JOURNAL OF
Research on Adolescence
Society for Research on Adolescence
www.s-r-a.org

JOURNAL OF RESEARCH ON ADOLESCENCE, 30(1), 189–202

The Role of Curiosity in the Sociopolitical Development of Black and Latinx Adolescents

Shelby Clark, and Scott Seider
Boston University
sclark2@bu.edu

Sociopolitical development, the process of coming to understand and take action against systems of oppression, is associated with key outcomes for youth. Although rooted in Paulo Freire's work on critical consciousness, sociopolitical development models overlook a motivational attribute—curiosity—that Freire characterized as a catalyst of such development. This longitudinal study investigated the relationship between curiosity and two aspects of sociopolitical development (social analysis, societal involvement) in a sample of Black and Latinx adolescents (N = 659). Longitudinal growth models demonstrated positive growth in all constructs over 4-years of high school. Multivariate growth models revealed a positive correlation at baseline between curiosity and both constructs; growth in curiosity was also positively correlated with growth in social analysis and societal involvement.

Issues of racial and economic inequality are longstanding and pervasive in the United States, with unemployment rates for Black Americans twice as high as those for White Americans (Irwin et al., 2014) and White families possessing more than 10 times the wealth, on average, than Black and Latinx families (Kochhar & Fry, 2014). A growing body of research suggests that sociopolitical development—the processes by which individuals come to understand, analyze, and take action against systems of oppression (Freire, 1970; Hope & Bañales, 2018; Watts & Flanagan, 2007)—can serve as a protective factor for youth marginalized by various forms of inequity. Indeed, sociopolitical development in marginalized youth is associated with school engagement (O'Connor, 2007), academic achievement (Authors Names Withheld, in press; Dee & Penner, 2017), resilience (Ginwright, 2010), occupational attainment (Rapa et al., 2018), civic activism (Watts et al., 2011), and voting behaviors (Diemer & Li, 2011). Several of these studies focused on youth's ability to analyze systems of oppression as a predictor of outcomes such as academic motivation (O'Connor, 1997) and academic achievement (Dee & Penner, 2017) while others considered youth's engagement in social action against such systems as a predictor of professional aspirations (Rapa et al., 2018) and voting behaviors in young adulthood (Diemer & Li, 2011).

Scholarship on sociopolitical development has its roots in philosopher-educator Paulo Freire's (1970) work on critical consciousness. Freire defined critical consciousness as the praxis of *critical reflection* upon oppressive forces shaping society and *critical action* that challenges these forces. Contemporary models of youth sociopolitical development (Watts & Flanagan, 2007; Watts et al., 2011) and critical consciousness (Diemer et al., 2016) build on Freire's (1970) work by maintaining this emphasis on the interrelationship between critical reflection and critical action, but also theorize the importance of other variables such as political self-efficacy (Diemer et al., 2016) and agency (Watts & Flanagan, 2007). To date, however, none of these contemporary models have accounted for a central motivational attribute—critical curiosity—that Freire (1970, 1998) also characterized as a key catalyst of critical consciousness development for people from oppressed groups. As a first step in further clarifying the role of curiosity in sociopolitical development, the present longitudinal study sought to investigate potential associations between dispositional curiosity and two aspects of sociopolitical development (critical reflection, critical action) in a sample of predominantly low-income youth of color.

This work was supported by funding from the John Templeton Foundation under Grant #54909, the Spencer Foundation under Grant #9550302849, the National Academy of Education, and the Boston University Undergraduate Research Opportunities Program.

Requests for reprints should be sent to Shelby Clark, Department of Applied Human Development, Boston University, 2 Silber Way, Boston, MA 02215. Email: sclark2@bu.edu

DOI: 10.1111/jora.12511

YOUTH SOCIOPOLITICAL DEVELOPMENT FRAMEWORK

As noted above, contemporary scholarship on sociopolitical development has its roots in Freire's (1970) foundational work on critical consciousness. In his work as a literacy teacher with adult migrant laborers in Brazil, Freire discovered that his students were motivated by their determination to "read" their social conditions and take action to transform them. Consequently, Freire (1970) developed his theory of conscientização, or critical consciousness, which argues that individuals from oppressed groups must learn how to both reflect and act on the world in order to challenge their oppression and transform society; both activities, social analysis and social action, mutually reinforce one another, a process Freire (1970) termed *praxis*.

Building on Freire's (1970) foundational work, Watts and Flanagan (2007) conceptualized a youth sociopolitical development model for youth marginalized by inequities in race, economic status, and other factors. Their model consists of four distinct, yet related, components: (1) social analysis; (2) agency; (3) opportunity structures; and (4) societal involvement. *Social analysis*—which aligns closely with Freire's (1970) concept of critical reflection—refers to the ability to name and analyze forces of inequality. It extends beyond basic knowledge and instead encompasses an ability to analyze the root of oppression as situated in structural and institutional forces. *Agency* is the internal belief that one has the capacity to effect social change. This sense of agency is a critical component of sociopolitical development as it helps move individuals or collectives from knowledge (social analysis) to a willingness and desire to act. *Opportunity structures* denote those spaces where meaningful opportunities to engage in social analysis and societal involvement might occur, such as youth's schools, churches, part-time jobs, and community organizations. Finally, *societal involvement*—which aligns closely with Freire's (1970) concept of critical action—refers to an individual's actual engagement in events and activities intended to challenge these oppressive forces and structures, and the unequal conditions they perpetuate. This action can take a wide range of forms and can be individual or collective. Given that youth generally do not possess the autonomy to fully determine their own engagement in civic action, this study measured adolescents' *commitment* to present and future social and political activism (Corning & Myers, 2002). Commitment to activism measures adolescents' expectations regarding their future involvement in different forms of civic participation and engagement, such as community or political organizing, voting, or engaging with government agencies (Kahne & Sporte, 2008). Such commitments in adolescents have been found to be positively correlated with greater involvement in activism as an adult (Ajzen, 2001; Metzger & Smetana, 2010) and therefore this construct serves as a proxy for the more formal, direct forms of societal involvement or critical action included in adult-oriented models of sociopolitical development (Freire, 1970).

In their youth sociopolitical development model, Watts and Flanagan (2007) posited a bidirectional relationship between youth's ability to engage in social analysis and commitment to social action. Put another way, increases in youth's ability to analyze the political, social, and economic forces shaping society are associated with increases in their societal involvement, and vice-versa. Additionally, Watts and Flanagan (2007) posited that the relationship between social analysis and societal involvement is moderated by an individual's sense of individual and collective agency around engaging in social action as well as by the availability of meaningful opportunities (opportunity structures) to engage in such social action. Diemer et al. (2016), in their own model of critical consciousness, similarly theorized a cycle of development in which critical reflection, political self-efficacy, and critical action mutually reinforce one another. A handful of studies have offered preliminary evidence of the validity of the associations posited in these models (Diemer et al., 2017; Hope & Jagers, 2014). For example, Hope and Jagers (2014) found an association between social analysis and societal involvement in Black adolescents, with this relationship stronger in youth with a more developed understanding of institutional racism. However, more research is needed in order to further empirically clarify the relationship between social analysis and societal involvement and other variables that could potentially play a catalytic role in this developmental process.

