitative, and*

    Mixed Methods Approaches (5th ed.). SAGE Publications.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of

    tests. *Psychometrika*, *16*(3), 297-334.

Crutchfield, J., Keyes, L., Williams, M., & Eugene, D. R. (2022). A scoping review of colorism in schools: Academic, social, and emotional experiences of students of color. *Social Sciences*, 11(1), 1-21. https://doi.org/10.3390/socsci11010015

Crutchfield, J., Phillippo, K. L., & Frey, A. (2020). Structural racism in schools: a view through the lens of the national school social work practice model. *Children & Schools*. https://doi.org/10.1093/cs/cdaa015

Dávila, B. (2015). Critical race theory, disability microaggressions and Latina/o student experiences in special education. *Race Ethnicity and Education, 18*(4), 443-468. https://doi.org/10.1080/13613324.2014.885422

Davis, D. M. (2004). Merry-go-round: A return to segregation and the implications for creating democratic schools: De jure, de facto: defining quality education 50 years beyond Brown. *Urban Education, 39*(4), 394–407. https://doi.org/10.1177/0042085904265104

Davis, H. A. (2003). Conceptualizing the role and influence of student-teacher relationships on children's social and cognitive development. *Educational Psychologist*, *38*(4), 207–234. https://doi.org/10.1207/S15326985EP3804_2

Davis, K. S. & Dupper, D. R. (2004). Student-teacher relationships: An overlooked factor in school dropout. *Journal of Human Behavior in the Social Environment*, *9*(1-2), 179–193. https://doi.org/10.1300/J137v09n01_12

Davis, L. P. & Museus, S. (2019). What is deficit thinking? An analysis of conceptualizations of deficit thinking and implications for scholarly research. *Currents, 1*(1), 117-130. http://dx.doi.org/10.3998/currents.17387731.0001.110

De Schryver, M. (2018). *A psychometric analysis of choice reaction time measures*.

Dissertation, Ghent University.

https://biblio.ugent.be/publication/8556989/file/8556991

De Houwer, J. (2019). Implicit bias is behavior: A functional-cognitive perspective on

implicit bias. *Perspectives on Psychological Science*, *14*(5), 835–840.

https://doi.org/10.1177/1745691619855638

Del Toro, J. & Wang, M. (2021). School cultural socialization and academic

performance: examining ethnic-racial identity development as a mediator among

African American adolescents. *Child Development, 92*(4), 1458–1475.

https://doi.org/10.1111/cdev.13467

Della-Dora, D. (1962). The culturally disadvantaged: Educational implications of certain

social-cultural phenomena. *Exceptional Children*, *28*(9), 467–472.

https://doi.org/10.1177/001440296202800906

Denessen, E., Hornstra, L., van den Bergh, L., & Bijlstra, G. (2020). Implicit measures of

teachers' attitudes and stereotypes, and their effects on teacher practice and

student outcomes: A review. *Learning and Instruction, 78*, 1-15.

https://doi.org/10.1016/j.learninstruc.2020.101437

DeVellis, R.F. (2003). *Scale Development: Theory and Applications (2nd Ed.)*. SAGE

Publications.

Dixson, A. D. & Rousseau Anderson, C. K. (2017). And we are still not saved: 20 years

of CRT and education. In *Critical Race Theory in Education* (1st ed., pp. 32-54).

Routledge.

Dixson, A. D., Anderson, C. K. R., & Donnor, J. K. (2017). *Critical Race Theory in Education All God's Children Got a Song*. Routledge.

Donato, R. & Hanson, J. S. (2012). Legally White, Socially "Mexican": The Politics of De Jure and De Facto School Segregation in the American Southwest. *Harvard Educational Review, 82*(2), 202–225. https://doi.org/10.17763/haer.82.2.a562315u72355106

Doucet, F. (2021). *Identifying and testing strategies to improve the use of antiracist research evidence through critical race lenses*. William T. Grant Foundation.

Downey, D. B., & Pribesh, S. (2004). When race matters: Teachers' evaluations of students' classroom behavior. Sociology of Education, 77(4), 267-282. https://doi.org/10.1177/003804070407700401

Duncombe, W., Lukemeyer, A., & Yinger, J. (2008). The no child left behind act: Have federal funds been left behind? *Public Finance Review, 36*(4), 381–407. https://doi.org/10.1177/1091142107305220

Edwards, E. C. (2021). Centering race to move towards an intersectional ecological framework for defining school safety for black students. *School Psychology Review*, *50*(2-3), 254–273. https://doi.org/10.1080/2372966X.2021.1930580

Egalite, A. J., Kisida, B., & Winters, M. A. (2015). Representation in the classroom: The effect of own-race teachers on student achievement. *Economics of Education Review*, *45*, 44–52. https://doi.org/10.1016/j.econedurev.2015.01.007

English, D., Lambert, S. F., Tynes, B. M., Bowleg, L., Zea, M. C., & Howard, L. C. (2020). Daily multidimensional racial discrimination among Black U.S. American

adolescents. *Journal of Applied Developmental Psychology*, *66*, 1-12.

https://doi.org/10.1016/j.appdev.2019.101068

Every Student Succeeds Act, 20 US.C. § 6301 (2015).

https://www.congress.gov/114/plaws/publ95/PLAW-114publ95.pdf

Fix, R., Schaeffer, C., Bohnenkamp, J., & Hoover, S. (2021). Understanding

disproportionate suspension practices for Black students in elementary, middle,

and high Schools. *School Psychology Review*, 1–13.

https://doi.org/10.1080/2372966X.2021.1881819

Fortuna, L. R., Tolou-Shams, M., Robles-Ramamurthy, B., & Porche, M. V. (2020).

Inequity and the disproportionate impact of COVID-19 on communities of color

in the United States: The need for a trauma-informed social justice

response. *Psychological Trauma*, *12*(5), 443–445.

https://doi.org/10.1037/tra0000889

Fox, L. (2015). Seeing potential: The effects of student–teacher demographic congruence

on teacher expectations and recommendations. *AERA Open*, *2*(1), 1-17.

https://doi.org/10.1177/2332858415623758

Frankenberg, E. (2012). Exploring Teachers' Racial Attitudes in a Racially Transitioning

Society. *Education and Urban Society*, *44*(4), 448–476.

https://doi.org/10.1177/0013124510392780

Franklin, V. P. (2002). Introduction: cultural capital and African American

education. *The Journal of African American History*, *87*(2), 175-181.

Frey, A. J., Alvarez, M. E., Sabatino, C. A., Lindsey, B. C., Dupper, D. R., Raines, J. C.,

Streeck, F., McInerney, A., & Norris, M. P. (2012). The Development of a

National School Social Work Practice Model. *Children & Schools*, *34*(3), 131-134. https://doi.org/10.1093/cs/cds025

Gale, A. (2020). Examining Black adolescents' perceptions of in-school racial discrimination: The role of teacher support on academic outcomes. *Children and Youth Services Review*, *116*, 1-10.

https://doi.org/10.1016/j.childyouth.2020.105173

Garcia, S. B., & Guerra, P. L. (2004). Deconstructing deficit thinking: Working with educators to create more equitable learning environments. *Education and urban society*, *36*(2), 150-168. https://doi.org/10.1177/0013124503261322

Garcia, N.M., López, N., & Vélez, V. N. (2018). QuantCrit: rectifying quantitative methods through critical race theory. *Race, Ethnicity and Education, 21*(2), 149–157. https://doi.org/10.1080/13613324.2017.1377675

Gawronski, B., & De Houwer, J. (2014). *Implicit Measures in Social and Personality Psychology*. In Reis, H. T. & Judd, C. M (Eds). Handbook of research methods in social and personality psychology (2nd edition). Cambridge University Press.

Gawronski, B., De Houwer, J., & Sherman, J. W. (2020). Twenty-five years of research using implicit measures. *Social Cognition, 38*, s1-s25.

Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher Education, 53*(2), 106–116. https://doi.org/10.1177/0022487102053002003

Gay, G. (2015). The what, why, and how of culturally responsive teaching: International mandates, challenges, and opportunities. *Multicultural Education Review, 7*(3), 123–139. https://doi.org/10.1080/2005615X.2015.1072079

Gershenson, S., Holt, S. B., & Papageorge, N. W. (2016). Who believes in me? The effect of student teacher demographic match on teacher expectations. *Economics of Education Review, 52*, 209–224. https://doi.org/10.1016/j.econedurev.2016.03.002

Gillborn, D. (2010). The colour of numbers: Surveys, statistics and deficit-thinking about race and class. *Journal of Education Policy*, *25*(2), 253–276. https://doi.org/10.1080/02680930903460740

Gillborn, D., Warmington, P., & Demack, S. (2018). QuantCrit: education, policy, "Big Data" and principles for a critical race theory of statistics. *Race, Ethnicity and Education, 21*(2), 158–179. https://doi.org/10.1080/13613324.2017.1377417

Gilliam, C., & Russell, C. J. (2021). Impact of racial microaggressions in the clinical learning environment and review of best practices to support learners. *Current Problems in Pediatric and Adolescent Health Care*, 1-6. https://doi.org/10.1016/j.cppeds.2021.101090

Glesne, C. (2015). *Becoming qualitative researchers: An* introduction (5th ed.). Boston, MA: Pearson Education, Inc.

