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The Engagement-Achievement Paradox and the Role of Cultural Humility in the Instruction of Diverse Youth

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ACCEPTANCE

This dissertation, THE ENGAGEMENT-ACHIEVEMENT PARADOX AND THE ROLE OF CULTURAL HUMILITY IN THE INSTRUCTION OF DIVERSE YOUTH, by EMILY SRISARAJIVAKUL, was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the degree, Doctor of Philosophy, in the College of Education & Human Development, Georgia State University.

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THE ENGAGEMENT-ACHIEVEMENT PARADOX AND THE ROLE OF CULTURAL HUMILITY IN THE INSTRUCTION OF DIVERSE YOUTH

By

EMILY SRISARAJIVAKUL

Under the direction of Kris Varjas, Psy.D

ABSTRACT

School engagement is a multidimensional construct that includes behavioral and emotional dimensions that affect a student's interaction with his/her school environment (Appleton et al., 2006). School engagement has been positively correlated with academic achievement, however there is a growing body of literature that has found the opposite is true with Black/African American students (e.g., Johnson et al., 2001) who have higher levels of school engagement yet lower levels of academic achievement than their White peers (Shernoff &

Schmidt, 2008). Chapter One was a systematic literature review that identified study qualities, the role of culture, and hypothesized reasons for the existence of this engagement-achievement paradox. Results suggested there is a need to consider culture and teacher-student relationships when examining the relationship between school engagement and academic achievement. Chapter Two examined the relationships between cultural humility and emotional school engagement variables, the predictive value of teacher cultural humility on school engagement and academic achievement, and further explored the engagement-achievement paradox among diverse early adolescents. Data were gathered among 1,504 middle school students in a high-need, low-income school district in the Southeastern United States during 2018-2019. Students completed the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997), the Inventory of Teacher Student Relationships (IT-SR; Murray & Zvoch, 2011) and the Cultural Humility Scale for Students (CHS-S; Srisarajivakul et al., 2021). Results indicated that cultural humility correlated highly with other measures of emotional school engagement. When considering cultural humility, there was an engagement-achievement paradox among Black/African American students, highlighting the importance of culturally humble practices in teaching. Findings from this study have the potential to expand the school engagement literature base to include cultural humility and inform culturally-responsive teaching practices.

INDEX WORDS: Academic achievement, Black/African American, school engagement, behavior, cultural humility, cross-cultural issues, middle school, teacher-student relationship quality

THE ENGAGEMENT-ACHIEVEMENT PARADOX AND THE ROLE OF CULTURAL HUMILITY IN THE INSTRUCTION OF DIVERSE YOUTH

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DEDICATION

I dedicate this dissertation to my parents, Nopadon and Chanphen Srisarajivakul. From my early schooling experiences and into adulthood, you always taught me to do what made me happy while also helping others. You instilled in me the desire to broaden my horizons, question what I thought I knew, and above all else, work hard to achieve my goals. I would like to extend a special thanks to my sister Caroline Srisarajivakul, who has always fostered my values of ambition, creativity, and curiosity. I have always looked up to you and am always thankful for your support.

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Last, I would like to thank my partner Athip Vatanapradith for being my rock during the good times and the bad. You've always offered great advice and a shoulder to rest on, and I am so thankful that you are in my life. You've given me the confidence to believe in myself and the strength to handle tough times. Without our late-night chats and gaming sessions, there is no way I could have completed this program.

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ABBREVIATIONS

ANOVA	Analysis of Variance
CFI	Comparative Fit Index
CHS-S	Cultural Humility Scale for Students
EAP	Engagement-Achievement Paradox
EFA	Exploratory Factor Analysis
ESE	Emotional School Engagement
IT-SR	Inventory of Teacher-Student Relationships
MANOVA	Multivariate Analysis of Variance
RMSEA	Root Mean Square Error of Approximation
SDQ	Strengths and Difficulties Questionnaire
SEM	Structural Equation Modeling
TSRQ	Teacher-Student Relationship Quality

CHAPTER 1

THE ENGAGEMENT-ACHIEVEMENT PARADOX: UNDERSTANDING SCHOOL ENGAGEMENT AMONG DIVERSE LEARNERS

School engagement is a multifaceted construct that encapsulates students' emotional attachments to their teachers and school as well as behaviors in the classroom and attitudes towards learning (Fredricks et al., 2004). Students who were engaged in school had lower rates of substance use and delinquency as well as higher academic achievement than those who were disengaged (Luthar & Ansary, 2005). Disengaged students were found to be at risk of dropping out of high school (Fredricks et al., 2004; Janosz et al., 2008) and thus experienced limited career opportunities. However, Shernoff and Schmidt (2008) discovered the "engagement-achievement paradox," in which Black/African American students reported higher school engagement yet lower academic achievement than their White peers. As a result, there has been a longstanding call for more efforts to further consider how socio-cultural differences affect school engagement and outcomes such as academic achievement and high school graduation (Fredricks et al., 2004; Jimerson et al., 2003; Roorda et al., 2011; Wang & Eccles, 2013). In this systematic literature review, I aim to identify possible explanations for how and why the engagement-achievement paradox may exist among Black/African American[1] students and explore the role of culture in conceptualizations of school engagement.

[1] For this study, I will be using the term Black/African American as a proxy for "Black or African American." This is the descriptive term used by the U.S. Census for people who have, "… origins in any of the Black racial groups of Africa…[and] also includes respondents who reported entries such as African American; Sub-Saharan African entries, such as Kenyan and Nigerian (with the exception of Sudanese and Cape Verdean because of their complex, historical heritage); and Afro-Caribbean entries, such as Haitian and Jamaican. North African entries are classified as White." (Rastogi et al., 2011, p. 2).

Definitions and Measures of School Engagement

School engagement has been defined as a continuum, involving different levels of student participation in day-to-day and extra-curricular activities and variable feelings of belonging to the school, which includes teachers and peers (Finn, 1992). This definition has expanded over time, and Appleton and colleagues (2008) suggested that the construct of school engagement is comprised of four distinct subtypes of engagement. First, behavioral engagement refers to the way students follow school rules, the presence of student behaviors such as persistence and asking for help, and student participation in school-related activities such as athletics. Emotional engagement refers to students' emotional reactions to their school, classroom, and teacher. Academic engagement refers to the student's effort for understanding complex ideas or mastering skills that are difficult to acquire. Last, cognitive engagement refers to student-centered traits such as flexibility in problem solving, positive coping in the face of failure, and investment in learning, understanding, and mastering academic knowledge and skills (Appleton et al., 2008). It is thought that the relationship between emotional school engagement and academic outcomes may be moderated by behavioral engagement (Li et al., 2010). However, it could be that behavioral engagement and emotional engagement reciprocally influence each other, which lead to differences in academic outcomes (Li et al., 2010). A host of other social (e.g., parenting styles, peer support) and environmental (e.g., classroom quality, school environment) factors are hypothesized to influence student engagement, both academically and socio-emotionally (Upadyaya & Salmela-Aro, 2013).

There exists a high level of variability in studies examining school engagement based on the different subtypes assessed (Furlong et al., 2003). One review found that only a few studies examined academic, behavioral, emotional, and cognitive dimensions of school engagement,

while the majority of studies measured only one or a combination of two facets of school engagement (Jimerson et al., 2003). Some studies considered related terms such as school bonding and school attachment to be the same as school engagement, but some argue that these constructs should be considered subcategories of behavioral and emotional engagement, rather than uniquely different concepts (Jimerson et al., 2003; O'Farrell & Morrison, 2003).

Studies examining school engagement varied in their definitions of school engagement and in the measures of school engagement used (see Fredricks & McColskey, 2012 for a review). Instruments commonly used to measure student engagement included Appleton's Student Engagement Instrument (Appleton et al., 2006), Finlay's Student Engagement Survey (Finlay, 2006), and the School Engagement in Schools Questionnaire (Hart et al., 2011). Other studies used a combination of measures capturing the different subtypes of school engagement (i.e., behavioral, emotional, and cognitive).

School Engagement, Academic Achievement, and Culture

Researchers (e.g., Fredricks et al., 2004; Lei et al., 2014; Zhu, 2010) have theorized that higher levels of school engagement generally lead to better academic and social-emotional outcomes for students. If students feel more embedded in their school, they may exert more effort in school and classroom activities, which leads to the development of positive feelings for the school and better academic achievement (identification-participation model; Li et al., 2010). On the other hand, if students do not feel emotionally engaged in their academic life, they begin to disengage behaviorally and cognitively, leading to poorer academic outcomes (e.g., Archambault et al., 2009; Hirschfield & Gasper, 2011). In a recent meta-analysis, Lei and colleagues (2018) found a strong positive correlation between student engagement and academic

achievement in a sample of 69 independent studies consisting of 196,473 diverse participants ($r = .269$, $z = 46.095$, $p < .001$, $k = 30$, 95% CI = .258, .279).

Culture. Some researchers have suggested that the relationship between school engagement and academic achievement is not linear and that culture may serve as an important moderator of this relationship (e.g., Johnson et al., 2001; Shernoff & Schmidt, 2008; Suárez-Orozco et al., 2009). In this study, culture is defined as, "A sedimentation of the historical experience of persons and of social groupings of various kinds, such as nuclear family and kin, gender, ethnicity, race, and social class, all with differing access to power in society" (Erickson, 2003, p. 32). This definition was chosen because it is broad enough to encompass many different aspects of a person's identity, which is important because one person can be part of many different social groupings. Power and historical context are particularly vital when considering relationships within the school context because members of certain cultural groups have had differing relationships with members of other cultural groups over time. These dynamics may cause relational friction in settings such as classrooms where one party (the teacher) is meant to have more power over another (the students; Alexander-Snow, 2004). In this study, I will be reviewing studies using this definition of culture to determine if culture was taken into account when reviewing the original studies. This will be done by investigating whether the study authors included cultural considerations in their definitions of school engagement or if the study authors provided demographic information and accounted for characteristics of students' cultural identities (e.g., race/ethnicity, gender) in their analyses.

Bias. In the US, academic and behavioral expectations in educational settings are mostly influenced by White, middle-class norms. While teachers have mostly been White and female (e.g., Monroe, 2005), it is important to note that White women are not typically the ones who

have created the policies and structures in which they teach. However, the day-to-day enforcement of these norms does typically reside with teachers who predominantly fit these demographic characteristics. While the teaching class remains relatively stable in terms of race, student populations are becoming increasingly diverse (e.g., Musu-Gillette et al., 2017). In terms of race and ethnicity, for example, the National Center for Education Statistics (NCES) report (2020) showed that nearly half of public-school students were from racially/ethnically diverse backgrounds, while nearly than 80 percent of their teachers were White. Because of such stark demographic differences between the teaching and student populations, teachers may selectively show bias towards different students, which may lead to disproportionate practices that may affect behavioral and academic outcomes (McIntosh et al., 2014).

McIntosh and colleagues (2014) presented a multidimensional conceptualization of bias that may provide an explanation of how cultural differences between White teachers and diverse students may affect student achievement and engagement outcomes. They defined bias as a system of cognitive processing that involves one system that operates quickly and automatically (implicit bias; Macrae & Bodenhausen, 2000) and one system that is more deliberate and involves conscious attention (explicit bias; Green et al., 2006). With implicit bias, McIntosh and colleagues (2014) posited that generalized associations are formed from systematically limited experience or exposure to certain racial groups and can bias perception, judgment, and decision-making unconsciously. On the other hand, explicit bias involved consciously held beliefs that members of certain cultural groups were inherently inferior, and these beliefs tended to be the products of learned patterns of thinking (McIntosh et al., 2014).

In the educational context, there have been some studies that have measured explicit and implicit ethnic biases of teachers and their effects on students. In one study of mostly White

elementary school teachers, researchers found that teachers' implicit biases predicted the extent of the achievement gap between the teachers' minority and non-minority (White) ethnic students on standardized tests (van den Bergh et al., 2010). Additionally, they found that teachers had lower expectations for academic success towards their ethnic minority students, a finding that has been replicated in the literature (e.g., Minor, 2014). More recent studies have found that evaluations of educators who teach lower-achieving students and students of color are more negative than teachers who serve higher-achieving and White students (Campbell & Ronfeldt, 2018; Dillon & Malick, 2020), indicating some observer bias by administrators.

One potential answer to the issue of unequal expectations and behaviors of teachers may be to match students with teachers based on race/ethnicity. However, some research has shown that hiring more non-White teachers has not necessarily been shown to solve this problem of disproportionate practices (Bradshaw et al., 2010). This line of thinking assumes that race/ethnicity is synonymous with culture, when in reality, culture is multifaceted (e.g., Erickson, 2003; Helms, 1997). Thus, when considering differences in school engagement and academic achievement across cultural lines, examining the potential moderating effects of other aspects of culture and bias towards those aspects may be important in understanding the academic and vocational achievement of minority students.

Engagement and Academic Achievement Across Dimensions of Cultures

Helms (1997) contended that it is useful to carefully differentiate sociodemographic categories from peoples' subjective experiences to avoid generalization across cultural groups. However, there are some studies that have identified some patterns of achievement and engagement across various dimensions of culture, and there are some merits to categorizing experiences into discrete patterns in order to drive targeted, effective assessment and intervention

efforts (Helms, 1997). Below is a description of various dimensions of culture and their general academic achievement and engagement trajectories as identified in the literature.

Age. There are developmental changes that exist when considering students' engagement with school. In general, younger students tend to be more engaged in school than older students (Johnson et al., 2001). It is thought that the transition from elementary school to middle school involves a general decline in academic success because of a combination of individual (e.g., hormonal, emotional) and contextual (e.g., peer and parental) influences (Li & Lerner, 2010). Additionally, students who have been retained and are thus older than those in their grade levels have lower levels of both school engagement and academic achievement (Weiss et al., 2010). Importantly, low school engagement in middle school also has been found to predict truancy and delayed high school graduation (Baams et al., 2017). It appears that the nature of school engagement changes once again as students transition from high school to university or vocational school, as school engagement becomes more similar to work engagement during this time (Salmena-Aro & Upadyaya, 2012). Studies have suggested that as students reach the end of high school, they begin to plan for entry into the workforce or postsecondary education and experience gains in both school engagement and academic achievement (e.g., Steinberg et al., 2009).

Gender. In general, female students have been shown to be more engaged in school and have higher grades than male students (Anderman & Anderman, 1999; Furrer & Skinner, 2003; Johnson et al., 2001; Skinner et al., 2008; Wang & Eccles, 2012). Among girls, school engagement has been more strongly correlated with academic achievement than among boys (Wen et al., 2010). In turn, boys were more likely than girls to experience rapid decreases in school engagement over time compared to girls (Janosz et al., 2008; Li & Lerner, 2011).

Socio-economic status. Studies have suggested that students from high socio-economic backgrounds display higher levels of school engagement, and the relationship between engagement and achievement is positive and linear (Weiss et al., 2010). Students from low socio-economic backgrounds tended to follow unstable school engagement trajectories that may lead to school dropout (Archambault et al., 2009; Janosz et al., 2008). One study found that low student engagement may be more related to low community socio-economic status (SES) rather than individual family SES (Shernoff & Schmidt, 2008). The relationship between community SES and academic achievement also may be mediated by problem behaviors such as delinquency as well as substance use among students from both low- and high-income communities, such that engagement in such behaviors leads to low school engagement and academic achievement (Luthar & Ansary, 2005).

Race. Among White American and Asian American students, the relationship between school engagement and academic achievement has been positive (Sciarra & Seirup, 2008). Other racial groups such as Hispanic/Latinx (Reeves & Bennett, 2004; Sciarra & Seirup, 2008) and students who recently immigrated to the US (Suarez-Orozco et al., 2009) also displayed a pattern of high engagement leading to high academic achievement and vice versa.

An interesting phenomenon emerges when considering school engagement and academic achievement among Black/African American students. While some studies have found that the relationship between engagement and achievement was linear and positive across all racial/ethnic groups (e.g., Lei et al., 2018), other studies have found that Black/African American students paradoxically have higher school engagement but lower achievement than White students (e.g., Johnson et al. 2001). Shernoff & Schmidt (2008) coined the term "engagement-achievement paradox" (EAP) to describe this pattern. Evidence also has suggested that

Black/African American students have higher self-esteem, expectancies for academic success, and positive educational attitudes than White students, yet they still unexpectedly experience lower academic achievement compared to their White peers (Singh et al., 2010).

Some (e.g., Johnson et al., 2001) have posited that the disidentification hypothesis may explain why these positive attributes related to school engagement may not lead to academic achievement. This hypothesis posited that Black/African American students may not tie their self-esteem and engagement with school to academic outcomes, therefore undermining the well-established relationship between school engagement and academic achievement (Osborne, 1995; Steele, 1992). Instead, a robust literature base suggests that sources of self-esteem and engagement may come from other sources such as extracurricular activities, religious institutions, and peers (Gray-Little & Hafdahl, 2000). However, a systematic literature review has not been conducted to assess whether this EAP appears across the literature or if it was found only in a minority of studies. One aim of this study is to further evaluate the literature surrounding the relationship between engagement and achievement among Black/African American students to more clearly ascertain the circumstances in which the EAP appears.