CURIOSITY AND SOCIOPOLITICAL DEVELOPMENT

Although Watts and Flanagan's (2007) sociopolitical development model and Diemer et al. (2016) critical consciousness model are both explicitly grounded in Freire's (1970) work, neither model takes up Freire's (1970, 1998) positioning of critical

curiosity as a key motivational catalyst of youth sociopolitical development. Specifically, Freire (1970, 1998) contended that *critical curiosity* was necessary for a true praxis, or mutually reinforcing relationship between social analysis and societal involvement, to occur. For Freire (1970, 1998), critical curiosity (or epistemological curiosity) specifically referred to a deep desire to learn more about issues of power, oppression, and inequality and a willingness to question and engage critically with one's beliefs and dominant society (Shor, 1992). He noted, "We must build on our intuitions and submit them to methodical and rigorous analysis so that our curiosity becomes epistemological" (Freire, 1998, p. 48). As such, Freire (1998) both argued that curiosity presupposed social analysis, but that such critical curiosity would also lead "to an awareness of the world but also to a thorough, scientific knowledge of it" (p. 66) that would ultimately result in individuals "not only... adapt[ing] to the world but especially [intervening] to re-create, and to transform it" (p. 66). Thus, Freire positioned critical curiosity as a motivational force behind an individual's desire both to reflect and analyze as well to act and engage. In motivating individuals to strive to "unveil reality" (Freire, 1970), critical curiosity becomes both a potential mediator and moderator between the reciprocal forces of social analysis and societal involvement.

In support of Freire's claims, research on political interest—"a citizen's willingness to pay attention to political phenomena at the possible expense of other topics" (Lupia & Philpot, 2005, p. 1122)—has been connected to political knowledge, political concern, and several other forms of political engagement (Russo & Stattin, 2017; Verba, Burns, & Schlozman, 1997). For example, Russo and Stattin (2017) found that political interest was associated with engagement with the news, various forms of discussion and excitement about political talk, and efficacy regarding political skills in adolescents.

Several contemporary scholars have taken Freire's lead in noting that an adolescents' level or type of "motivation" can impact the trajectory of youth sociopolitical development (Diemer et al., 2016, 2017; McWhirter & McWhirter, 2016). To date, youth sociopolitical development models tend to focus only on agency (or self-efficacy) as a representative motivational attribute, although there is disagreement over whether agency might act as a mediator (Diemer et al., 2016, 2017) or moderator (Watts & Flanagan, 2007) in the overall sociopolitical development process. Recall, for example, that Watts and Flanagan (2007) suggested that the bidirectional relationship between social analysis and societal involvement is moderated by a youth's level of agency. In all, though, curiosity has not been considered in this scholarship. Yet, curiosity is a key motivational construct that includes both cognitive and affective elements, is prompted by an "urge to know more", and often manifests behaviorally in questioning or exploratory behavior (Engel, 2011, p.627; Grossnickle, 2016). Curiosity has been found to be integral for motivating an individual's attention, engagement, and learning (Ainley, 2012, Kashdan, 2004; Silvia & Kashdan, 2009).

Given extant research that has found curiosity to be an important motivational force (Kashdan, 2004; Silvia & Kashdan, 2009) and Freire's explicit positioning of critical curiosity as integral to the development of critical consciousness, this study sought to investigate how marginalized youths' dispositional curiosity relates to their sociopolitical development. By dispositional curiosity, we refer to an individual's more enduring and habitual tendency toward

pursuing knowledge and new experiences as well as engaging in information seeking and exploratory behaviors (Silvia & Kashdan, 2009). Put another way, this study considered the relationship between young people's tendency toward curiosity —their "urge to know more" regarding a variety of subjects (Engel, 2011)—and the development of their social analysis skills and societal involvement commitments. No previous research that we are aware of has specifically investigated the relationship between dispositional curiosity and adolescents' sociopolitical development.

CURIOSITY AND ADOLESCENT DEVELOPMENT

Extant research suggests that dispositional curiosity remains stable or declines in adolescence (Dillon, 1988; Engel, 2015; Peterson, 1979). However, Chouinard (2007) found that preschool-aged children ask almost 100 questions of an adult per hour, Dillon (1988) found that, on average, adolescents in a high school class collectively ask two information-seeking curiosity-based questions per hour. Other scholars (Pearson & West, 1991) similarly found that students collectively ask only a total average of 3.3 questions in an hour-long college class. Peterson (1979), however, found that sensory-motor curiosity does not decline from childhood into adolescence. In his cross-sectional study, students from

five to 18 years old were left in a science classroom with interesting objects and rated on their level of curiosity-based exploration; regardless of age, students explored equally in the stimulating environment.

Erikson's (1963) classic model of psychosocial development suggests that adolescence is a prime developmental period for an individual's curiosity to pique regarding issues of society and inequality. Erikson positioned adolescence as the period in which one is "seeking purpose, deciding on beliefs and commitments, and linking to others (in organizations, religious traditions, or social causes) who can share such commitments" (Zaff et al., 2010, p. 603). Such identity exploration and self-reflection presupposes a significant amount of questioning and curiosity. Moreover, Garcia Coll et al. (1996) argued that, for adolescents from marginalized racial groups, such identity development explicitly entails coming to understand the effects of racism, prejudice, discrimination, oppression, and other inequities upon their own lives and communities.

A growing body of empirical research has begun to explore the connections between relevance to one's identity and curiosity (Priniski, Hecht, & Harackiewicz, 2018). For example, some research has found that presenting STEM careers as more collaborative rather than independent focused can raise curiosity regarding these careers for women, given that women tend to identify as more communally goal oriented than men (Diekman et al., 2017). Specifically relevant to adolescents of color, contemporary critical pedagogy scholars – building on the work of Freire (1970)—continue to call for a form of education based on the lived experiences and "funds of knowledge" (Moll et al., 1992) of students in the classroom; Duncan-Andrade and Morrell (2008) argued that it is only through "foreground[ing] the relationship between education and the most pressing conditions of the community" (p. 11) that youth of color develop the curiosity, motivation, and engagement necessary to develop sociopolitically and critically understand society. Accordingly, one aim of this study was to investigate adolescent curiosity change and its potential connection to sociopolitical development at schools that specifically focused on sociopolitical issues.