Glock, S. & Klapproth, F. (2017). Bad boys, good girls? Implicit and explicit attitudes toward ethnic minority students among elementary and secondary school teachers. *Studies in Educational Evaluation*, *53*, 77–86. https://doi.org/10.1016/j.stueduc.2017.04.002

Glock, S., Kovacs, C., & Pit-ten Cate, I. (2019). Teachers' attitudes towards ethnic minority students: Effects of schools' cultural diversity. *British Journal of Educational Psychology*, *89*(4), 616–634. https://doi.org/10.1111/bjep.12248

Golden, A. R., Griffin, C. B., Metzger, I. W., & Cooper, S. M. (2018). School racial

climate and academic outcomes in African American adolescents: The protective

role of peers. *Journal of Black Psychology*, *44*(1), 47–73.

https://doi.org/10.1177/0095798417736685

Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-

esteem, and stereotypes. *Psychological Review*, *102*(1), 4–27.

https://doi.org/10.1037/0033-295X.102.1.4

Greenwald, A. G., & Farnham, S. D. (2000). Using the implicit association test to

measure self-esteem and self-concept. *Journal of Personality and Social*

Psychology, *79*(6), 1022–1038. https://doi.org/10.1037/0022-3514.79.6.1022

Greenwald, A., McGhee, D., & Schwartz, J. (1998). Measuring individual differences in

implicit cognition: The implicit association test. *Journal of Personality and Social*

Psychology, *74*(6), 1464–1480. https://doi.org/10.1037/0022-3514.74.6.1464

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the

implicit association test: I. An improved scoring algorithm. *Journal of Personality*

and Social Psychology, *85*(2), 197–216. https://doi.org/10.1037/0022-

3514.85.2.197

Greenwald, A G, Poehlman, T A, Uhlmann, E L and Banaji, M R (2009). Understanding

and using the Implicit Association Test: III. Meta-analysis of predictive

validity. *Journal of Personality and Social Psychology* 97(1): 17–41,

DOI: https://doi.org/10.1037/a0015575

Hahn, R.A. (2022). School Segregation Reduces Life Expectancy in the U.S. Black

   Population by 9 Years. *Health Equity, 6*(1), 27–277.

   https://doi.org/10.1089/heq.2021.0121

Hanselman, P. & Fiel, J. E. (2017). School opportunity hoarding? Racial segregation and

   access to high growth schools. *Social Forces*, *95*(3), 1077–1104.

   https://doi.org/10.1093/sf/sow088

Hargrove, B. H. & Seay, S. E. (2011). School teacher perceptions of barriers that limit the

   participation of African American males in public school gifted

   programs. *Journal for the Education of the Gifted*, *34*(3), 434–467.

   https://doi.org/10.1177/016235321103400304

Harvard Project Implicit (n.d.) *About the IAT*. https://www.projectimplicit.net/

Harvey, K. E., Suizzo, M.-A., & Jackson, K. M. (2016). Predicting the grades of low-

   income-ethnic-minority students from teacher-student discrepancies in reported

   motivation. *The Journal of Experimental Education*, *84*(3), 510–528.

   https://doi.org/10.1080/00220973.2015.1054332

Henderson, D. X., Irsheid, S., Lee, A., Corneille, M. A., Jones, J., & McLeod, K. (2021).

   "they try and break us but they can't": The cultural ethos youth of color engage

   and rely on to persevere and navigate racial stressors in the U.S. public education

   system. *Journal of Adolescent Research*, *36*(1), 68–97.

   https://doi.org/10.1177/0743558420942476

Henderson, D. X., Walker, L., Barnes, R. R., Lunsford, A., Edwards, C., & Clark, C.

   (2019). A framework for race-related trauma in the public education system and

implications on health for black youth. *The Journal of School Health*, *89*(11), 926–933. https://doi.org/10.1111/josh.12832

Hill, H.C., Charalambous, C. Y., & Chin, M. J. (2019). Teacher characteristics and student learning in mathematics: A comprehensive assessment. Educational Policy (Los Altos, Calif.), 33(7), 1103–1134. https://doi.org/10.1177/0895904818755468

Hofmann, W., Gawronski, B., Gschwendner, T., Le, H., & Schmitt, M. (2005). A meta-analysis on the correlation between the implicit association test and explicit self-report measures. *Personality and Social Psychology Bulletin, 31*, 1369–1385.

Horsford, S. D. (2019). School integration in the new Jim Crow: Opportunity or oxymoron? *Educational Policy*, *33*(1), 257-275. https://doi.org/10.1177%2F0895904818810526

Hosterman, S. J., DuPaul, G. J., & Jitendra, A. K. (2008). Teacher ratings of ADHD symptoms in ethnic minority students: Bias or behavioral difference? *School Psychology Quarterly*, *23*(3), 418–435. https://doi.org/10.1037/a0012668

Howard, T. C., & Navarro, O. (2016). Critical race theory 20 years later: Where do we go from here? *Urban Education*, *51*(3), 253-273. https://doi.org/10.1177%2F0042085915622541

Hughes, D., Del Toro, J., Harding, J. F., Way, N., & Rarick, J. R. D. (2016). Trajectories of discrimination across adolescence: Associations with academic, psychological, and behavioral outcomes. *Child Development*, *87*(5), 1337–1351. https://doi.org/10.1111/cdev.12591

Huguley, J. P., Wang, M.-T., Pasarow, S., & Wallace, J. M. (2020). Just discipline in

    schools: An integrated and interdisciplinary approach. *Children & Schools, 42*(3),

    1-5. https://doi.org/10.1093/cs/cdaa012

Hung, M., Smith, W. A., Voss, M. W., Franklin, J. D., Gu, Y., & Bounsanga, J. (2020).

    Exploring student achievement gaps in school districts across the United

    States. *Education & Urban Society*, *52*(2), 175–193. https://doi-

    org.proxy.lib.ohio-state.edu/10.1177/0013124519833442

Hussar, B., Zhang, J., Hein, S., Wang, K., Roberts, A., Cui, J., Smith, M., Bullock Mann,

    F., Barmer, A., & Dilig, R. (2020). *The Condition of Education 2020 (NCES*

    2020-144). US. Department of Education. Washington, DC: National Center for

    Education Statistics.

Irizarry, Y. (2015). Selling students short: Racial differences in teachers' evaluations of

    high, average, and low performing students. *Social Science Research, 52*, 522–

    528. https://doi.org/10.1016/j.ssresearch.2015.04.002

Irwin, V., Zhang, J., Wang, X., Hein, S., Wang, K., Roberts, A., York, C., Barmer, A.,

    Bullock Mann, F., Dilig, R., & Parker, S. (2021). *Report on the Condition of*

    Education 2021 (NCES 2021-144). U.S. Department of Education. Washington,

    DC: National Center for Education Statistics. Retrieved from

    https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2021144.

Jerome, E. M., Hamre, B. K., & Pianta, R. C. (2009). Teacher-child relationships from

    kindergarten to sixth grade: Early childhood predictors of teacher-perceived

    conflict and closeness. *Social Development, 18*(4), 915–945.

    https://doi.org/10.1111/j.1467-9507.2008.00508.x

Johnson, A., & Williams, D. J. (2015). White racial identity, color-blind racial attitudes, and multicultural counseling competence. *Cultural Diversity & Ethnic Minority Psychology*, *21*(3), 440–449. https://doi.org/10.1037/a0037533

Jupp, J. C. & Slattery, P. (2010). White male teachers on difference: narratives of contact and tensions. *International Journal of Qualitative Studies in Education*, *23*(2), 199–215. https://doi.org/10.1080/09518390903107499

Kessinger. (2011). Efforts toward educational reform in the United States since 1958: a review of seven major initiatives. *American Educational History Journal*, *38*(2), 263-276.

Kincade, L., Cook, C., & Goerdt, A. (2020). Meta-analysis and common practice elements of universal approaches to improving student-teacher relationships. *Review of Educational Research, 90*(5), 710–748. https://doi.org/10.3102/0034654320946836

Kohli, R., & Solórzano, D. G. (2012). Teachers, please learn our names!: Racial microaggressions and the K-12 classroom. *Race Ethnicity and Education*, *15*(4), 441-462. https://doi.org/10.1080/13613324.2012.674026

Kohli, R., Pizarro, M., & Nevárez, A. (2017). The "new racism" of K–12 schools: Centering critical research on racism. *Review of Research in Education*, *41*(1), 182-202. https://doi.org/10.3102%2F0091732X16686949

Kraemer, H. C., Kiernan, M., Essex, M., & Kupfer, D. J. (2008). How and why criteria defining moderators and mediators differ between the Baron & Kenny and MacArthur approaches. *Health Psychology, 27*(2S), S101–S108. https://doi.org/10.1037/0278-6133.27.2(Suppl.).S101

La Salle, T., Wang, C., Wu, C., & Rocha Neves, J. (2020). Racial mismatch among
minoritized students and White teachers: Implications and recommendations for
moving forward. *Journal of Educational and Psychological Consultation*, *30*(3),
314–343. https://doi.org/10.1080/10474412.2019.1673759

Ladson-Billings, G. & Tate, W. F. (1995). Toward a critical race theory of education.
Teachers College Record, 97(1), 47–68.

Lagana-Riordan, C. & Aguilar, J. P. (2009). What's missing from no child left behind? A
policy analysis from a social work perspective. *Children & Schools*, *31*(3), 135–
144. https://doi.org/10.1093/cs/31.3.135

Leitner, J. B., Hehman, E., Ayduk, O., & Mendoza-Denton, R. (2016). Blacks' death rate
due to circulatory diseases is positively related to whites' explicit racial bias: A
nationwide investigation using project implicit. *Psychological science*, *27*(10),
1299-1311.

Leonardo, Z. (2007). The war on schools: NCLB, nation creation and the educational
construction of whiteness. *Race, Ethnicity and Education*, *10*(3), 261–278.
https://doi.org/10.1080/13613320701503249

Lin, S., Fabris, M. A., & Longobardi, C. (2021). Closeness in student–teacher
relationships and students' psychological well-being: The mediating role of
hope. *Journal of Emotional and Behavioral Disorders*, 106342662110137–.
https://doi.org/10.1177/10634266211013756

Liou, D. D., Leigh, P. R., Rotheram-Fuller, E., & Cutler, K. D. (2019). The influence of
teachers' colorblind expectations on the political, normative, and technical

dimensions of educational reform. *International Journal of Educational Reform*, *28*(1), 122–148. https://doi.org/10.1177/1056787918824207

Litam, S. D. A., & Balkin, R. S. (2021). Assessing Bayesian Racism Scale: measuring endorsement of racial stereotypes. *International Journal for the Advancement of Counselling*, 1–15. https://doi.org/10.1007/s10447-021-09436-y

Little, R.J., Carpenter, J. R., & Lee, K. J. (2022). A Comparison of Three Popular Methods for Handling Missing Data: Complete-Case Analysis, Inverse Probability Weighting, and Multiple Imputation. *Sociological Methods & Research, Online First*, 1-31. https://doi.org/10.1177/00491241221113873

Liu, S. R., & Modir, S. (2020). The outbreak that was always here: Racial trauma in the context of COVID-19 and implications for mental health providers. *Psychological Trauma: Theory, Research, Practice, and Policy, 12*(5), 439-442. http://dx.doi.org/10.1037/tra0000784

MacPhail, C., Khoza, N., Abler, L., & Ranganathan, M. (2016). Process guidelines for establishing intercoder reliability in qualitative studies. *Qualitative research*, *16*(2), 198-212.

