Investigating the Relation Between Critical Consciousness and Academic Achievement for Adolescents of Color and White Adolescents

Scott Seider[1], Daphne A. Henry[2], Elianny C. Edwards[1], James P. Huguley[3], Brianna Diaz[1], and Kaila Daza[1]
[1] Department of Counseling, Developmental, and Educational Psychology, Lynch School of Education and Human Development, Boston College
[2] Department of Psychology, University of Pittsburgh
[3] School of Social Work, University of Pittsburgh

Objectives: A handful of studies have previously reported on positive associations between critical consciousness and academic achievement for youth of color. The present study contributes to this scholarship by investigating how the association between critical consciousness and academic achievement varies for youth ($N = 179$) across different content areas in school, as well as whether this association differs for youth from different racial–ethnic groups. ***Method:*** For three different measures of critical consciousness, we fit single-level ordinary least squares (OLS) regression models to investigate their relationship to students' academic achievement in four different subject areas. We also included moderation models to investigate whether the relation between critical consciousness and academic achievement differed for students of color versus White students. ***Results:*** OLS regression analyses revealed that different components of critical consciousness differentially predicted students' academic achievement in different subject areas. Additionally, moderation analyses suggest that these associations between critical consciousness and academic achievement are stronger for students of color than White students. ***Conclusions:*** These findings may encourage more K–12 schools and school systems to adopt culturally relevant and sustaining curriculum (such as ethnic studies coursework) that offer more opportunities for youth from both dominant and marginalized identity groups to learn about issues of power, oppression, and resistance to oppression.

Public Significance Statement
More than 30 states in the United States have recently adopted or introduced laws that limit teaching in K–12 schools about race and racism. The present study finds that, in a racially diverse sample of high school students, young people's ability to understand and analyze racism was significantly associated with higher levels of academic achievement in several subject areas, and that these associations were particularly strong for high school students of color. These results may encourage more K–12 schools to adopt culturally relevant and sustaining curriculum that offer opportunities for youth to learn about issues of power, oppression, and resistance to oppression.

Keywords: critical consciousness, youth sociopolitical development, academic achievement, adolescent development

Philosopher–educator Freire (1970) argued that nurturing the critical consciousness of young people from oppressed groups should be the primary goal of education, so that youth are equipped with the knowledge, skills, and motivation to challenge oppression and transform society. While Freire theorized that critical consciousness is a vital step for societal transformation, a growing body of research has also explored associations between critical consciousness and a host of positive outcomes for the young people themselves (Heberle et al., 2020; Maker Castro et al., 2022).

A small number of these studies have reported a significant association between critical consciousness and academic achievement for youth of color (Cabrera et al., 2014; Dee & Penner, 2017; Seider, Clark, & Graves, 2020). However, there remains much to learn about the nature of this association, including how effects vary

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across different content areas in school, as well as whether this association differs for youth from different racial–ethnic groups (Heberle et al., 2020). Bolstering evidence of critical consciousness as a predictor of academic outcomes could have a meaningful influence on the investment of educators and schools in nurturing students' critical consciousness. Moreover, if this association between critical consciousness and academic achievement is found to be particularly strong for youth of color, these results could offer further support for the importance of schools and school systems adopting culturally relevant and sustaining curriculum that offer more opportunities for youth of color—who now represent more than half of the K–12 student population (Frey, 2019)—to learn about and reflect upon topics and issues that feel particularly relevant to their own identity groups (Ladson-Billings, 1995; Milner, 2010). Accordingly, the present study sought to contribute to the extant scholarship on youth critical consciousness and academic achievement by examining this relation by specific subject areas in a diverse sample of adolescents ($N = 179$) attending eight different high schools.

Theoretical Framework: Critical Consciousness

The term, critical consciousness, comes from Brazilian philosopher–educator Paulo Freire (1970) whose work as a literacy teacher in rural Brazil in the 1940s led to his discovery that the adult laborers with whom he was working were motivated to learn to read by their investment in decoding and challenging their social conditions. Freire invoked the term conscientizacao, or critical consciousness, to refer to this ability to understand and analyze oppressive social systems ("critical reflection") and to engage in social action to challenge and resist them ("critical action").

R. J. Watts et al. (2011) later added to Freire's foundational work by conceptualizing critical consciousness as consisting of three distinct but related components: critical reflection, critical action, and critical motivation. In these scholars' conceptual model, critical motivation—also sometimes referred to as political self-efficacy—refers to a person's internal beliefs that they can and should seek to challenge oppressive forces and systems. In this way, critical motivation refers to both an individual's feelings of self-efficacy to effect social change, as well as their motivation to do so (R. J. Watts et al., 2011). Perhaps because critical motivation was not explicitly included in Freire's (1970) foundational work on critical consciousness, it has received the least theoretical and empirical scrutiny. In fact, two of the most prominent validated measures of critical consciousness (Diemer et al., 2017; Thomas et al., 2014) do not include measures of critical motivation, and the critical motivation subscales of two additional validated critical consciousness measures focus primarily on the motivational dimension of critical consciousness rather than the political self-efficacy dimension (McWhirter & McWhirter, 2016; Rapa et al., 2020).

A growing body of research has investigated associations between critical consciousness and a number of positive outcomes for youth of color. Specifically, researchers have reported that high levels of critical consciousness are associated with higher levels of resilience for African American adolescents (Zimmerman et al., 1999), higher levels of self-esteem for racial/ethnic minority youth (Godfrey et al., 2019), higher levels of academic engagement for African American adolescents (Carter, 2008; O'Connor, 1997),

higher career aspirations among African American adolescents (Rapa et al., 2018), and higher levels of civic and political engagement among Black adolescents (Hope & Jagers, 2014) and Black and Latinx young adults (Bañales et al., 2020).

The focus on youth of color in the extant research resonates with Freire's (1970) conception of critical consciousness as a tool for engaging members of oppressed groups in developing the understanding, skill, and will to challenge the forces oppressing them. Accordingly, few studies of critical consciousness have explored effects among White youth (Heberle et al., 2020). Diemer and Li (2011) reported that critical consciousness was more predictive of civic engagement for youth of color than White youth. Likewise, Tyler et al. (2020) found that critical reflection skills were negatively associated with the caring and connection components of positive youth development for White adolescents in their sample, whereas there was no such association for Black adolescents. While neither of these studies assessed associations between critical consciousness and academic achievement for White youth, they suggest that associations between critical consciousness and positive youth development may work differently for White youth versus youth of color. In their recent literature review on youth critical consciousness, Heberle et al. (2020) likewise concluded that, though limited research has explored critical consciousness in White youth, the associations between critical consciousness and positive youth outcomes are likely to be different for White youth as compared to youth of color. Specifically, these scholars note: "For White youth, who are already privileged in many ways with respect to education and employment, critical consciousness would not necessarily be expected to relate to these domains" (Heberle et al., 2020, p. 547).

In considering why the association between critical consciousness and positive youth outcomes may differ for youth of color and White youth, several scholars have theorized that critical consciousness supports the positive development of youth from oppressed groups by replacing feelings of culpability and shame for obstacles they are encountering with feelings of solidarity with other oppressed individuals and an investment in participating in a collective struggle for liberation (e.g., Duncan-Andrade, 2009; Ginwright, 2010). Accordingly, scholars have referred to critical consciousness as an "antidote to oppression" and a form of "psychological armor" for youth from oppressed groups (Phan, 2010, p. 31; R. Watts et al., 1999, p. 255). This theorized ability of critical consciousness to shift oppressed individuals' worldview and self-concept in agentic ways is a potential explanation for the significant associations between critical consciousness and a host of positive outcomes for youth of color. One might also reasonably expect to find weaker associations between critical consciousness and positive outcomes for White youth, given that critical consciousness would not lead these youth to adopt a more agentic worldview and self-concept with regard to oppressive forces that they or their families are personally experiencing.

On the other hand, in her White racial identity development model, Helms (1990) posited that a positive racial identity for White people entails abandoning their own racist behaviors, recognizing and challenging systemic racism, and embracing the role they can play in working toward a more just society (Moffitt et al., 2022; Tatum, 2017). According to Helms, deepening White people's critical consciousness of racism will both enlist them as allies in challenging the pernicious effects of racism in their lives and communities and also contribute to their own healthy development.