THE CURRENT STUDY

This study investigated the relationship between dispositional curiosity and two aspects of adolescent sociopolitical development—social analysis and societal involvement. First, in light of the theories by Erikson (1963) and Garcia Coll et al. (1996) regarding the intersection of curiosity, sociopolitical development, and adolescence, we hypothesized that Black and Latinx adolescents' curiosity would increase over the course of 4 years attending high schools with sociopolitically oriented missions. Second, building on Freire's (1970) foundational writings on critical consciousness, we hypothesized that adolescents' growth in curiosity across high school would be strongly and positively correlated with both youths' social analysis and societal involvement development. Likewise, a bidirectional correlation between social analysis and societal involvement was also expected, based on both Freire's (1970) scholarship and Watts and Flanagan's (2007) youth sociopolitical development model.

METHOD

This study drew upon data collected as part of a longitudinal, mixed-methods investigation of sociopolitical development in adolescents attending six northeastern secondary schools in the United States that began in the fall of 2013 (Authors' Names Withheld, 2016).

Participants

The study's participants included adolescents who were in the Class of 2017 cohort at six charter high schools located in five northeastern cities in the United States (N = 659). Of this sample, 380 youth (57.66%) identified as Black or African American, 136 youth (20.64%) identified as Latinx, 117 youth (17.75%) identified as multi-racial, and nine youth (1.37%) identified as White. In addition, almost 80% of the participating adolescents qualified for free or reduced-price lunch, a common proxy for low socioeconomic status.

Purposeful sampling was utilized to identify charter high schools who served adolescents from racially and economically marginalized groups, and whose mission statements included a commitment to fostering their students' sociopolitical development. Charter schools are publicly funded schools that are overseen by their respective state departments of education rather than by local school boards; are generally granted more autonomy in curriculum and personnel matters than traditional public schools; and often serve relatively small student bodies of 200–400 students (Nathan, 1997). All six schools in this study were open to

any adolescent residing in their respective cities, admitted students by randomized registration lottery, and cited fostering students' civic engagement as a component of their mission. For example, one of the participating school's missions called for "deliberately and explicitly challenging all forms of inequity." In support of this mission, the school's students and faculty participated together in "community improvement projects" that focused on social issues such as homelessness (see Appendix A for more information about each school).

Procedure

Beginning in ninth grade, 465 adolescents completed surveys including previously validated sociopolitical development measures at the beginning of their freshman year of high school (September 2013). Students completed the same survey again at the end of their freshman year (May 2014; $n = 463$), at the conclusion of their tenth grade year (May 2015; $n = 395$), at the conclusion of the eleventh grade year (May 2016; $n = 378$), and, finally, at the conclusion of their twelfth grade year (May 2017; $n = 359$). Prior to data collection, a letter was sent home to parents allowing parents and youth the opportunity to opt the student out of participating in the study. In all, after accounting for students who completed the survey inconsistently, a total of 659 adolescents completed the survey. Missing data were the following: 194 cases (29.44%) at T1, 196 cases (29.64%) at T2, 264 cases (40.06%) at T3, 281 cases (42.64%) at T4, and 300 cases (45.52%) at T5.

Measures

The student questionnaire included seven survey measures described in greater detail below. On the questionnaire, all measures were answered on a 5-point Likert scale from 1 (*No Way!*) to 5 (*Definitely!*), except for the curiosity scale, which ranged on a 5-point Likert scale from 1 (*Not like me at all!*) to 5 (*Very much like me!*). Here, we briefly describe each of these seven measures in turn, followed by a description of how these measures were merged to form our broader social analysis, societal involvement, and curiosity measures for analysis.

Awareness of interpersonal racism. The *Awareness of Interpersonal Racism* measure is a five item sub-scale from Oyserman, Gant and Ager's (1995) Racial-Ethnic Identity Scale that assesses an individual's recognition of the presence of interpersonal racism in the various communities of which he or she is a part. The measure asks youth to identify their racial identity and then solicits their level of agreement with statements into which they "insert" that racial identity. For example, one item reads: "Some people will treat me differently because I am _____".

Awareness of structural racism. The *Awareness of Structural Racism* measure consisted of four items adapted from Gurin, Nagda and Zuniga's (2013) Structural Thinking about Racial Inequality Scale and assesses the extent to which an individual recognizes the systemic factors underlying racial inequality. For example, one item solicits youths' level of agreement to the following statement: "Racism in the educational system limits the success of Blacks, Latinos and other racial minorities".

Beliefs about the causes of poverty. The *Beliefs about the Causes of Poverty* measure consisted of five items adapted from the Poverty in America Survey (NPR-Kaiser-Harvard, 2001) that assesses the extent to which an individual conceptualizes poverty as caused by individual or structural factors. A score of "1" on this scale represents attributing inequality to more individualist causes while a score of "5" on this scale represents attributing inequality to more systemic or structural causes. For example, one item from this measure reads: "A shortage of jobs is a major cause of poverty".

Youth social responsibility. The *Youth Social Responsibility* measure (short version) is an eight-item measure developed by Pancer, Pratt, Hunsberger, and Alisat (2007) that assesses adolescents' commitment to striving for the benefit of society. An example item includes, "Young people have an important role to play in making the world a better place".

Commitment to activism. The *Commitment to Activism* measure consisted of a nine-item measure adapted from Corning and Myers's (2002) Activism Orientation Scale that assesses adolescents' commitment to engaging in collective social action to challenge injustice. Questions include those such as "How likely is it now or in the future that you will take part in a protest, march, or demonstration?".

Achievement as resistance. The *Achievement as Resistance* measure is a four-item sub-measure of Oyserman et al.'s (1995) Racial-Ethnic Identity

Scale (Embedded Achievement) that assesses the extent to which people of color are motivated to attain personal success as a mechanism for countering hegemonic notions that achievement is a White property. An example item includes, "If I am successful, it will help the (adolescent's racial group) community".

Values in action inventory for youth- curiosity sub-measure. The *Values in Action Inventory for Youth* (Park & Peterson, 2006) curiosity sub-measure is an eight-item sub-measure of Park and Peterson's (2006) Values in Action Inventory for Youth, a self-report questionnaire for ages 10 to 17 that assesses 24 character strengths. Questions include those such as "I am always curious about people, places, or things I am not familiar with".

Analytic Strategy

Students' observed scores on several measures were averaged for study analyses.$dummy$When our larger study of sociopolitical development focused on youth's understanding of racial and economic inequity began in 2013, there were no existing measures of critical consciousness or sociopolitical development; therefore, we sought out preexisting measures that probed adolescents' understandings of racial and economic injustice. Accordingly, youths' observed scores at each time point on the Awareness of Interpersonal Racism, Awareness of Structural Racism, and Beliefs about the Structural Causes of Poverty scales were averaged in order to form an overall "Social Analysis" score for each youth for each time point. Preliminary confirmatory factor analyses also confirmed acceptable fit for this combined measure, $\chi^2(9) = 141.73$, $p < .001$, RMSEA = 0.09; TLI = 0.88; SRMR = 0.05. The merged "Social Analysis" measure's Cronbach's alpha was $\alpha = .70$ at T1, $\alpha = .62$ at T2, $\alpha = .67$ at T3, $\alpha = .64$ at T4, and $\alpha = .75$ at T5.