MacQueen, K. M., McLellan, E., Kay, K., & Milstein, B. (1998). Codebook development for team-based qualitative analysis. *Cam Journal*, *10*(2), 31-36.

Madigan, J. C. (2009). The education of women and girls in the United States: A historical perspective. *Advances in Gender and Education*, *1*(1), 11.

Marcucci, O. (2020). Implicit bias in the era of social desirability: Understanding antiblackness in rehabilitative and punitive school discipline. *The Urban Review*, *52*(1), 47–74. https://doi.org/10.1007/s11256-019-00512-7

Martin, L. L., & Varner, K. J. (2017). Race, residential segregation, and the death of

    democracy: Education and myth of postracialism. *Democracy and*

    Education, *25*(1), 4. https://democracyeducationjournal.org/home/vol25/iss1/4

Maynard, B. R., Salas-Wright, C. P., & Vaughn, M. G. (2014). High school dropouts in

    emerging adulthood: Substance use, mental health problems, and crime.

    Community Mental Health Journal, *51*(3), 289–299.

    https://doi.org/10.1007/s10597-014-9760-5

MAXQDA. (n.d.). *All-in-One Qualitative & Mixed Methods Data Analysis Tool*.

    https://www.maxqda.com/#

Maxwell, J. A. (2013). *Qualitative research design: An interactive approach* (3rd ed.).

    SAGE Publications.

McCoy, L. (2015). Southern rural public schools: A study of teacher

    perspectives. *Qualitative Report*. https://doi.org/10.46743/2160-3715/2006.1657

McCoy, M., & Villeneuve, M. (2020). Reconceiving schooling: Centering indigenous

    experimentation in Indian education history. *History of Education*

    Quarterly, 60(4), 487-519. https://doi.org/10.1017/heq.2020.53

McFarland, J., Cui, J., Holmes, J., and Wang, X. (2019). *Trends in High School Dropout*

    and Completion Rates in the United States: 2019 (NCES 2020-117). U.S.

    Department of Education. Washington, DC: National Center for Education

    Statistics. Retrieved [date] from https://nces.ed.gov/pubsearch.

McGrady, P. B. & Reynolds, J. R. (2013). Racial mismatch in the classroom: Beyond

    black-white differences. *Sociology of Education*, *86*(1), 3–17.

    https://doi.org/10.1177/0038040712444857

McHugh, M. (2012). Interrater reliability: The kappa statistic. *Biochemia Medica*, *22*(3), 276–282. https://doi.org/10.11613/bm.2012.031

McKown, C. (2013). Social equity theory and racial-ethnic achievement gaps. *Child Development*, *84*(4), 1120–1136. https://doi.org/10.1111/cdev.12033

McWhirter, E. H., Garcia, E. A., & Bines, D. (2018). Discrimination and other education barriers, school connectedness, and thoughts of dropping out among Latina/o students. *Journal of Career Development*, *45*(4), 330–344. https://doi.org/10.1177/0894845317696807

Mellin, E.A., Taylor, L., Weist, M.D. (2014). The expanded school mental health collaboration instrument [School Version]: Development and initial psychometrics. *School Mental Health, 6*, 151–162. https://doi.org/10.1007/s12310-013-9112-6

Memon, M. A., Cheah, J. H., Ramayah, T., Ting, H., Chuah, F., & Cham, T. H. (2019). Moderation analysis: Issues and guidelines. *Journal of Applied Structural Equation Modeling*, *3*(1), 1-11. https://doi.org/10.47263/JASEM.3(1)01

Miles, M. B., Huberman, A. M., & Saldana, J. M. (2020). Qualitative data analysis: A methods sourcebook (4th ed.). SAGE Publications.

Morris, E. W. (2005). From "middle class" to "trailer trash". Teachers' perceptions of white students in a predominately minority school. *Sociology of Education, 78*(2), 99–121. https://doi.org/10.1177/003804070507800201

Muñiz, J. (2019). *Culturally Responsive Teaching: A 50-State Survey of Teaching Standards*. New America. Retrieved from newamerica.org/education-policy/reports/culturally-responsive-teaching/

Muñiz, R. (2021). Education law and policy in the time of COVID-19: Using a legal framework to expose educational inequity. *AERA Open*, *7*, 1-8. https://doi.org/10.1177/23328584211054107

Muñoz, M.A., & Chang, F. C. (2007). The elusive relationship between teacher characteristics and student academic growth: A longitudinal multilevel model for change. *Journal of Personnel Evaluation in Education, 20*(3-4), 147–164. https://doi.org/10.1007/s11092-008-9054-y

National Academies of Sciences, Engineering, and Medicine. (2022). *The Future of Education Research at IES: Advancing an Equity-Oriented Science*. Washington, DC: The National Academies Press. https://doi.org/10.17226/26428

National Center on Education Statistics (n.d.). *Racial/Ethnic Enrollment in Public Schools* https://nces.ed.gov/programs/coe/indicator/cge

National Center for Education Statistics. (2022). Characteristics of public school teachers who completed alternative route to certification programs. *Condition of Education*. U.S. Department of Education, Institute of Education Sciences. Retrieved January 11th, 2022, from https://nces.ed.gov/programs/coe/indicator/tlc.

National Center on Educational Statistics (2021). *Characteristics of Public School Teachers*. Retrieved from https://nces.ed.gov/programs/coe/indicator/clr

National Center on Educational Statistics (2019). *Spotlight A: Characteristics of Public School Teachers by Race/Ethnicity*. Retrieved from https://nces.ed.gov/programs/raceindicators/spotlight_a.asp

National Center for Education Statistics (2008). *Average number of hours in the school day and average number of days in the school year for public schools, by state:*

2007–08. National Center for Education Statistics. Retrieved from

https://nces.ed.gov/surveys/sass/tables/sass0708_035_s1s.asp

National Defense of Education Act US. P.L. 85-864 (1958).

Neville, H. A., Lilly, R. L., Duran, G., Lee, R. M., & Browne, L. (2000). Construction

and initial validation of the color-blind racial attitudes scale (CoBRAS). *Journal*

of Counseling Psychology, *47*(1), 59–70. https://doi.org/10.1037/0022-

0167.47.1.59

Nienhusser, H., Vega, B. E., & Carquin, M. C. S. (2016). Undocumented students'

experiences with microaggressions during their college choice process. *Teachers*

College Record, *118*(2), 1–33. https://doi.org/10.1177/016146811611800208

No Child Left Behind of 2001, Pub. L. No. 107-110, 115 Stat. 1425 (2001).

https://files.eric.ed.gov/fulltext/ED556108.pdf

Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2005). Understanding and using the

implicit association test: II. Method variables and construct validity. *Personality*

& Social Psychology Bulletin, *31*(2), 166–180.

https://doi.org/10.1177/0146167204271418

Nunn, L. (2011). Classrooms as racialized spaces: Dynamics of collaboration, tension,

and student attitudes in urban and suburban high schools. *Urban*

Education, *46*(6), 1226–1255. https://doi.org/10.1177/0042085911413146

Olden, D. R. (2015). Shifting the lens: Using critical race theory and Latino critical

theory to re-examine the history of school desegregation. *Qualitative*

Inquiry, *21*(3), 250-261. https://doi.org/10.1177%2F1077800414562898

Orfield, G. & Frankenberg, E. (2014). Increasingly segregated and unequal schools as courts reverse policy. *Educational Administration Quarterly*, *50*(5), 718–734. https://doi.org/10.1177/0013161X14548942

Osei-Twumasi, O. & Pinetta, B. J. (2019). Quality of Classroom Interactions and the Demographic Divide: Evidence From the Measures of Effective Teaching Study. *Urban Education, 58*(5), 899-930. https://doi.org/10.1177/0042085919893744

Oswald, F. L., Mitchell, G., Blanton, H., Jaccard, J., & Tetlock, P. E. (2013). Predicting ethnic and racial discrimination: A meta-analysis of IAT criterion studies. *Journal of Personality and Social Psychology, 105*(2), 171–192. https://doi.org/10.1037/a0032734

Pak, Y. K. (2021). "Racist-blind, not color-blind" by design: Confronting systemic racism in our educational past, present, and future. *History of Education Quarterly*, *61*(2), 127–149. https://doi.org/10.1017/heq.2021.5

Payne, B., Vuletich, H. A., & Lundberg, K. B. (2017). The bias of crowds: How implicit bias bridges personal and systemic prejudice. *Psychological Inquiry*, *28*(4), 233–248. https://doi.org/10.1080/1047840X.2017.1335568

Pena-Shaff, J., Bessette-Symons, B., Tate, M., & Fingerhut, J. (2019). Racial and ethnic differences in high school students' perceptions of school climate and disciplinary practices. *Race, Ethnicity and Education*, *22*(2), 269–284. https://doi.org/10.1080/13613324.2018.1468747

Peterson, E., Rubie-Davies, C., Osborne, D., & Sibley, C. (2016). Teachers' explicit expectations and implicit prejudiced attitudes to educational achievement:

Relations with student achievement and the ethnic achievement gap. *Learning and Instruction*, *42*, 123–140. https://doi.org/10.1016/j.learninstruc.2016.01.010

Petrone, R. & Stanton, C. R. (2021). From producing to reducing trauma: A call for "trauma-informed" research(ers) to interrogate how schools harm students. *Educational Researcher*, *50*(8), 537–545. https://doi.org/10.3102/0013189X211014850

Pham, Y. K., Murray, C., & Gau, J. (2021). The Inventory of Teacher–Student Relationships: Factor structure and associations with school engagement among high-risk youth. *Psychology in the Schools*, 1– 17. https://doi.org/10.1002/pits.22617

Phillippo, K., Brown, E.L., Brown, N., Galib, L., Fujimoto, K., Iachini, A., Lennix, C., Parker, A., & Childs, T.M. (under review). Equity intersections: Teachers' experiences with student wellness support during the COVID-19 pandemic. *American Educational Research Association Open*.