Cultural Discontinuity, Cultural Ecology, and the Engagement-Achievement Paradox

The cultural discontinuity perspective may explain why school engagement and academic achievement among students may vary across cultural groups. According to this perspective, differences between minority cultures and mainstream cultures may lead to differential developments of cognitive and social-behavioral skills and academic achievement (Bingham & Okagaki, 2012). Cultural conflicts between the home and school environments (e.g., differences in nonverbal/verbal communication, cultural values or behaviors) may lead to disruptions of the learning process, which then may lead to the students' rejection of cultural values and academic

demands (Bernal et al., 1991). This pattern is theorized to persist into post-secondary education as well (e.g., Burt et al., 2018) and has deleterious effects on academic achievement and school attachment (Brown-Wright & Tyler, 2010; Tyler et al., 2016; Tyler et al., 2010). Additionally, the cultural ecological view posits that institutional oppression and discrimination of racial/ethnic minority groups over time have limited the potential for racial/ethnic minority students to be successful in school (Ogbu, 1986). Taken together, these views suggest that cultural discontinuity between a minority culture and the mainstream culture along with systemic discrimination of people from the minority group could lead to a student's lack of engagement in school as well as low academic achievement (Bingham & Okagaki, 2012).

However, neither the cultural discontinuity nor the cultural ecological views seem to clarify why the EAP may exist among Black/African American students specifically. Given the historical institutional disenfranchisement of Black/African American students, coupled with potential cultural conflicts between home and school, one might expect Black/African American students to be more likely to have low school engagement that leads to low academic achievement. However, some studies have found that Black/African American students remain engaged with school despite experiencing lower levels of academic achievement (e.g., Shernoff & Schmidt, 2008). It may be important to consider that despite Black/African American students' best efforts to stay engaged with school, there might be something in the school environment (e.g., systematic and institutional barriers to education) that is pervasively keeping academic achievement levels lower among this population compared to White students. It is critical for teachers to incorporate cultural backgrounds and experiences when instructing Black/African American students as a way to help boost the academic achievement levels among this population. This perspective has not yet been examined with respect to the EAP.

The Current Study

Connell and colleagues (1994) argued that, "Engagement is the most proximal point of entry for reform efforts designed to enhance the educational chances of poor African-American youth" (Connell et al., 1994, p. 504). However, the literature seems to be contradictory about the link between school engagement and academic achievement among Black/African American students. It is important to determine what interventions in the wider school setting may help to improve academic achievement among Black/African American students because of the pervasive achievement gap between White and Black/African American students over the course of history (e.g., Norman et al., 2001). This study seeks to synthesize information found in studies about the EAP and to explore reasons for contradictions and inconsistencies across the literature. The research questions for this study are as follows:

1a. Is there an engagement-achievement paradox among studies that have examined the effects of school engagement on academic achievement among Black/African American students?

1b. Are there study qualities (e.g., analysis method, sample size, racial/ethnic makeup of sample, measurement of school engagement) that contribute to the conclusion that an engagement-achievement paradox exists or does not exist among Black/African American students?

2. How is culture accounted for in the research questions, definitions of school engagement, and outcomes in studies that found an engagement-achievement paradox and those that did not?

3. Among studies that found an EAP, what are the hypothesized reasons for why the engagement-achievement paradox exists among Black/African American students?

Method

The following databases were searched for relevant literature: PsychINFO 1872-2020 and EBSCO. The subject headings "engagement-achievement paradox" and "school engagement AND academic AND Black" and "school engagement AND academic AND "African American" were first searched, totaling 276 studies. Then, all sources (n = 247) citing Shernoff and Schmidt (2008) were identified through a Google Scholar search; this was the seminal article that introduced the term "engagement-achievement paradox" into the lexicon. All records were compiled (n = 523), and duplicates were removed, leaving 394 unique articles.

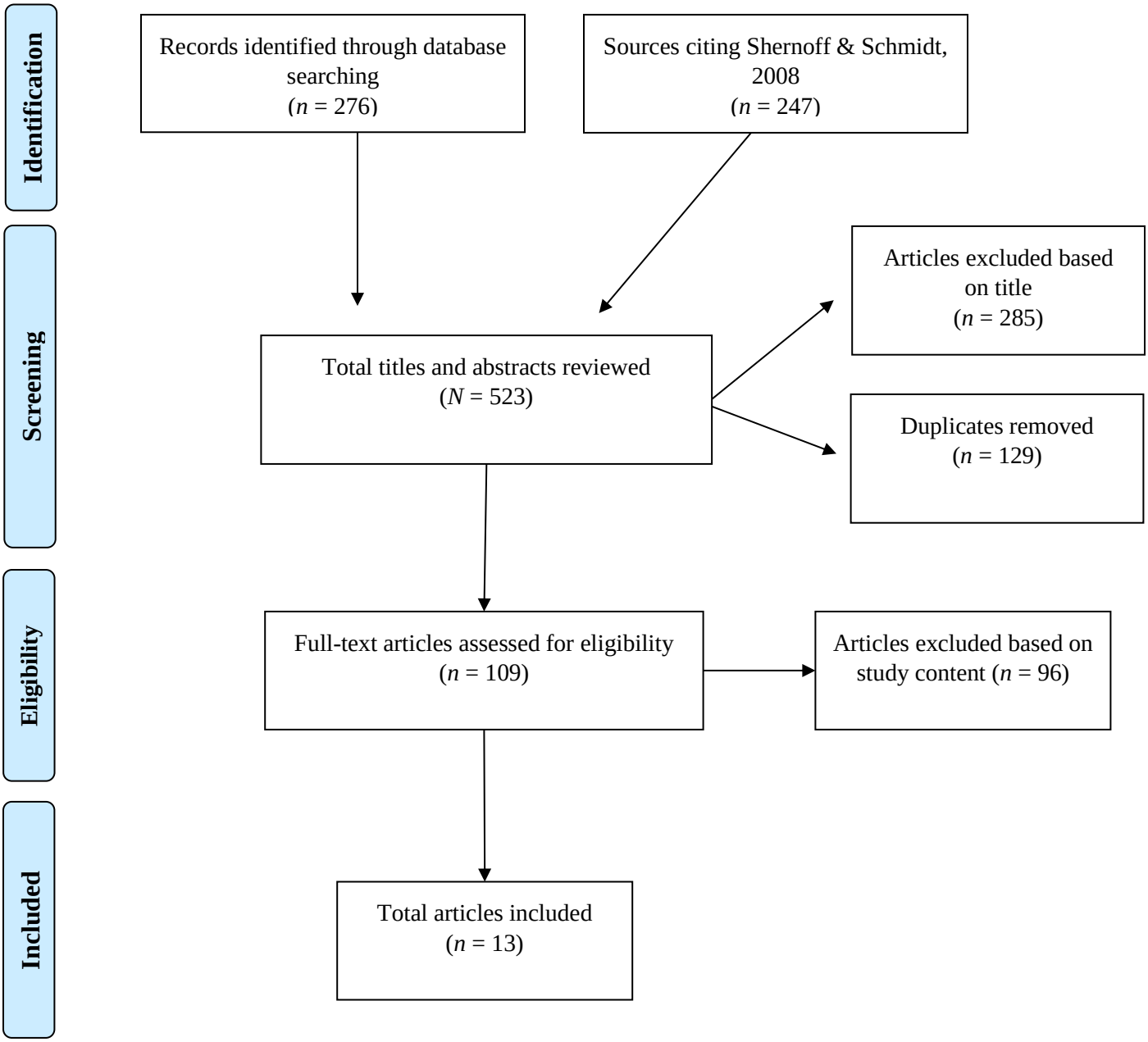
Inclusion and exclusion criteria. The search was limited to studies published in English and performed in the US. Studies exploring the engagement-achievement paradox (that is, comparing Black/African Americans on the dimensions of school engagement and achievement to another racial/ethnic group) were eligible for inclusion in this review. Studies included students from grades K-12, of any racial/ethnic background, in any school setting (e.g., urban, suburban, rural), and in any geographic area. Studies including diverse populations must have reported specific results for Black/African American students. Studies that offered commentary on school engagement or related constructs (e.g., school bonding, school attachment) were excluded because they did not provide new data supporting conclusions on the differences between engagement and achievement in terms of race and ethnicity. Studies primarily examining the psychometrics of school engagement measures also were excluded. Last, studies examining student engagement in the context of online classes were excluded, as examining

engagement in curricular content in online versus face-to-face settings was not the focus of this study.

Data screening and eligibility. The titles and abstracts of the 394 initially identified studies were reviewed. A total of 285 articles were deemed ineligible based on title and abstract, leaving 109 articles to review for eligibility. I reviewed the 109 full-text articles that appeared to meet inclusion criteria based on title and abstract for appropriateness of the sample, methods, measures, and analysis. Of the 96 studies that were excluded in this step, most were dropped for one or more of the following reasons: study did not include specific results for Black/African American students or did not compare Black/African American students to students in other racial groups, and study mostly examined the psychometrics of school engagement measures. I identified a total of 13 articles that met inclusion criteria.

I shared the 109 studies that appeared to meet inclusion criteria with an advanced doctoral student in school psychology. Coder training with this individual occurred during one Skype session that lasted approximately 1.5 hours, in which I explained the study and the definitions of each inclusion and exclusion criterion. I then provided this student with a spreadsheet listing each inclusion and exclusion criterion. I also provided her with an example of a paper that met criteria as well as one paper that did not meet criteria. The student was instructed to determine if each study met all the inclusion criteria without meeting any exclusion criteria. We identified the same studies except for one and discussed whether it should be included. We resolved this discrepancy and came to the consensus that the study in question did not meet eligibility criteria because it compared African American students in special education to African American students in general education, rather than African American students to students of other racial backgrounds. Figure 1 illustrates the gating process.

Figure 1
Gating Process



Analysis strategy. A narrative synthesis was selected as the most appropriate approach to analyzing the results of the review. The term narrative synthesis has been defined as, "an approach to the systematic review and synthesis of findings from multiple studies that relies primarily on the use of words and text to summarize and explain the findings of the review" (Popay et al., 2006, p. 5). Popay and colleagues (2006) suggested steps that should be used to complete a narrative synthesis, which were used in this study. In accordance with these steps, textual descriptions were first generated about each study. Then, studies were grouped based on whether they found the engagement-achievement paradox (EAP) or not (to answer research question 1a). Next, data were extracted and tabulated based on the research questions in this study (research questions 1b, 2, and 3).

In order to answer research question 1a in this study, data were extracted as to whether they found an engagement-achievement paradox or not. Then, to answer research question 1b, information concerning the study characteristics (e.g., sample size, setting, analysis, measure of school engagement) within and between both groups (those that found an engagement-achievement paradox and those that did not) were compared to determine if there were any salient qualities that reliably resulted in the identification of an engagement-achievement paradox. After the data were tabulated, vote counting was then employed to determine initial descriptions of patterns across the included studies. Vote counting refers to the process of, "calculating the frequency of different types of results across included studies" (Popay et al., 2006, p. 18). For example, in answering research question 1b, data about the grades of the students in each study (middle vs. high school) were gathered and counted from each study in the EAP group, resulting in seven out of the eight studies in that group examining high school students and one study examining middle school students. Thus, the conclusion that the EAP can

be found among high school students can be made based on this count. This process was then repeated for studies in the non-EAP group. Descriptions summarizing the results of the vote counting process were then developed (Popay et al., 2006) and are presented in the results section.

To answer the second research question, the definitions of school engagement and results of the study were further analyzed to determine if culture was considered. Culture was determined to exist if the study authors included a) cultural considerations in their definitions of school engagement (e.g., contextual differences in the home vs. school environments, environmental considerations) , b) demographic information about their participant pool, and c) characteristics of students' cultural identities into consideration in their analyses. These three factors (cultural considerations in definitions of school engagement, demographic information, and use of student cultural identities in analyses) were considered separately as three dimensions of how culture was considered in the studies.

To answer the third research question, the studies that identified the presence of an EAP were analyzed to determine potential explanations for this phenomenon. Categories were then created inductively to synthesize the information about these explanations. Categories were defined as those that appeared in more than one study. I then shared these categories with the same doctoral student who helped with deciding if each study met inclusion/exclusion criteria. I asked her to first identify different reasons of the existence of the paradox. Then, I directed her to deductively classify the reasons she found in each study within the categories I had predetermined from my inductive analysis (i.e., teacher quality, family/cultural influences, institutional disenfranchisement, definitional clarity, and other). Interrater agreement was 92.3%, which was consistent with the recommended threshold for acceptable inter-rater agreement (IRA

≥ 80%; Miles & Huberman, 1994). Disagreements involved differences in coding in the family/cultural influences category and the "other" category. These discrepancies in coding were discussed, and final decisions were made collaboratively until 100% IRA was achieved (i.e., consensus coding).

Results

Research Question 1a

To answer research question 1a, the 13 studies included in the final sample were divided into two groups: those that found an engagement-achievement paradox (n = 8) and those that did not (n = 5). Data extracted from all studies included characteristics of participants, setting, definition(s) of school engagement, measures of school engagement, whether culture was taken into consideration in the measurement and/or definition of school engagement, study design, results, and author-hypothesized reasons why the engagement-achievement paradox exists.

Research Question 1b

Participants, grade level, and type of data analysis. Tables 1 and 2 display the findings of the literature search for research question 1b, and Figure 2 summarizes the contributing factors towards finding an EAP. There was a seemingly wide array of sample sizes and grade levels both within and between the two groups of studies. In the group that identified the presence of an EAP (Table 1) sample size ranged from 345 to 16,792. Out of the eight studies in this group, three utilized large sample sizes from national longitudinal datasets (Ainsworth-Darnell & Downey, 1998; Johnson et al., 2001; Weiss et al., 2010). The other five studies varied in their settings, ranging from students in one high school (Phillips, 2013) to all students in one state (Voelkl, 1997) and a sample of students from different schools or cities in the U.S. (Shernoff & Schmidt, 2008; Singh et al., 2010; Uekawa et al., 2007). Interestingly, all of the

studies in this group took samples from high school students only with the exception of one (which sampled eighth grade students; Voelkl, 1997). Last, of the eight studies that identified the EAP, six studies sampled more White students than Black/African American students, and only two studies sampled more Black/African American students than White students.

In the group that did not find evidence of an engagement paradox (non-EAP group; Table 2), sample size was considerably smaller across the studies and ranged from 94 to 1,977. One of the studies in this group had data that came from a national longitudinal dataset (Li & Lerner, 2011). All studies in this group took samples from middle school students only (Frontier, 2012; Li & Lerner, 2011; Ryan & Patrick, 2001; Wang & Eccles, 2013) with the exception of one, which sampled high school students (Park et al., 2012). Interestingly, three studies sampled more Black/African American students than White students in this group, while two studies sampled more White students than Black/African American students.

In terms of data analysis, quantitative methodologies were used in the studies across the two groups. In the EAP group, four studies used hierarchical linear modeling (HLM), and four used regression. In the non-EAP group, two studies used HLM, one used regression, and two used structural equation modeling (SEM).

Variables measuring school engagement. Across both groups, the variables used to measure school engagement varied widely. In the EAP group (Table 1), six studies included work completion or on-task/delinquent behavior in their definitions of school engagement (Ainsworth-Darnell & Downey, 1998; Johnson et al., 2001; Phillips, 2013; Shernoff & Schmidt, 2008; Uekawa et al., 2007; Weiss et al., 2010). Five studies included some consideration of student attitudes or feelings of school belonging as part of school engagement (Ainsworth-Darnell & Downey, 1998; Johnson et al., 2001; Phillips, 2013; Singh et al., 2010; Voelkl, 1997).

Further, five studies in the EAP group included students' enjoyment, interest, and effort/responsibility in learning as part of their definition of school engagement (Phillips, 2013; Shernoff & Schmidt, 2008; Singh et al., 2010; Uekawa et al., 2007; Weiss et al., 2010). Three studies incorporated teacher-related features such as treatment by teachers, attitude towards teachers, teacher warmth/control, and teacher experience as part of their definitions of school engagement (Ainsworth-Darnell & Downey, 1998; Phillips, 2013; Weiss et al., 2010), even though these features are not typically included in definitions of school engagement (e.g., Fredricks et al., 2004). Last, there were other facets of school engagement that were only used by one study, such as popularity among peers (Ainsworth-Darnell & Downey, 1998), truancy (Johnson et al., 2001), self-concept (Singh et al., 2010), and parental involvement (Weiss et al., 2010).

In the non-EAP group (Table 2), three studies included work completion or on-task/delinquent behavior in their definitions of school engagement (Li & Lerner, 2011; Ryan & Patrick, 2001; Wang & Eccles, 2013). Four studies in the non-EAP group included some consideration of student attitudes or feelings of school belonging (Frontier, 2012; Li & Lerner, 2011; Ryan & Patrick, 2001; Wang & Eccles, 2013). Four studies included students' enjoyment, interest, and effort/responsibility in learning as part of their definition of school engagement (Frontier, 2012; Park et al., 2012; Ryan & Patrick, 2001; Wang & Eccles, 2013). Three studies incorporated teacher-related variables such as teacher-student relationships (TSRs) and social efficacy with teachers as part of their definitions of school engagement (Frontier, 2012; Li & Lerner, 2011; Ryan & Patrick, 2001). As with the EAP group, there were several other facets of school engagement that were only used by one study, including truancy

(Li & Lerner, 2011), self-determination (Park et al., 2012), and level of self-regulated learning strategies (Wang & Eccles, 2013).

Items and measures for school engagement. There was a high level of variability in the items used to measure school engagement used within and between groups, as identified by other reviews (e.g., Fredricks et al., 2004; Jimerson et al., 2013). In the EAP group (Table 1), one study measured academic engagement, five measured behavioral engagement, seven measured cognitive engagement, and six measured emotional engagement. The number of items used to measure these subtypes of engagement ranged from three to 14 items, with two studies that did not report the number of items for each domain. All eight studies created their own measures of school engagement for the sake of the study (Ainsworth-Darnell & Downey, 1998; Johnson et al., 2001; Phillips, 2013; Singh et al., 2010; Shernoff & Schmidt, 2008; Uekawa et al., 2007; Voelkl, 1997; Weiss et al., 2010). Only one study utilized a measure that had previously been assessed for its psychometric properties (the Student Participation questionnaire, Voelkl, 1997), but the researchers developed their own measure of school engagement as well.