Similarly, for societal involvement, we sought to identify measures that would offer insights into adolescents' commitment to resisting oppressive social forces as an individual (Achievement as Resistance), as part of a collective (Commitment to Activism), and their beliefs regarding whether they *should* engage in such activism (Youth Social Responsibility). Accordingly, youths' observed scores at each time point on the Achievement as Resistance, Commitment to Activism, and Youth Social Responsibility measures were averaged in order to form an overall "Societal Involvement" score for each youth for each time point. Preliminary confirmatory factor analyses also confirmed acceptable fit for this combined measure, $\chi^2(35) = 545.81$, $p < .001$, RMSEA = 0.09; TLI = 0.87; SRMR = 0.05. The merged "Societal Involvement" measure's Cronbach's alpha was $\alpha = .80$ at T1, $\alpha = .87$ at T2, $\alpha = .87$ at T3, $\alpha = .86$ at T4, and $\alpha = .87$ at T5.

Finally, the youths' observed scores at each time point on the curiosity measure were averaged in order to form an overall curiosity score for each youth for each time point. Preliminary confirmatory factor analyses also confirmed good fit for this measure, $\chi^2(2) = 20.35$, $p < .001$, RMSEA = 0.07; TLI = 0.98; SRMR = 0.02. The curiosity measure's Cronbach's alpha was $\alpha = .72$ at T1, $\alpha = .79$ at T2, $\alpha = .73$ at T3, $\alpha = .77$ at T4, $\alpha = .77$ at T5. For additional information regarding missing data on these variables, see Appendix B.

Subsequently, a series of latent growth models were fit in order to explore the study's research questions. In latent growth models, repeated observed measurements are used as indicators of latent factor variables. One of these factors (the intercept) represents the initial level of the outcome of interest. The other factor (the slope) represents how much change can be expected in the outcome of interest after a unit change in time (Preacher, 2010). Although both the intercept and slope factors are unobserved variables, this technique assumes that the factor intercepts and slopes are responsible for changes witnessed in individuals' observed scores on the outcome of interest. Latent growth models also allow both the intercept and slope to be modeled as random effects; accordingly, how much individual variability is present in these factors can be estimated and additional covariates can be included in the model to help explain this variability (Preacher, 2010).

All statistical analyses were conducted using Stata 15.0 (StataCorp, 2018). Averaged scores were used in the models for purposes of ease as well as comprehensibility to the widest audience (Abry, Rimm-Kaufman, & Curby, 2017). In accordance with suggestions from Preacher (2010) and Grimm, Ram, and Estabrook's (2016), Root-Mean Square Error of Approximation (RMSEA) values up to .10 and Tucker Lewis Index (TLI) values above .90 were considered consistent with acceptable model fit. RMSEA is a value of absolute fit, assessing how far the model is from "perfect" fit, or a fit of zero; TLI, alternatively, is a measure of incremental fit, and assesses models against a null model (Little, 2013). In light of the numerous significance tests of

model relationships that are run as part of structural equation analyses, we used a reduced alpha level of 0.01 to assess statistical significance in order to reduce our Type 1 error rate (Smith & Cribbie, 2013). As is typical in longitudinal studies, attrition was common in this study (Little, 2013). Models were estimated using full information maximum likelihood, in order to include all cases in with available data (Acock, 2008).

First, in order to assess whether curiosity changes across high school, we fit a linear latent growth model to the five curiosity scores (i.e. for each time point); factor means, variances, and correlations were estimated. Based on visual inspection of the means observed in adolescents' curiosity scores, linear latent growth models were expected to fit the data well (see Appendix C, Figures C1 through C3). Although we considered the possibility of improving model Goodness-of-Fit by fitting and then correlating quadratic univariate models, we ultimately chose to forgo reporting these models for reasons of parsimony and model interpretability.

Second, in order to assess whether adolescents' curiosity related to social analysis and societal involvement, we fit a multivariate latent growth model between the "Social Analysis," "Societal Involvement," and "Curiosity" averaged observed scores. That is, the multivariate growth models simultaneously fit the latent growth models of the social analysis, societal involvement, and curiosity variables, while allowing them to co-vary with one another. Through correlating both the intercepts and slopes of all variables, the multivariate latent growth model allowed us to assess whether change in one variable was associated with change in another.

RESULTS

The descriptive statistics for adolescents' mean scores on the curiosity, social analysis, and societal involvement measures are presented below in Table 1. These statistics reveal that adolescents in the sample demonstrated positive mean changes, on average, in curiosity, social analysis, and societal involvement across their four high school years.

Latent Growth Models

Curiosity. A linear growth model for curiosity exhibited good fit with the data, $\chi^2(10, N = 651) = 21.69$, $p > .05$, RMSEA = 0.042; TLI = 0.98. On average, adolescents began high school with moderate curiosity, with an intercept of 3.77 ($p < .001$). Students exhibited positive curiosity growth, with a significant slope factor of 0.05 ($p < .01$). That is, for each school year, adolescents increased 0.05 points in curiosity, on average. Accordingly, across four years of high school, one might expect the average adolescent to increase their curiosity score from 3.77 to 3.97 (a 4% increase on a 5-point scale). The level of curiosity at which adolescents entered high school (their intercept) demonstrated a weak, negative relationship with their rate of growth in curiosity ($r = -0.32$, $p < .01$). That is, adolescents who demonstrated higher curiosity at the start of high school demonstrated smaller rates of change in their curiosity over the course of high school. It is important to note that significant variability was present in both the curiosity factor intercept, $\chi^2(2) = 252.86$, $p < .001$, and curiosity factor slope, $\chi^2(2) = 25.04$, $p < .001$, within the model.

Social Analysis. A linear growth model for social analysis exhibited acceptable fit with the data, $\chi^2(10, N = 656) = 56.17$, $p < .001$, RMSEA = 0.08, TLI = 0.93. Students began high school with a social analysis intercept of 3.29 ($p < .001$), on average. Students exhibited positive social analysis growth, with a slope factor of 0.13 ($p < 001$); that is, a 1-year increase was associated with a 0.13-point increase in adolescents' social analysis scores, on average. Accordingly, across 4 years of high school, one might expect the average adolescent to increase their social analysis score from 3.29 to 3.81 (a 10% increase on a 5-point scale). A similar pattern as curiosity was found between the social analysis intercept and slope ($r = -0.45$, $p < .001$), with adolescents who demonstrated higher social analysis at the start of high school demonstrating smaller rates of change in their social analysis over the course of high school. Importantly, significant variability was present in the factor intercept, $\chi^2(2) = 287.47$, $p < .001$, and factor slope, $\chi^2(2) = 61.28$, $p < .001$, within the model.