In short, there remains much to be learned about potential differences in the associations between critical consciousness and positive outcomes for youth from dominant and oppressed racial–ethnic groups in the United States. This question is considered in the present study with regard to potential differences by race–ethnicity in the association between critical consciousness and academic achievement.

Critical Consciousness and Academic Achievement

A number of prior studies have investigated associations between critical consciousness and academic achievement for youth of color. In education research, three qualitative studies investigating critical consciousness and academic achievement reported that high achieving Black and Latinx adolescents described their motivation to succeed academically as driven in part by their desire to disprove racist stereotypes, as well as to make the educational system easier to navigate for other members of their racial–ethnic groups (Carter, 2008; O'Connor, 1997; Yosso, 2000). Importantly, Carter (2008) reported that the high achieving Black adolescents in her study were motivated by a "critical race achievement ideology." Put another way, these young people's awareness of pernicious but commonly held stereotypes about Black intellectual inferiority strengthened their investment in excelling academically. Yosso (2000) likewise reported that Latinx college students adopted "prove them wrong" attitudes that motivated them to succeed academically as a means of disproving pernicious stereotypes about members of their racial identity group. Both of these scholars' work informs our efforts in the present study to consider the relation between critical consciousness and academic achievement for youth from dominant and oppressed groups.

A handful of studies from developmental psychology also offer insight into the relationship between critical consciousness specifically and academic outcomes (Heberle et al., 2020). Pérez-Gualdrón and Helms (2017) reported that, in a sample of approximately 1,500 Latinx adolescents, social justice orientation in the 10th grade was associated with higher grades and a decreased likelihood of dropping out in the 12th grade. Similarly, two other studies of Latinx high school students found similarly that youth with higher levels of critical consciousness also self-reported significantly higher academic achievement (Luginbuhl et al., 2016; McWhirter & McWhirter, 2016). Diemer (2009) found that a sample of low socioeconomic status (SES) youth of color ($N = 19,394$) demonstrated a significant positive association between critical consciousness and academic achievement in the 10th grade. Finally, Seider, Clark, & Graves (2020) reported that, in a sample of approximately 300 Black and Latinx adolescents, students' growth in critical reflection and critical action over 4 years of high school were significantly associated with their cumulative grade point average at the conclusion of high school.

In contrast, one study reports a negative relationship between critical consciousness and academic outcomes (Diemer et al., 2010). Specifically, Diemer et al. (2010) reported evidence of a significant negative relationship between critical consciousness and academic achievement for a sample of approximately 2,600 African American, Latin American, and Asian American youth as measured by standardized tests of Math and reading. The authors of this study explicitly noted that this negative relationship between critical consciousness and academic achievement was an unexpected finding

that diverged from previous work by the same research team (e.g., Diemer, 2009). The authors also noted that using standardized achievement tests to measure academic outcomes may be problematic given these tests' history of cultural bias (Suzuki et al., 2001), and they speculated that more critically conscious youth of color might choose to invest less time and attention on standardized tests that they perceive to be culturally biased.

Cumulatively, these studies offer promising evidence of a positive association between critical consciousness and academic achievement for youth of color, although none of these studies investigate differential associations between critical consciousness and academic achievement by subject area. Investigating such associations by subject area in the present study can offer additional insight into the nature of the association between critical consciousness and academic achievement. For example, if our analyses found critical consciousness to be more strongly associated with academic achievement in Social Studies courses than in Science, Technology, Engineering and Mathematics courses, such findings would seem to resonate with the research on ethnic studies coursework that suggests critically conscious youth are eager to engage with academic content that offers opportunities to learn and think about oppression and resistance to oppression (e.g., Cabrera et al., 2014; Dee & Penner, 2017). On the other hand, if our analyses revealed critical consciousness to be significantly and equally associated with students' academic achievement across all content areas, such findings would seem to resonate with research on achievement-as-resistance orientations that suggest the associations between critical consciousness and academic achievement for youth of color are due to these youth conceptualizing their academic achievement as a means of challenging racism and racial stereotypes (Carter, 2008; Yosso, 2000). Accordingly, the present study was guided by the following research questions:

1. To what extent do the different components of critical consciousness predict adolescents' academic outcomes in different subject areas?

2. Does the relation between critical consciousness and academic outcomes differ for White students and students of color?

Given Freire's (1970) conceptualization of critical consciousness as a tool for the liberation of oppressed groups, we hypothesized that youth critical consciousness would be more strongly associated with academic outcomes for youth of color than White youth. Second, given the extant research on ethnic studies programming (e.g., Cabrera et al., 2014; Cammarota, 2007; Dee & Penner, 2017), we hypothesized that youth critical consciousness would be more strongly associated with adolescents' academic achievement in academic disciplines (e.g., Social Studies, English/Language Arts) that traditionally offer more opportunities for reflection and learning about sociopolitical issues.

Method

Participants

This study was conducted as part of a larger data collection effort that included a variety of inquiries designed by scientists affiliated with Character Lab Research Network (CLRN). CLRN simultaneously

rolled out multiple independent studies, and students that elected to participate in the CLRN were randomized to one of the studies running in their school. Students who were randomly assigned to this study included 179 adolescents in Grades 9–12 attending eight different urban high schools across the United States. The number of participants from each of these eight schools varied substantially, with three of the participating high schools reporting fewer than five participants, four of the participating high schools reporting between 20 and 40 participants, and one high school reporting 49 participants. Our data do not include information as to whether the four participants from a single high school all came from the same homeroom or advisory class. Of this sample, 85 adolescents (47%) identified as female, and 67 (37%) qualified for free/reduced price lunch (FRPL), a common proxy for low SES. Forty-five of these adolescents were in the 9th grade, 48 were in the 10th grade, 43 were in the 11th grade, and 43 were in the 12th grade. Fifty-eight identified as White (32%), 48 identified as Latinx (27%), 37 identified as Black or African American (21%), 13 identified as Asian (7%), 13 identified as multiracial (7%), three identified as Native American (2%), and seven chose not to share a racial/ethnic identity (4%). Accordingly, in the analyses below, the contrast is between students who identified as people of color (Latinx, Black/African American, Asian, Native American, multiracial) versus White students. Twenty-nine of these students (16%) qualified for special education services, and nine students (5%) were designed as English language learners.

Data Collection

This study was conducted on school computers during class time over the course of a 2- to 3-week testing window during the winter of 2021 ($n = 75$) and 2022 ($n = 104$). On a predetermined testing day, a teacher proctor at each school administered the CLRN research activities to students. To introduce the study, teachers read a script that explained to students that all research activities were part of an educational research initiative at their school, that participation was voluntary and they were not being graded, and that teachers would not see their answers. Upon logging into the CLRN platform, all students first viewed an assent screen that reiterated this information and, in addition, explained that parents would not see their responses and that their names and any other unique identifying information would not be shared with researchers. Students who agreed to participate were then directed to the survey. Included on the survey completed by participating adolescents were three measures associated with the three components of critical consciousness: critical reflection, critical action, and critical motivation. We describe each of these measures in greater detail below.

Measures

Critical Reflection

Critical reflection was assessed as the mean of a seven-item scale designed to capture youths' awareness of systemic racism. The measure was adapted from the Racial Privilege Subscale of Neville et al. (2000) Color-Blind Racial Attitudes Scale (CoBRAS), which assesses the extent to which participants recognize the pervasiveness of racism in societal institutions such as the criminal justice and health care systems. Using a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), participants reported their levels of agreement with statements such as "Race plays an important role in who gets sent to prison" and "Racial and ethnic minorities do not have the same opportunities as White people in the U.S." (Cronbach's $\alpha = 0.76$).

Critical Action

Critical action was assessed as the mean of a four-item scale adapted from the Critical Action Subscale of Diemer et al. (2022) Short Critical Consciousness Scale, which assesses involvement in various forms of collective social action. Items include questions such as "How frequently in the past year have you joined a protest, March, political demonstration, or political meeting?" Responses to items ranged from 1 (*never did this*) to 3 (*once every few months*) to 5 (*at least once a week*; Cronbach's $\alpha = 0.82$).