In the non-EAP group (Table 2), variability in terms of the items measuring school engagement existed as well. four studies measured behavioral engagement, three studies measured cognitive engagement, and all five studies measured emotional engagement. The number of items used to measure these subtypes range from three to 11, with one study that did not report the number of items for each domain. In this group, only two studies created their own school engagement measures (Park et al., 2012; Ryan & Patrick, 2001). The other three studies used validated scales to measure school engagement (Frontier, 2012; Li & Lerner, 2011; Wang & Eccles, 2013).

Table 1

Summary of literature review findings for Research Question 1 (EAP group)

Author (year)	Participants and Grade Level	Percentages of Black and White students	Variables Used to Measure School Engagement	Items Used to Measure School Engagement	Analysis	Summary of Results
Ainsworth-Darnell & Downey (1998)	16,792 10th grade students from the National Education Longitudinal Study	13.1% Black 83.0% White	Disruptive behavior, treatment by teachers, attitude towards teachers, attitude towards school, and popularity among peers	Behavioral (8 items), cognitive (7 items), and emotional engagement (9 items). Researcher-developed measure.	Regression	African American students felt significantly more positively towards school and demonstrated more prosocial behaviors than White students yet had significantly lower academic achievement compared to White students.
Johnson et al. (2001)	8,104 adolescents in grades 7-12 in the National Longitudinal Study of Adolescent Health	15% Black 68% White	School attachment, truancy, work completion	Behavioral (3 items) and emotional engagement (3 items). Researcher-developed measure.	HLM	The racial-ethnic composition of schools was significantly related to students' attachment to school but not engagement. Black students were no less engaged in school compared to White students yet had lower academic achievement.

Phillips (2013)	398 high school students in one school	37% Black 22% White	Teacher warmth, teacher control, behavioral, emotional, and cognitive engagement	Behavioral, emotional, and cognitive engagement (number of items not reported). Researcher-developed measure.	HLM	Black and Latino students were no less behavioral/ emotionally engaged than their White peers. They were significantly more cognitively engaged than their White peers
Singh et al. (2010)	1,157 high school students in three schools	43.7% Black 56.3% White	Self-concept, school belonging, enjoyment of learning, and effort/responsibility for learning	Cognitive (9 items) and emotional engagement (5 items). Researcher-developed measure.	Regression	Black students had significantly higher self-concept and school engagement scores compared to White students, but not school belonging. White students had higher grades. School belonging had a significant relationship to school achievement for African-American students.
Shernoff & Schmidt (2008)	586 students from 13 high schools	16% Black 65% White	Enjoyment, concentration, and interest in learning	Academic (4 items and continuous on-task behavior tracking) and cognitive engagement (3 items). Researcher-developed measure.	HLM	Black students reported significantly higher engagement, intrinsic motivation, and affect yet lower GPA relative to White students.

Uekawa et al. (2007)	345 high school students in four different cities in the U.S.	58% Black 7% White	On-task behavior, motivation for learning, and attentiveness	Cognitive engagement (8 items). Researcher-developed measure.	HLM	Black students were significantly more engaged than White, Hispanic/Latinx, and Asian students.
Voelkl (1997)	1,335 White and African American 8th grade students in one state	13.6% Black 86.4% White	Identification with school/school belonging and valuing school	Behavioral (14 items), cognitive (7 items), and emotional (9 items) engagement. Used a combination of researcher-developed measure and previously validated measure.	Correlations and regression	White students had significantly higher levels of achievement and participation than African American students. African-American students had significantly higher levels of identification with school than did White students.
Weiss et al. (2010)	10,946 10th grade students from the Educational Longitudinal Study	25% Black; percentage of White students was not reported	Teacher experience, student delinquent behavior, educational motivation, teacher beliefs about ability, school preparedness, and parental involvement	Behavioral, cognitive and emotional engagement (number of items not reported). Researcher-developed measure.	Multilevel regression	Small student groups exacerbated extant disadvantages among adolescents, especially with regard to Black students. There were no significant differences between Black and White students in terms of engagement, but White students significantly outperformed Black students in terms of math achievement.

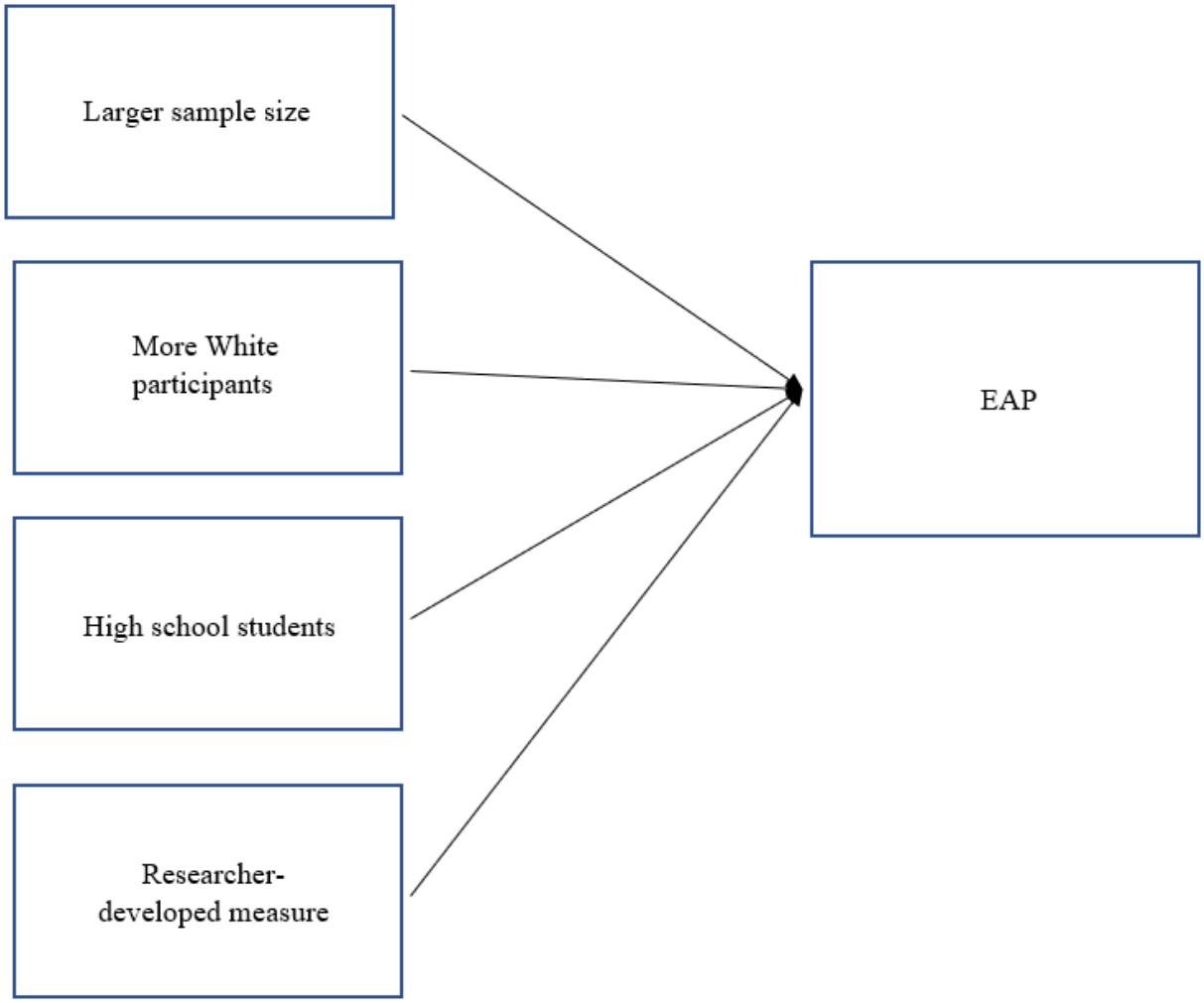
Table 2

Summary of literature review findings for Research Question 1 (Non-EAP group)

Author (year)	Participants and Grade Level	Percentages of Black and White students	Variables Used to Measure School Engagement	Items Used to Measure School Engagement	Analysis	Summary of Results
Frontier (2012)	552 students at one middle school	10.5% Black 78% White	Value of school, motivation for learning, teacher-student relationships, school belonging	Behavioral (7 items), cognitive (8 items) and emotional engagement (5 items). Used previously validated measure.	Multiple regression	White students were significantly more engaged and had higher levels of achievement than Black students.
Li & Lerner (2011)	1,977 students across grades 5-8 as part of the 4-H Study of Positive Youth Development	7.6% Black 62.6% White	Homework completion, truancy, school belonging, teacher-student relationships	Behavioral (4 items) and emotional engagement (3 items). Used previously validated measure.	Semiparametric mixture model (SEM) and ANOVAs	African American students were found to be significantly more likely to be in the decreasing school engagement group and have lower grades than White students.
Park et al. (2012)	94 9th grade students followed at one school over 3 years	34.0% Black 31.9% White	Interest, concentration, and enjoyment of activities and self-determination	Emotional engagement only (3 items). Researcher-developed measure.	HLM	Perceptions of autonomy, competence, and relatedness contributed significantly to students' emotional engagement over and above gender, race/ethnicity, and achievement.

Ryan & Patrick (2001)	233 7th and 8th grade students from 3 middle schools	55% Black 45% White	Student perception of classroom environment, motivation, social efficacy with teacher, engagement with learning, and disruptive behavior	Behavioral (11 items), cognitive (11 items), and emotional engagement (4 items). Researcher-developed measure.	HLM	Prior motivation and engagement were strong predictors of subsequent motivation and engagement, whereas gender, race, and prior achievement were not related to changes in motivation or engagement. Student perceptions of teacher qualities (support, positive interactions, and promoting performance goals) were significantly related to changes in motivation and engagement.
Wang & Eccles (2013)	1,157 middle school students in one state	56% Black 32% White	Disruptive behavior, work completion, school belonging, interest/enjoyment with school, level of self-regulated learning strategies	Behavioral (5 items), cognitive (5 items), and emotional engagement (6 items). Used previously validated measure.	SEM	Student perceptions of school environment influenced academic motivation, which in turn influenced all three types of school engagement. The link between academic motivation to engagement held up for both white and Black/African American students, indicating a lack of EAP.

Figure 2
Contributors to Finding an EAP



Definitions of school engagement. Tables 3 and 4 display data about the definitions of school engagement. First, the definitions of school engagement were extracted and compared. Across both the EAP and non-EAP groups (n = 13), all definitions included a list of student behaviors, attitudes, and contextual factors that comprised the term "school engagement" in their studies. Though these definitions differed considerably, all definitions seemed to capture the multidimensionality of school engagement. Additionally, in the EAP group, six studies of the eight studies described school engagement as a trait that is wholly dependent on student

behaviors and attitudes, while the other two studies acknowledge that school engagement not only depends on the student but also contextual factors outside of the student's control (Shernoff & Schmidt, 2008; Singh et al., 2010). Similarly, in the non-EAP group, three of the five studies define school engagement as a within-student trait while the other two mention contextual factors such as classroom social environment (Ryan & Patrick, 2001; Wang & Eccles, 2013).

Research Question 2

Tables 3 and 4 display information regarding how culture was considered in the studies. While some of the definitions of school engagement considered "contextual factors" as part of their definitions of school engagement (see section entitled "Definitions of School Engagement" above), none of the studies in this review explicitly considered culture or cultural differences among students or teachers as a part of their definitions of school engagement. When investigating the aspects of culture that were used for the analyses, though, it was clear that all studies took cultural factors into consideration by reporting the demographics and/or including the demographic characteristics as part of the data analyses. Across both the EAP and non-EAP groups, all studies examined race/ethnicity of the student body, which was likely an artifact of the inclusion criteria. In the EAP group (n = 8), all but one study (Singh et al., 2010) reported gender, but three of those seven studies did not use gender in their analyses. In the non-EAP group (n = 5), all studies reported and included gender in their analyses. In the EAP group, three included the socioeconomic status of families (Ainsworth-Darnell & Downey, 1998; Phillips, 2013; Voekl, 1997), and one study included the socioeconomic status of students' communities and neighborhoods (Shernoff & Schmidt, 2008). In the non-EAP group, three of the five studies took socioeconomic status of families into consideration (Li & Lerner, 2011; Park et al., 2012; Wang & Eccles, 2013), while one of those three studies did not utilize socioeconomic status in

any analysis (Park et al. 2012). Last, two studies in the EAP group investigated student immigrant status (Ainsworth-Darnell & Downey, 1998; Phillips, 2013); two studies considered family/community beliefs about education (Ainsworth-Darnell & Downey, 1998; Weiss et al., 2010); and two studies included information about the urbanicity of schools (Johnson et al., 2001; Shernoff & Schmidt, 2008).

Table 3

Summary of findings for Research Question 2 (EAP group)

Author (year)	Definition of School Engagement	Aspects of Culture Reported	Aspects of Culture Used in Data Analysis
Ainsworth-Darnell & Downey (1998)	School engagement involves students' skills, habits, and work styles as well as attitudes towards school and teachers.	• Race/ethnicity of student body • Immigrant status • Family/community beliefs about education • Socioeconomic status of families	• Race/ethnicity • Immigrant status • Family/community beliefs about education • Socioeconomic status of families
Johnson et al. (2001)	School engagement involves an affective component which refers to the extent to which students feel they are embedded in their school communities and a behavioral component that refers to students' participation in class and school.	• Race/ethnicity of student body and teaching staff • Gender of students • Parents' education level • Urbanicity of schools	• Race/ethnicity of student body and teaching staff • Parents' education levels • Urbanicity of schools
Phillips (2013)	School engagement encompasses students' behavior, emotion, and cognition.	• Race/ethnicity of student body • Gender of students • Immigration generation • Socioeconomic status of families	• Race/ethnicity of student body • Immigration generation • Socioeconomic status of families
Singh et al. (2010)	School engagement is a multidimensional construct with psychological, behavioral, and cognitive components and is considered a malleable function of the individual as well as the environment.	• Race/ethnicity of student body	• Race/ethnicity of student body
Shernoff & Schmidt (2008)	School engagement is a multidimensional construct that involves both individual and contextual influences.	• Race/ethnicity of student body • Gender of students • Urbanicity of schools	• Race/ethnicity of student body • Gender of students • Urbanicity of schools

		• Socioeconomic status of communities	• Socioeconomic status of communities
Uekawa et al. (2007)	School engagement is a dynamic phenomenon that not only includes students' general attitudes towards schooling but also moment-by-moment changes in behavior.	• Race/ethnicity of student body • Gender of students	• Race/ethnicity of student body • Gender of students
Voelkl (1997)	School engagement is comprised of student feelings of identification with and belonging in school and values school-related outcomes.	• Race/ethnicity of student body • Gender of students • Socioeconomic status of families (free/reduced lunch status)	• Race/ethnicity of student body • Gender of students • Socioeconomic status of families (free/reduced lunch status)
Weiss et al. (2010)	School engagement involves psychological (enthusiasm for school, interest) and behavioral (attendance, time on-task) dimensions.	• Race/ethnicity of student body • Gender of students • Parental involvement in education • Socioeconomic status	• Race/ethnicity of student body • Gender of students • Parental involvement in education • Socioeconomic status

Table 4

Summary of findings for Research Question 2 (Non-EAP group)

Author (year)	Definition of School Engagement	Aspects of Culture Reported	Aspects of Culture Used in Data Analysis
Frontier (2012)	School engagement is a multidimensional construct consisting of emotional, behavioral, and cognitive elements.	• Race/ethnicity of student body • Gender of students	• Race/ethnicity of student body • Gender of students
Li & Lerner (2011)	School engagement is the extent to which students participate in the academic and nonacademic activities of school, feel connected at school, and value the goals of education.	• Race/ethnicity of student body • Gender of students • Socioeconomic status of families	• Race/ethnicity of student body • Gender of students • Socioeconomic status of families
Park et al. (2012)	School engagement is defined as active involvement in learning, in contrast to superficial participation, apathy, or lack of interest.	• Race/ethnicity of student body • Gender of students • Socioeconomic status of families	• Race/ethnicity of student body • Gender of students
Ryan & Patrick (2001)	School engagement involves student behaviors (e.g., disruptive behavior, learning behaviors) and a fit with the classroom social environment (which involves students and teachers).	• Race/ethnicity of student body • Gender of students	• Race/ethnicity of student body • Gender of students
Wang & Eccles (2013)	School engagement that is malleable and is influenced by the degree to which students perceive that the school context meets their psychological needs.	• Race/ethnicity of student body • Gender of students • Socioeconomic status of families	• Race/ethnicity of student body • Gender of students • Socioeconomic status of families (as covariate only)

Research Question 3

Table 5 displays the findings of the literature search for research question 3. To answer this research question, data about the reasons for the existence of the paradox as described by the authors were extracted for only studies in the EAP group (n = 8). Reasons for the paradox were supported by the data and results in four of the eight studies in the EAP group (Phillips, 2013; Uekawa et al., 2007; Voelkl, 1997; Weiss et al., 2010). That is, in these four studies, results for the paradox were hypothesized and then directly tested. In two of the studies in the EAP group, the reasons for the paradox were partially supported by the results (Johnson et al., 2001; Shernoff & Schmidt, 2008), meaning that only some or part of the hypothesized reasons were supported by the results of their studies. Last, reasons for the paradox were hypothesized and not directly connected to the results in the remaining two studies (Ainsworth-Darnell & Downey, 1998; Singh et al., 2010). It should be noted that the reasons for the paradox mostly focused on why the achievement levels among Black/African American students were low, rather than what might influence the interplay between high school engagement and low academic achievement. Major themes across these studies are detailed below.