Pianta, R.C. (2001). Student-Teacher Relationship Scale: Professional manual. Odessa, FL: Psychological Assessment Resources.

Pianta, R. C., & Steinberg, M. (1992). Teacher-child relationships and the process of adjusting to school. *New Directions for Child and Adolescent Development, 1992(57)*, 61-80.

Pianta, R. C., Steinberg, M. S., & Rollins, K. B. (1995). The first two years of school: Teacher-child relationships and deflections in children's classroom adjustment. *Development and Psychopathology, 7*(02), 295-312.

Pianta, R. C. & Stuhlman, M. W. (2004). Teacher-child relationships and children's

    success in the first years of school. *School Psychology Review*, *33*(3), 444–458.

    https://doi.org/10.1080/02796015.2004.12086261

Pit-ten Cate, I, M. & Glock, S. (2019). Teachers' implicit attitudes toward students from

    different social groups: A meta-analysis. *Frontiers in Psychology*, *10*, 2832–2832.

    https://doi.org/10.3389/fpsyg.2019.02832

Pituch, K. A., & Stevens, J. P. (2015). *Applied multivariate statistics for the social*

    sciences: Analyses with SAS and IBM's SPSS. Routledge.

Priest, N., Paradies, Y., Trenerry, B., Truong, M., Karlsen, S., & Kelly, Y. (2013). A

    systematic review of studies examining the relationship between reported racism

    and health and wellbeing for children and young people. *Social Science &*

    Medicine (1982), *95*, 115–127. https://doi.org/10.1016/j.socscimed.2012.11.031

Qualtrics. (n.d.). https://www.qualtrics.com/

Quinn, D. M. (2017). Racial attitudes of preK-12 and postsecondary educators:

    Descriptive evidence from nationally representative data. *Educational*

    Researcher, 46, 397–411. https://doi.org/10.3102/0013189X17727270

Quinn, D. M. (2020). Experimental evidence on teachers' racial bias in student

    evaluation: The role of grading scales. *Educational Evaluation and Policy*

    Analysis, *42*(3), 375–392. https://doi.org/10.3102/0162373720932188

Race Forward (2014a). *Moving the Race Conversation Forward: How the media Covers*

    Racism, and Other Barriers to Productive Racial Discourse – Part I. The Center

    for Racial Justice Innovation. https://act.colorlines.com/acton/attachment/1069/f-

    0114/1/-/-/-/-/Racial_Discourse_Part_1.PDF

Race Forward (2014b). *Moving the Race Conversation Forward: How the media Covers*

    Racism, and Other Barriers to Productive Racial Discourse – Part II. The Center

    for Racial Justice Innovation. https://act.colorlines.com/acton/attachment/1069/f-

    0115/1/-/-/-/-/Racial_Discourse_Part_2.PDF

Radiker, S. & Kuckartz, U. (2020). *Analyzing Open-Ended Survey Questions with*

    MAXQDA. MAXQDA Press.

Rasheed, D.S., Brown, J. L., Doyle, S. L., & Jennings, P. A. (2020). The Effect of

    Teacher–Child Race/Ethnicity Matching and Classroom Diversity on Children's

    Socioemotional and Academic Skills. *Child Development, 91*(3), e597–e618.

    https://doi.org/10.1111/cdev.13275

Rauscher, E. (2015). Educational expansion and occupational change: US compulsory

    schooling laws and the occupational structure 1850 - 1930. *Social Forces*, *93*(4),

    1397–1422. https://doi.org/10.1093/sf/sou127

Ray, V. (2019). A theory of racialized organizations. *American Sociological*

    Review, *84*(1), 26–53. https://doi.org/10.1177/0003122418822335

Reardon, S.F. & Owens, A. (2014). 60 Years After "Brown": Trends and Consequences

    of School Segregation. *Annual Review of Sociology, 40*(1), 199–218.

    https://doi.org/10.1146/annurev-soc-071913-043152

Reardon, S. F., & Portilla, X. A. (2016). Recent trends in income, racial, and ethnic

    school readiness gaps at kindergarten entry. *AERA Open*, *2*(3), 1-18.

    https://doi.org/10.1177/2332858416657343

Redding, C. (2019). A teacher like me: A review of the effect of student–teacher

    racial/ethnic matching on teacher perceptions of students and student academic

and behavioral outcomes. *Review of Educational Research*, *89*(4), 499–535.

https://doi.org/10.3102/0034654319853545

Renzulli, L. A., Parrott, H. M., & Beattie, I. R. (2011). Racial mismatch and school type:

Teacher satisfaction and retention in charter and traditional public

schools. *Sociology of Education*, *84*(1), 23–48.

https://doi.org/10.1177/0038040710392720

Rogers, G. (2009). *Sample Protocol for Pilot Testing Survey Items*. ABET. Retrieved

from https://www.abet.org/wp-content/uploads/2020/09/Sample-Protocol-for-

Pilot-Testing-Survey-Items-09.09.29.pdf

Roorda, D. L., Koomen, H. M., Spilt, J., & Oort, F. (2011). The influence of affective

teacher-student relationships on students' school engagement and achievement: A

meta-analytic approach. *Review of Educational Research*, *81*(4), 493–529.

https://doi.org/10.3102/0034654311421793

Rosa, E. M., & Tudge, J. (2013). Urie Bronfenbrenner's theory of human development:

its evolution from ecology to bioecology: the evolution of Urie Bronfenbrenner's

theory. *Journal of Family Theory & Review*, *5*(4), 243–258.

https://doi.org/10.1111/jftr.12022

Rudnick, D. L. (2019). Walking on egg shells: colorblind ideology and race talk in

teacher education. *Multicultural Education Review: Policy Influences and

Practical Contributions of Multicultural Education in Diverse Contexts*, *11*(3),

216–233. https://doi.org/10.1080/2005615X.2019.1644043

Rueda, E. (2015). The benefits of being Latino: Differential interpretations of student

behavior and the social construction of being well behaved. *Journal of Latinos*

and Education, *14*(4), 275-290. https://doi-

org.pallas2.tcl.sc.edu/10.1080/15348431.2015.1025955

Ruel, E. E., Wagner, W. E., & Gillespie, B. J. (2016). *The practice of survey research: theory and applications*. Sage Publications, Inc.

Russell Sage Foundation. (2023). *Social, Political and Economic Inequality*. Retrieved from https://www.russellsage.org/research/funding/social-inequality

Ryan, G., & Bernard, H. (2003). Techniques to identify themes. *Field Methods, 15*(1), 85–109.

Rychly, L. & Graves, E. (2012). Teacher characteristics for culturally responsive pedagogy. *Multicultural Perspectives, 14*(1), 44–49. https://doi.org/10.1080/15210960.2012.646853

Saft, E. W. & Pianta, R. C. (2001). Teachers' perceptions of their relationships with students: Effects of child age, gender, and ethnicity of teachers and children. *School Psychology Quarterly*, *16*(2), 125–141. https://doi.org/10.1521/scpq.16.2.125.18698

Saldana, J. (2015). *The Coding Manual for Qualitative Researchers (3rd ed)*. Thousand Oaks, CA: Sage.

Saleem, F. T., Howard, T. C., & Langley, A. K. (2021). Understanding and addressing racial stress and trauma in schools: A pathway toward resistance and healing. *Psychology in the Schools*, 1– 16. https://doi.org/10.1002/pits.22615

Sandilos, L.E., Rimm-Kaufman, S. E., & Cohen, J. J. (2017). Warmth and Demand: The Relation Between Students' Perceptions of the Classroom Environment and

Achievement Growth. *Child Development*, *88*(4), 1321–1337.

https://doi.org/10.1111/cdev.12685

Schoener, H. J., & McKenzie, K. B. (2016). Equity traps redux: Inequitable access to

foreign language courses for African American high school students. *Equity &*

Excellence in Education, *49*(3), 284–299.

https://doi.org/10.1080/10665684.2016.1194099

Schreier, M. (2012). Qualitative content analysis in practice. In Flick, U. (Eds.) *The*

SAGE Handbook of Qualitative Data Analysis (pp. 170-183). Sage Publications.

Sharma, M. (2018). Seeping Deficit Thinking Assumptions Maintain the Neoliberal

Education Agenda: Exploring Three Conceptual Frameworks of Deficit Thinking

in Inner-City Schools. *Education and Urban Society, 50*(2), 136–154.

https://doi.org/10.1177/0013124516682301

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), 85–107.

https://doi.org/10.1080/02796015.2011.12087730

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%2F0042085901363002

Solorzano, D. G. & Yosso, T. J. (2001). From racial stereotyping and deficit discourse

toward a critical race theory in teacher education. *Multicultural Education*, *9*(1),

2–8.

Soumah, M. A., & Hoover, J. H. (2013). A conversation on inequality with students of

    color. *Reclaiming Children and Youth, 22*(1), 18.