Critical Motivation

Finally, critical motivation was assessed as the mean of a four-item youth social responsibility measure adapted from Pancer et al. (2007) Youth Social Responsibility Scale, which assesses the extent to which youth are motivated to support individuals and groups contending with inequity and oppression. Using a 5-point Likert scale, participants reported their level of agree with statements such as "It is important to me to make sure that all people are treated fairly" and "It is important to me to consider the needs of other people." Responses ranged from 1 (*not at all*) to 5 (*definitely*; Cronbach's $\alpha = 0.77$). Recall from the Introduction that critical motivation has been defined as consisting of both an individual's feelings of self-efficacy about effecting social change as well as their motivation to do so. One limitation of the Youth Social Responsibility Scale as a measure of critical motivation is that it focuses on the motivational dimension of critical motivation rather than the self-efficacy dimension of this construct; however, this focus on the motivational dimension of critical motivation aligns with other recent efforts to conceptualize and assess critical consciousness (McWhirter & McWhirter, 2016; Rapa et al., 2020).

Grade Point Average

Participating students' schools reported grade point average on a scale of 0–100 points for the first quarter of the 2020 or 2021 school year for each of the following subject areas: English/Language Arts, Math, Science, History/Social Studies, and overall (or cumulative) grade point average. These grade point averages were "unweighted," which means they do not seek to account for the difficulty or "level" of the course in which students were enrolled. These data on students' grade point averages came from the schools themselves rather than via self-report from the students.

Demographic Variables

The analyses described below also included several demographic variables, including gender (0 = male student, 1 = female student); race/ethnicity (0 = White student, 1 = student of color); eligibility for FRPL (0 = not FRPL, 1 = FRPL); and grade level (1 = 9th grade, 2 = 10th grade, 3 = 11th grade, 4 = 12th grade).

Data Analysis

To investigate the relationship between participating adolescents' critical consciousness and academic achievement, we fit a series of single-level ordinary least squares (OLS) regression models in which students' score on each of the tested measures of critical consciousness represented the independent variable, and students' grade point average in each of their core academic subjects represented the dependent variable. We acknowledge that a multilevel regression approach would be the most appropriate theoretically due to the structure of the data, but our relatively small sample size lacked the power to cluster participating students by their school attended. We describe below (and also in the Results section) supplementary analyses we ran that sought to partially address this limitation.

Given the presence of missing data in this study's data set (Enders, 2001), full information maximum likelihood estimation was used for all analyses by using the maximum likelihood with missing values estimation in SAS 9.4 (using the PROC CALIS statement). This method allowed for the inclusion of all participants with data for at least one variable in the model. Accordingly, participants were included in the models despite having missing values on either the critical consciousness variables or the academic achievement variables. If a participant had missing data for all variables in the model, that participant was excluded from the analyses. We also excluded from the model a small number of participants who had not indicated their ethnic–racial identity.

Accordingly, for each of the three tested measures of critical consciousness, we fit single-level OLS regression models investigating their relationship to students' academic achievement in the fields of English/Language Arts, Social Studies, Mathematics, Science, as well as their cumulative grade point average for a total of 15 different regression models. For each of these main effects models, we added the following predictor variables: students' gender, race/ethnicity (with White students as the reference group), SES (as measured by eligibility for FRPL), and grade level. Previous research has found each of these predictor variables to be associated with young people's academic achievement and critical consciousness (see Heberle et al., 2020).

To explore our second research question, we also added an interaction term to investigate potential differences in the relation between critical consciousness and academic achievement for White youth versus youth of color. We acknowledge both here and in the Discussion below that there are meaningful limitations to grouping together all of the young people in our sample that identify as youth of color (i.e., Black, Latinx, Asian, Indigenous, multiracial) and that our analytic strategy precludes the identification of distinct associations between critical consciousness and academic achievement for youth of color from different racial–ethnic identity groups. Unfortunately, the present study lacked the power to explore these potential differential associations. Specifically, preliminary power analyses revealed that the sample size of the present study and inclusion of four predictor variables (gender, race/ethnicity, FRPL, grade level) should yield a power of 0.8 in testing hypotheses concerning both the continuous critical consciousness variable and a single interaction term (Students of Color × Critical Consciousness) at a .05 α level (and a power of 0.7 in testing hypotheses at a .01 α level). Accordingly, we are hopeful the findings reported here comparing the association between critical consciousness and academic achievement in White youth and youth of color will motivate future research efforts with sufficient sample sizes to explore these additional questions. Nonetheless, we believe there is value in investigating whether there are differences in the association between critical consciousness and academic achievement for youth who do and do not identify as White—the dominant racial–ethnic group in the United States context.

We also took several steps to strengthen the validity of our analyses. First, to protect against careless responding, we excluded from our analyses the participants who spent fewer than 60 s completing the survey. The exclusion of these participants comes out of Maniaci and Rogge's (2014) recommendation that a straightforward way to exclude careless responders is to exclude participants who completed the survey substantially faster than the average time of study participants in the broader sample. The mean completion time for participants in the present study was 956 s (approximately 16 min). Accordingly, participants who completed the survey in fewer than 60 s were spending substantially less time on the survey than their fellow participants. Second, to protect against Type 1 error, we reduced our significance level to .01. Third, for each of the main effects models and moderation models that identified significant associations between critical consciousness and academic achievement, we ran supplementary analyses that included in these models as covariates the five schools that were attended by five or more students in our sample (with the 49 students from School 7 and the additional seven students from Schools 2, 4, and 6 as the reference group). We report these supplementary analyses below (and in Tables 6–8).

Results

The results of the analyses investigating the relationship between participating adolescents' critical consciousness and academic achievement are reported in Tables 1–4 below. Specifically, Table 1 shares the descriptive statistics (M, SD) for students' scores on each of the measures of critical consciousness and academic achievement, and Table 2 reports the bivariate correlations among these measures. Tables 3–5 report the main effects between particular components of youth critical consciousness and students' academic achievement by content area, while controlling for students' gender, race, SES, and grade level. We also included moderation models to investigate whether the relation between critical consciousness and academic achievement differed for White students versus students of color. We describe each of these sets of analyses below.

Table 3 reports the association between participating adolescents' academic achievement and their awareness of racism—a measure related to the critical reflection component of critical consciousness and, specifically, to adolescents' knowledge and understanding of an oppressive social force shaping our lives. OLS regression analyses for the main effects model revealed a relation approaching statistical significance between adolescents' awareness of racism and overall grade point average ($p = .02$), as well as their awareness of racism and grade point average in Social Studies coursework ($p = .02$). There was not a significant association between awareness of racism and academic achievement for participating students in English/Language Arts, Math, or Science coursework.

For the analyses predicting students' Social Studies GPA, we also found evidence of a significant interaction between awareness of racism and students' race/ethnicity ($p < .001$). Specifically, for

Table 1

Summary Statistics (M, SD) for All Critical Consciousness Measures and Academic Achievement Measures

Measures	n	M score (SD)	Range
Critical consciousness measures (5-point scale)			
Critical reflection	133	3.40 (1.09)	4.00
Critical motivation	142	4.08 (0.85)	4.00
Critical action	139	1.39 (.72)	4.00
Academic achievement measures (100-point scale)			
Overall GPA	174	85.54 (10.23)	48.43
Social studies GPA	151	83.46 (11.59)	50.00
English/Language arts GPA	169	83.73 (13.37)	50.00
Math GPA	165	79.19 (14.09)	50.00
Science GPA	140	83.94 (12.03)	50.00

Note. GPA = cumulative grade point average.

students of color in our sample, a one-unit increase in awareness of racism corresponded with a 5.39-point increase in their Social Studies grade point average. In contrast, the association between awareness of racism and academic achievement for White students was nonsignificant. From these analyses, one might tentatively conclude that a critical understanding of racism is associated with academic achievement for students of color in high school Social Studies coursework in a way that it may not be for White students.

Table 4 reports the association between participating adolescents' academic achievement and their engagement in critical action—another key component of critical consciousness. OLS regression analyses revealed that participating adolescents' involvement in critical action activities did not significantly predict their academic achievement overall or in Social Studies, English/Language Arts, or Mathematics coursework. However, there was evidence of a significant relation between students' engagement in critical action and their academic achievement in Science courses ($p = .008$). Specifically, a one-unit increase in students' critical action scores corresponded with a 3.60-unit increase in their grade point average in Science courses on a 100-point scale. As can also be seen in Table 4, analyses of our moderation models revealed no evidence that students' race–ethnicity moderated the association between academic achievement and their engagement in critical action.