Teacher quality. Six of the eight studies mentioned something related to teachers as a reason for the low achievement of Black/African American study participants. Three articles discussed poor teacher instructional quality and its influence on low achievement (rarely providing students with structured, challenging classroom activities; Phillips, 2013; having a lack of diversity in the use of pedagogical techniques, Uekawa et al., 2007; being new teachers with few years of experience, Weiss et al., 2010). Three articles discussed teacher bias (biased reward systems based on White norms/values; Ainsworth-Darnell & Downey, 1998; unequal learning opportunities and biased treatment of Black/African American students by teachers, Voelkl,

1997; biased beliefs about students' abilities, Weiss et al., 2010) as a reason for low achievement among Black/African American students compared to school engagement. Last, one study discussed stereotype threat by teachers (negative stereotypes about the intellectual abilities of Black/African Americans, Singh et al., 2010).

Family/cultural influences. Four studies mentioned family or cultural influences on Black/African American students' appraisal of the usefulness of academics as a reason for the EAP (Shernoff & Schmidt, 2008; Uekawa et al., 2007; Voelkl, 1997; Weiss et al., 2010). Two studies attributed the EAP to a distinct aspect of Black/African American culture (the disidentification hypothesis) that suggested school engagement and academic achievement were unrelated and should be considered as two separate constructs in this population, suggesting that efforts to intervene on facets of school engagement may not necessarily result in academic gains as we would expect in other racial/ethnic populations (Johnson et al., 2001; Singh et al., 2010). One study found that the opposite was true such that parts of Black/African American students' family or cultural values encouraged identification with school, yet objective measures of achievement were lower compared to White students (Voelkl, 1997).

Institutional disenfranchisement. Two studies hypothesized that the long-standing institutional disenfranchisement may have affected Black/African American students' academic achievement (Ainsworth-Darnell & Downey, 1998; Voelkl, 1997). Voelkl (1997) posited that Black/African American students may disidentify with schools because some schools systematically and disproportionally fail to provide them with adequate opportunities to gain skills that would direct them toward positive and worthwhile vocational opportunities. Therefore, students might feel disincentivized for working hard in school and valuing the academic part of school. At the same time, Black/African American students may inexplicably feel a sense of

belonging or identification with school due to other factors such as peer relationships, extracurricular activities, and positive relationships with individual teachers.

Definitional clarity for school engagement. Two studies pointed to variations in the literature about the definition and measurement of school engagement (Johnson et al., 2001; Shernoff & Schmidt, 2008). Shernoff and Schmidt (2008) found that the gap between school engagement and academic achievement was wider when considering only emotional engagement compared to only cognitive engagement. Similarly, Johnson et al. (2001) found that Black/African American students reported feeling equally attached to school as White students, and more Black/African American students participated in classroom and school activities than White students, which are both elements of emotional engagement. Both studies suggested that if school engagement were defined and measured using emotional engagement rather than academic, behavioral, or cognitive engagement, the EAP may be found.

Additional explanations. Two studies offered other explanations that were not captured in the previous categories. First, Ainsworth-Darnell and Downey (1998) pointed to social desirability bias (the idea that people tend to evaluate themselves more positively than outside observers do or report more highly on attributes that they think outside observers want to see; Constantine & Ladany, 2000) as one reason why Black/African American students displayed higher engagement and lower achievement than their White counterparts. They posited that Black/African American students may have over-reported how much they enjoyed school or viewed the importance of school compared to White students, which may have led to inflated school engagement scores. Next, Shernoff and Schmidt (2008) postulated that Black/African American students may lack engagement in academic activities at home, which subsequently led to higher engagement at school. Both of these explanations seem to overgeneralize the behaviors

and home lives of Black/African American youth, and thus very little weight was placed on these two explanations for the differences between Black/African American and White students in this review.

Table 5
Summary of findings for Research Question 3

Author (year)	**Authors' Explanation for Engagement-Achievement Paradox**
Ainsworth-Darnell & Downey (1998)	1. African American students may feel more positively about school in the abstract yet feel frustrated by the concrete, day-to-day routines of school 2. Positivity bias in self-report measures 3. Teacher bias 4. Institutional disenfranchisement
Johnson et al. (2001)	1. Variations in the literature about the definition of school engagement 2. Disidentification hypothesis
Phillips (2013)	1. Differences in achievement varied by teacher behaviors and quality
Singh et al. (2010)	1. Disidentification hypothesis 2. Stereotype threat by teachers
Shernoff & Schmidt (2008)	1. The attitude towards achievement and engagement for Black students differs due to cultural/familial reasons 2. Variations in the literature about the definition and measurement of school engagement
Uekawa et al. (2007)	1. Classroom activities/teacher quality 2. Social environment
Voelkl (1997)	1. Disidentification hypothesis 2. Negative peer influence on the value of academics 3. Teacher-related factors 4. Institutional inadequacies, biased/unfair learning opportunities
Weiss et al. (2010)	1. Negative peer influence on the value of academics 2. Teacher quality

Discussion

This narrative synthesis of the systematic literature review regarding the presence or absence of the engagement-achievement paradox among Black/African American students suggested that there were mixed results regarding the presence of this paradox across different samples and the reasons why this paradox may exist. To briefly summarize the findings of research questions 1a and 1b, this review suggested that finding an EAP may be due to sample size and demographics, age groups surveyed, and definition/measure of school engagement used. Findings from research questions 2 and 3 suggested that there is still much to be discovered about how culture can influence the development of school engagement among Black/African American students and why an EAP may exist with this population. Given the finding that teacher bias and institutional disenfranchisement may impact both the engagement and achievement levels of Black/African American students, it makes intuitive sense that teacher bias, cultural sensitivity, and competence may be related contextual factors that could impact this population of students.

Study qualities. Three main differences emerged between groups with respect to participants and setting (research question 1). First, the EAP group included larger sample sizes than the non-EAP group. Second, in the EAP group, the majority of studies oversampled White students, while more studies oversampled Black/African American students in the non-EAP group. Taken together, it could be possible that the EAP can be identified only with larger sample sizes or that perhaps the emergence of the EAP is simply a statistical artifact based on whether Black/African American or White students comprised the majority of the sample. Third, the main difference that emerged was that the EAP group included mostly high school students (n = 7 out of 8) while the non-EAP group included mostly middle school students (n = 4 out of

5). Some studies (e.g., Alspaugh, 1998) have found that middle school students generally experience decreases in academic achievement, so it could be that Black/African American students' achievement levels match engagement levels of other racial/ethnic groups during this time period and then become discrepant again in high school. It also could be that middle school is an important time of change in general for all adolescents with regard to school engagement and worthy of further research because the patterns of school engagement seem to be high in elementary school, low in middle school, and high again by high school (e.g., Johnson et al., 2001; Steinberg et al., 2009; Wang & Eccles, 2012).

Measures and definitions. Variations in the studies about the definition and measurement of school engagement emerged as expected (e.g., Jimerson et al., 2003); research question 1). One key difference was that all studies in the EAP group created their own measures of school engagement comprised of different elements of school engagement. This might lead to erroneous conclusions if the instrumentation does not have good psychometric properties, which could be ascertained through exploratory and confirmatory factor analyses, for example. On the other hand, the majority of studies in the non-EAP group used previously validated scales to measure school engagement, which may lead to more reliable and valid results. While no distinct patterns emerged about how school engagement was defined and measured between the EAP and non-EAP groups, similar themes emerged across both groups in terms of how school engagement was defined. In both groups, many studies included some considerations of work completion or on-task behavior, student attitudes and feelings of school belonging, students' enjoyment of learning, and teacher-related features including treatment by teachers, attitudes towards and relationships with teachers, and teacher warmth. Interestingly, with the exception of work completion, these are all key aspects of emotional engagement. In fact, a total of 11 out of the 13

total studies measured some element of emotional engagement (compared to one study measuring academic engagement, nine studies measuring behavioral engagement, and 10 studies that measured cognitive engagement). Because so many studies measured emotional engagement, the results of this review suggested that regardless of the finding of an EAP, emotional engagement should be viewed as a key element of school engagement according to researchers who authored the studies in this review.

Cultural Considerations for the EAP

While none of the articles analyzed in this study explicitly considered culture in their definitions of school engagement (research question 3), there were several studies in the EAP group that considered different cultural aspects of a student's background and environment over and above race/ethnicity and gender (e.g., parental/family beliefs on education, urbanicity of schools, immigrant status). This differed from the studies in the non-EAP group; the studies in this group only included race/ethnicity, gender, and socioeconomic status in their analyses. It seems that in order to find that Black/African American students have higher levels of school engagement than their White peers, one must have more sophisticated considerations of culture than one that only considers race/ethnicity (e.g., Erickson, 2003; Shernoff & Schmidt, 2008).

Results from research question 3 suggest there may be distinct cultural and family/community differences among Black/African American students that should be considered when measuring school engagement and academic achievement (e.g., the disidentification hypothesis, Johnson et al., 2001). This hypothesis suggested that school engagement and achievement may be complex processes among Black/African American students. For example, Johnson et al. (2001) found that Black/African American students put forth just as much effort into school compared to their White peers (behavioral and cognitive

engagement). However, Black/African American students were less likely to be emotionally engaged with school (e.g., liking teachers, feeling like an important member of the class, identifying with school successes; Johnson et al., 2001).

While this relatively high level of behavioral and cognitive engagement should bode well for future success, there is some evidence that consistent disidentification with school and low emotional engagement may lead to adverse outcomes for students, such as externalizing behaviors and juvenile delinquency (e.g., Liska & Reed, 1985; person-environment fit model, Kulka et al., 1980). Disidentification might be compounded by the effects of institutional disenfranchisement on Black/African American students' academic achievement (e.g., Bingham & Okagaki, 2012). Thus, interventions related to enhancing emotional engagement and understanding cultural and family differences undertaken by teachers and other practitioners working with students may be beneficial.

Additionally, other studies have found that influences from peers and adults in the school setting and in the community significantly influence academic achievement among adolescents cross-culturally (see Yu & Patterson, 2010 for a review). This suggested that, along with parents and peers, schools should consider viewing teachers and other school staff as important resources for the continued development of school engagement and academic achievement among Black/African American students.

It is notable, though, that none of the studies analyzed in this review included information on teachers' cultural backgrounds, training, or relational style with students. Cultural aspects examined included within-student and family-related characteristics only. Such information about teachers, their experiences with teaching diverse students, and their potential biases could be crucial to assisting researchers and educators to better understand students' emotional school

engagement and its possible relations with academic achievement. Examining teacher backgrounds or perhaps professional development efforts to understand teachers' and diverse students' cultures, for example, might be successful in helping teachers understand bias and engaging Black/African American students in school.

Cultural Considerations for Teachers

This review, in addition to other studies (e.g., Brown-Wright & Tyler, 2010), suggested that it is important to consider student, teacher, and family culture when intervening with school engagement and academic achievement among Black/African American students. Practitioners (e.g., teachers, psychologists, administrators) should continue to examine cultural differences between the home and school environments and/or among cultural groups using a multidimensional conceptualization of culture that takes historical and systemic contexts into account (e.g., Allen, 2008). Culturally-responsive pedagogy, for example, is one intervention that focuses on teacher cultural competence, teacher reflection on their own potential bases, as well as other important teacher-related competencies in the areas of academic success and sociopolitical consciousness, to facilitate the appreciation and celebration of diverse student cultures (Ladson-Billings, 1994). One recent review has demonstrated that using culturally-responsive pedagogy may improve academic achievement for both White students as well as Black/African American students and other students of color, as it challenges teachers to carefully consider the way they interact with their students and potential biases when planning activities and projects around student culture (Aronson & Laughter, 2016).

Another important theme that emerged in examining the reasons for the existence of the paradox (research question 2) was that negative teacher attitudes and behaviors related to lower levels of school engagement and lower academic achievement, especially among Black/African

American youth (e.g., Phillips, 2013). Research has suggested that teacher bias may impact students' academic success over time. Studies have found that White teachers consistently rate their Black/African American students as having lower scholastic aptitude ability than White students, even if these ratings were not objectively supported by data (e.g., Minor, 2014). These initial perceptions have been found to have lasting implications for how teachers perceive and treat Black/African American students throughout the school year (McGrady & Reynolds, 2013; Minor, 2014). Thus, interventions targeting the negatively biased teacher appraisals of Black/African American student behavior and academic aptitude may lead to better academic outcomes. Interventions related to improving teacher-student relationships, for example, have been shown to be effective in boosting academic outcomes (Roorda et al., 2017) and may help reduce teacher bias by improving the quality of the relationship and increasing mutual understanding between teachers and students.

Considering cultural humility. One way to capture important teacher-student relationship and culture information in future research could be through examining teacher cultural humility. Cultural humility is defined as a way of being and seeing the world that requires constant reflection with respect to cultural biases and considerations (Hook et al., 2013). From a culturally humble perspective, culturally differences are thought to exist in the interaction between people rather than within each individual in the interaction (Fisher, 2020). Thus, those who are culturally humble may not only consider an individual's identity in isolation but also consider how other aspects of their identity and environmental contexts contribute to their experiences and interactions with others (Kirmayer, 2012) This might impact teacher-student relationships, as teachers who are able to think more holistically about a student's cultural

identities and environmental contexts as well as reflect on their own beliefs and ideas may be less likely to be biased in their appraisals of their students.

Importantly, cultural humility is theorized to protect against the relational damage that can come from uncomfortable social situations involving individuals with differing ideals and beliefs (Worthington et al., 2017). Some initial support for this hypothesis has been found in married couples adjusting to parenthood and within business with managers and more positive organizational outcomes (Owens & Hekman, 2012; Reid et al., 2018). In the school context, students' perceptions of a teacher's cultural humility may be protective of the teacher-student relationship and, as a result, help reduce bias and improve outcomes such as academic achievement. Another recent study suggested that cultural humility could potentially serve as a significant buffer between students and teachers as different cultural perspectives are brought together in the classroom setting (McPhee et al., 2019). Examining teacher cultural humility in the context of school engagement and academic achievement may lead to efficacious interventions that target teacher-student relationships to determine if targeting teacher-student relationships and teacher behavior towards students with different cultural values leads to improvements in both engagement and achievement as a result, thus eliminating the EAP and increasing equity for Black/African American students.

Limitations and Future Directions

This review provided preliminary evidence that teacher bias, teacher quality, and cultural influences may be important to consider when measuring and intervening on Black/African American students' school engagement and academic achievement. However, there were some limitations to this study. First, six of the thirteen studies examined in this paper accounted for nesting effects (e.g., students within classrooms, classrooms within schools, schools within

districts, etc.) or information about how differences in academic achievement vary at the within-school versus between-school levels. Nesting is important to consider, not doing so would lead to an overrepresentation of the degrees of freedom as well as an increased risk of Type 1 errors (Niehaus et al., 2014). Further research could parse out whether there is a school-level or individual interaction such that external or systematic factors such as community socioeconomic status or school climate that may be affecting individual student engagement, achievement, or both. Examinations of the sizes of the effects school- or individual-level interactions have on engagement and achievement may be able to adjudicate whether significant differences were found to be statistical artifacts or not. Future research could consider other aspects of a student's ecological settings to examine the influence of culture on school engagement (e.g., socioeconomic status, neighborhood, family attitudes towards the importance of education).

Based on the findings of this review, future research efforts could examine measurement-related reasons for why the engagement achievement-paradox exists. In this review, there were substantial differences in how school engagement was measured, and it is still currently unclear if using a combination of engagement measures capture more valuable or valid information compared to a singular instrument. Future work should investigate differences in conclusions produced by unidimensional versus multidimensional measures of school engagement. Future research should also combine cultural considerations regarding teacher-student relationships with existing definitions and measures of emotional engagement, which are focused on feelings of student belonging at school. Results from such research may allow racial/ethnic or cultural differences between teachers and students or among students to be explored further and lead to differential identification of intervention for students' unique challenges (e.g., determine whether

students would most benefit from interventions related to improving relationships with teachers versus intensive academic interventions and/or special education services).

Though the results were mixed regarding the methodological differences between the studies that found an EAP and those that did not, this review demonstrated the importance of teacher factors on achievement outcomes for Black/African American students. Further research on teacher cultural humility as a moderator of the relationship between school engagement and academic achievement may be able to explore the link between engagement and achievement that has been observed with students from other racial groups and potentially further explain why this discrepancy exists. Additionally, because most of the reasons for why the paradox exists (results from research question 3) related to reasons why achievement among Black/African Americans was low, future research should further investigate how engagement and achievement interact, rather than attempting to answer why engagement can be high while achievement is low among Black/African American students.

In order to investigate the link between school engagement and academic achievement more effectively, perhaps future research efforts could determine whether it is indeed emotional engagement or perhaps another element of school engagement that is most predictive of achievement for Black/African American students (compared to a reference group, like White students). Researchers may want to parse out what aspects of engagement are most closely related to academic achievement among Black/African American students to help inform intervention efforts aimed at improving academic achievement.

More research regarding the EAP should be conducted with members of other racial minorities such as Asian/Asian American and Hispanic/Latinx groups as well as other minority groups in terms of religion, sexual orientation, and other aspects of identity that might be

important to adolescents. While there is some evidence that other minority groups do not display this EAP (e.g., Reeves & Bennett, 2004), it would be valuable to examine the causal relationship between school engagement and academic achievement and investigate the power of various environmental and/or cultural influences on academic achievement. Additionally, comparing Black Hispanic students to Black/African American, Afro-Caribbean, and/or White Hispanic students may illuminate other important variables in the interplay among teacher-student relationships, school engagement, and academic achievement.