Spector, P.E., & Brannick, M. T. (2011). Methodological urban legends: The misuse of

    statistical control variables. *Organizational Research Methods*, *14*(2), 287–305.

    https://doi.org/10.1177/1094428110369842

Staats, C. (2014). *Implicit Racial Bias and School Discipline Disparities: Exploring the*

    Connection. Kirwan Institute The Ohio State University, Columbus, OH.

    http://www.kirwaninstitute.osu.edu/wp-content/uploads/2014/05/ki-ib-argument-

    piece03.pdf

Staats, C. (2016). *Understanding Implicit Bias What Educators Should Know*. American

    Educator. https://www.aft.org/ae/winter2015-

    2016/staats#:~:text=%20What%20Educators%20Should%20Know%20%201%20

    The,that%20implicit%20biases%20can%20yield%20inequitable...%20More%20

Staats, C., Capatosto, K., Wright, R. A., & Contractor, D. (2015). *State of the Science:*

    Implicit Bias Review 2015. Kirwan Institute The Ohio State University,

    Columbus, OH. https://www.nationalcollaborative.org/wp-

    content/uploads/2016/03/2015-kirwan-implicit-bias.pdf

Starck, J., Riddle, T., Sinclair, S., & Warikoo, N. (2020). Teachers are people too:

    Examining the racial bias of teachers compared to other American

    adults. *Educational Researcher*, *49*(4), 273–284.

    https://doi.org/10.3102/0013189X20912758

Stephens, M., & Yang, D.Y. (2014). Compulsory education and the benefits of schooling. *The American Economic Review*, *104*(6), 1777–1792. https://doi.org/10.1257/aer.104.6.1777

Stern, J. A., Barbarin, O., & Cassidy, J. (2021). Working toward anti-racist perspectives in attachment theory, research, and practice. *Attachment & Human Development*, 1–31. https://doi.org/10.1080/14616734.2021.1976933

Syed, M. & Nelson, S. C. (2015). Guidelines for establishing reliability when coding narrative data. *Emerging Adulthood*, *3*(6), 375–387. https://doi.org/10.1177/2167696815587648

Tate, W. F. (1997). Chapter 4: Critical race theory and education: History, theory, and implications. *Review of Research in Education*, *22*(1), 195–247. https://doi.org/10.3102/0091732X022001195

Teasley, M. L., McCarter, S., Woo, B., Conner, L. R., Spencer, M. S., & Green, T. (2021). *Eliminate Racism (Grand Challenges for Social Work initiative Working Paper No. 26)*. Cleveland, OH: American Academy of Social Work & Social Welfare. Retrieved from: https://grandchallengesforsocialwork.org/wp-content/uploads/2021/05/Eliminate-Racism-Concept-Paper.pdf

Teitcher, J. E., Bockting, W. O., Bauermeister, J. A., Hoefer, C. J., Miner, M. H., & Klitzman, R. L. (2015). Detecting, preventing, and responding to "fraudsters" in internet research: Ethics and tradeoffs. *The Journal of Law, Medicine & Ethics, 43*(1), 116–133. https://doi.org/10.1111/jlme.12200

Texas Education Agency (n.d.). *Employed and Certified Teachers by Preparation Route 2012-13 through 2021-22*. Retrieved from

https://tea.texas.gov/sites/default/files/employed-and-certified-teachers-by-preparation-route-2022.pdf

Tropp, L.R. & Rucinski, C. L. (2022). How implicit racial bias and concern about appearing racist shape K-12 teachers' race talk with students. *Social Psychology of Education, 25*(4), 697–717. https://doi.org/10.1007/s11218-022-09715-5

Tugend, A. (2022). *Culturally Responsive Teaching, Explained*. Future Ed. Retrieved from https://www.future-ed.org/culturally-responsive-teaching-explained/#:~:text=It%E2%80%99s%20known%20as%20the%20other%20CRT%E2%80%94not%20critical%20race,those%20subjects%20should%20be%20included%20in%20classroom%20teaching.

Tyler, A. C. (2016). "Really just lip service": Talking about diversity in suburban schools. *Peabody Journal of Education*, *91*(3), 289-308. https://doi.org/10.1080/0161956X.2016.1182838

Uhlmann, E. L., Brescoll, V. L., & Machery, E. (2010). The motives underlying stereotype-based discrimination against members of stigmatized groups. *Social Justice Research*, *23*(1), 1–16. https://doi.org/10.1007/s11211-010-0110-7

United States Department of Education. (2008). *A nation accountable: Twenty-five years after a nation at risk*. Washington, D.C.: US. Dept. of Education. (2008). Retrieved from https://www2.ed.gov/rschstat/research/pubs/accountable/index.html

Ura, S. K. & d'Abreu, A. (2021). Racial bias, social–emotional competence, and teachers' evaluation of student behavior. *Children & Schools*, *44*(1), 17-26. https://doi.org/10.1093/cs/cdab028

Valencia, R. (2010a). At-risk students or at-risk schools. In *Dismantling Contemporary Deficit Thinking* (pp. 1–18). Routledge. https://doi.org/10.4324/9780203853214-1

Valencia, R. (2010b). The construct of deficit thinking. In *Dismantling Contemporary Deficit Thinking* (pp. 1–18). Routledge. https://doi.org/10.4324/9780203853214-1

Valencia, R. & Solorzano, D. G. (1997). *Contemporary Deficit Thinking*. In The Evolution of Deficit Thinking (1st ed., pp. 160-210). Falmer Press.

Van den Bergh, L., Denessen, E., Hornstra, L., Voeten, M., & Holland, R. W. (2010). The implicit prejudiced attitudes of teachers: Relations to teacher expectations and the ethnic achievement gap. *American Educational Research Journal*, *47*(2), 497-527. https://www.jstor.org/stable/40645448

Vaught, S. E., & Castagno, A. E. (2008). "I don't think I'm a racist": Critical Race Theory, teacher attitudes, and structural racism. *Race Ethnicity and education*, *11*(2), 95-113. https://doi.org/10.1080/13613320802110217

Vega, D., & Moore, J. L. (2018). Access to gifted education among African-American and Latino males. *Journal for Multicultural Education*, 12(3), 237-248. https://doi.org/10.1108/JME-01-2017-0006

Verhoeven, M., Poorthuis, A. M., & Volman, M. (2019). The role of school in adolescents' identity development: A literature review. *Educational Psychology Review*, *31*(1), 35–63. https://doi.org/10.1007/s10648-018-9457-3

Voight, A., Hanson, T., O'Malley, M., & Adekanye, L. (2015). The racial school climate gap: Within-school disparities in students' experiences of safety, support, and connectedness. *American Journal of Community Psychology*, *56*(3), 252–267. https://doi.org/10.1007/s10464-015-9751-x

Wald, J., & Losen, D. J. (2003). Defining and redirecting a school-to-prison pipeline. *New Directions for Youth Development, 99*, 9-15. https://doi.org/10.1002/yd.51

Warikoo, N., Sinclair, S., Fei, J., & Jacoby-Senghor, D. (2016). Examining racial bias in education: A new approach. Educational Researcher, 45, 508– 514. https://doi.org/10.3102/0013189X16683408

Wayne, A. J., & Youngs, P. (2003). Teacher characteristics and student achievement gains: A review. *Review of Educational research*, *73*(1), 89-122. https://journals.sagepub.com/doi/pdf/10.3102/00346543073001089

Weeks, M.R. & Sullivan, A.L. (2019). Discrimination matters: Relations of perceived discrimination to student mental health. *School Mental Health*, 11, 425–437. https://doi.org/10.1007/s12310-019-09309-1

Welton, A. D., & Harris, T. O. (2021). Youth of color social movements for racial justice: The politics of interrogating the school-to-prison pipeline. *Educational Policy*, *36*(1) 57–99. https://doi.org/10.1177%2F08959048211059728

Whitaker, M.C. (2020). Us and them: Using social identity theory to explain and re-envision teacher–student relationships in urban schools. *The Urban Review, 52*(4), 691–707. https://doi.org/10.1007/s11256-019-00539-w

Whitaker, R. C., Dearth-Wesley, T., & Gooze, R. A. (2015). Workplace stress and the quality of teacher–children relationships in Head Start. *Early Childhood Research Quarterly*, *30*, 57–69. https://doi.org/10.1016/j.ecresq.2014.08.008

Whitford, D. K., & Emerson, A. M. (2019). Empathy intervention to reduce implicit bias in pre-service teachers. *Psychological Reports*, *122*(2), 670–688. https://doi.org/10.1177/0033294118767435

William T. Grant Foundation. (2023). *Research Grants on Reducing Inequality*. Retrieved from: https://wtgrantfoundation.org/grants/research-grants-reducing-inequality

Willis, H.A., Sosoo, E. E., Bernard, D. L., Neal, A., & Neblett, E. W. (2021). The associations between internalized racism, racial identity, and psychological distress. *Emerging Adulthood, 9*(4), 384–400. https://doi.org/10.1177/21676968211005598

Wolfe, D. P. (1965). The elementary and secondary education act of 1965. *Childhood Education, 42*(1), 12. https://doi.org/10.1080/00094056.1965.10729033

Worrell, F. C. (2021). Who will teach the teachers? Examining implicit bias in the educator workforce. *Learning and Instruction*. https://doi.org/10.1016/j.learninstruc.2021.101518

Wubbels, T. & Brekelmans, M. (2005). Two decades of research on teacher–student relationships in class. *International Journal of Educational Research*, *43*(1), 6–24. https://doi.org/10.1016/j.ijer.2006.03.003

Yarnell, L. M. & Bohrnstedt, G. W. (2018). Student-teacher racial match and its association with black student achievement: An exploration using multilevel structural equation modeling. *American Educational Research Journal*, *55*(2), 287–324. https://doi.org/10.3102/0002831217734804

Yoon, J. S. (2002). Teacher characteristics as predictors of teacher-student relationships: Stress, negative affect, and self-efficacy. *Social Behavior & Personality: An International Journal*, *30*(5), 485–493. https://psycnet.apa.org/doi/10.2224/sbp.2002.30.5.485

Yosso, T. J. (2005). Whose culture has capital? A critical race theory discussion of

    community cultural wealth. *Race, Ethnicity and Education*, *8*(1), 69–91.

    https://doi.org/10.1080/1361332052000341006

Young, E. Y. (2011). The four personae of racism: educators' (mis)understanding of

    individual vs. Systemic racism. *Urban Education*, *46*(6), 1433–1460.

    https://doi.org/10.1177/0042085911413145

Zimmerman, M. A., & Astor, R. A. (2021). Racism obstructs the path to school safety

    and educational equity: the need for an anti-racism focus in school violence

    prevention. *Journal of School Health, 91*(6), 443-446.

    https://doi.org/10.1111/josh.13018

APPENDIX A

Online Survey Questionnaire

Study Info and Consent/Information Letter (Section 1)

Dear Participant,

You are invited to participate in a research study conducted by Tasha Childs, a doctoral candidate in the College of Social Work at the University of South Carolina (UofSC). The purpose of this study is to gain teachers' valuable insight into how teacher racial biases relate to the quality of student-teacher relationships, and how you maintain and develop relationships with your students.

You are eligible to participate in this survey as a preschool to 12th grade public school teacher in the United States. If you agree to participate, you will complete an online survey that should take approximately 30 minutes and should be completed on a computer, as one section requires responding by selecting certain keys on the keyboard.