Finally, Table 5 reports the association between participating adolescents' academic achievement and feelings of social responsibility—a measure related to the critical motivation component of critical consciousness. OLS regression analyses revealed that participating adolescents' feelings of social responsibility are a significant predictor of their overall grade point average ($p = .007$) and Social Studies grade point average ($p = .01$). Specifically, a one-unit increase in adolescents' feelings of social responsibility (along a 5-point Likert scale) corresponded with a 2.63-point increase in their overall GPA and a 2.96-point increase in their Social Studies GPA on a 100-point scale. There was not a significant association between students' feeling of social responsibility and academic achievement in their English, Math, or Science coursework, although the association between feelings of social responsibility and academic achievement in English/Language Arts coursework also approached statistical significance ($p = .04$).

For the analyses predicting students' English/Language Arts GPA, we also found evidence of an interaction approaching statistical significance between students' race–ethnicity and their feelings of social responsibility ($p = .02$). Specifically, for students of color in our sample, a one-unit increase in youth social responsibility corresponded with a 4.92-point increase (on a 100-point scale) in their English/Language grade point average. In contrast, the association between feelings of social responsibility and English/Language Arts achievement for White students was nonsignificant.

To summarize, then, within this diverse sample of adolescents, we found that students' critical motivation scores significantly predicted their overall grade point average and Social Studies grade point average, and there was a similar association approaching statistical significance between these same measures of academic achievement and students' critical reflection scores. There was likewise a significant association between students' engagement in critical action and their grade point average in Science coursework. Finally, our moderation analyses suggested that the association between students' critical reflection scores and Social Studies grades was significantly stronger for students of color than for White students, and that there was a similar relationship approaching statistical significance between students' critical motivation scores and English/Language Arts grades for students of color but not for White students. As described in the Method section above, supplementary analyses that included participating students' high

Table 2

Correlations Among All Critical Consciousness and Academic Achievement Variables

Variable	CritRef	CritMot	CritAct	GPA	SocGPA	EngGPA	MathGPA	SciGPA
CritRef	—							
CritMot	.18**	—						
CritAct	−.04	−.30***	—					
GPA	.25**	.21**	.12	—				
SocGPA	.23**	.22**	.07	.75***	—			
EngGPA	.13	.19*	.07	.86***	.58***	—		
MathGPA	.14	.14	.03	.75***	.46***	.57***	—	
SciGPA	.25**	.18*	.23**	>73***	.55***	.53***	.48***	—

Note. CritRef = critical reflection; CritMot = critical motivation; CritAct = critical action; GPA = cumulative grade point average; SocGPA = Social Studies cumulative grade point average; EngGPA = English/Language Arts cumulative grade point average; MathGPA = Math cumulative grade point average; SciGPA = Science cumulative grade point average. Higher scores signify higher levels of the construct.
* $p < .05$.   ** $p < .01$.   *** $p < .001$.

Table 3

OLS Regression of Critical Reflection (Awareness of Racism) on Academic Achievement by Content Area

Model	Outcome variable	*n*	Variable	Main effects model		Moderation model	
				B	*SE*	*B*	*SE*
1	Overall GPA	132	Intercept	56.69***	6.76	59.94***	7.14
			Critical reflec	1.94*	0.84	0.69	1.22
			Female	4.84**	1.49	4.47**	1.50
			POC	−1.92	1.64	−9.42~	5.50
			FRPL	−1.03	1.51	−0.88	1.51
			Grade level	1.98**	0.66	2.02**	0.66
			Reflec × POC			2.34	1.64
2	Social studies GPA	117	Intercept	62.17***	9.43	70.20***	9.40
			Critical reflec	2.22*	1.01	−1.19	1.39
			Female	3.18~	1.91	2.03	1.88
			POC	−0.77	2.07	−22.13***	6.42
			FRPL	−2.94	1.93	−2.55	1.86
			Grade level	1.30	0.88	1.50~	0.85
			Reflec × POC			6.58***	1.89
3	English/Language arts GPA	128	Intercept	54.79***	9.29	60.74***	9.81
			Critical reflec	1.14	1.21	−1.29	1.76
			Female	6.47**	2.03	5.92**	2.03
			POC	−0.96	2.31	−14.58~	7.62
			FRPL	−1.82	2.05	−1.50	2.03
			Grade level	2.23*	0.91	2.33**	0.90
			Reflec × POC			4.29~	2.28
4	Math GPA	127	Intercept	65.30***	10.40	67.59***	11.09
			Critical reflec	1.00	1.29	0.14	1.94
			Female	6.29**	2.24	6.09**	2.26
			POC	−0.70	2.52	−5.47	8.34
			FRPL	0.19	2.27	0.30	2.27
			Grade level	0.76	1.01	0.77	1.01
			Reflec × POC			1.52	2.53
5	Science GPA	108	Intercept	70.42***	9.39	66.85***	9.93
			Critical reflec	2.11~	1.15	3.45*	1.71
			Female	6.54**	2.01	6.96***	2.04
			POC	−0.35	2.27	7.23	7.67
			FRPL	0.69	1.99	0.42	2.00
			Grade level	0.32	0.95	0.29	0.94
			Reflec × POC			−2.38	2.29

Note. OLS = ordinary least squares; *SE* = standard error; GPA = cumulative grade point average; POC = people of color; FRPL = free/reduced price lunch.
~ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

schools as covariates found very similar associations between participants' critical consciousness and academic achievement (see Tables 6–8).

Discussion

This study sought to investigate the association between critical consciousness and academic achievement in a diverse sample of adolescents. A handful of studies have found critical consciousness to be a predictor of academic achievement for Black and Latinx youth (e.g., McWhirter & McWhirter, 2016; Pérez-Gualdrón & Helms, 2017; Seider, Clark, & Graves, 2020), but previous studies have not investigated differences in the association between critical consciousness and academic achievement for White youth and youth of color. Previous research has also not considered distinct associations between youth critical consciousness and academic achievement by subject area. We believed that considering these questions could offer useful insights about why critical consciousness may be predictive of academic achievement for youth of color, as well as hold practical

implications for schools and educators invested in both the academic and critical consciousness development of their student bodies. Below, we consider this study's key findings in turn.

Critical Consciousness and Academic Achievement

As described in the Results section, this study's main effects models offer mixed evidence of a relationship between participating students' cumulative grade point average (GPA) and the various components of critical consciousness. Specifically, participating students' critical motivation scores significantly predicted their cumulative grade point average, but this relationship was nonsignificant for students' GPA and engagement in critical action. Moreover, the relationship between students' critical reflection scores and cumulative grade point average only approached statistical significance.

This study's main effects models also offered mixed evidence of a relationship between participating students' critical consciousness and academic achievement by subject area. Specifically, participating students' critical motivation scores significantly predicted their Social

Table 4

OLS Regression of Critical Action on Academic Achievement by Content Area

Model	Outcome variable	*n*	Variable	Main effects model		Moderation model	
				B	*SE*	*B*	*SE*
1	Overall GPA	138	Intercept	56.56***	6.91	55.83***	7.00
			Critical action	1.39	1.14	2.36	1.96
			Female	5.60***	1.45	5.50***	1.46
			POC	−0.64	1.55	1.46	3.79
			FRPL	−1.10	1.53	−1.26	1.55
			Grade level	2.31***	0.64	2.26***	0.65
			Action × POC			−1.48	2.44
2	Social Studies GPA	123	Intercept	64.56***	9.54	64.19***	9.69
			Critical action	1.01	1.32	1.41	2.24
			Female	4.14*	1.86	4.10*	1.87
			POC	0.68	1.98	1.58	4.45
			FRPL	−3.04	1.95	−3.11	1.98
			Grade level	1.52~	0.88	1.51~	0.89
			Action × POC			−0.63	2.80
3	English/Language arts GPA	134	Intercept	54.07***	9.41	52.41***	9.50
			Critical action	1.32	1.53	3.57	2.64
			Female	6.89***	1.96	6.66***	1.97
			POC	−0.16	2.10	4.61	5.05
			FRPL	−1.81	2.05	−2.20	2.08
			Grade level	2.42**	0.88	2.30**	0.88
			Action × POC			−3.39	3.28
4	Math GPA	133	Intercept	66.15***	10.49	65.98***	10.65
			Critical action	0.22	1.68	0.43	2.90
			Female	6.75**	2.15	6.73**	2.17
			POC	0.06	2.33	0.52	5.61
			FRPL	0.13	2.27	0.09	2.30
			Grade level	0.90	0.99	0.89	0.99
			Action × POC			−0.32	3.60
5	Science GPA	115	Intercept	67.89***	9.34	66.84***	9.45
			Critical action	3.60**	1.37	4.92*	2.38
			Female	7.23***	1.91	7.06***	1.92
			POC	0.99	2.08	3.87	4.75
			FRPL	0.55	1.96	0.27	2.01
			Grade level	0.66	0.90	0.60	0.91
			Action × POC			−2.01	2.99

Note. GPA = cumulative grade point average; POC = people of color; FRPL = free/reduced price lunch; OLS = ordinary least squares; *SE* = standard error.
~ *p* < .10. * *p* < .05. ** *p* < .01. *** *p* < .001.