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CHAPTER 2

STUDENT PERCEPTIONS OF TEACHER CULTURAL HUMILITY AND EMOTIONAL SCHOOL ENGAGEMENT: RELATIONS WITH ACADEMIC ACHIEVEMENT AMONG DIVERSE EARLY ADOLESCENTS

School engagement is a multifaceted term that has been defined in numerous ways and involves the presence or absence of affective, behavioral, academic, and psychological factors that reflect a student's levels of adjustment and functioning in school (e.g., Appleton et al., 2008). School engagement is thought to be malleable and is impacted by both intrinsic traits within the student (e.g., emotional adjustment) and external factors (e.g., school practices, presence or absence of positive social support) in the student's environment (Jimerson et al., 2003). School engagement is relevant for predicting and preventing school dropout, as highly-engaged students have been found to be less likely to drop out of high school (Fredricks et al., 2004). Cultural and environmental factors such as gender, race/ethnicity, socioeconomic status, teacher characteristics, and school environment have been theorized to affect school engagement and its relationship with academic achievement (e.g., Upadyaya & Salmela-Aro, 2013). In this study, I am seeking to determine if cultural characteristics (e.g., age, race/ethnicity, gender), teacher cultural humility, and emotional school engagement (ESE) are related to differences in student academic achievement.

School engagement is a term that encompasses a broad range of student behaviors and attitudes and often involves terms such as participation, attachment, motivation, withdrawal, and alienation (Glanville & Wildhagen, 2007). School engagement researchers have developed models and definitions of school engagement based on the differential effects of academic, psychological, and affective components of students' learning (e.g., Jimerson et al., 2003). In

general, school engagement has been considered a multifaceted construct that examines several different aspects of a student's traits (e.g., motivation) and experiences (e.g., school belonging) and how they impact school success (Appleton et al., 2008; Fredricks et al., 2004). Engagement has been described as having four different components: academic, behavioral, cognitive, and emotional. Academic and behavioral engagement relate to the external behaviors that can be easily observed, such as time on task and homework completion (academic), as well as attendance, suspensions, and participation in extracurricular activities (behavioral). Cognitive and emotional school engagement relate to a student's internal indicators of engagement with school, including self-regulation, perceived value of learning and education, and relevance of school to future occupational work (cognitive), as well as feelings of identification or belonging and relationships with teachers and peers (emotional; Appleton et al., 2008).

Emotional School Engagement

Though all subtypes of school engagement are vital components to understanding students' experiences and predicting future behavior, ESE has been important in predicting social-emotional development, participation in school activities, and academic achievement. Li and colleagues (2010) found that school climate was a strong predictor of ESE, which in turn was a strong predictor of academic competence. It is thought that ESE increases behavioral engagement, such that if students felt more attached to school, they were more likely to be involved in school-based extracurricular activities (Fredricks et al., 2004). Increased ESE in elementary school may lead to increased behavioral involvement in academic tasks and other classroom activities in adolescence (Li et al., 2010).

Data assessing ESE collected in middle school may predict high school dropout (Janosz et al., 2008; Wang & Peck, 2013). It is thought that students' ESE can play a role in preventing

negative life outcomes such as school dropout. Scholars have claimed that feelings of alienation, social isolation among peers, and feelings of estrangement towards teachers and school staff contributed to student decisions on whether to drop out of high school (Finn, 1989; Mehan et al., 1996). Middle school may serve as an important point of intervention regarding ESE for students showing signs of disengagement with school (Archambault et al., 2009; Finn, 1989; Rumberger & Larson, 1998; Wehlage et al., 1989).

Theoretical Foundations of ESE

One important theory to help understand ESE is the bioecological resilience theory (Bronfenbrenner, 2005). The bioecological resilience perspective proposes that there are processes that students could be exposed to in their learning environments that may be either a risk to or protective of positive development in school (Woolley & Bowen, 2007). This theory is closely related to Bronfenbrenner's (2005) conceptualization of ecological systems that influence child development, such that there are different systems in a student's environment that can differentially impact a child (e.g., families in the microsystem, schools and neighborhoods in the mesosystem, and the society's culture in the macrosystem). Positive adolescent outcomes such as academic achievement have been found to occur as a result of the bidirectional relational process between the student and his/her social ecology (Theokas & Lerner, 2006) and positive perceptions of his/her atmosphere at school (Klem & Connell, 2004). Middle school is a particularly important stage of development according to the bioecological resilience perspective (Wooley & Bowen, 2007). Researchers have found that middle school students who are influenced by a negative peer group (Farmer et al., 2003), are not involved in extracurriculars (Mahoney & Cairnes, 1997), and are aggressive towards adults are at a greater risk of dropping out of school, having fewer vocationally opportunities, and having poorer mental health

outcomes (Woolley & Bowen, 2007). These risk factors have been found to affect boys and minority students the most significantly (Orfield et al., 2004).

Considering the bioecological resilience perspective in the context of ESE, it seems important to consider the role that teachers play in educating diverse students. Students are raised within microsystems (i.e., their families) and macrosystems (i.e., the broader cultural context of the nation or society in which they live and what it means to be of a certain race/ethnicity, gender, sexual orientation, religion, or other cultural groups in those societies; Bronfenbrenner, 1992). When they enter school, they are then influenced by teachers and peers, who in turn have been shaped by familial, school-based, and cultural forces themselves (Roorda et al., 2017; Skinner et al., 2009). Thus, the relationships that a student has with others in the school context may be bidirectionally impacted by similar or competing cultural forces (e.g., Pianta, 2001).

Researchers have found that within the classroom context, supportive teachers serve as protective factors at school to ameliorate emotional and behavioral difficulties that students may face and promote school engagement and academic achievement (Roorda et al., 2011; Rosenfeld et al., 2000; Wang & Eccles, 2013). As such, it is hypothesized that support from teachers is likely to influence students' affective responses to school first (e.g., connection to school, feelings of competence), then school behaviors (e.g., participation in activities, work completion), and finally school outcomes (e.g., grades, academic achievement; Levitt et al., 1994).

Similar to teacher-student relationships, peer relationships are thought to be risk or protective factors to the development of positive school engagement under the bioecological resilience perspective (Woolley & Bowen, 2007). For example, one study found that being influenced by negative peer groups engaging in antisocial behaviors is a risk factor for students'

social-emotional well-being, whereas positive peer influences in the home, school, and in the community serve as resilience factors (Woolley & Bowen, 2007). In this view, positive teacher-student relationships and peer relationships are vital to the healthy development of children in schools, and studies have suggested that the quality of these relationships and the affective response of the student to his/her learning environment have led to differential achievement outcomes (e.g., van den Bergh et al., 2010). In short, students tend to perform better in contexts where their psychological needs are met by positive social relationships in the school environment (Fredricks & Eccles, 2004).

Student-level Differences in ESE

Researchers have suggested that student-level factors such as age, gender and race/ethnicity affected the relationships between the quality of teacher support, peer relationships, affective reactions to school, and student outcomes (Lei et al., 2016). The following section outlines how academic achievement and ESE differ across grade, gender, and race/ethnicity.

Grade. Middle school appears to be a unique period for students in terms of ESE and academic achievement worthy of further research. ESE, academic achievement, and academic motivation seem to decrease among middle school students compared to elementary and high school students (Simons-Morton & Crump, 2003; Wang & Eccles, 2012). In one longitudinal study, Wang and Holcombe (2010) found that students' negative perceptions of their school environment in seventh grade negatively impacted academic achievement in eighth grade, further contributing to the importance of intervention at this crucial developmental period, as it may have long-lasting effects. Other longitudinal studies highlighted the power of ESE on other aspects of school engagement and academic achievement, finding that peer, teacher, and parental

social support predicted middle school students' school engagement and academic success over and above other individual characteristics such as academic ability and self-esteem/self-concept (Wang & Eccles, 2012) as well as socio-economic status and grade retention status (Woolley & Bowen 2007). It is worth noting as well that across middle school students, teacher social support has been found to impact student feelings of school identification and ESE over and above peer social support (Wang & Eccles, 2012), which may not be the case among high school-aged adolescents, who may shift social priorities to identification with peer groups rather than teachers (Jessor et al., 1995).

Gender. Boys with low academic achievement and a history of externalizing behaviors tend to have worse relationships with their teachers (Hamre & Pianta, 2001; Lei et al., 2016; McGrath & Van Bergen, 2015) and may be more at risk of dropping out of school (Janosz et al., 2008). Using student reports, some studies have found evidence that in general, boys tend to display less ESE, have more conflict with teachers, and experience less closeness with their teachers compared to girls (e.g., Koomen & Jellsma, 2015; Skinner & Belmont, 1993). It appears that gender matching teachers with students does not seem to improve the relationships boys have with their teachers; one study found that both male and female teachers had more conflictual relationships with boys than girls, and female teachers especially reported fewer close relationships with boys (Spilt et al., 2012). In terms of peer relations and identification with school, which are two other important aspects of ESE (Fredricks et al., 2004), evidence suggests that middle school girls reported higher levels of school identification and emotional connectedness than boys (Wang & Eccles, 2012). However, it appears that positive social supports from peers and parents affect boys and girls similarly in terms of ESE, which highlights the importance of peer friendships and parental support (Wang & Eccles, 2012). As of the

current date of writing, research is limited about the experiences of gender non-conforming or transgender students with regard to ESE. One recent study about gender diverse youth found that transgender and gender diverse youth reported lower levels of connectedness with their teachers and safety at school compared to their cisgender peers (Gower et al., 2018).

Race/ethnicity. Study findings have been mixed concerning the differential effects of race/ethnicity on ESE. Evidence suggested that teachers reported higher quality relationships with students of majority ethnicities (i.e., White) than with students of minority ethnicities (e.g., Murray et al., 2008). Another study found that students from racial/ethnic minority groups with low socioeconomic resources tended to have more negative relationships with their teachers (Lei et al., 2016). Chiu and colleagues found that first- and second-generation immigrant students of color reported weaker teacher-student relationships than their native peers (Chiu et al., 2012). However, some studies provided evidence that among students of color, positive teacher-student relationships were an especially powerful protective factor (Decker et al., 2007; Sabol & Pianta, 2012). Levels of ESE among Black/African American students has been found to be especially impacted by positive relationships with adults (e.g., Woolley & Bowen, 2007) and peers (e.g., Darensbourg & Blake, 2014; Estell & Perdue, 2013) compared to White students. Further, some teacher factors such as implicit bias and stereotype threat by White teachers towards Black/African American students have been found to negatively affect ESE, relationships with their teachers, and possibly academic achievement (e.g., Weiss et al., 2010). Given these ties to academic achievement, research on ESE suggests that teacher-student and peer relationships are particularly important among Black/African American students and highlights the need for teachers to cultivate good relationships with these students.

Cultural Considerations and the Engagement-Achievement Paradox (EAP)

Differences in ESE have been found based on student race/ethnicity and culture as well as based on the combination of factors used to measure ESE (Appleton et al., 2008; Jimerson et al., 2003). These differences have led some researchers (e.g., Shernoff & Schmidt, 2008) to find an engagement-achievement paradox (EAP) among Black/African American students. The EAP refers to a pattern where Black/African American students reported higher self-perceptions in areas of ESE (e.g., school belonging), yet have lower scores on measures of academic achievement (Singh et al., 2010). Because ESE has a strong relationship to academic achievement, this pattern seems paradoxical. This author believes that it could be the case that despite teacher efforts to increase ESE, their efforts are still not enough to reverse the effects of centuries of systematic racism. It also could be argued that the EAP represents a strengths-based approach to conceptualizing student performance in schools while highlighting the achievement gap that Black/African American students have long experienced. Further cultural considerations might be necessary to extend ESE research to examine why the EAP exists and how to potentially leverage ESE to boost academic achievement.

Researchers have found evidence that important facets of ESE such as relations with teachers, peers, and the school environment as well as demographic factors such as age, gender, and race were related to general school achievement (Furrer & Skinner, 2003; Voelkl, 1997). Allen (2008) has argued that aspects of the school environment including teacher attitudes and pedagogical practices may exacerbate the achievement gap that Black/African American students continue to face across the country. Some scholars (e.g., Allen, 2008) have theorized that this achievement gap is simply a kinder, subtler way to discuss pervasive racial and socioeconomic disparities between White and Black/African American students with regards to outcomes such as academic achievement that have been maintained systematically by societal forces. Other

researchers argued that teachers who held negative stereotypes about Black/African American students treated these students negatively compared to other students with regard to academic (Ladson-Billings, 2006; Tyler et al., 2016) and behavioral outcomes (Losen et al., 2015).

There are other significant factors that have been thought to contribute to this gap, such as cultural mismatch between the home and school environments (Tyler et al., 2016). Cultural mismatch refers to the idea that behavioral and academic expectations between home and school may differ, and such conflicts may lead to disruptions in students' learning processes and rejections of school values and academic demands (Bernal et al., 1991). Cultural mismatch has been shown to have especially deleterious effects on academic achievement and school attachment among Black/African American students (Tyler et al., 2016). One quality that has been found to be important towards addressing cultural mismatches and home-school partnerships has been teacher-student relationship quality (TSRQ) and thus ESE. Researchers have found that student-perceived TSRQ had the strongest links to students' attitudes toward school and feelings of belonging at school (ESE), and teachers who build warm, trusting relationships with their students tended to result in better academic and behavioral outcomes and better partnerships with families (e.g., Chiu et al., 2012).

Measuring ESE

There are several issues regarding how measurements of ESE relate to academic achievement among diverse populations. Extant measures of ESE have included items capturing feelings of student relatedness with other peers (Leffert et al., 1998), relatedness with teachers, and feelings of happiness or depression related to classrooms/school (Li & Lerner, 2011; Valeski & Stipek, 2001). However, indicators of ESE are often subsumed or combined with measures of behavioral or cognitive engagement, making it conceptually difficult to parse out which elements

of ESE may be more predictive of outcomes such as academic achievement (e.g., Connell et al., 1994; Ladd & Dinella, 2009).

Another significant measurement issue is that survey items that tap into ESE are often combined into a single factor or a unidimensional construct within a multidimensional school engagement scale. For example, the Profiles of Student Life: Attitudes and Behaviors scale (Leffert et al., 1998) is a commonly used measure of school engagement. Based on a confirmatory factor analysis, the factor structure of the scale includes two factors: a behavioral engagement factor (4 items) and an ESE factor (3 items; Li et al., 2010). A closer examination of the items by this author revealed that the three ESE items may tap into vastly different facets of a student's experience; one asked about how much students thought their teachers cared about them, how much they thought classmates cared about them, and to what extent they feel that they belong in the school. Measuring ESE without breaking each factor down into its constituent parts (e.g., asking about teacher-student relationships separately from peer relationships) makes it challenging to determine the differential effects of different aspects of ESE on outcomes such as academic achievement for different student populations (Fredricks et al., 2004). It may be the case, for example, that Black/African American students might feel a sense of belonging in their schools as a result of their social connectivity to peers but not teachers, which would lead to overinflated and misinterpreted high scores on school engagement measures for that population of students. A unidimensional measure of ESE may miss important information that diverse students are experiencing that may have important implications for intervention.

In addition, some studies employed measures of teacher-reported school engagement instead of student reports. This methodology introduces the potential of bias by teachers, as negative teacher attitudes and behaviors may be related to potentially inaccurate measurements

of school engagement and academic achievement among Black/African American students compared to White students (e.g., Phillips, 2013). One way to address this measurement issue would be to develop a student-reported measure of ESE, which may be a more accurate measure of students' experiences.

The Potential Power of Cultural Humility

Cultural humility could be a factor that may serve as a vital part of ESE and help clarify questions related to the engagement-achievement paradox. Cultural humility refers to the ability of an individual to maintain an open stance about aspects of another's cultural identities (Hook et al., 2013). It is a relational construct that has been linked to facilitating better interpersonal relationships between members of differing belief systems (Worthington et al., 2017). Cultural humility requires one to reject a sense of cultural superiority over others and regulate tendencies to judge others for their cultural values and beliefs (Choe et al., 2019). Cultural humility has been examined in the field of education as a quality that teachers have that can facilitate positive teacher-student relationships (Lund & Lee, 2015). A study of high school students using a majority-minority sample found that teacher cultural humility moderated the relationship between student externalizing behavior and TSRQ (McPhee et al., 2019). Because extant research has suggested that TSRQ is a robust predictor of academic achievement, (e.g., Roorda et al., 2011) interventions related to student emotional adjustment and TSRQ may therefore have positive effects on academic achievement (Levitt et al., 1994).

Cultural humility has not yet been examined within the context of school engagement (Srisarajivakul, 2021). Exploring teacher cultural humility in middle school could have implications for future teacher-focused professional development programs or interventions that could promote positive teacher-student relationships and ESE in high school and perhaps the

reduction of high school dropout rates. Given that TSRQ and student externalizing/internalizing behaviors are relevant to ESE, more research should be conducted to determine if there are differences in how teacher cultural humility functions among different populations of students in relation to academic achievement in order to design effective interventions aimed at improving student outcomes.

Current Study & Research Questions

It is important to consider the effects of teacher cultural humility when measuring ESE as researchers have suggested that teacher cultural humility may be associated with positive behavior outcomes and positive teacher-student relationships (McPhee et al., 2019). For this study, I will be focusing on ESE because teacher cultural humility has been found to relate to teacher-student relationship quality (e.g., Lund & Lee, 2015; McPhee et al., 2019), which is a key aspect of ESE.

In this study, I hypothesized that cultural humility could be conceptualized as an important element of TSRQ (McPhee et al., 2019) and may uniquely contribute to ESE. I also predicted that ESE would be significantly related to academic achievement in English language arts (ELA) and math (Roorda et al., 2011). These two academic subjects were chosen because they are common subjects used to measure academic achievement in the larger school engagement literature base (e.g., Bingham & Okagaki, 2012; Finn & Zimmer, 2012). The research questions are as follows:

1. Is ESE related to academic achievement in English language arts and math?

Based on prior literature (e.g., McPhee et al., 2019), I hypothesized that cultural humility would be positively correlated with TSRQ and negatively correlated with emotional problems and peer problems. I also hypothesized that all ESE variables would be significantly correlated

with academic achievement in ELA and math, as has been found in prior literature (e.g., Archambault et al., 2009).