You will have the opportunity to be entered into a raffle for one of six $50.00 digital Amazon gift cards to be emailed to the participants. You may only complete the survey one time. You must complete a series of required questions for data integrity to protect the responses from including malicious actors (e.g., "bots"). If you do not complete the data integrity questions, you are not eligible to enter into the e-gift card raffle. In addition, if you are found to manipulate the survey to participate more than one time, you will not be able to enter the e-gift card raffle more than once time. If you follow all instructions included in the survey materials, you are eligible to enter the e-gift card raffle for a chance to win one of the six Amazon e-gift cards via email.

Your responses will be collected anonymously, though we recommend the survey be taken in a private setting to ensure confidentiality of your responses. If you choose to, you will have the option to provide your contact information for participation in future research, to enter the gift-card raffle, or to help review the final study results (e.g., member checking).

There are several expected benefits to participation in the study. These include increased self-awareness of your own implicit and explicit racial biases, and changes to your pedagogy due to this knowledge gain, and potential reflection on the role of race and racism in relationships with your students. As a result of your participation in this study, we may gain crucial insight into intervention points in the classroom, and better understand how teachers are currently employing strategies to develop and maintain

high-quality relationships with their students. This research study may be published or presented; however, the report(s) or presentation(s) will not include your name, or other identifying information about you.

Participation in this research study is voluntary. You are free not to participate, or to stop participating at any time, for any reason without negative consequences.

We will be happy to answer any questions you have about the study. You may contact Tasha Childs at 815-900-4119 or by email at tashah@email.sc.edu. Concerns about your rights as a research subject are to be directed to, Lisa Johnson, Assistant Director, Office of Research Compliance, UofSC, 1600 Hampton Street, Suite 414D, Columbia, SC 29208, phone: (803) 777-6670 or email: LisaJ@mailbox.sc.edu.
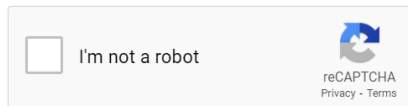

With kind regards,

Tasha Childs

Tasha Childs
1512 Pendleton St.,
Columbia, SC 29209

1) By continuing beyond this page, you acknowledge you have read the study purpose, **are taking this survey on a computer**, and agree to participate in this study. You will only be able to complete the survey one time.

Please complete the below task: (reCAPTCHA to ensure not a robot)

[Page Break]

2) Are you a preschool through 12th grade public school teacher in the United States? (yes/no)
   a) If yes, continue to survey.
   b) If no, "Thank you for your interest in this study, but unfortunately this survey is designed to only be completed by PK-12 US Public School Teachers."

Teacher Implicit Racial Bias (Section 2)

Race Preference Black/White Race Implicit Association Test (Greenwald et al., 1998). This section will use the current *Project Implicit* words and images, which are publicly available on OSF (https://osf.io/jrvg8/) using the *IATgen* method (Carpenter et al., 2019) of using the IATs in Qualtrics. R code will be used to set up Qualtrics block templates (customizable to change words/images) for the Black/White racial preference Implicit Association Tests. These are a series of 7 blocks of images where participants match the images or with whichever words they associate with the image.

- Good words are: "Joy", "Happy", "Laughter", "Love", "Glorious", "Pleasure", "Peace", and "Wonderful"
- Bad words are: "Evil", "Agony", "Awful", "Nasty", "Terrible", "Horrible", "Failure", and "Hurt".
- Black face images are: "bm14_nc.jpg", "bm23_nc.jpg", "bm56_nc.jpg", "bf14_nc.jpg", "bf23_nc.jpg", "bf56_nc.jpg"
- White face images are: "wm1_nc.jpg", "wm4_nc.jpg", "wm6_nc.jpg", "wf2_nc.jpg", "wf3_nc.jpg", "wf6_nc.jpg".

Instructions for this section are provided below, although images may differ based on randomization.

Section Two: (Instructions adapted from Harvard Project Implicit; Greenwald et al., 1998)

In the next task, you will be presented with a set of words or images to classify into groups. This task requires that you classify items as quickly as you can while making as few mistakes as possible. Going too slow or making too many mistakes will result in an uninterpretable score.

This part of the study will take about 5 minutes. Keep in mind:
- Keep your index fingers on the 'e' and 'i' keys to enable rapid response.
- Two labels at the top will tell you which words or images go with each key.
- Each word or image has a correct classification. Most of these are easy.
- The test gives no results if you go slow -- Please try to go as fast as possible.
- Expect to make a few mistakes because of going fast. That's OK.
- For best results, avoid distractions and stay focused.

Block 1

Instructions: Place your left and right index fingers on the E and I keys. At the top of the screen are 2 categories. In the task, words and/or images appear in the middle of the screen.

When the word/image belongs to the category on the left, press the **E** key as fast as you can. When it belongs to the category on the right, press the **I** key as fast as you can. If you make an error, a red **X** will appear. Correct errors by hitting the other key.

Please try to go as *fast as you can* while making as few errors as possible.

When you are ready, please press the [Space] bar to begin.
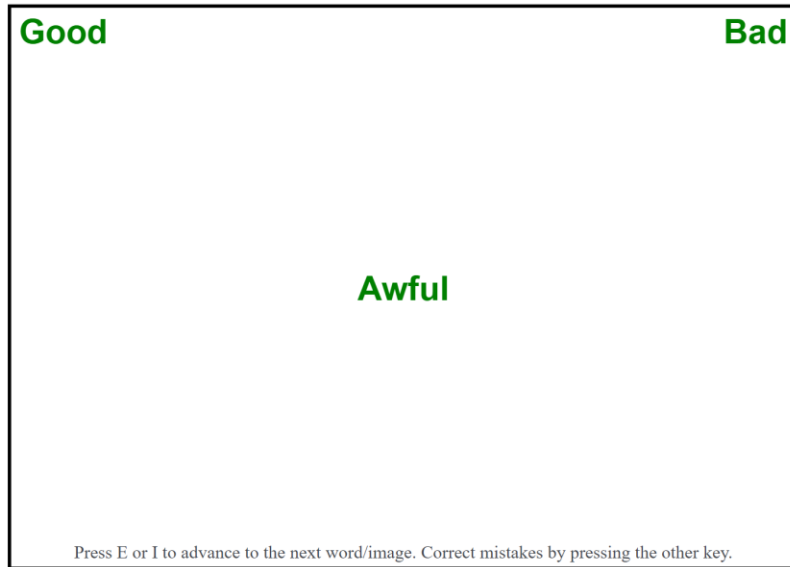
Example Survey Screen Block 1
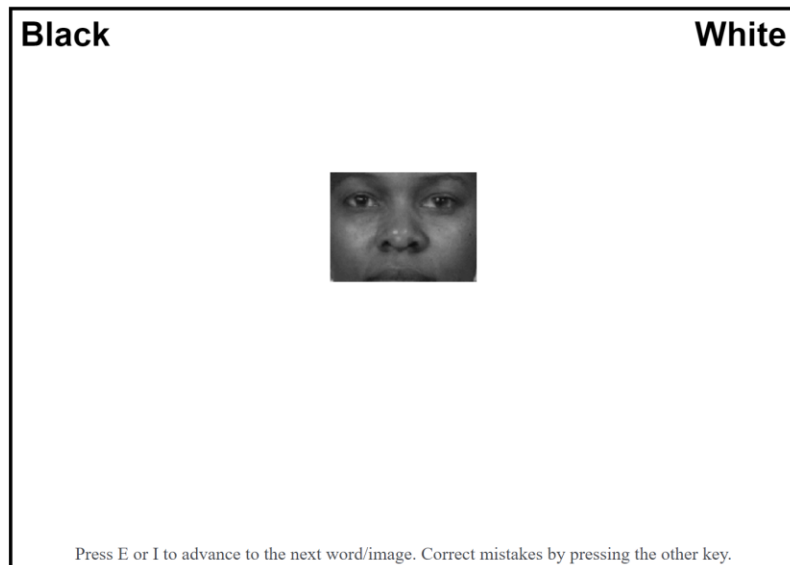
Block 2

Now, the categories have changed, but the rules remain the same. Please try to go as *fast as you can* while making as few errors as possible. Correct errors by hitting the other key.

When you are ready, please press the [Space] bar to begin.

Example Survey Screen Block 2

Block 3

Now the four categories you saw separately will appear together. Remember, each word/image fits in only one of the four categories. The label/item colors may help you identify the appropriate category.

Use the **E** key for the two categories on the left and the **I** key for the two categories on the right. Again, try to go as fast as possible without making mistakes. Correct errors by hitting the other key. Practice this combination now.

When you are ready, please press the [Space] bar to begin.

Example Survey Screen Block 3

Black
or
Bad

White
or
Good

Awful

Block 4

Please continue the task as you were just doing it. Again, try to go as fast as possible without making mistakes. Correct errors by hitting the other key.

When you are ready, please press the [Space] bar to begin.

Example Survey Screen Block 4

|	
Black	**White**
or	or
Bad	**Good**
Happy	
Press E or I to advance to the next word/image. Correct mistakes by pressing the other key.	

Block 5

Notice the categories from before have switched sides. Please practice this new configuration now. Remember to try to go as *fast as you can* while making as few errors as possible. Correct errors by hitting the other key.

When you are ready, please press the [Space] bar to begin.

Example Survey Screen Block 5

White	Black
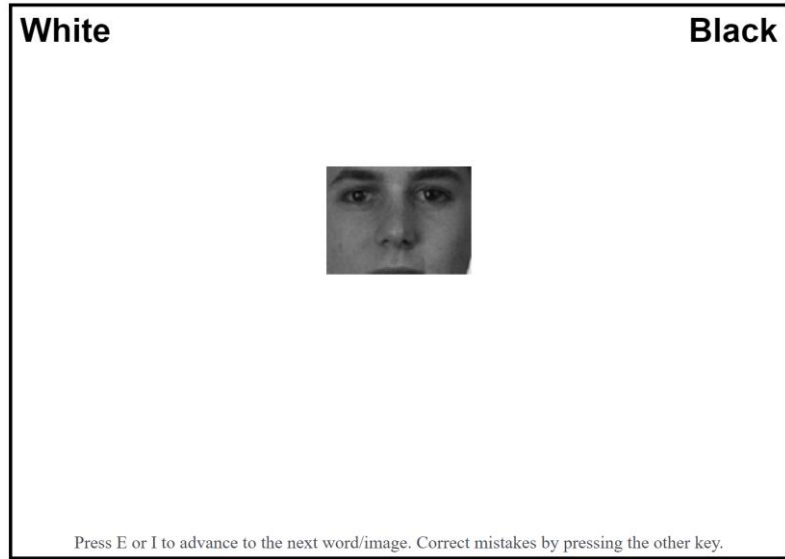
Block 6

Notice the four categories have been combined again, but in a new configuration. Please practice this combination now, and remember to go as fast as you can while making as few mistakes as possible. Correct errors by hitting the other key.