Studies grades but not their academic achievement in Math, Science, or English/Language Arts. Similarly, the relationship between students' critical reflection scores and academic achievement only approached statistical significance with their Social Studies grades and was nonsignificant with their other academic subjects. Finally, students' critical action scores significantly predicted their academic achievement in Science coursework but not in Social Studies, Math, or English/Language Arts coursework. Cumulatively, these findings seem to offer somewhat weaker evidence of a relationship between critical consciousness and grade point average than that reported by a number of other recent studies (e.g., McWhirter & McWhirter, 2016; Pérez-Gualdrón & Helms, 2017; Seider, Clark, & Graves, 2020).

One possible explanation for this divergence from previous scholarship may be the racial diversity of the sample in the present study. As noted in the Introduction, the extant research on critical consciousness and academic achievement has focused on samples of Black and Latinx adolescents and young adults (e.g., Diemer, 2009;

McWhirter & McWhirter, 2016; Pérez-Gualdrón & Helms, 2017; Seider et al., 2016). While we are not aware of previous studies that have reported on the association between critical consciousness and academic achievement for White students, there are a small number of empirical and theoretical studies that suggest associations between critical consciousness and other positive youth outcomes may be weaker for White students than for students of color (Diemer & Li, 2011; Heberle et al., 2020; Tyler et al., 2020). Accordingly, it seems possible that the mixed results in the present study regarding the association between critical consciousness and academic achievement may be due, in part, to approximately one third of the sample being comprised of White students, for whom Heberle et al. (2020) have posited that the association between critical consciousness and educational outcomes is likely to be weaker. To consider this explanation further, we can turn to this study's moderation models that sought to identify differences in the associations between critical consciousness and academic achievement for youth of color versus White youth.

Table 5

OLS Regression of Critical Motivation (Youth Social Responsibility) on Academic Achievement by Content Area

Model	Outcome variable	n	Variable	Main effects model		Moderation model	
				B	SE	B	SE
1	Overall GPA	141	Intercept	45.30***	8.19	56.82***	10.65
			Critical motiv	2.63**	0.99	0.50	1.60
			Female	4.92***	1.46	4.89***	1.45
			POC	−0.93	1.53	−14.81~	8.26
			FRPL	−0.54	1.52	−0.73	1.51
			Grade level	2.58***	0.64	2.30***	0.65
			Motiv × POC			3.44~	2.01
2	Social studies GPA	126	Intercept	50.53***	11.21	59.86***	13.71
			Critical motiv	2.96*	1.22	1.05	2.03
			Female	3.62~	1.85	3.61~	1.84
			POC	0.22	1.96	−11.61	10.29
			FRPL	−2.36	1.94	−2.59	1.94
			Grade level	1.86*	0.88	1.71~	0.88
			Motiv × POC			2.93	2.50
3	English/Language arts GPA	137	Intercept	42.28***	11.21	65.18***	15.21
			Critical motiv	2.83*	1.40	−1.60	2.42
			Female	6.21***	1.98	6.16**	1.95
			POC	−0.39	2.09	−26.90*	12.01
			FRPL	−1.17	2.06	−1.66	2.04
			Grade level	2.64**	0.87	2.19*	0.88
			Motiv × POC			6.52*	2.90
4	Math GPA	135	Intercept	54.28***	12.52	61.10***	16.47
			Critical motiv	2.51~	1.51	1.25	2.49
			Female	6.08**	2.17	6.08**	2.17
			POC	−0.21	2.31	−8.30	12.87
			FRPL	0.74	2.28	0.59	2.29
			Grade level	1.10	0.99	0.94	1.02
			Motiv × POC			2.00	3.13
5	Science GPA	116	Intercept	62.12***	11.52	85.16***	18.13
			Critical motiv	2.09	1.48	−2.31	3.04
			Female	6.84***	1.99	7.16***	1.98
			POC	1.22	2.11	−21.92	14.08
			FRPL	0.63	2.00	0.22	2.00
			Grade level	0.86	0.92	0.37	0.96
			Motiv × POC			5.68~	3.42

Note. OLS = ordinary least squares; SE = standard error; GPA = cumulative grade point average; POC = people of color; FRPL = free/reduced price lunch.
~ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Critical Consciousness, Academic Achievement, and Race–Ethnicity

As described in the Results section, our moderation models revealed that, for youth of color, their critical reflection scores significantly and positively predicted their academic achievement in Social Studies coursework, but this association was not significant for White students. Likewise, for youth of color, the association between their critical motivation and English/Language Arts grades approached statistical significance, but this association was not significant for White students. These were the only models for which differences emerged in the associations between critical consciousness and academic achievement for youth of color and White youth.

While researchers often rely on statistical significance to describe a meaningful relationship between two variables, it seems particularly important in the present study to focus on the practical significance of the associations between critical consciousness and academic achievement for youth of color. To take our measure of critical reflection, a one-unit increase in the critical reflection skills of youth

of color (along a 5-point Likert scale) corresponded with a 5.39-point increase (out of 100 points) in their grade point average in Social Studies courses. In practical terms, an increase of approximately five points in a student's grade point average for a course could raise that student's final course grade by a full letter grade (e.g., from a *B+* to an *A*). Accordingly, one might reasonably describe this association between critical reflection and Social Studies grade point average for students of color as a meaningful one.

This identification of a small number of differences between White youth and youth of color in the relationship between critical consciousness and academic achievement resonates with much of the extant empirical and theoretical scholarship in this area. As noted above, two prior empirical studies have found critical consciousness to be associated more weakly with civic engagement and positive youth development for White youth than youth of color (Diemer & Li, 2011; Tyler et al., 2020). These findings contributed to Heberle et al. (2020) concluding that there are likely to be differences for youth of color and White youth in the associations between critical consciousness and educational outcomes due to the various types of racial privilege that White youth already possess in the United

Table 6

OLS Regression of Critical Reflection (Awareness of Racism) on Academic Achievement by Content Area With Four Participating Schools as Covariates

Model	Outcome variable	n	Variable	Main effects model B	SE	Moderation model B	SE
1	Overall GPA	132	Intercept	66.06***	8.27	69.71***	8.54
			Critical reflec	1.90*	0.85	0.50	1.23
			Female	4.13*	1.71	3.79*	1.72
			POC	−2.48	1.99	−10.76~	5.62
			FRPL	−1.53	1.75	−1.28	1.74
			Grade level	1.20	0.76	1.25	0.76
			School 1	1.33	2.64	1.21	2.63
			School 2	3.37	2.55	3.51	2.53
			School 3	−0.32	2.71	−0.87	2.72
			School 4	1.90	2.28	1.97	2.27
			Reflec × POC			2.57	1.63
2	Social studies GPA	117	Intercept	62.23***	11.50	71.20***	11.24
			Critical reflec	2.36*	1.11	−1.44	1.52
			Female	0.99	2.25	−0.03	2.16
			POC	−0.15	2.65	−24.11**	7.29
			FRPL	−3.12	2.32	−2.48	2.21
			Grade level	1.14	1.05	1.39	1.00
			School 1	3.84	3.40	3.64	3.18
			School 2	3.84	3.34	4.21	3.22
			School 3	−0.39	3.83	−2.17	3.67
			School 4	4.14	2.94	3.98	2.79
			Reflec × POC			7.24***	2.07

Note. OLS = ordinary least squares; SE = standard error; GPA = cumulative grade point average; POC = people of color; FRPL = free/reduced price lunch.
~ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

States more broadly and in educational settings in particular (Heberle et al., 2020). This perspective also resonates with philosopher Freire's (1970) original conceptualization of critical consciousness as a tool for individuals from oppressed and marginalized groups to understand and challenge the oppressive conditions shaping their lives and communities, as well as theoretical work by contemporary scholars about why critical consciousness serves as an "antidote to oppression" for youth from oppressed and marginalized groups (R. Watts et al., 1999, p. 255).