2. How does cultural humility relate to traditional measures of ESE?

I hypothesized that the data would fit a multidimensional definition of ESE better than a unidimensional one and that teacher cultural humility would add unique, valuable information when considering ESE.

3. What are demographic differences in ESE among middle school students?

Based on the existing literature, I hypothesized that female students may show more ESE than male students (e.g., Koomen & Jellsma, 2015). Based on results from Chapter 1, I would expect Black/African American and White students to show similar levels of ESE since being in middle school does not appear to be a predictor of higher engagement among Black/African American students.

4. How do the ESE variables relate to academic achievement among Black/African American and White middle school students?

I hypothesized that the traditional ESE variables may predict achievement similarly among both White and Black/African American students, but cultural humility may predict achievement for Black/African American students more strongly than for White students given potential cultural differences between Black/African American students and their mostly White teachers.

Method

Context and Participants

Participants were from one rural county in the Southeastern U.S. According to the National Center for Education Statistics, this district was classified as a large, rural school

district at the time of the study (NCES, 2017). Data collected by the U.S. Census Bureau (2020) found that 40.5% of residents of the county were White, 56.0% were Black/African American, 5.4% were Hispanic or Latinx, 1.5% were multi-racial, 1.3% were Asian American/Pacific Islander, and 0.2% were American Indian/Alaska Native. The average annual income for residents of this county in 2019 was $42,398, and per capita income was $21,675 (Best Places, 2021). For this study, 1504 students from four middle schools were surveyed about their perceptions of their school engagement and teacher cultural humility, 34.4% of the students were White, 45.6% were Black/African American, 8.6% were multi-racial, 8.3% were Hispanic or Latinx, 2.1% were American Indian/Alaskan Native, 0.9% were Asian/Pacific Islander, and 0.1% identified as "other." The percentage of students receiving free and reduced lunch across the four schools ranged from 63%-88% (GADOE, 2019). Additional demographic information for this sample are reported in Table 6.

Table 6

Sample Characteristics

		N	Percent
Grade			
	6th grade	521	34.6
	7th grade	488	32.4
	8th grade	495	32.9
Gender			
	Female	723	48.1
	Male	741	49.3
	Other	20	1.3
	Prefer not to say	20	1.3
Race			
	American Indian or Alaskan Native	31	2.1
	Asian or Pacific Islander	13	0.9
	Black/African American, not Hispanic	686	45.6
	Hispanic	125	8.3
	Multi-Racial	130	8.6
	Other	2	0.1
	White, not Hispanic	517	34.4
Total		1504	100.0

Measures

ESE. Two measures were used to assess ESE. The first is the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). The SDQ is a 25-item measure of social, emotional, and behavioral strengths and difficulties in children and adolescents. Students reported their own levels of risk for externalizing and internalizing mental health and behavioral issues using the self-report version, which has 5 factors each with 5 indicators. The scales are entitled Hyperactivity (items refer to levels of activity and impulsivity), Emotional Problems (items refer to internalizing symptoms of anxiety and depression felt in school), Conduct Problems (items refer to behavioral difficulties like fighting and tantrums), Peer Problems (items refer to problematic peer interactions), and Prosocial (items refer to positive interactions with others). Four of the five factors load onto two subscales: Externalizing (made up of Hyperactivity and Conduct Problems), and Internalizing (made up of Emotional Problems and Peer Problems). For this study, the Internalizing scale was used, as this most closely matches existing definitions of ESE (e.g., Appleton et al., 2008). The SDQ has been shown to provide acceptable levels of validity and acceptable to good internal consistency in measuring self-reported emotional and behavioral strengths and difficulties and in adolescent samples, with Cronbach's alphas of .76 - .80. (Muris et al., 2004; Van Roy et al., 2008). In this sample, McDonald's omega (ω) was used to assess internal reliability for each factor because recent literature has suggested that McDonald's omega is a better measure of reliability than Cronbach's alpha, as it takes the strength of association between items, item-specific measurement errors, and constructs into account (e.g., Hayes & Coutts, 2020). For this study, ω coefficients of .50 or above were considered acceptable, and coefficients .70 or above were considered good (Reise, 2012). The OMEGA macro for SPSS was utilized for all calculations of ω (Hayes & Coutts, 2020). The

McDonald's omega coefficient for the Emotional Problems subscale was 0.72 and 0.88 for the Peer Problems subscale. The second scale used to measure ESE was the 17-item Inventory of Teacher-Student Relationships (IT-SR; Murray & Zvoch, 2011). Items are rated on a 4-point scale, ranging from 1= *almost never or never true* to 4 = *almost always or always true* and load onto three factors: Communication, Trust, and Alienation. Items on the Communication (e.g., "I can count on my teachers when I need to get something off my chest.") and Trust (e.g., "My teachers accept me as I am.") subscales assess student perspectives of teachers' understanding, responsiveness, and sensitivity. Items on the Alienation subscale (e.g., "I feel that no one understands me.") assess the degree to which students feel connected or disconnected from teachers. The IT-SR has shown evidence of moderate to strong internal consistency among diverse middle school students with Cronbach's alpha coefficients estimated at 0.72 for the Alienation subscale, 0.84 for the Trust subscale, and 0.89 for the Communication subscale (Murray & Zvoch, 2011). Concurrent validity with the Child and Adolescent Support Scale (used to measure student perceptions of social support from parents, teachers, classmates, and a close friend) also was demonstrated in a diverse sample of adolescents, with correlations ranging from .31 and .70 ($p < .001$ for all; Murray & Zvoch, 2011). For this sample, McDonald's omega coefficients were 0.91 for the Communication subscale, 0.86 for the Trust subscale, and 0.77 for the Alienation subscale.

Cultural humility. Cultural humility was assessed using the 11-item Cultural Humility Scale for Students (CHS-S; Srisarajivakul et al., 2021). The CHS-S was developed to obtain ratings of teachers' cultural humility. Students were first asked about what part of their culture (i.e., gender, language spoken at home, nationality, neighborhood, race/ethnicity, and other) was most important to them. Students could pick one, two, or three parts of their culture identities

that were most important to them in order of importance. Students were then asked to think about their third-period teacher and how the teacher treated the part of their culture that was the most important to them. The third-period teacher designation was implemented to reduce potential bias that may be introduced if students pick their favorite or least favorite teachers for the exercise. Next, students completed the 11 CHS-S items about this teacher. Items (e.g., "Towards this part of my culture, my teacher shows respect") are rated on a 5-point Likert-type scale, where 1 = *really disagree*, 2 = *kind of disagree*, 3 = *neutral*, 4 = *kind of agree*, and 5 = *really agree*. The CHS-S has two factors: one suggests positive teacher cultural humility (e.g., "Shows an interest in learning more") and one suggests negative teacher cultural humility (e.g., "Acts like a know-it-all"). The CHS-S has demonstrated acceptable to good reliability among diverse middle school students. The McDonald's omega coefficient for the positive factor was 0.87 and 0.73 for the negative factor.

Academic achievement. Academic achievement scores were represented by composites of students' scores on the Georgia Milestones Assessment System (Milestones; Georgia Department of Education, 2019), a summative assessment program given electronically to students from grade 3-12. It serves as an important component of Georgia's accountability system (the College and Career Ready Performance Index). The Milestones assessment measures knowledge and skills acquired each year according to the state-adopted content standards in English language arts (ELA), mathematics, science, and social studies. Because science and social studies are assessed in grades 5 and 8 only, achievement scores for ELA and mathematics were utilized in this study. Achievement scores are reported as scale scores ranging from 180 to 830. (Georgia Department of Education, 2019). Scores were available as averages for each grade

in each school. In other words, there were a total of 12 achievement scores (4 schools x 3 grades), and scores were clustered based on grade level at each school.

Student demographic variables. Demographic information was collected from the students. Data included student race/ethnicity, gender, age and grade level. See Appendix B for all items used in this study.

Procedures

Data Collection Procedures. This study was conducted as part of Project AWARE, a federal grant from the Substance Abuse and Mental Health Services Agency (SAMHSA) aimed at increasing awareness of mental health issues and services in schools. The IRB-approved research team coordinated data collection efforts with the grant director in the district. The SDQ was administered to all the middle and high school students in the district as part of a universal screening process. The CHS-S and IT-SR were added to the universal screening process. The survey was created by the research team using online survey software, and the link was sent to the district's grant director. The district's grant director distributed the link to every middle and high school in the district. The students took the survey in a supervised computer lab, and the responses were sent to a private account only accessible by the grant director. The district's grant director compiled the responses from all schools, removed student identifying information, and deposited the data into a private and password-protected online data management account that was accessible only by the principal investigators and the research team. Because of the nature of the research questions, only middle school data was used for this study.

Informed Consent. A letter from the school system was sent to all parents and guardians with details of the measures and timeline of survey administration. Passive parental consent procedures were utilized. Students were provided an assent form on the day that the survey was

administered that described the purpose of the study as well as potential risks associated with completing the survey and information about data management (see appendix A). The data collection was anonymous and part of a larger evaluation effort by the district. The data were collected through an online software, which allowed no direct interaction between university researchers and participating students. The district grant director was able to link the raw data to the original respondents. Any student identifying information was removed by the district grant director before sharing the data with the university researchers. Finally, the school district provided students with the option to skip items without penalty and they were able stop participating at any time. All questions had the option "I don't feel comfortable answering this question."

Analysis plan. All analyses were conducted using SPSS version 25.0 (IBM, 2017) and Mplus version 8.0 (Muthén & Muthén, 2018). To answer the first research question, I investigated the correlations among the factor scores for all ESE constructs (i.e., SDQ Internalizing subscale, ITSR, CHS-S). This step served as a form of preliminary analysis to determine the viability of these variables to be examined for further statistical analyses. Because initial research has found that teacher-student relationships were highly correlated with cultural humility in high school (McPhee et al., 2019), this step not only confirmed findings of prior literature but also provided further evidence that student-reported teacher cultural humility should be considered a part of ESE. Then, I assigned academic achievement scores for each grade at each school, such that all sixth-grade students at School 1 had the same achievement scores, and all seventh grade students at School 2 had the same achievement scores. This clustering approach has been used in related literature on academic achievement, where clusters have been defined based on the school level (Donnelly et al., 2017), perceived ability within

classrooms (Brulles et al., 2012), and demographic characteristics such as race, grade, and percent of students qualifying for free/reduced price lunch (Schonfeld et al., 2015). Individual ESE scores were retained. Table 8 displays the sample characteristics for each cluster in this sample.

To answer the second research question, I fit an EFA using Promax rotation to the item-level ESE and cultural humility data (using the Peer Problems and Emotional Problems of the SDQ, the Communication, Trust, and Alienation scales of the ITSR, and the Positive and Negative Cultural Humility scales of the CHS-S). Other competing models were tested and compared in terms of model fit. For this study, criteria for good model fit included Comparative Fit Index (CFI) > .95, Maximum likelihood-based Standardized Root Mean Squared Residual (SRMR) < .08 (Hu & Bentler, 1999), and Root Mean Square Error of Approximation (RMSEA) values between .05 and .08 (Marsh et al., 2004). Then, I confirmed measurement invariance across gender, race, and grade. This process involved assessing the psychometric equivalence of survey items across groups such as race or gender. Confirmation of measurement invariance provides evidence that the construct has the same meaning to different demographic groups (e.g. Glanville & Wildhagen, 2007). Without evidence of measurement invariance, comparisons between groups may be invalid (Putnick & Bornstein, 2016). The configural invariance model tested whether constructs have the same pattern of free and fixed loadings across groups. The metric invariance model tested the equivalence of the item loadings on the proposed factors and is done by constraining factor loadings to be equivalent in the two groups. Last, the scalar invariance model constrained item intercepts to be equivalent in both groups (Putnick & Bornstein, 2016). Measurement invariance was supported when constraints did not significantly worsen model fit. A significant difference was determined by ΔCFI > -.002 (Cheung &

Rensvold, 2002) and ΔMcDonald's Noncentrality Index (MNCI) > -.007 (Kang et al., 2016). When measurement invariance was not supported, partial invariance models were estimated by using modification indices to determine which items were non-invariant and freeing the loadings for those items.

To answer the third research question, I ran a 2x2 multivariate analysis of variance (MANOVA) using race (Black/African American and White) and gender (male and female) to determine if there were demographic differences in ESE in this sample.

Finally, to answer the fourth research question, I wanted to compare Black/African American and White students on academic achievement as well as each dimension of ESE individually to determine if there were differences that were not being captured in previous analyses. To answer this question, I utilized a micro-macro approach, where academic achievement is measured at the group level and the explanatory variables (ESE) are measured at both the individual and group levels. This assumes that individual-level measures would be indicators of the group-level construct of academic achievement, which is a method that has been used in educational research (e.g., Foster-Johnson & Kromrey, 2018). For this study, individual ESE data were utilized for Black/African American students (n = 686) and White students (n = 517). Achievement data were available for each grade at each school, resulting in 12 groups with group size ranging from 74-177 students per group, which is acceptable in small group research (e.g., Kenny et al., 2002). Because variability in group sizes may lead to heteroscedasticity, White's correction method was used to address this issue (Croon & van Veldhoven, 2007; Foster-Johnson & Kromrey, 2018). I completed this analysis using Foster-Johnson and Kromrey (2018)'s Mplus syntax for micro-macro analyses. Due to model convergence issues, I also

utilized an aggregation approach to model the individual- and cluster-level variables in a regression analysis that accounts for multilevel data.

Results

Preliminary analyses

First, data were examined to find participants who endorsed the same response for each question or assented to completing the survey and then proceeded to leave every answer blank (straightlining insufficient effort responders; Schonlau & Toepoel, 2015). This resulted in 76 participants being dropped; thus, the final sample was 1504. Then, Little's Missing Completely at Random (MCAR; Little, 1988) test was conducted to determine any patterns of missing data. Little's MCAR test was not significant, indicating that the data were missing completely at random. Next, normality was tested for all variables in this sample. The values of skewness and kurtosis were between -1 and +1 for all ESE and academic achievement variables, indicating normality.

Correlational Analysis (RQ1)

Based on prior literature about ESE and its link with teacher-student relationships, student relationships with peers, and student emotional well-being (e.g., Li & Lerner, 2011), I anticipated that variables related to teacher-student relationships as measured by the IT-SR (Communication, Trust, and Alienation) would be related to student emotional problems and peer problems. Because positive cultural humility embodies values of openness and trust between teacher and student (Srisarajivakul et al., 2021), I also anticipated that positive cultural humility would be related to communication and trust, while negative cultural humility, which relates to teacher cultural superiority, would likely be related to alienation and emotional problems.

Table 7 displays the descriptive statistics of these variables as well as the bivariate correlations. On an individual level, positive cultural humility was significantly related to communication (r = .53, p < .01) and trust (r = .59, p < .01). This suggests that higher levels in behaviors related to positive cultural humility (e.g., openness, willingness to learn about a student's cultural background) by teachers relates to increased communication and trust that students have for the teachers. Also, as predicted by my hypotheses, negative cultural humility (e.g., teacher expressions of cultural superiority) was significantly related to alienation (r = .27, p < .01) meaning that the more negative cultural humility a teacher displays, the more alienated the student feels towards the teacher. Negative cultural humility was significantly related to decreases in trust (r = .08, p <.01) and marginal increases in peer problems (r = .08, p < .01).

Across the other ESE variables, a few other patterns were noted. Communication was significantly related to trust (r = .65, p < .01) and negatively related to alienation (r = -.12, p < .01) and peer problems (r = -.03, p < .01). Trust was negatively related to alienation (r = -.27, p < .01) and emotional problems (r = -.06, p < .05) to a smaller degree. Alienation was positively related to emotional problems (r = .35, p < .01) and peer problems (r = .14, p < .01). Emotional problems were positively related to peer problems (r = .28, p < .01)

Table 7

Descriptive Statistics and Bivariate Correlations

Variable	M	SD	1	2	3	4	5	6
1. Positive Cultural Humility	3.70	.61	--					
2. Negative Cultural Humility	2.81	.73	-.10**	--				
3. Communication	2.67	.89	.53**	-.04	--			
4. Trust	3.07	.63	.59**	-.08**	.65**	--		
5. Alienation	2.13	.87	.01	.27**	-.12**	-.27**	--	
6. Emotional Problems	1.36	.47	-.07**	-.06	.04	.03	.35**	--
7. Peer Problems	1.05	.29	-.02**	.08**	-.03**	-.06*	.14**	.28**

** = p < .05; **= p < .01, N = 1504*

As previously noted, achievement scores were unavailable for each individual student, thus average English Language Arts (ELA) and Math scores for each grade level in each school were used, creating 12 “clusters” of achievement scores (e.g., ELA scores were the same for all sixth-grade students at school 1). Cluster sizes ranged from 74 to 150, and Table 8 displays additional descriptive information about each cluster.