Societal Involvement. A linear model exhibited good fit with the data, $\chi^2(10, N = 657) = 48.68$, $p < .001$, RMSEA = 0.08, TLI = 0.94. Students began high school with a societal involvement intercept of 3.63 ($p < .001$), on average. Students exhibited positive societal involvement growth, with a slope factor of 0.05 ($p < .001$); that is, a 1-year increase was associated with a 0.05-point

TABLE 1
Descriptive statistics (Means, Standard Deviations) for Measures

	n	*T1*	n	*T2*	n	*T3*	n	*T4*	n	*T5*
Curiosity	433	3.78 (.80)	454	3.81 (.88)	392	3.92 (.79)	376	3.89 (.77)	352	4.01 (.78)
Social Analysis	462	3.36 (.54)	463	3.35 (.58)	393	3.55 (.53)	377	3.67 (.55)	355	3.85 (.57)
Societal Involvement	465	3.65 (.46)	463	3.67 (.56)	395	3.75 (.54)	378	3.76 (.55)	359	3.90 (.53)

Note. Standard deviations listed in parentheses

increase in adolescents' societal involvement scores, on average. Accordingly, across 4 years of high school, one might expect the average adolescent to increase their societal involvement score from 3.63 to 3.83 (a 4% increase on a 5-point scale). No significant relationship was found between the societal involvement intercept and the rate of change in adolescents' societal involvement. In other words, the level of activism at which adolescents entered high school was not associated with their growth in this quality ($r = 0.21$, $p = .31$). Importantly, significant variability was present in the factor intercept, $\chi^2(2) = 301.71$, $p < .001$, and factor slope, $\chi^2(2) = 28.15$, $p < .001$, within the model.

Multivariate latent growth models

The results of the multivariate latent growth model analysis provide further insight into the study's research question regarding how curiosity is related to adolescent sociopolitical development (see Table 2). An initial baseline multivariate growth model was fit between the univariate linear growth models of curiosity, social analysis, and societal involvement that allowed the intercepts and slopes of all constructs to correlate freely. Examination of the modification indices indicated that model fit could be improved by correlating the observed measures within each timepoint. Given the possibility of testing effects (Baltes et al., 1988), we correlated the disturbances of societal involvement and curiosity, societal involvement and social analysis, and social analysis and curiosity within timepoint. The addition of these covariances significantly improved model fit, $\Delta\chi^2(15) = 161.86$, $p < .001$, in turn resulting in a model with very good fit, $\chi^2(78, N = 657) = 154.11$, $p < .001$, RMSEA = 0.04; TLI = 0.96.

In the multivariate model, adolescents' baseline levels of curiosity, social analysis, and societal involvement were all significantly correlated. Curiosity and societal involvement demonstrated a moderate, positive relationship ($r = 0.49$, $p < .001$), indicating that if an adolescent was high (or low) in one quality he or she would likely be the same in the other. Curiosity and social analysis also demonstrated a weak, positive relationship at baseline ($r = 0.25$, $p < .001$), again indicating that if one was high or low in one quality, one might be the same in the other. Similarly, societal involvement and social analysis shared a similar relationship with a significant correlation of 0.22 ($p < .01$). Wald tests between construct correlations indicated that only the correlation between the curiosity and societal involvement intercepts and that of the societal involvement and social analysis intercepts were significantly different in strength, $\chi^2(1) = 13.10$, $p < .001$, (see Appendix D for full results).

Likewise, adolescents' rates of change in all constructs were found to be significantly correlated. Again, a moderate, positive correlation was found between adolescents' curiosity slope factor and societal involvement slope factor ($r = 0.47$, $p < .01$); in other words, this model indicates that adolescent growth in beliefs about, and desire to engage in, forms of critical action and activism were positively associated with their growth in curiosity; as one increases or decreases, so does the other. The model indicated a similar moderate, positive correlation between social analysis and societal involvement ($r = 0.47$, $p < .01$), which again denotes a relationship wherein the growth of social analysis and the growth of societal involvement change in tandem with one another. Curiosity and social analysis also demonstrated a weak, positive relationship with one another ($r = 0.36$, $p < .01$). Again, as one grows, so does the other. Wald tests between construct correlations indicated that none of the correlations between the factor slopes were significantly different in strength (see Appendix D for full results).

Notably, a small, positive correlation was found between the societal involvement intercept and the rate of change in adolescents' social analysis, indicating that those who began high school more likely to take action were more likely to grow in their ability to analyze societal injustice; however, this change was not significant at our .01 alpha value ($r = .19$, $p = 0.04$). All other correlations

TABLE 2
Parameter Estimates for Multivariate Latent Growth Model (MLGM) – Curiosity, Social Analysis, and Societal Involvement

	Factor means, variances, and correlations							
			Factor Correlations					
Factor	*Factor Mean (μ)*	*Unexplained Factor Variance (ζ)*	*1.*	*2.*	*3*	*4.*	*5.*	*6.*
1. Curiosity Int	3.764***	0.38	—					
2. Curiosity Slope	0.047***	0.019	−0.311**	—				
3. Social Analysis Int	3.290***	0.207	0.252***	−0.177	—			
4. Social Analysis Slope	0.124***	0.016	0.052	0.356**	−0.455***	—		
5. Societal Involvement Int	3.626***	0.129	0.486***	−0.12	0.215**	0.194*	—	
6. Societal Involvement Slope	0.050***	0.004	0.308	0.469**	−0.080	0.466**	0.201	—
Goodness of Fit	χ^2		RMSEA		TLI			
N= 657	χ^2 (78) = 154.112***		0.039		0.959			

*Note: **p<.01; ***p<.001

between cross-construct intercepts and slopes were nonsignificant at alpha = .05 and above.

DISCUSSION

There is a growing body of scholarship on youth sociopolitical development—the processes by which individuals come to understand, analyze, and take action against systems of oppression (Diemer et al., 2017; Watts & Flanagan, 2007). However, this work has not drawn upon a sizable body of scholarship that has found curiosity to be a key motivational attribute (Engel, 2015) or Paulo Freire's (1970, 1998) explicit positioning of critical curiosity as playing a key role in the development of critical consciousness. As described below, this study offers preliminary evidence that dispositional curiosity may play a substantive role in youth sociopolitical development.

Growth in Curiosity

One key finding of this study was that adolescents exhibited positive, significant, linear growth in curiosity over the course of 4 years attending high schools with missions that included goals around fostering youth sociopolitical development. This finding is particularly notable given that extant research generally finds that curiosity decreases during adolescence (Dillon, 1988; Engel, 2015), or tends to remain stable (Zaff et al., 2010).