The present study cannot offer causal explanations for why students of color in the present study may have demonstrated stronger associations between critical consciousness and academic achievement than White students; however, the research literature cited in the Introduction offers two distinct explanations relevant to the present study. On one hand, research on K–12 ethnic studies programming suggests that the associations between critical consciousness and academic achievement for young people of color may be due to critically conscious young people of color engaging deeply with coursework that offers opportunities to understand and analyze how racism works as well as how to resist and challenge it (e.g., Cabrera et al., 2014; Dee & Penner, 2017). Because White students, on average, perceive issues of race and racism to be less salient to their own lives (Camacho et al., 2017), they may be less engaged by coursework offering opportunities to explore root causes, consequences, and responses to racism.

On the other hand, several scholars have reported that critical consciousness strengthens the determination of students of color to

achieve academic success as a form of resistance against racist stereotypes (Carter, 2008; O'Connor, 1997; Yosso, 2000). This explanation suggests that the relationship between critical consciousness and academic achievement is less about engagement in particular types of curriculum and more about critically conscious youth of color striving to achieve academically as a means of challenging pernicious stereotypes about their racial group. Because White youth are not subject to similar stereotypes about their ability to be successful, their developing critical consciousness may not exert a similar influence upon their motivation to achieve in academic settings. One approach to considering this explanation further would be to investigate whether White youth who are part of other marginalized groups based on their gender, sexual identity, or disability status demonstrate a significant association between their academic achievement and critical consciousness of oppressive forces related to that marginalized identity group to which they belong.

The present study is not designed to offer a definitive explanation for differential associations between critical consciousness and academic achievement for students of color and White students; however, the fact that differences emerged between these two groups in Social Studies and English/Language Arts coursework but not Science, Technology, Engineering and Mathematics coursework seems to suggest that one factor may have been the heightened investment of critically conscious students of color in coursework that offers opportunities to learn and reflect upon racism and resistance to racism. Put another way, perhaps the associations between critical consciousness and academic achievement in Social Studies and

Table 7

OLS Regression of Critical Action on Academic Achievement by Content Area With Four Participating Schools as Covariates

Model	Outcome variable	n	Variable	Main effects model		Moderation model	
				B	SE	B	SE
1	Overall GPA	138	Intercept	64.40***	8.33	63.64***	8.55
			Critical action	1.05	1.15	1.76	2.04
			Female	5.70***	1.66	5.61**	1.68
			POC	−1.35	1.92	0.19	4.13
			FRPL	−1.53	1.73	−1.70	1.78
			Grade level	1.68*	0.74	1.66*	0.75
			School 1	0.86	2.62	1.02	2.66
			School 2	2.36	2.63	2.25	2.65
			School 3	−1.20	2.60	−0.98	2.68
			School 4	1.94	2.30	2.06	2.32
			Reflec × POC			−1.06	2.52
2	Science GPA	115	Intercept	76.23***	10.68	74.86***	10.87
			Critical action	2.91*	1.34	4.34~	2.40
			Female	7.11**	2.12	6.87**	2.15
			POC	0.31	2.48	3.44	5.01
			FRPL	−1.49	2.12	−1.85	2.19
			Grade level	0.16	0.99	0.11	0.99
			School 1	2.76	3.25	3.09	3.28
			School 2	0.22	3.39	−0.15	3.44
			School 3	−2.89	3.25	−2.49	3.31
			School 4	0.14	2.88	0.31	2.90
			Reflec × POC			−2.14	2.98

Note. OLS = ordinary least squares; SE = standard error; GPA = cumulative grade point average; POC = people of color; FRPL = free/reduced price lunch.
$^{\sim} p < .10.$ $^{*} p < .05.$ $^{**} p < .01.$ $^{***} p < .001.$

English/Language Arts courses were stronger for students of color than White students because these subject areas frequently offer direct opportunities to learn about racism and other sociopolitical issues. While it is certainly possible for Math and Science coursework to engage adolescents in learning about social and political issues as well (e.g., Brown, 2021; Kokka, 2019), research suggests that fewer secondary Math and Science educators take these issues in comparison to their colleagues in the Humanities and Social Sciences (e.g., Tichnor-Wagner et al., 2016). In offering these speculations, we by no means dismiss the possibility that the differential associations between critical consciousness and academic achievement for students of color and White students were influenced by the adoption of an achievement-as-resistance orientation by student of color (Carter, 2008; Yosso, 2000). However, the fact that these differential associations appeared most evidently in students' Humanities and Social Science coursework suggests that culturally relevant curriculum may play a role in this relationship as well (Ladson Billings, 1995).

Considering Critical Action

Finally, it was notable in the present study that the critical action component of critical consciousness was not predictive of students' cumulative grade point average or achievement in any subject area, with the exception of Science coursework. Moreover, no significant differences emerged in the relationship between critical action and academic achievement for students of color and White students. Additionally, the bivariate correlations reported in Table 2 suggest a negative association between critical action and critical reflection

and critical action and critical motivation. These null and negative associations diverge from that of several previous studies (e.g., Clark & Seider, 2020; Diemer et al., 2010; McWhirter & McWhirter, 2016), and it is unclear why students' engagement in critical action is more strongly associated with academic achievement in Science than in other academic content areas. One possible explanation for this association between critical action and Science achievement is that fewer students enroll in Science courses across all 4 years of high school than in other academic subjects (e.g., Madigan, 1997) and, thus, there may be some characteristic of the students enrolled in Science courses in this study that contributed to a stronger association between critical action and academic achievement. For example, perhaps high school students who enjoy and are successful in completing the more hands-on lab work involved in many Science courses are also more likely to participate in activist activities such as a protest or demonstration. Another possible explanation is that secondary Science courses have, in fact, begun to adopt more "social justice infused" curriculum that engages students in learning about and challenging injustices related to environmental and other issues (Brown, 2021; Kozan et al., 2017).

As for why critical action was not predictive of academic outcomes in students' other academic subjects, one possible explanation is that the present study utilized Diemer et al. (2022) Short Critical Consciousness Scale to assess adolescents' current frequency of engagement in specific activities related to critical action. In contrast, several of the prior studies investigating the association between critical action and academic achievement assessed adolescents' anticipation of their future engagement in critical action activities (Seider, Kelly, et al., 2020) or questioned students more generally

Table 8

OLS Regression of Critical Motivation (Youth Social Responsibility) on Academic Achievement by Content Area With Four Participating Schools as Covariates

Model	Outcome variable	*n*	Variable	Main effects model		Moderation model	
				B	*SE*	*B*	*SE*
1	Overall GPA	141	Intercept	52.17***	9.55	63.42***	11.45
			Critical motiv	2.45*	0.99	0.34	1.56
			Female	5.03**	1.62	5.01**	1.60
			POC	−1.70	1.82	−15.63~	8.18
			FRPL	−0.97	1.70	−1.08	1.69
			Grade level	2.04**	0.72	1.78*	0.73
			School 1	0.57	2.52	0.35	2.50
			School 2	3.13	2.45	3.57	2.45
			School 3	−0.74	2.52	−0.67	2.50
			School 4	2.30	2.21	2.22	2.19
			Motiv × POC			3.45~	1.97
2	Social studies GPA	126	Intercept	43.55**	13.45	53.68**	16.37
			Critical motiv	3.07*	1.40	1.07	2.31
			Female	3.15	2.15	3.16	2.15
			POC	−0.03	2.47	−12.46	11.72
			FRPL	−2.83	2.30	−3.02	2.30
			Grade level	2.29*	1.02	2.11*	1.04
			School 1	3.64	3.26	3.41	3.27
			School 2	3.42	3.33	3.73	3.35
			School 3	0.34	3.62	0.25	3.62
			School 4	4.91~	2.92	4.67	2.93
			Motiv × POC			3.06	2.83
3	English/Language arts GPA	137	Intercept	54.93***	13.23	79.08***	16.32
			Critical motiv	2.48~	1.39	−2.20	2.35
			Female	6.28**	2.19	6.26**	2.15
			POC	−3.30	2.49	−31.59**	11.84
			FRPL	−1.16	2.30	−1.54	2.26
			Grade level	1.84~	0.99	1.37	0.99
			School 1	−0.51	3.39	−0.95	2.32
			School 2	4.22	3.31	4.88	3.26
			School 3	−3.66	3.51	−3.90	3.44
			School 4	0.86	3.04	0.50	2.99
			Motiv × POC			6.94*	2.84