When you are ready, please press the [Space] bar to begin.

White or Bad	Black or Good
Happy	

Block 7

Please continue the task as you were just doing it, and remember to go as fast as you can while making as few mistakes as possible. Correct errors by hitting the other key.

When you are ready, please press the [Space] bar to begin.

White	Black
or	or
Bad	Good

Press E or I to advance to the next word/image. Correct mistakes by pressing the other key.

Pilot Questionnaire Teacher Implicit Racial Bias Section – Only for Pilot Participants

The following questions ask you to reflect on your understanding of the survey section you just completed, and ask you to provide any feedback to improve either the format of the survey or how a particular question is asked. These series of questions will follow each section of the survey. For the section you just completed, select "yes or no" for each question below, and please provide an explanation for your response.

1) Was the survey section easy to understand?
    Yes or No, Why?
2) Is there any other feedback you would like to share about this survey section?
    Yes or No, Why?

Teacher Explicit Racial Bias (Section 3)
Feelings Thermometer (Used in Chin et al., 2019; Leinter et al., 2016; Starck et al., 2020)

Please rate how warm or cold you feel toward the following groups (0 = coldest feelings, 5 = neutral, 10 = warmest feelings).

1) African Americans (0 = coldest feelings, 5 = neutral, 10 = warmest feelings)
2) European Americans (0 = coldest feelings, 5 = neutral, 10 = warmest feelings)

Pilot Questionnaire Feelings Thermometer – Only for Pilot Participants

For the section you just completed select "yes or no" for each question below, and please provide your explanation for each response.
1) Was the survey section easy to understand?
   Yes or No, Why?
2) Is there any other feedback you would like to share about this survey section?
   Yes or No, Why?

Bayesian Racism Scale (Litam & Balkin, 2021) 1 Strongly disagree," 2 "Disagree," 3 "Somewhat disagree," 4 "Neither agree nor disagree," 5 "Somewhat agree," 6 "Agree," and 7 "Strongly agree

Please select your level of agreement with the following statements from Strongly Disagree to Strongly Agree.

1) If you want to make accurate predictions, you should use information about a person's ethnic group when deciding if they will perform well.
2) If it will increase profits, it makes sense to use statistics about the performance of different racial groups.
3) When forming an impression of someone, you should consider the general tendencies of the ethnic group to which they belong.
4) It should be against airport policy to allow airport security to search passengers based on their ethnic group—for example, Arabs more so than others.
5) It is wrong to avoid someone because members of their racial group are more likely to commit violent crimes. (reverse-coded)
6) Law enforcement officers should pay particular attention to those social groups more heavily involved in crime, even if this means focusing on members of particular ethnic groups.

Pilot Questionnaire Bayesian Racism Scale – Only for Pilot Participants

For the section you just completed select "yes or no" for each question below, and please provide your explanation for each response.
1) Was the survey section easy to understand?
   Yes or No, Why?
2) Is there any other feedback you would like to share about this survey section?
   Yes or No, Why?

Color-blind Racial Attitudes Scale (COBRAs; Neville et al., 2000); 20-items, Likert 1 (Strongly Disagree) to 6 (Strongly Agree).

Please select your level of agreement with the following statements from Strongly Disagree to Strongly Agree.

Racial Privilege	
CoBRAS1r	1. White people in the US have certain advantages because of the color of their skin.
CoBRAS2r	2. Race is very important in determining who is successful and who is not.
CoBRAS3r	3. Race plays an important role in who gets sent to prison.
CoBRAS4r	4. Race plays a major role in the type of social services (such as type of health care or day care) that people receive in the US.
CoBRAS5r	5. Racial and ethnic minorities do not have the same opportunities as white people in the US.
CoBRAS6	6. Everyone who works hard, no matter what race they are, has an equal chance to become rich.
CoBRAS7r	7. White people are more to blame for racial discrimination than racial and ethnic minorities.
Institutional Discrimination	
CoBRAS8	8. Social policies, such as affirmative action, discriminate unfairly against white people.
CoBRAS9r	9. White people in the US. Are discriminated against because of the color of their skin.
CoBRAS10	10. English should be the only official language in the US.
CoBRAS11	11. Due to racial discrimination, programs such as affirmative action are necessary to help create equality.
CoBRAS12	12. Racial and ethnic minorities in the US. Have certain advantages because of the color of their skin.
CoBRAS13r	13. It is important that people begin to think of themselves as American and not African American, Mexican American or Italian American.
CoBRAS14	14. Immigrants should try to fit into the culture and values of the US.
Blatant Racial Issues	
CoBRAS15	15. Racial problems in the US. Are rare, isolated situations.
CoBRAS16	16. Talking about racial issues causes unnecessary tension.
CoBRAS17r	17. Racism is a major problem in the US.
CoBRAS18r	18. It is important for public schools to teach about the history and contributions of racial and ethnic minorities.
CoBRAS19r	19. It is important for political leaders to talk about racism to help work through or solve society's problems.
CoBRAS20	20. Racism may have been a problem in the past, it is not an important problem today.

Data Integrity Survey Block

1. **Enter a number a ten digit number into the text box.** * (required bot detection)

   * _____

2. **Bot Detection Question: Only Visible to Malicious Actor Programs**

   * This is a special question designed to detect bots. Are you a bot?

     o Yes, if yes end of survey skip logic.

     o Maybe, if maybe end of the survey skip logic.

     o No, if no end of the survey skip logic.

<u>**Pilot Questionnaire Colorblind Racial Attitudes – Only for Pilot Participants**</u>

For the section you just completed select "yes or no" for each question below, and please provide your explanation for each response.
 1) Was the survey section easy to understand?
    Yes or No, Why?
 2) Is there any other feedback you would like to share about this survey section?
    Yes or No, Why?

Student-Teacher Relationships (Section 4)

Student-Teacher Relationships Scale (Adapted from Pianta, 2001)
Likert 1-5: 1=Definitely does not apply, 2=Not really, 3=Neutral, not sure, 4=Applies somewhat, 5=Definitely applies [Factors: Closeness 1, 3, 4R, 5, 6, 7, 9, 15; Conflict 2, 8, 10, 11, 12, 13, 14]

Please reflect on the degree to which each of the following statements currently applies to your relationship with your students.
1. I share an affectionate, warm relationship with my students.
2. My students and I always seem to be struggling with each other.
3. If upset, my students will seek comfort from me.
4. My students are uncomfortable with physical affection or touch from me. (reverse-coded)
5. My students value their relationship with me.
6. When I praise my students, they beam with pride.
7. My students spontaneously shares information about themselves.
8. My students easily becomes angry at me.
9. It is easy to be in tune with what my students are feeling.
10. My students remains angry or is resistant after being disciplined.
11. Dealing with my students drains my energy.
12. When my students arrive in a bad mood, I know we're in for a long and difficult day.
13. My students' feelings toward me can be unpredictable or can change suddenly.
14. My students are sneaky or manipulative with me.
15. My students openly shares his/her feelings and experience with me.

Pilot Questionnaire Student-Teacher Relationships – Only for Pilot Participants

For the section you just completed select "yes or no" for each question below, and please provide your explanation for each response.
1) Was the survey section easy to understand?
   Yes or No, Why?
2) Is there any other feedback you would like to share about this survey section?
   Yes or No, Why?

Please rate each of the following items from the prior section on their clarity and provide suggestions for alternative wording.			
1. I share an affectionate, warm relationship with my students.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			

2. My students and I always seem to be struggling with each other.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			

3. If upset, my students will seek comfort from me.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			

4. My students are uncomfortable with physical affection or touch from me.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			

5. My students value their relationship with me.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			

6. When I praise my students, they beam with pride.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			

7. My students spontaneously shares information about themselves.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			

8. My students easily becomes angry at me.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			

9. It is easy to be in tune with what my students are feeling.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear

If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			
10. My students remains angry or is resistant after being disciplined.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			
11. Dealing with my students drains my energy.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			
12. When my students arrive in a bad mood, I know we're in for a long and difficult day.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			
13. My students' feelings toward me can be unpredictable or can change suddenly.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			
14. My students are sneaky or manipulative with me.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			
15. My students openly share their feelings and experience with me.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			

Open-Ended Student-Teacher Relationship Questions (Section 5)

1) *How do you develop relationships with students whose racial or ethnic identity differs from your own? Please give one or two specific examples.*
2) *How do you maintain relationships with students whose racial or ethnic identity from your own? Please give one or two specific examples.*
3) *Does a student's racial or ethnic identity influence the types of actions you take to develop or maintain relationships with your students? (yes/no; Logic in the survey for yes/no)*
   a. *If yes, could you share more about how a student's racial or ethnic identity influences your actions?*
   b. *If no, could you share more about why a student's racial or ethnic identity does not influence your actions?*

Pilot Questionnaire Open-Ended Questions – Only for Pilot Participants

For the section you just completed select "yes or no" for each question below, and please provide your explanation for each response.
1) Was the survey section easy to understand?
   Yes or No, Why?
2) Is there any other feedback you would like to share about this survey section?
   Yes or No, Why?

Please rate each of the following items on their clarity and provide suggestions for alternative wording.			
1) How do you develop relationships with students whose racial or ethnic identity differs from your own? Please give one or two specific examples.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			
2) How do you maintain relationships with students whose racial or ethnic identity from your own? Please give one or two specific examples.			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			
3) Does a student's racial or ethnic identity influence the types of actions you take to develop or maintain relationships with your students?			
Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			
3a) If yes, could you share more about how a student's racial or ethnic identity influences your actions?			

Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			

3b) *If no, could you share more about why a student's racial or ethnic identity does not influence your actions?*

Rate the clarity of the above item.	1=Not Clear	2=Somewhat Clear	3=Very Clear
If unclear, which parts of this item are awkward or confusing? What alternative wording would you recommend?			

Teacher-Student Racial Mismatch (Section 6)

Please describe the race/ethnicity of students in your primary classroom. This section considers minority to be inclusive of students who identify as **African American or Black, Hispanic, Asian, Pacific Islander, American Indian/Alaska Native, Biracial, and Multiracial**.

Students
1) Which best describes the percentage of students from a minoritized racial or ethnic group in your primary classroom? Dropdown Options: (75% or more minority students, 50-74% minority students, 25-49% minority students, less than 24% minority students)
2) What is the race or ethnicity of the majority (greater than 50%) of the **students in your primary classroom**? Dropdown Options: (African American or Black, Asian, Native American or Alaska Native, Native Hawaiian or Pacific Islander, Hispanic or Latino, White, Biracial, Multiracial [Three or More Races])
3) Please estimate (%) the percentage of students in your primary classroom belonging to each racial or ethnic group.
    _____ African American or Black
    _____ Asian
    _____ Native American or Alaska Native
    _____ Native Hawaiian or Pacific Islander
    _____ Hispanic or Latino
    _____ White
    _____ Biracial
    _____ Multiracial (Three or More Races)
    _____ Another race/ethnicity:_____

Pilot Questionnaire Teacher Racial Mismatch – Only for Pilot Participants

For the section you just completed select "yes or no" for each question below, and please provide your explanation for each response.
1) Was the survey section easy to understand?
    Yes or No, Why?
2) Is there any other feedback you would like to share about this survey section?
    Yes or No, Why?

Teacher and School Characteristics (Section 7)

Teacher Demographics
1) **What is your gender?** Dropdown Options: Male, Female, Transgender, Nonbinary, ___ Another gender, write-in
2) **How old are you?** Dropdown Options: (18-100)
3) **Are you of Latinx or Hispanic origin?** Dropdown Options: (Yes/No)
4) **With what race do you identify?** Select All. African American or Black, Asian, Native American or Alaska Native, Native Hawaiian or Pacific Islander, White, Biracial _____, Multiracial _____ Another race/ethnicity, write-in
5) **What state do you live in?** Dropdown Options: 50 states plus Puerto Rico and D.C., Outside of the U.S.

Pilot Questionnaire Teacher Demographics – Only for Pilot Participants

For the section you just completed select "yes or no" for each question below, and please provide your explanation for each response.
1) Was the survey section easy to understand?
   Yes or No, Why?
2) Did the response options make sense?
   Yes or No, Why?
3) Is there any other feedback you would like to share about this survey section?
   Yes or No, Why?

Education and Professional Experience
6) **What is your highest degree attained?** Dropdown Options: (Some High School, High School, Associate's Degree, Bachelor's Degree, Master's Degree, Doctorate)
7) **How many years have you served as a teacher?** Dropdown Options: (0-75)
8) **How many years have you worked at your current school?** Dropdown Options: (0-75)
9) **Did you enter teaching through an alternative certification program?** Dropdown Options: (Yes/No)
10) **Are you a union member?** Dropdown Options: (yes/no)

Pilot Questionnaire Education and Professional Experience – Only for Pilot Participants

For the section you just completed select "yes or no" for each question below, and please provide your explanation for each response.
1) Was the survey section easy to understand?
   Yes or No, Why?
2) Did the response options make sense?
   Yes or No, Why?
3) Is there any other feedback you would like to share about this survey section?
   Yes or No, Why?

<u>School Characteristics</u>
11) **What type of school do you teach at?** Dropdown Options: Traditional public school (including magnet schools, specialty schools) Charter school, Private school, Alternative school, _____ Another type, write-in
12) **What level of school do you teach at?** Dropdown Options: Preschool, Elementary, Middle, High, Alternative, _____ Another type, write-in
13) **What grade level do you currently teach?** Dropdown Options: Pre-K Kindergarten First Second Third Fourth Fifth Sixth Seventh Eighth Ninth Tenth Eleventh Twelfth, Other, write-in
14) **What subject do you teach?** Multiple Choice: Preschool, Elementary (general), Middle grades (general), Health, Physical education, Special education, Arts and/or music, English as a second language, Secondary English/language arts, Secondary math, Secondary natural sciences, Secondary social sciences, Career and technical education, Religious education, World languages, Computer science, Gifted and Talented, Advanced Placement: _____, Honors: _____, Another type, write-in: _____
15) **What state is your school district in?**
16) **What is the name of your school district?** Dropdown options linked by state, list from U.S. Census 2021.

Pilot Questionnaire School Characteristics – Only for Pilot Participants

For the section you just completed select "yes or no" for each question below, and please provide your explanation for each response.
1)   Was the survey section easy to understand?
      Yes or No, Why?
2)   Is there any other feedback you would like to share about this survey section?
      Yes or No, Why?

Self-Awareness & Prior Exposure to Implicit Association Tests (Section 8)

1)   *I am aware of any implicit racial biases I may hold (Implicit Awareness).* (yes/no)
2)   *I am aware of any explicit racial biases I may hold (Explicit Awareness).* (yes/no)
3)   *I have taken a race or skin tone implicit association test in the past (Exposure to IATs).* (yes/no)

Pilot Questionnaire Self-Awareness & Prior Exposure – Only for Pilot Participants

For the section you just completed select "yes or no" for each question below, and please provide your explanation for each response.
3)   Was the survey section easy to understand?
      Yes or No, Why?
4)   Is there any other feedback you would like to share about this survey section?
      Yes or No, Why?

The following sections were not included in Pilot Survey, only the Final Survey: Section 9

<u>Future Participation and Member Checking Interest (Section 9)</u>

1) Are you are interested in participating in future studies or interview opportunities on similar topics? (Yes/No)
    a. If yes, please include your contact information:
    b. Name:
    c. Phone Number:
    d. Email Address:
2) Are you interested in reviewing the final results of this study to discuss their accuracy and representation in capturing the lived experiences of teachers? (Yes/No)
    a. If yes, please include your contact information:
    b. Name:
    c. Phone Number:
    d. Email Address:

<u>Enter Gift Card Raffle (Section 10)</u>

1) If you would like to be entered to win one of six $50 Amazon e-gift cards, please include the following information.
    a. Name:
    b. Phone Number:
    c. Email Address:

APPENDIX B

Student-Teacher Relationship Scale Pilot Participant Item Responses

Table B.1

Pilot Participant Responses to Clarification Suggestions on STRS Items

Scale Item	Clarity of Item	Awkward or Confusing Portions	Alternative Wording Recommendations
1. I share an affectionate, warm relationship with my students.	100% (Very Clear)	--	I'm not sure affectionate is a good word to use. May be try welcoming or caring?
2. My students and I always seem to be struggling with each other.	100% (Very Clear)	I think of this as the "the majority of my students" feel or act this way. consider saying struggle to form a relationship?	--
3. If upset, my students will seek comfort from me.	90% (Very Clear) 10% (Somewhat Clear)	--	Advice, guidance maybe better than comfort.
4. My students are uncomfortable with physical affection or touch from me.	70% (Very Clear) 20% (Somewhat Clear) 10% (Not Clear)	At the high school level, where I teach, physical affection is not regularly used for very good reasons. For example, a young male teacher hugging a teenage girl would definitely be frowned upon, so the lack of physical affection between that teacher and student would not accurately reflect the positive relationship that may exist between them. Therefore, if you are using this question as a gauge for determining teacher-student relationships, it would not provide valid feedback. This isn't specifying who is initiating the contact.	Maybe be specific. Hugs, pats on the back, etc. I'm not sure if there is any appropriate wording of this question for the high school level because physical affection between high school teachers and students is highly variable depending on age, genders, and the severity of the situation which might warrant the physical affection. Does not apply should be an option if the initiating is coming from the teacher. I don't initiate because I never want to make a student feel uncomfortable.

5. My students value their relationship with me.	90% (Very Clear) 10% (Somewhat Clear)	Again, this is hard because I have to answer this for 30 students even though every relationship is a little different. Majority are strong but some need improvement.	--
6. When I praise my students, they beam with pride.	100% (Very Clear)	--	--
7. My students spontaneously shares information about themselves.	100% (Very Clear)	--	--
8. My students easily becomes angry at me.	90% (Very Clear) 10% (Somewhat Clear)	Generalizing all 30 students again.	Again, majority or all or a few need to be included.
9. It is easy to be in tune with what my students are feeling.	90% (Very Clear) 10% (Somewhat Clear)	I could interpret it as either I can sense their range of feelings or that I do not know their home lives.	--
10. My students remains angry or is resistant after being disciplined.	90% (Very Clear) 10% (Somewhat Clear)	Many times I am not allowed to discipline the most needy child.	--
11. Dealing with my students drains my energy.	80% (Very Clear) 20% (Somewhat Clear)	When one student continually misbehaves badly, it can drain you. What do you mean by dealing?	Specify dealing with behaviors, or teaching, or whatever you intended by dealing.
12. When my students arrive in a bad mood, I know we're in for a long and difficult day.	70% (Very Clear) 30% (Somewhat Clear)	Is this saying that the teacher doesn't know how to deal with students in a bad mood? It's usually not the majority, but the one or two students who come in hot that set the tone. This wording isn't completely appropriate for the high school level because high school teachers only have students for one period a day. Therefore, if high school students come in a bad mood I know we're just in for a long and difficult class period, not a day.	When "my friend" arrives... Maybe "When my students arrive in a bad mood, I know we're in for a long and difficult time together," would work for multiple age groups?
13. My students' feelings toward me can be unpredictable or can change suddenly.	90% (Very Clear) 10% (Somewhat Clear)	For me, they are teenagers, so this could happen at any time and it doesn't always have anything to do with me.	--

14. My students are sneaky or manipulative with me.	100% (Very Clear)	--	--
15. My students openly shares his/her feelings and experience with me.	100% (Very Clear)	--	--