Given that this study focused on marginalized youth attending sociopolitically oriented schools, one might reasonably speculate that the programming and practices at these schools contributed to adolescents' growth in curiosity by taking advantage of their developing interest in questions of power, inequity and injustice. Recall that Erikson (1963) and others (e.g. Ginwright, 2010) have suggested that adolescence is a prime period for individuals to "confront the political and moral dimensions of the society they are entering" (Younnis & Yates, 1997, p. 165). In particular, adolescents from marginalized racial and economic groups seek to make sense of their identity in relation to society's oppressive institutions and structures (Garcia Coll et al., 1996). Other scholars have reported that adolescents' interest and engagement can be captured by school curriculum and programming that connects academic content to issues of injustice and inequity (Authors' Names Withheld, 2017; Dee & Penner, 2017). In so doing, such programming aligns with Freire's (1970) foundational work on critical consciousness that posited individuals from marginalized groups are motivated to "read the word in order to read the world;" that is, people are motivated to learn in order to understand their social conditions. Notably, Freire urged educators to focus on "generative themes," by which he meant topics that evolve from the conversations and questions of students themselves, as he believed these topics would prove the most motivating (Shor, 1992).

This study's findings of an increase in curiosity at sociopolitically oriented schools offers real-world pedagogical implications for educators; indeed, aligning with contemporary critical pedagogy efforts (Duncan-Andrade & Morrell, 2008) that

have built on Freire's idea of 'generative themes' (Shor, 1992), such results indicate that turning the purpose of more curriculum and programming toward sociopolitical development might prove motivational and curiosity-inducing for adolescents, and particularly adolescents of color, across educational settings.

Curiosity and Sociopolitical Development

This study's second key finding was that adolescent curiosity was significantly and positively correlated with social analysis and societal involvement scores at the beginning of high school as well as with adolescents' growth in these qualities across high school. Notably, youths' societal involvement baseline scores demonstrated a significantly stronger correlation with their curiosity scores than with their social analysis scores, indicating that adolescents who entered high school with high levels of commitment to activism were more likely to demonstrate high curiosity than social analysis. These findings respond to calls for additional research on potential catalysts of adolescent sociopolitical development (Diemer et al., 2016; Hope & Bañales, 2018). As Hope and Bañales (2018) noted, "It is unclear whether one dimension of critical consciousness is especially catalytic in the [sociopolitical development] process... but it is well established in the motivation literature that attitudes precede behaviors." (p. 6). As such, curiosity may be the motivational attitude that leads to a commitment to involvement. Aligning with Freire's (1970, 1998) argument that curiosity might both presuppose interest in, as well as act as a motivational catalyst to engage with, the world around oneself, such a finding indicates that piquing adolescents' curiosity may be one primary way of developing youths' sociopolitical involvement. Moreover, this finding establishes a firm, positive association between curiosity and key sociopolitical development constructs.

One potential—albeit speculative—explanation for the somewhat strong relationship between youth societal involvement scores and curiosity relates to youth access to opportunity structures for social action (Watts & Flanagan, 2007; Watts et al., 2011). As Watts and Flanagan (2007) argued, opportunity structures play an important role in the relationship between a student's ability to engage in analysis of systems of injustice and his or her ability to take an active role in combatting issues of inequality and injustice. Although certainly many secondary schools offer opportunities to engage in various types of service learning and other forms of social action (Younnis & Yates, 1997), a high-curiosity adolescent may be more likely to seek out and take advantage of these opportunity structures.

Another possible explanation for the relatively strong association between adolescent's curiosity and commitment to societal involvement lies in prior work that has found individual's political interest to be predictive of various types of political engagement (Verba et al., 1997). In other words, perhaps the dispositional curiosity measured in this study, in fact, encompassed (or served as a proxy for) adolescents' feelings of political interest. Recall that Russo and Stattin (2017) found that adolescents who are politically interested are more likely to engage with current events and pressing sociopolitical issues in the news. Adolescents more attuned to such current events and sociopolitical issues may also be more committed to engaging in political action that challenges those issues and events they find to be unjust (Russo & Amnå, 2016). Given this extant scholarship on political interest, future research should work to further disentangle the impact of these three constructs on youth sociopolitical development.

In all, these findings suggest that contemporary models of sociopolitical development would benefit from considering the addition of curiosity to models of adolescent sociopolitical development. As discussed above, to date, models of youth sociopolitical development have codified "agency," "empowerment," or various forms of "self-efficacy" as either mediating (Diemer et al., 2015, 2016) or moderating (Watts & Flanagan, 2007) motivational variables impacting adolescents' sociopolitical development. Indeed, recall that Watts and Flanagan's (2007) model of youth sociopolitical development focuses on agency as the prime catalytic motivational variable within the sociopolitical developmental process; that is, Watts and Flanagan (2007) suggested that whether or not praxis results in sociopolitical action depends upon an adolescent's feelings of agency. In light of Freire's (1970, 1998) theorizing about the role of critical curiosity as a motivational force catalyzing social analysis and societal involvement, as well as the current findings that adolescent curiosity grows in tandem with social analysis and societal involvement, it seems reasonable to call for greater attention to the role of curiosity in adolescent sociopolitical development.

Moreover, we would urge researchers to consider more broadly widening the bucket of motivational constructs considered as potential catalytic or limiting factors within the youth sociopolitical development framework. For example, in future

research efforts, scholars considering adolescent sociopolitical development might consider both adolescent agency *and* curiosity as motivational variables that potentially both serve as levers of youth sociopolitical development.

Associations Between Societal Analysis and Involvement

In line with our second hypothesis, our analyses also offered support for Watts and Flanagan's (2007) posited bidirectional relationship between social analysis and societal involvement within their youth sociopolitical development model. Specifically, this study's multivariate latent growth model—though not proposing causal paths between the social analysis and societal involvement constructs—found a medium correlation between the social analysis and societal involvement slopes. This correlation indicates a moderate relationship between growth in an adolescent's ability to analyze issues of social injustice and growth in his or her commitment to engaging in action that challenges such injustice.

This work adds to a small, but growing body of scholarship confirming a reciprocal relationship between social analysis and societal involvement. In work on their Critical Consciousness Scale (CCS), for example, Diemer et al. (2015) found that their critical reflection-perceived inequality subscale and critical action-sociopolitical participation subscale correlated significantly; however, their critical reflection-egalitarianism sub-scale and critical action-sociopolitical participation subscale were not significantly associated. Hope and Jagers (2014) also found that the ability to critically analyze social systems is related to civic engagement, particularly for adolescents' who perceive institutional discrimination.$dummy$Both these studies and the present results offer support for the central components of Watts and Flanagan's youth sociopolitical development model as well as Freire's foundational theorizing of a cycle of development in which critical reflection and critical action mutually reinforce one another.