Note. OLS = ordinary least squares; SE = standard error; GPA = cumulative grade point average; POC = people of color; FRPL = free/reduced price lunch.
~ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

about their investment in taking up opportunities for critical action (Diemer et al., 2010; McWhirter & McWhirter, 2016). Accordingly, one interpretation of the present findings is that adolescents' frequency of engagement in activities such as protests or boycotts may not vary sufficiently to use frequency as a sole indicative of investment in critical action. Evidence for this possibility can be seen in Table 1 that the mean score for participating students' engagement in critical action was 1.39 along a 5-point scale, with a standard deviation of 0.72. These summary statistics suggest that most of the students in this sample reported that they "never" participate in critical action activities or just "once or twice last year." A related possibility is that adolescents do not necessarily possess the autonomy or resources to determine their own participation in critical action activities (R. J. Watts & Hipolito-Delgado, 2015). Ultimately, more research is necessary to investigate ways in which the critical action component of critical consciousness may or may not feature a different relationship with academic achievement and other educational outcomes than the

critical reflection and critical motivation components of critical consciousness.

Limitations

The present study offers useful insights into the relation between critical consciousness and academic achievement; however, there are also limitations that can be addressed by future research in this area. First, while the present study is explicitly interested in learning more about how and why critical consciousness is a significant predictor of young people's academic achievement, the research design does not allow for causal claims or inferences. A second limitation is that the study relies upon a diverse but relatively small sample of adolescents. Accordingly, our analyses did not have the power to nest participants within their respective schools and may not have had the power to detect weaker associations between particular components of critical consciousness and participants'

content area grade point averages. Likewise, our relatively small sample precluded us from investigating the association between critical consciousness and academic achievement for specific racial–ethnic groups (e.g., African American, Native American, Asian) or to explore intersectional differences involving race/ethnicity and gender.

Finally, each of the measures utilized in the present study comes with its own benefits and limitations. One limitation of the critical reflection measure is that it focuses specifically on adolescents' understandings of racism rather than a broader range of oppressive forces. A limitation of the critical motivation measure is that it focuses on only one type of motivation (feelings of social responsibility) and does not seek to assess students' feelings of political self-efficacy. A limitation of the critical action measure is that it focuses on frequency of engagement in critical action activities rather intensity of commitment or investment in such activities. Additional research in this area would be well-served to attend to all of these limitations.

Conclusion

The present study reports on associations between critical consciousness and academic achievement for all students and also that these associations may be particularly strong for students of color and other students from marginalized identity groups. We are hopeful that these findings may encourage more K–12 schools and school systems to adopt culturally relevant and sustaining curriculum (such as ethnic studies coursework) that offer more opportunities for youth from both dominant and marginalized identity groups to learn about issues of power, oppression, and resistance to oppression that are predictive of their academic development, social–emotional development, and investment in challenging these oppressive forces shaping all of our lives and communities (Heberle et al., 2020; Maker Castro et al., 2022). Such an investment in curriculum and programming that support young people's critical consciousness development could be a much-needed counterweight to an "anticritical race theory" movement in the United States that has already resulted in legislation limiting antiracism education in 36 states (Stout & Wilburn, 2022).

References

Bañales, J., Mathews, C., Hayat, N., Anyiwo, N., & Diemer, M. A. (2020). Latinx and Black young adults' pathways to civic/political engagement. *Cultural Diversity & Ethnic Minority Psychology*, 26(2), 176–188. https://doi.org/10.1037/cdp0000271

Bonilla, S., Dee, T. S., & Penner, E. K. (2021). Ethnic studies increases longer-run academic engagement and attainment. *Proceedings of the National Academy of Sciences of the United States of America*, 118(37), Article e2026386118. https://doi.org/10.1073/pnas.2026386118

Brown, B. A. (2021). *Science in the city: Culturally relevant STEM education*. Harvard Education Press.

Cabrera, N. L., Milem, J. F., Jaquette, O., & Marx, R. W. (2014). Missing the (student achievement) forest for all the (political) trees: Empiricism and the Mexican American studies controversy in Tucson. *American Educational Research Journal*, 51(6), 1084–1118. https://doi.org/10.3102/0002831214553705

Camacho, T. C., Bañales, J., Cross, F. L., Marchand, A., & Rivas-Drake, D. (2017). Psychological aspects of ethnic/racial identity and their associations with social behavior. In A. Blume (Ed.), *Social issues in living color: Challenges and solutions from the perspective of ethnic minority psychology* (pp. 165–187). Praeger/ABC-CLIO.

Cammarota, J. (2007). A social justice approach to achievement: Guiding Latina/o students toward educational attainment with a challenging, socially relevant curriculum. *Equity & Excellence in Education*, 40(1), 87–96. https://doi.org/10.1080/10665680601015153

Carter, D. (2008). Achievement as resistance: The development of a critical race achievement ideology among Black achievers. *Harvard Educational Review*, 78(3), 466–497. https://doi.org/10.17763/haer.78.3.83138829847hw844

Clark, S., & Seider, S. (2020). The role of curiosity in the sociopolitical development of Black and Latinx adolescents. *Journal of Research on Adolescence*, 30(1), 189–202. https://doi.org/10.1111/jora.12511

Dee, T. S., & Penner, E. K. (2017). The causal effects of cultural relevance: Evidence from an ethnic studies curriculum. *American Educational Research Journal*, 54(1), 127–166. https://doi.org/10.3102/0002831216677002

Diemer, M. A. (2009). Pathways to occupational attainment among poor youth of color: The role of sociopolitical development. *The Counseling Psychologist*, 37(1), 6–35. https://doi.org/10.1177/0011000007309858

Diemer, M. A., Frisby, M. B., Pinedo, A., Bardelli, E., Elliot, E., & Voight, A. M. (2022). Development of the Short Critical Consciousness Scale (ShoCCS). *Applied Developmental Science*, 26(3), 409–425. https://doi.org/10.1080/10888691.2020.1834394

Diemer, M. A., & Li, C. H. (2011). Critical consciousness development and political participation among marginalized youth. *Child Development*, 82(6), 1815–1833. https://doi.org/10.1111/j.1467-8624.2011.01650.x

Diemer, M. A., Rapa, L. J., Park, C. J., & Perry, J. C. (2017). Development and validation of the critical consciousness scale. *Youth & Society*, 49(4), 461–483. https://doi.org/10.1177/0044118X14538289

Diemer, M. A., Wang, Q., Moore, T., Gregory, S. R., Hatcher, K. M., & Voight, A. M. (2010). Sociopolitical development, work salience, and vocational expectations among low socioeconomic status African American, Latin American, and Asian American youth. *Developmental Psychology*, 46(3), 619–635. https://doi.org/10.1037/a0017049

Duncan-Andrade, J. (2009). Note to educators: Hope required when growing roses in concrete. *Harvard Educational Review*, 79(2), 181–194. https://doi.org/10.17763/haer.79.2.nu3436017730384w

Enders, C. (2001). The performance of the full information maximum likelihood estimator in multiple regression models with missing data. *Educational and Psychological Measurement*, 61(5), 713–740. https://doi.org/10.1177/0013164401615001

Freire, P. (1970). *Pedagogy of the oppressed*. Continuum.

Frey, W. (2019 June 24). *Less than half of U.S. children under 15 are white, census shows*. Brookings.

Ginwright, S. (2010). *Black youth rising: Activism and radical healing in America*. Teachers College Press.