Table 8

Cluster Sample Characteristics

		1	2	3	4	5	6	7	8	9	10	11	12	Total
Grade														
	6th grade	150	0	0	177	0	0	120	0	0	74	0	0	521
	7th grade	0	146	0	0	143	0	0	121	0	0	78	0	489
	8th grade	0	0	135	0	0	150	0	0	117	0	0	93	495
Gender														
	Female	82	59	75	83	82	69	46	64	59	34	32	38	723
	Male	63	85	58	90	61	76	66	53	55	39	45	52	741
	Other	4	1	2	1	0	3	4	1	1	0	0	3	20
	Prefer not to say	1	1	0	3	0	2	4	3	2	1	1	2	20
Race														
	American Indian/Alaskan Native	3	2	4	3	4	1	5	2	1	2	2	2	31
	Asian or Pacific Islander	3	0	1	2	1	0	2	1	0	0	2	1	13
	Black/African American	83	66	65	90	70	60	59	57	49	27	28	32	686
	Hispanic	15	16	9	19	18	17	9	6	6	4	3	3	125
	Multi-Racial	12	12	15	13	16	14	5	8	14	7	7	7	130
	Other	1	0	0	0	0	1	0	0	0	0	0	0	2
	White, not Hispanic	33	50	41	50	34	57	40	47	47	34	36	48	517

Measurement model (RQ2)

Exploratory factor analysis. As a result of the initial correlational analysis, I posited that the items comprising Cultural Humility, Communication, Trust, and Alienation could fit into two ESE factors, with one indicating positive engagement and the other representing negative engagement. Theoretically speaking, it is debated as to whether ESE should be considered unidimensionally or multidimensionally (Fredricks et al., 2004), so this analysis sought to answer this question. First, select items were reverse-coded on the Alienation, Emotional Problems, Peer Problems, and Negative Cultural Humility variables so that higher scores were markers of more positive ESE. I ran an exploratory factor analysis specifying two-, three- and four-factor models using PROMAX rotation. The one-factor model fit the data poorly based on all three fit indices. This provides evidence that ESE should be viewed multidimensionally. The two- and three-factor models met a priori criteria for good fit for two out of the three indicators (RMSEA between .05 and .08 and SRMR < .08). An examination of the factor loadings revealed that two factors contained most of the items, leaving the third factor with only one item and two items that cross-loaded with the second factor. Therefore, an alternative bifactor exploratory model was run with two factors (positive and negative ESE) and a general factor. This type of model is useful for exploratory analysis because it produces a rotated loading matrix that has an approximate bifactor structure and does not require one to provide an explicit a priori structure (Jenrich & Bentler, 2012). This bifactor model also was run in the event that there was a general method or engagement factor that was not being adequately captured by the previous models. Again, the resulting model met criteria for good fit for RMSEA and SRMR but not CFI (CFI = .84, RMSEA = .06, SRMR = .062). Last, a four-factor model was run, which fit the data the best (CFI = .95, RMSEA = .05, SRMR = .03). If it should be considered unidimensional, we may

have seen the data fit fairly well using just one factor. However, model fit indices suggested that the four-factor model fit best. These results, combined with theoretical and conceptual evidence (e.g., Jimerson et al., 2003) provided evidence that ESE should be considered as a multidimensional construct that is comprised of several different elements of a student's feelings about school and should not be considered as a unidimensional construct. Table 9 lists the fit statistics for all models.

Table 9

Exploratory Factor Analysis Measurement Models

	χ^2	*df*	*p*	CFI	RMSEA	90% CI	SRMR
One-factor model	9122.76	594	<.001	0.61	0.09	.096, .099	.100
Two-factor model	5840.40	559	<.001	0.76	0.08	.077, .081	.064
Three-factor model	3697.53	630	<.001	0.85	0.06	.061, .065	.048
Two-factor bifactor model	4041.11	630	<.001	0.84	0.06	.063, .066	.062
Four-factor model	2391.71	492	<.001	0.95	0.05	.049, .053	.031

Note. CFI = Comparative fit index; RMSEA = Root mean square error of approximation. 90% CI = confidence interval for RMSEA. SRMR = Standardized root mean square residual.

Table 10 displays the item loading matrix for the final four-factor model. The first factor was comprised of all items in the positive subscale of the CHS-S as well as three items from the Trust subscale of the IT-SR. The second factor contained all items from the Communication subscale and the rest of the items in the Trust subscale. The third factor was made up of all items in the negative subscale of the CHS-S. Last, the fourth factor was made up of the items from the Emotional Problems and Peer Problems subscales from the SDQ as well as all items from the Alienation subscale of the IT-SR. However, because the Emotional Problems and Peer Problems subscales loaded onto one factor despite clearly tapping into two different parts of students' experiences in school, I chose to continue with the analyses using each individual subscale (e.g., Communication, Trust, Positive Cultural Humility) as its own variable, instead of combining the items into four separate factors suggested by this analysis since they seem to be less clearly interpretable.

Table 10

Item Loadings of Final Four-Factor Exploratory Model

Factor	Item	B	S.E.
1	CHS1	0.74	0.02
	CHS2	0.65	0.02
	CHS5	0.62	0.03
	CHS6	0.71	0.02
	CHS7	0.71	0.02
	CHS9	0.70	0.02
	CHS12	0.42	0.03
	ITSR1	0.77	0.03
	ITSR2	0.72	0.03
	ITSR3	0.73	0.03
2	ITSR4	0.69	0.03
	ITSR7	0.59	0.03
	ITSR8	0.75	0.03
	ITSR9	0.70	0.02
	ITSR10	0.75	0.02
	ITSR11	0.78	0.02

	ITSR12	0.77	0.02
	ITSR13	0.68	0.03
	ITSR15	0.77	0.02
	ITSR17	0.75	0.02
3	CHS4	0.48	0.03
	CHS8	0.46	0.03
	CHS10	0.73	0.03
	CHS11	0.38	0.03
4	SDQ3	-0.36	0.03
	SDQ6	-0.27	0.03
	SDQ8	-0.42	0.03
	SDQ13	0.16	0.03
	SDQ14	0.22	0.03
	SDQ16	-0.46	0.03
	SDQ19	-0.37	0.03
	SDQ23	-0.31	0.03
	SDQ24	-0.39	0.03
	ITSR5	0.71	0.03
	ITSR6	0.72	0.03
	ITSR14	0.43	0.03
	ITSR16	0.59	0.03

Note. B = Unstandardized factor loadings.

Measurement invariance. Next, I tested measurement invariance on all subscales with respect to gender (male and female), race (Black/African American and White) and grade (sixth, seventh, and eighth). Items were treated as ordered categorical, and thus WLSMV estimator was used, since it has been found to be the most robust estimator for use with ordered categorical data (Muthen et al., 1997). For gender and race, these categories were chosen because they comprised the majority of my sample. Table 11 displays the model fit indices for the subscales. Invariance testing for Positive and Negative Cultural Humility subscales using this sample has been explored by Srisarajivakul et al. (2021) who found support for scalar measurement invariance for gender, and partial metric and scalar models for race and grade. In the current study, the Communication subscale and Emotional Problems subscale met configural, metric, and scalar invariance for gender, race, and grade. The Trust and Peer Problems subscales met configural,

metric, and scalar invariance for gender, race, and grade with some adjustments made to the configural models. For the Trust subscale, the errors for item 1 (“My teacher respects my feelings”) and item 7 (“My teacher trusts my judgement”) were correlated. For the Peer Problems subscale, item 11 (“I have one good friend or more”) and item 14 (“Other people my age generally like me”) were correlated. The Alienation subscale met configural, metric, and scalar invariance for gender and grade and partial scalar invariance for race. Loadings for non-invariant items (“I feel that no one understands me” and “I get upset more than my teacher knows”) were freed in the partial scalar invariance model.

Table 11

Measurement invariance model fit indices

	χ^2	*df*	$\Delta\chi^2$	Δdf	*p*	CFI	ΔCFI	MNCI	ΔMNCI	RMSEA	90% CI	SRMR
Communication												
Male/Female												
Configural	228.68	28			<.001	.929		.906		.09	.08-.10	.04
Metric	245.82	34	17.14	6	<.001	.928	-.001	.901	-.005	.09	.08-.10	.05
Scalar	285.23	40	39.41	6	<.001	.927	-.001	.887	-.004	.09	.08-.10	.06
Black/White												
Configural	180.27	28			<.001	.935		.928		.09	.08-.10	.04
Metric	202.12	34	21.85	6	<.001	.933	-.002	.921	-.007	.09	.08-.10	.05
Scalar	259.00	40	56.88	6	<.001	.931	-.002	.917	-.004	.09	.08-.10	.07
Grade												
Configural	253.39	42			<.001	.927		.902		.10	.09-.11	.04
Metric	264.13	54	10.74	12	<.001	.927	.000	.902	.000	.09	.07-.09	.05
Scalar	300.10	66	35.97	12	<.001	.925	-.002	.896	-.006	.08	.07-.09	.05
Trust												
Male/Female												
Configural	64.36	8			<.001	.935		.973		.10	.08-.12	.04
Metric	72.32	12	7.96	4	<.001	.932	-.003	.971	-.002	.09	.07-.10	.04
Scalar	81.58	16	9.26	4	<.001	.930	-.002	.968	-.003	.08	.07-.10	.05
Black/White												
Configural	44.22	8			<.001	.951		.985		.09	.06-.11	.04
Metric	55.75	12	11.53	4	<.001	.948	-.003	.983	-.002	.09	.07-.11	.05
Scalar	67.97	16	12.22	4	<.001	.945	-.003	.980	.003	.09	.07-.11	.06

Grade												
Configural	63.95	12			<.001	.941		.970		.09	.07-.12	.04
Metric	73.08	20	9.13	8	<.001	.939	-.002	.967	-.003	.07	.06-.09	.05
Scalar	92.64	28	19.56	8	<.001	.936	-.003	.964	-.003	.07	.05-.08	.05
Alienation												
Male/Female												
Configural	9.91	4			<.001	.992		.997		.05	.01-.08	.02
Metric	17.46	7	7.55	3	<.001	.990	-.002	.995	-.002	.05	.02-.07	.03
Scalar	22.30	10	4.84	3	<.001	.990	.000	.994	-.001	.04	.02-.06	.04
Black/White												
Configural	12.49	4			<.001	.988		.991		.06	.02-.10	.02
Metric	42.09	7	29.60	3	<.001	.985	-.003	.988	-.003	.09	.07-.12	.07
Scalar	69.28	10	27.19	3	<.001	.917	-.068	.962	-.026	.10	.08-.12	.09
Partial Scalar	69.28	10	27.19	3	<.001	.981	-.004	.985	-.012	.10	.08-.12	.09
Grade												
Configural	14.23	6			<.001	.992		.996		.05	.02-.09	.02
Metric	18.05	12	3.82	6	<.001	.989	-.003	.997	.001	.03	.00-.06	.03
Scalar	29.49	18	11.44	6	<.001	.985	-.004	.994	-.003	.04	.01-.06	.04
Emotional Problems												
Male/Female												
Configural	17.59	10			<.001	.990		.996		.03	.01-.06	.02
Metric	20.11	14	2.52	4	<.001	.992	.002	.997	.001	.02	.01-.05	.02
Scalar	48.19	18	28.08	4	<.001	.991	-.001	.995	-.002	.05	.03-.06	.04
Black/White												
Configural	17.10	10			<.001	.993		.997		.03	.01-.06	.02
Metric	19.32	14	2.22	4	<.001	.992	-.001	.997	.000	.03	.01-.05	.03
Scalar	27.07	18	7.75	4	<.001	.991	-.001	.996	-.001	.03	.01-.05	.03

Grade												
Configural	30.24	15			<.001	.983		.993		.05	.02-.07	.03
Metric	42.58	23	12.34	8	<.001	.981	-.002	.990	-.003	.04	.02-.06	.04
Scalar	54.92	31	12.34	8	<.001	.980	-.001	.988	-.002	.05	.02-.06	.04
Peer Problems												
Male/Female												
Configural	20.62	8			<.001	.965		.974		.05	.02-.08	.02
Metric	25.46	12	4.84	4	<.001	.963	-.002	.975	.001	.04	.02-.07	.03
Scalar	33.07	16	7.61	4	<.001	.959	-.004	.975	.000	.06	.05-.08	.04
Black/White												
Configural	26.43	8			<.001	.950		.968		.06	.03-.08	.03
Metric	30.96	12	4.53	4	<.001	.948	-.002	.946	-.022	.05	.03-.07	.03
Scalar	35.67	16	4.71	4	<.001	.946	-.002	.947	.001	.04	.02-.06	.03
Grade												
Configural	26.96	12			<.001	.962		.955		.05	.03-.08	.03
Metric	30.73	20	3.77	8	<.001	.960	-.002	.957	.002	.05	.01-.06	.03
Scalar	43.65	28	12.92	8	<.001	.957	-.003	.956	-.001	.06	.05-.08	.04

Note. CFI = Comparative fit index; MNCI = McDonald's noncentrality index; RMSEA = Root mean square error of approximation. 90% CI = confidence interval for RMSEA. SRMR = Standardized root mean square residual.
$\Delta\chi^2$ based on the Yuan-Bentler scaling correction.

Demographic differences in ESE (RQ3)

I then conducted a 2x2 MANOVA using race (Black/African American and White) and gender (male and female) as the fixed factors and all ESE variables (including cultural humility) as the dependent variables. There was a statistically significant difference in terms of gender on the combined dependent variables, $F(7, 1163) = 12.5$, $p < .001$; Wilks' $\Lambda = .93$. Girls reported significantly more Trust ($p < .05$) and less Negative Cultural Humility ($p < .05$) in their teachers compared to boys. Boys reported significantly more Emotional Problems compared to girls ($p < .01$). There was also a statistically significant difference in terms of race on the combined dependent variables, $F(7, 1163) = 12.26$, $p < .01$; Wilks' $\Lambda = .07$. Black/African American students reported significantly more Communication ($p < .01$) yet significantly more Negative Cultural Humility ($p < .01$) and less Positive Cultural Humility ($p < .05$) by their teachers compared to White students. White students reported significantly less Emotional Problems ($p < .01$) and Peer Problems ($p < .01$) compared to Black/African American students. There was not a statistically significant interaction effect between race and grade on the combined dependent variables, $F(7, 1163) = .325$, $p = .943$; Wilks' $\Lambda = .998$.

Engagement-Achievement Paradox (RQ4)

To identify whether the relationship between ESE and achievement differs between White and Black/African American students, an unadjusted ordinary least squares analysis of group means (OLS) using sample means of the individual-level predictors (ESE) with White's adjustment was conducted using Mplus. This method has been found to maximize the statistical power of the individual-level predictors while taking the multilevel nature of the achievement data into account (Foster-Johnson & Kromrey, 2018).

First, in line with Foster-Johnson and Kromrey (2018)'s guidelines based on their Monte Carlo simulation study, the interclass correlations of the ESE (predictor) variables were calculated. Values ranged from 0.04 to 0.07, which are considered small based on common guidelines in education research (e.g., Hedges & Hedberg, 2007; Hox & Maas, 2002). The full dataset was split into one with just White students and another with just Black/African American students, and analyses were run separately for those two racial/ethnic groups. All of the ESE variables were entered as within-level predictors, and achievement in ELA was entered as the between-level outcome variable. The analyses were then repeated with math as the between-level outcome variable. Raw achievement scores were divided by a constant (i.e., 100) in order to have numbers in the same zone as variance for the predictors. Clusters were defined by each grade level at each school (see Table 8 for descriptive statistics).

Initial models included all ESE predictors, but those resulted in convergence errors, presumably due to model complexity, lack of variability between clusters (in the academic achievement variable), and the small number of clusters in general. Model modifications were attempted, but convergence problems persisted. To reduce model complexity, a total of six additional models were run using each measure individually with White students and then again with Black/African American students (e.g., looking at the relationship between the TSR subscales and achievement in ELA among White students, then the SDQ subscales and achievement in ELA among White students, etc.). However, due to large and out of range estimates and standard errors, results of this analysis were also deemed unreliable.

Because of the convergence issues of the first attempt as well as the grossly inflated estimates and standard errors of the second attempt, a third set of analyses was conducted using Mplus that utilized an aggregation approach (also known as marginal modeling; Chambers &

Skinner, 2003) to model the individual- and cluster-level variables in a regression analysis that accounts for multilevel data. TYPE = COMPLEX was used in these analyses to account for the multilevel and non-independent nature of the data (Muthen & Satorra, 1995). This type of analysis models parameters on one level instead of two, accounts for unequal cluster sizes, and adjusts the standard errors using the Huber-White sandwich estimator, which is used to correct the standard errors in models where model specification is unreliable (Asparouhov & Muthen, 2006; Freedman, 2006), as was the case in the previous sets of analyses. Using this type of analysis was necessary to account for the non-independence in the observations (i.e., students within grades; grades within schools) and to maximize the power of the individual-level predictors using cluster-level outcome measure (Foster-Johnson & Kromrey, 2018; Freedman, 2006). A maximum likelihood (MLR) estimator was used as recommended for clustered data by a simulation study (Muthen & Satorra, 1995).

All ESE variables were entered in one step. Table 13 displays the results for the aggregation analyses. Among White students, the ESE variables taken together explained a small but significant amount of variance in ELA achievement scores ($r^2 = .04$, $p < .01$) and math achievement scores ($r^2 = .03$, $p < .01$). Communication and Trust were significant predictors of ELA achievement, and Communication and Emotional Problems were significant predictors of math achievement. Among Black/African American students, ESE variables taken together were not significant predictors of achievement in ELA or math. In terms of the individual subscale scores, Communication, Trust, and Peer Problems significantly predicted achievement in ELA, and Communication and Trust predicted achievement in math. However, these results should be interpreted with caution because a simulation study suggested that this type of aggregation

approach requires more than 10 clusters but ideally at least 20 clusters to produce reliable results (Muthen & Sattora, 1995), whereas there were 12 clusters in the present analysis.