Limitations & Future Research

This study had several limitations. First, this study, correlational in nature, was not able to shed light on the causal relationships posited in Freire's (1970) theory of praxis—the bidirectional relationship between social analysis and societal involvement—and the potential moderating and mediating roles of curiosity within this relationship. In investigating alternative explanatory models for this data, we attempted to run an analysis wherein growth in curiosity (e.g. intercept and slope factors) predicted a multivariate growth model in which growth in social analysis and growth in societal involvement were intercorrelated; however, this model would not converge. We also attempted to run a model wherein the social analysis growth model predicted growth in societal involvement (i.e. *praxis*) and both growth models were predicted by adolescents' growth in curiosity; however, this model, too, would not converge. Given that significant variability was found in the intercept and slopes of each study construct it seems unlikely that this lack of convergence was due to limited variance within the models; indeed, ICCs ranged between 0.51 for social analysis, 0.56 for societal involvement, and 0.54 for curiosity. That is, approximately 51 to 56% of the variability in the study constructs was due to individual differences. A more likely explanation for this lack of convergence might be the variations in missing data across the five study time points, which ranged from 29.44% at T1 to 45.52% at T5 (Acock, 2008), coinciding with our medium sample size of 659. Although studies have found full information maximum likelihood estimation to outperform other missing data methods at ameliorating the effects of incomplete data, structural equation modeling convergence rates have been found to decrease with high amounts of missing data, small sample sizes, small factor loadings, and high levels of parameter nonnormality (Li & Lomax, 2017). This lack of model convergence might also indicate that a causal model, with growth in curiosity predicting growth in social analysis and societal involvement in some way, is an inaccurate representation of the relationship between these three constructs (Little, 2013). In all, it remains notable that we found a significant correlation between growth in social analysis, societal involvement, and curiosity, as such a relationship both confirms the bidirectional nature of praxis posited by Freire (1970) and confirms a role of curiosity in this process. Yet, future studies, with larger or more complete data sets might consider how an individual's level of curiosity specifically either moderates and/or mediates the *relationship* between social analysis and societal involvement (e.g. Beauchaine & Mead, 2006).

Second, we were not able to randomly assign adolescents to schools; therefore, we are not fully able to account for potential selection bias threats nor all exogenous variables that could have

contributed to youths' curiosity and sociopolitical development. In addition, this study focused on a sample of Black and Latinx adolescents from (predominantly) low-income families living in northeastern cities and attending charter high schools. As such, these findings may not generalize to adolescents from other geographic, racial, and economic groups.

Third, we also note that an optimal data analysis approach in this study would have accounted for the nesting of students within schools. However, given that only six sociopolitically oriented schools were included in the study, including this level of analysis was not feasible (Robson & Pevalin, 2016). We responded to this limitation in our data by reducing the alpha level to .01 (Smith & Cribbie, 2013).

Finally, as noted above, this study presented participating adolescents with a measure of dispositional curiosity but did not include measures of political interest or *critical* curiosity. The inclusion of such measures could have offered further insight into the nature of the relationship between adolescents' curiosity and sociopolitical development, and future research would do well to investigate associations between adolescents' sociopolitical development and the content and focus of their curiosity.

CONCLUSION

Sociopolitical development in marginalized youth is associated with several key outcomes, including school engagement (O'Connor, 1997), occupational attainment (Diemer & Li, 2015), and academic achievement (Dee & Penner, 2017). Despite curiosity's role as a key motivational variable that has been theorized as integral to the development of sociopolitical skills and behaviors (Freire, 1970), curiosity has played little role in contemporary scholarship or models of sociopolitical development. The current study's findings that dispositional curiosity develops in tandem with adolescents' social analysis skills and societal involvement behaviors, and that curiosity increases at schools with missions focused specifically on sociopolitical goals, suggests that educators and stakeholders would do well to engage youth by tapping into their curiosity regarding the social, political, and economic forces influencing their lives and communities. In turn, this developing curiosity may help catalyze sociopolitical development in adolescents from marginalized groups, increasing adolescents' motivation and capacity to "read the word in order to read the world" and ultimately take action against oppression (Freire, 1970).

REFERENCES

Abry, T., Rimm-Kaufman, S. E., & Curby, T. W. (2017). Are all program elements created equal? Relations between specific social and emotional learning components and teacher–student classroom interaction quality. *Prevention Science*, *18*, 193–203. https://doi.org/10.1007/s11121-016-0743-3

Acock, A. C. (2008). *A gentle introduction to Stata*. College Station, TX: Stata Press.

Ainley, M. (2012). Students' interest and engagement in classroom activities. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 283–302). New York, NY: Springer.

Ajzen, I. (2001). Nature and operation of attitudes. *Annual Review Psychology*, *52*(1), 27–58. https://doi.org/10.1146/annurev.psych.52.1.27

Baltes, P. B., Resse, H. W., & Nesselroade, J. R. (1988). *Introduction to research methods: Life-span developmental psychology*. New York, NY: Psychology Press.

Beauchaine, T. P., & Mead, H. K. (2006). Some recommendations for testing mediating and moderating effects in treatment-outcome research. *International Journal of Psychology Research*, *1*(1), 97–117.

Chouinard, M. M. (2007). Children's questions: A mechanism for cognitive development. *Monographs of the Society for Research in Child Development*, *72*(1), i–129.

Clark, S., & Seider, S. (2017). Developing critical curiosity in adolescents. *Equity & Excellence in Education*, *50*, 125–141. https://doi.org/10.1080/10665684.2017.1301835.

Corning, A. F., & Myers, D. J. (2002). Individual orientation toward engagement in social action. *Political Psychology*, *23*, 703–729. https://doi.org/10.1111/0162-895X.00304

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

Diekman, A. B., Steinberg, M., Brown, E. R., Belanger, A. L., & Clark, E. K. (2017). A goal congruity model of role entry, engagement, and exit: Understanding communal goal processes in STEM gender gaps. *Personality and Social Psychology Review*, *21*, 142–175. https://doi.org/10.1177/1088868316642141

Diemer, M. A., & Li, C. (2011). Critical consciousness development and political participation among marginalized youth. *Child Development*, *82*, 1815–1833.

Diemer, M. A., McWhirter, E. H., Ozer, E. J., & Rapa, L. J. (2015). Advances in the conceptualization and measurement of critical consciousness. *The Urban Review*, *47*, 809–823. https://doi.org/10.1007/s11256-015-0336-7

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

Diemer, M. A., Rapa, L. J., Voight, A. M., & McWhirter, E. H. (2016). Critical consciousness: A developmental approach to addressing marginalization and oppression. *Child Development Perspectives*, *10*, 216–221. https://doi.org/10.1111/cdep.12193

Dillon, J. T. (1988). The remedial status of student questioning. *Journal of Curriculum studies*, *20*, 197–210. https://doi.org/10.1080/0022027880200301

Duncan-Andrade, J. M. R., & Morrell, E. (2008). *The art of critical pedagogy: Possibilities for moving from theory to practice in urban schools*, Vol. *285*. New York, NY: Peter Lang.