Godfrey, E. B., Burson, E. L., Yanisch, T. M., Hughes, D., & Way, N. (2019). A bitter pill to swallow? Patterns of critical consciousness and socioemotional and academic well-being in early adolescence. *Developmental Psychology*, 55(3), 525–537. https://doi.org/10.1037/dev0000558

Heberle, A. E., Rapa, L. J., & Farago, F. (2020). Critical consciousness in children and adolescents: A systematic review, critical assessment, and recommendations for future research. *Psychological Bulletin*, 146(6), 525–551. https://doi.org/10.1037/bul0000230

Helms, J. E. (1990). *Black and White racial identity: Theory, research, and practice*. Greenwood Press.

Hope, E. C., & Jagers, R. J. (2014). The role of sociopolitical attitudes and civic education in the civic engagement of black youth. *Journal of Research on Adolescence*, 24(3), 460–470. https://doi.org/10.1111/jora.12117

Kokka, K. (2019). Healing-informed social justice mathematics: Promoting students' sociopolitical consciousness and well-being in mathematics class. *Urban Education*, 54(9), 1179–1209. https://doi.org/10.1177/0042085918806947

Kozan, S., Blustein, D. L., Barnett, M., Wong, C., Connors-Kellgren, A., Haley, J., Patchen, A., Olle, C., Diemer, M. A., Floyd, A., Tan, R. P. B., & Wan, D. (2017). Awakening, efficacy, and action: A qualitative inquiry of a social justice-infused, science education program. *Analyses of Social Issues and Public Policy*, *17*(1), 205–234. https://doi.org/10.1111/asap.12136

Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, *32*(3), 465–491. https://doi.org/10.3102/00028312032003465

Luginbuhl, P. J., McWhirter, E. H., & McWhirter, B. T. (2016). Sociopolitical development, autonomous motivation, and education outcomes: Implications for low-income Latina/o adolescents. *Journal of Latina/o Psychology*, *4*(1), 43–59. https://doi.org/10.1037/lat0000041

Madigan, T. (1997). *Science proficiency and course taking in high school: The relationship of science course-taking patterns to increases in science proficiency between 8th and 12th grades*. U.S. Department of Education, Office of Educational Research and Improvement.

Maker Castro, E., Wray-Lake, L., & Cohen, A. K. (2022). Critical consciousness and wellbeing in adolescents and young adults: A systematic review. *Adolescent Research Review*, *7*(4), 499–522. https://doi.org/10.1007/s40894-022-00188-3

Maniaci, M., & Rogge, R. (2014). Caring about carelessness: Participant inattention and its effects on research. *Journal of Research in Personality*, *48*, 61–83. https://doi.org/10.1016/j.jrp.2013.09.008

McWhirter, E. H., & McWhirter, B. T. (2016). Critical consciousness and vocational development among Latina/o high school youth: Initial development and testing of a measure. *Journal of Career Assessment*, *24*(3), 543–558. https://doi.org/10.1177/1069072715599535

Milner, R. (2010). *Start where you are, but don't stay there: Understanding diversity, opportunity gaps, and teaching in today's classroom*. Harvard Education Press.

Moffitt, U., Rogers, L. O., & Dastrup, K. R. (2022). Beyond ethnicity: Applying Helms's white racial identity development model among white youth. *Journal of Research on Adolescence*, *32*(3), 1140–1159. https://doi.org/10.1111/jora.12645

Neville, H. A., Lilly, R. L., Duran, G., Lee, R. M., & Browne, L. (2000). Construction and initial validation of the color-blind racial attitudes scale (CoBRAS). *Journal of Counseling Psychology*, *47*(1), 59–70. https://doi.org/10.1037/0022-0167.47.1.59

O'Connor, C. (1997). Dispositions toward (collective) struggle and educational resilience in the inner city. *American Educational Research Journal*, *34*(4), 593–629. https://doi.org/10.3102/00028312034004593

Pancer, S. M., Pratt, M., Hunsberger, B., & Alisat, S. (2007). Community and political involvement in adolescence. *Journal of Community Psychology*, *35*(6), 741–759. https://doi.org/10.1002/jcop.20176

Pérez-Gualdrón, L., & Helms, J. (2017). A longitudinal model of school climate, social justice orientation, and academic outcomes among Latina/o students. *Teachers College Record*, *119*(10), 1–38. https://doi.org/10.1177/016146811711901001

Phan, O. (2010). *The psychological armor of urban adolescents: Exploring the influence of critical consciousness and racial identity on career adaptability* [Unpublished doctoral dissertation]. Boston College.

Rapa, L. J., Bolding, C. W., & Jamil, F. M. (2020). Development and initial validation of the short critical consciousness scale (CCS-S). *Journal of Applied Developmental Psychology*, *70*, Article 101164. https://doi.org/10.1016/j.appdev.2020.101164

Rapa, L. J., Diemer, M. A., & Bañales, J. (2018). Critical action as a pathway to social mobility among marginalized youth. *Developmental Psychology*, *54*(1), 127–137. https://doi.org/10.1037/dev0000414

Seider, S., Clark, S., & Graves, D. (2020). The development of critical consciousness and its relation to academic achievement in adolescents of color. *Child Development*, *91*(2), 451–474. https://doi.org/10.1111/cdev.13262

Seider, S., Graves, D., El-Amin, A., Clark, S., Soutter, M., Tamerat, J., Jennett, P., Gramigna, K., Yung, J., Kenslea, M., & Sklarwitz, S. (2016). Preparing adolescents attending progressive and no-excuses urban charter schools to analyze, navigate, and challenge race and class inequality. *Teachers College Record*, *118*(12), 1–54. https://doi.org/10.1177/016146811611801206

Seider, S., Kelly, L., Clark, S., Jennett, P., El-Amin, A., Graves, D., Soutter, M., Malhotra, S., & Cabral, M. (2020). Fostering the sociopolitical development of African American and Latinx adolescents to analyze and challenge racial and economic inequality. *Youth & Society*, *52*(5), 756–794. https://doi.org/10.1177/0044118X18767783

Stout, C., & Wilburn, T. (2022, February 1). *CRT map: Efforts to restrict teaching racism and bias have multiplied across the U.S.* Chalkbeat Blog.

Suzuki, L., Ponterroto, J., & Meller, P. (Eds.). (2001). *Handbook of multicultural assessment: Clinical, psychological, and educational applications* (2nd ed., pp. 197–261). Jossey Bass.

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

Thomas, A. J., Barrie, R., Brunner, J., Clawson, A., Hewitt, A., Jeremie-Brink, G., & Rowe-Johnson, M. (2014). Assessing critical consciousness in youth and young adults. *Journal of Research on Adolescence 24*(3), 485–496. https://doi.org/10.1111/jora.12132

Tichnor-Wagner, A., Parkhouse, H., Glazier, J., & Cain, J. (2016). Expanding approaches to teaching for diversity and justice in K-12 education: Fostering global citizenship across the content areas. *Education Policy Analysis Archives*, *24*(59), 1–35. https://doi.org/10.14507/epaa.24.2138

Tyler, C. P., Geldhof, G. J., Black, K. L., & Bowers, E. P. (2020). Critical reflection and positive youth development among White and Black adolescents: Is understanding inequality connected to thriving? *Journal of Youth and Adolescence*, *49*(4), 757–771. https://doi.org/10.1007/s10964-019-01092-1

Watts, R., Griffith, D., & Abdul-Adil, J. (1999). Sociopolitical development as an antidote for oppression: Theory and action. *American Journal of Community Psychology*, *27*(2), 255–272. https://doi.org/10.1023/A:1022839818873

Watts, R. J., Diemer, M. A., & Voight, A. M. (2011). Critical consciousness: Current status and future directions. In C. A. Flanagan & B. D. Christens (Eds.), *Youth civic development: Work at the cutting edge* (Vol. 134, pp. 43–57). Josey-Bass. https://doi.org/10.1002/cd.310

Watts, R. J., & Hipolito-Delgado, C. P. (2015). Thinking ourselves to liberation? Advancing sociopolitical action in critical consciousness. *The Urban Review*, *47*(5), 847–867. https://doi.org/10.1007/s11256-015-0341-x

Yosso, T. (2000). *A critical race and LatCrit approach to media literacy: Chicana/o resistance to visual microaggresions* [Unpublished doctoral dissertation]. University of California.

Zimmerman, M. A., Ramírez-Valles, J., & Maton, K. I. (1999). Resilience among urban African American male adolescents: A study of the protective effects of sociopolitical control on their mental health. *American Journal of Community Psychology*, *27*(6), 733–751. https://doi.org/10.1023/A:1022205008237