Table 12
Aggregation model results

	Estimate	*S.E*
ELA		
White		
Communication	0.21***	0.06
Trust	0.17*	0.07
Alienation	-0.09	0.06
Peer Problems	0.04	0.03
Emotional Problems	0.07	0.04
Positive Cultural Humility	0.01	0.08
Negative Cultural Humility	-0.02	0.04
Black/African American		
Communication	0.24*	0.11
Trust	0.18**	0.07
Alienation	-0.01	0.09
Peer Problems	-0.11*	0.05
Emotional Problems	0.04	0.06
Positive Cultural Humility	0.01	0.07
Negative Cultural Humility	-0.03	0.03
Math		
White		
Communication	0.15***	0.04
Trust	0.09	0.08
Alienation	-0.07	0.05
Peer Problems	0.01	0.04
Emotional Problems	0.08**	0.03
Positive Cultural Humility	0.05	0.06
Negative Cultural Humility	0.07	0.06
Black/African American		
Communication	0.17*	0.09
Trust	0.23***	0.06
Alienation	-0.16	0.12
Peer Problems	-0.09	0.05
Emotional Problems	-0.06	0.07
Positive Cultural Humility	0.06	0.07
Negative Cultural Humility	-0.04	0.04

* = p < .05, ** = p< .01, *** = p < .001

Discussion

Findings of this study supported previous literature that suggested ESE may function differently among different demographic groups of students (e.g., Shernoff & Schmidt, 2008), and these differences have important implications for academic achievement. Among both Black/African American and White students, students' communication and trust in their teachers were found to be important predictors of academic achievement, regardless of race/ethnicity. This finding highlights the importance of positive TSRQ for both groups of students, which has been suggested in previous literature (e.g., Woolley & Bowen, 2007). Black/African American students reported more communication with their teachers yet more emotional and peer problems compared to White students, which suggests that this population may benefit from further socio-emotional and/or school climate-related interventions. Given the theoretical ties between ESE and academic achievement explored in this study and in the broader literature, increased emotional and peer problems may be an underlying cause of the EAP among Black/African American students.

Additionally, this study was the first to take student-reported teacher cultural humility into account when measuring ESE and therefore uniquely contributed to the school engagement and academic achievement literature bases. A key finding in this study was that cultural humility was highly correlated with both communication and trust, and if improved, could serve to boost the positive effects of teacher communication and trust. In terms of gender, girls reported significantly more trust in their teachers and significantly less negative cultural humility compared to boys. This is in line with previous research findings regarding the relatively poor TSRQ boys experience compared to girls (e.g., Koomen & Jellesma, 2015) and suggests that

boys may benefit from teachers who emphasize trust in their relationships with their students and express cultural humility in terms of gender.

The EAP and the Importance of Attending to Culture and Environmental Context

With respect to the EAP, it appears that the nature of the relationship between ESE and academic achievement differs between Black/African American and White students. While the results from the aggregation approach in research question 4 should be interpreted with caution due to issues with cluster size and the small amount of variability among the clusters, higher ESE seems to lead to higher academic achievement scores among White students but not necessarily Black/African American students. This serves as an additional explanation for why the EAP exists that has not been observed before and is a contribution to the literature about the EAP.

One important finding was that there were differences among boys and girls as well as White and Black/African American students on several ESE and cultural humility variables, which is consistent with some findings in the literature about differences in ESE across students of different races/ethnicities and genders (e.g., Lei et al., 2016). This finding underscores the importance of attending to culture and the ecological settings in which students live (Bronfenbrenner, 2005). According to the bioecological perspective, students are influenced by teachers, peers, and families, who have all been shaped by cultural forces (Skinner et al., 2009). Further, students are impacted by the demographic characteristics such as race/ethnicity and gender and how identification in those groups is perceived by the cultural majority of the US (which favors White males; Murray et al., 2008). With all of these systems in a student's environment, it is vital for teachers and school staff to be aware of their own identities and identities that are important to their students in order to ensure equitable treatment of all students

and create a positive school culture (Theokas & Lerner, 2006). Based on the findings of this study, there were several significant differences with regard to gender and race/ethnicity.

In this study, female middle school students had higher ESE than their male peers in the areas of trust and negative cultural humility, as they felt more trusting towards their teachers, who they believed did not act culturally superior to them to the same degree as their male counterparts. This is consistent with existing research on gender differences in TSRQ, as males tended to have more conflict and experience less closeness with their teachers compared to females (e.g., Koomen & Jellsma, 2015). In this study, being male was associated with increased Emotional Problems, which highlighted the importance of attending to the emotional needs of male students in classrooms, as literature has found that poor TSRQ and negative affective reactions to school have been tied to higher rates of drop out among boys (Janosz et al., 2008).

Cultural Humility as a Measure of ESE

This was the first study to incorporate teacher cultural humility within the realm of ESE. As hypothesized, cultural humility does seem to fit well with the other aspects of ESE (as evidenced by correlations with measures of TSRQ, peer belongingness, and emotional affect towards the school environment). Theoretically, ESE has been described as a factor that, "Encompasses positive and negative reactions to teachers, classmates, academics, and schools and is presumed to create ties to an institution and influence willingness to do the work," (Fredricks et al., p. 60). However, based on findings from chapter 1, the operational definition of ESE has varied widely in the literature. Despite ESE being a multidimensional construct from its very definition, studies have instead measured it by using one factor or a with few loosely-connected items (e.g., Johnson et al., 2001; Park et al., 2012) An exploratory factor analysis presented by this researcher suggested that combining these disparate concepts together into one

factor does not provide the best fit for the data. Instead, it seems that the data best fits a four-factor model, with a positive cultural humility/trust factor, a communication/trust factor, a negative cultural humility factor, and a negative emotionality/peer relationships factor. This is consistent with some literature, which identifies ESE using multiple concepts (e.g., Appleton et al., 2008).

Furthermore, it is notable that some aspects of ESE measured in this study were significantly related to academic achievement, which is in-line with some existing literature (e.g., Janosz et al., 2008; Wang & Peck, 2013). Among both Black/African American and White students, Communication and Trust were significant predictors of academic achievement. These results suggest that ESE (and more specifically, TSRQ) is important to academic achievement, which has been noted elsewhere in the literature (e.g., Fredricks et al. 2004). While cultural humility was not a significant predictor for achievement in this study, it could serve as a way to improve communication and trust between teachers and their students given the high correlations among the concepts. Cultural humility may therefore be an important factor to consider when measuring school engagement, especially among diverse student populations.

Results from the MANOVA suggest that teachers may communicate more with Black/African American students. However, they may not engage Black/African American students about their cultural identities, may not be open to different ways of thinking and behavior, and may not ask appropriate questions to students when unsure about their cultural identities (Hook et al., 2017), as compared to White students. This provides additional evidence that cultural humility could be an important factor to measure when considering ESE and opens new possibilities for prevention and intervention that may impact overall school climate.

Implications for Research and Practice

Efforts to increase teacher cultural humility might have important implications for the instruction and academic achievement of students of color given the importance of cultural humility among Black/African American students based on the findings from this study. Empowering teachers to improve the quality of their relationships with their students and practicing cultural humility through professional development programs or other in-service training opportunities might therefore lead to more equitable practices and increased academic achievement across racial/ethnic minority groups.

According to the correlational analysis, teacher behaviors related to positive cultural humility was significantly and positively correlated with communication and trust that students have for the teachers. On the other hand, negative cultural humility was significantly and positively correlated with students feeling alienated from their teachers. Thus, having more coursework for pre-service teachers and professional development for experienced teachers centered around increasing cultural humility may have important implications for classroom management and discipline. For example, helping school staff develop their own self-awareness about their own cultural orientations and beliefs as well as learn about and reflect on the cultural beliefs of their students may allow teachers to better understand student behaviors. Some literature suggests that teachers without such an understanding may misjudge some student comments to be disrespectful or actions to be defiant (e.g., Gregory & Weinstein, 2008). Practicing cultural humility may allow teachers to understand these comments or behaviors as reflective of fear or embarrassment, for example, rather than being simply disrespectful. Thus, cultural humility practice may impact teachers' disciplinary and classroom management practices in addition to improving TSRQ and ESE.

Raising awareness about the importance of positive school climate through cultural humility may importantly promote other positive student outcomes with robust connections to school climate (e.g., psychological development, academic achievement, motivation to learn; Wang & Degol, 2016). This study suggested that measuring cultural humility in addition to other ESE variables both as a formative and summative measure throughout the school year may add valuable culturally relevant and student-driven data about TSRQ, which is an important measure of school culture and school climate. Low scores on the CHS-S for a particular teacher and other ESE measures may lead to professional development opportunities for teachers and school-wide efforts to improve relationships between school staff and students. Doing so may reduce the negative impacts of cultural mismatch (i.e., different behavioral expectations for students at home versus at school; Brown-Wright & Tyler, 2010) on academic achievement and overall school climate.

Another way that cultural mismatch might be addressed is through a strengths-based approach towards instructing diverse students. According to the results of this study, Black/African American students had better communication with teachers and experienced more positive affective reactions to their teachers and less conflict with their peers compared to White students. This finding was consistent with the recent strengths-based literature on the protective factors related to Black/African American students (e.g., Golden et al., 2018). Thus, in addition to increasing cultural humility among teachers, future efforts to improve cultural mismatch, home-school partnerships and TSRQ should emphasize the importance of recognizing strengths among students. Using the bioecological resilience perspective, viewing students in terms of their strengths may boost teacher supportiveness as well as promoting cooperation and better relationships between teachers and families, which would then likely impact students' affective

reactions to their teachers and positive school behaviors such as participation in class and work completion (Levitt et al., 1994). This domino effect related to TSRQ would likely have important implications for academic success and positive social-emotional development (Janosz et al., 2008; van den Bergh et al., 2010).

Limitations and Future Research

As has been noted throughout, this analysis was limited because individual student achievement scores were not available to this researcher. The clustering approach that was taken in this study limited the ability to investigate between school variance, which may be an important consideration for all variables in this study, especially academic achievement in the areas of ELA and math. In the future, more research should be done with individual students' scores, rather than cluster scores, to further explore the relationship between ESE and academic achievement. Additionally, the cross-sectional design of this study, while providing important evidence regarding cultural humility and ESE and their effects on academic achievement, limited the ability to follow up on student outcomes over time. Tracking these ESE and academic achievement scores over time through a longitudinal design would also shed more light on differences in these variables across grade levels, schools, and other demographic characteristics.

Due to issues of teacher confidentiality, teacher cultural humility data were collected such that students were instructed to think about their third period teachers when completing the survey but not name them. If an adequate number of teachers could be identified in future studies, (i.e., 30 or more; Kreft et al., 1998), future efforts could employ multilevel modeling to account for both within- and between-classroom variance, which would provide more insight into whether interventions should take place with an individual classroom teacher versus an entire school. Researchers could then utilize the CHS-S to track teacher progress in the domains

of cultural humility, other areas of school engagement, and academic achievement over time if an intervention like a professional development series was implemented. Such longitudinal research would especially add to cultural humility research, which is mostly comprised of studies employing cross-sectional designs.

Because this study examined ESE and the role of teacher cultural humility in improving academic achievement in the areas of ELA and math, generalization of results to other domains of school engagement is limited. Future researchers could conduct additional research on other domains of school engagement like behavioral, cognitive, and academic engagement and their impacts on academic achievement. It is possible that other school engagement domains could impact academic achievement differently than ESE. Additionally, future research efforts may be useful in determining ways to incorporate cultural considerations in other areas of school engagement. This study presented initial evidence that measuring cultural humility as part of greater efforts to address differences in ESE could be helpful in improving TSRQ and possibly academic achievement. Improvements in these other areas of school engagement and efforts to add more cultural considerations into the school engagement literature might also lead to further improvements in school climate (e.g., Wang & Degol, 2016).

In terms of instrumentation, this study provided important reliability and measurement invariance results regarding the SDQ and IT-SR, which are measures that have been widely used to measure student engagement, TSRQ, and student behavioral outcomes. In terms of reliability, the McDonald's omega coefficients for the Peer Problems, Emotional Problems, Communication, Trust, and Alienation subscales for this diverse sample were in the acceptable to good ranges. In terms of measurement invariance, results indicated that the all subscales of the IT-SR and the SDQ met configural, metric, and scalar/partial scalar invariance for gender, race,

and grade among this sample of diverse middle school students. This could suggest that these scales are reliable when used with diverse populations of students.

Last, this sample included students of several racial/ethnic groups as well as gender diverse students. However, the sample sizes of these students were small (2.1% for American Indian/Alaskan Native students 0.9% for Asian American/Pacific Islander students, and 1.3% for gender diverse students). In general, there seems to be a lack of research on these populations compared to other racial/ethnic and gender groups with regard to the EAP, cultural humility, and the effects of ESE on academic achievement. More research on Native, Hispanic/Latinx, Asian American/Pacific Islander, and multiracial students might shed more light on how these populations compare to their Black/African American and White peers in terms of ESE and academic achievement. Similarly, work on students identifying as transgender, gender non-conforming, and other gender identities could supplement the findings of this study. A study focused on a larger sample size of students identifying as transgender and other gender identities could extend and confirm the findings of this study and perhaps determine if cultural humility functions differently when considering gender as compared with race/ethnicity. Implications of such research could influence teaching practices uniquely related to racially/ethnically diverse and gender diverse students and professional development programs aimed at increasing cultural humility among teachers.

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APPENDICES

Appendix A
Data Management and Ethical Considerations

Data Management. The following was present in the student assent form regarding data management:

We will keep all anonymous study results private to the extent allowed by law. The principal investigator(s) will have access to the information you provide. Our computers are both password- and firewall-protected, so these will be kept secure. The online data is stored in a password protected data storage account. Because the district will submit the results of the survey to the University without identifying information, the University will have no access to your identity. Thus, any information that might point to you will not appear when we present this study or publish its results. You will not be identified personally. The findings will be summarized and reported in group form. Information may also be shared with those who make sure the study is done correctly (i.e., GSU Institutional Review Board, the Office for Human Research Protection). However, as the University will have no access to individual identifying information, none of this information could reveal your identity to anyone at any time.

Ethical Considerations. The primary ethical risks involve issues of confidentiality. All anonymous response data was stored in a password-protected Box account, so risk of identification was deemed to be extremely low. Electronic copies of the survey were kept on firewall- and password-protected computers in The Center for Research on School Safety, School Climate, and Classroom Management. Participants could experience feelings of discomfort related to answering survey items about their feelings, attitudes, and experiences. Participants were told that they could skip items without penalty, and they could stop

participating at any time. All questions had the option “I don’t feel comfortable answering this question.” In addition, they were given the PI’s contact information if they had questions, concerns, or complaints about this study. They also were given contact information for Susan Vogtner in the Georgia State University Office of Research Integrity if they wanted to talk to someone who is not part of the study team.

Appendix B
Study measures

Strengths and Difficulties Questionnaire (SDQ)

Emotional problems scale
ITEM 3: I get a lot of headaches, stomach-aches, or sickness
ITEM 8: I worry a lot
ITEM 13: I am often unhappy, depressed, or tearful
ITEM 16: I am nervous in new situations. I easily lose confidence
ITEM 24: I have many fears, I am easily scared

Peer problems scale
ITEM 6: I am usually on my own)
ITEM 11: I have one good friend or more
ITEM 14: Other people my age generally like me
ITEM 19: Other children or young people pick on me
ITEM 23: I get on better with adults than with people my age

Inventory of Teacher-Student Relationships (IT-SR)

Communication scale
9. I tell my teacher about my problems and troubles
4. My teacher can tell when something is upsetting me
8. My teacher helps me understand myself better
17. If teacher knows something is bothering me, they ask me about it
11. My teacher understands me
15. I can count on my teacher when need to get something off chest
12. When angry, teacher tries to be understanding
10. My teacher encourages me to talk about my difficulties

Trust scale
3. My teacher accepts me as I am
1. My teacher respects my feelings
2. I feel my teacher is successful as a teacher
13. I trust my teacher
7. My teacher trusts my judgment

Alienation scale
6. I get upset a lot more than my teacher knows about
16. I feel that no one understands me
5. I get upset easily at school
14. My teacher doesn't understand what I'm going through

Cultural Humility Scale for Students (CHS-S)

Directions: There could be parts of your cultural background that are important to you. Parts of your cultural background could include your skin color, ethnicity, nationality, gender, age, sexual orientation, religion, disability, body size, and the neighborhood you're from. There might be other parts of your cultural identity that are important to you that we did not put on the list. Also, some things may be more important to you, and other things may be less important to you.

Please pick the part of your cultural background that is most important to you:
How important is this part of your cultural background?

Not at all important		Somewhat Important		Very Important
1	2	3	4	5

If there is a 2nd part of your cultural background that is important to you, please pick:
How important is this part of your cultural background?

Not at all important		Somewhat Important		Very Important
1	2	3	4	5

If there is a 3rd part of your cultural background that is important to you, please pick:
How important is this part of your cultural background?

Not at all important		Somewhat Important		Very Important
1	2	3	4	5

Please think about your third period teacher and answer the questions below:

Towards this part of my culture, my teacher…	Really Disagree (1)	Kind of Disagree (2)	Neutral (3)	Kind of Agree (4)	Really Agree (5)
Shows respect	1	2	3	4	5
Is open	1	2	3	4	5
Assumes he/she already knows a lot	1	2	3	4	5
Is arrogant	1	2	3	4	5
Is considerate	1	2	3	4	5
Shows an interest in learning more	1	2	3	4	5
Tries to see my perspective	1	2	3	4	5
Makes assumptions	1	2	3	4	5
Stays open-minded	1	2	3	4	5
Acts like a know-it-all	1	2	3	4	5
Thinks he/she knows more than he/she does	1	2	3	4	5
Asks questions when unsure	1	2	3	4	5

Acts like he/she is better than me	1	2	3	4	5
Is willing to talk about it with me	1	2	3	4	5
This teacher's race is					
This teacher's age is					
This teacher's gender is					