Engel, S. (2011). Children's need to know: Curiosity in schools. *Harvard Educational Review*, *81*, 625–645. https://doi.org/10.17763/haer.81.4.h054131316473115

Engel, S. (2015). *The hungry mind: The origins of curiosity in childhood*. Cambridge, MA: Harvard University Press.

Erikson, E. H. (1963). *Childhood and society*. New York, NY: Norton.

Freire, P. (1970). *Pedagogy of the oppressed*. New York, NY: Continuum.

Freire, P. (1998). *Pedagogy of freedom: Ethics, democracy, and civic courage*. New York, NY: Rowman & Littlefield.

Garcia Coll, C., Crnic, K., Lamberty, G., Wasik, B. H., Jenkins, R., Garcia, H. V., & McAdoo, H. P. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development*, *67*, 1891–1914. https://doi.org/10.2307/1131600

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

Grimm, K. J., Ram, N., & Estabrook, R. (2016). *Growth modeling: Structural equation and multilevel modeling approaches*. New York, NY: Guilford Publications.

Grossnickle, E. M. (2016). Disentangling curiosity: Dimensionality, definitions, and distinctions from interest in educational contexts. *Educational Psychology Review*, *28*(1), 23–60. https://doi.org/10.1007/s10648-014-9294-y

Gurin, P., Nagda, B. R. A., & Zuniga, X. (2013). *Dialogue across difference: Practice, theory, and research on intergroup dialogue*. New York, NY: Russell Sage Foundation.

Hope, E. C., & Bañales, J. (2018). Black early adolescent critical reflection of inequitable sociopolitical conditions: A qualitative investigation. *Journal of Adolescent Research*, *34*, 167–200. https://doi.org/10.1177/0743558418756360.

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*, 460–470. https://doi.org/10.1111/jora.12117

Irwin, N., Miller, C. C., & Sanger-Katz, M. (2014). America's racial divide, charted. *The New York Times*. Retrieved from http://www.nytimes.com/2014/08/20/upshot/

Kahne, J., & Sporte, S. (2008). Developing citizens: The impact of civic learning opportunities on students' commitment to civic participation. *American Educational Research Journal*, *45*, 738–766. https://doi.org/10.3102/0002831208316951

Kashdan, T. B. (2004). Curiosity. In C. Peterson, & M. E. P. Seligman (Eds.), *Character strengths and virtues: A handbook and classification* (pp. 125–141). New York, NY: Oxford University Press.

Kochhar, R., & Fry, R. (2014). Wealth inequality has widened along racial, ethnic lines since end of great recession. *Pew Research Center*, *12*, 1–15.

Li, J., & Lomax, R. G. (2017). Effects of missing data methods in SEM under conditions of incomplete and nonnormal data. *The Journal of Experimental Education*, *85*, 231–258. https://doi.org/10.1080/00220973.2015.1134418

Little, T. D. (2013). *Longitudinal structural equation modeling*. New York, NY: Guilford Press.

Lupia, A., & Philpot, T. S. (2005). Views from inside the net: How websites affect young adults' political interest. *Journal of Politics*, *67*, 1122–1142. https://doi.org/10.1111/j.1468-2508.2005.00353.x

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*, 543–558. https://doi.org/10.1177/1069072715599535

Metzger, A., & Smetana, J. G. (2010). Social cognitive development and adolescent civic engagement. In L. Sherrod, C. A. Flanagan, & J. Torney-Purta (Eds.), *Handbook of research on civic engagement in youth* (pp. 221–248). Hoboken, NJ: Wiley.

Moll, L. C., Amanti, C., Neff, D., & Gonzalez, N. (1992). Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms. *Theory Into Practice*, *31*, 132–141. https://doi.org/10.1080/00405849209543534

Nathan, J. (1997). *Charter schools: Creating hope and opportunity for American education. The Jossey-Bass education series*. San Francisco, CA: Jossey-Bass.

NPR-Kaiser-Harvard (2001). *National survey on poverty in America*. http://www.kff.org/kaiserpolls

O'Connor, C. (1997). Dispositions towards (collective) struggle and resilience in the inner city: A case analysis of six African-American high school students. *American Educational Research Journal*, *34*, 593–629. https://doi.org/10.2307/1163351.

Oyserman, D., Gant, L., & Ager, J. (1995). A socially contextualized model of African American identity: Possible selves and school persistence. *Journal of Personality and Social Psychology*, *69*, 1216. https://doi.org/10.1037/0022-3514.69.6.1216

Pancer, S. M., Pratt, M., Hunsberger, B., & Alisat, S. (2007). Community and political involvement in adolescence: What distinguishes the activists from the

uninvolved? *Journal of Community Psychology*, *35*, 741–759. https://doi.org/10.1002/jcop.20176

Park, N., & Peterson, C. (2006). Moral competence and character strengths among adolescents: The development and validation of the values in action inventory of strengths for youth. *Journal of Adolescence*, *29*, 891–909. https://doi.org/10.1016/j.adolescence.2006.04.011

Pearson, J. C., & West, R. (1991). An initial investigation of the effects of gender on student questions in the classroom: Developing a descriptive base. *Communication Education*, *40*(1), 22–32. https://doi.org/10.1080/03634529109378823

Peterson, R. W. (1979). Changes in curiosity behavior from childhood to adolescence. *Journal of Research in Science Teaching*, *16*, 185–192. https://doi.org/10.1002/tea.3660160302

Preacher, K. J. (2010). Latent growth curve models. In G. R. Hancock, R. O. Mueller, & L. M. Stapleton (Eds.), *The reviewer's guide to quantitative methods in the social sciences* (pp. 185–198). New York, NY: Routledge.

Priniski, S. J., Hecht, C. A., & Harackiewicz, J. M. (2018). Making learning personally meaningful: A new framework for relevance research. *The Journal of Experimental Education*, *86*(1), 11–29. https://doi.org/10.1080/00220973.2017.1380589

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

Robson, K., & Pevalin, D. (2016). *Multilevel modeling in plain language*. London: Sage.

Russo, S., & Amnå, E. (2016). The personality divide: Do personality traits differentially predict online political engagement? *Social Science Computer Review*, *34*, 259–277. https://doi.org/10.1177/0894439315582487

Russo, S., & Stattin, H. (2017). Self-determination theory and the role of political interest in adolescents' sociopolitical development. *Journal of Applied Developmental Psychology*, *50*, 71–78. https://doi.org/10.1016/j.appdev.2017.03.008

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 high schools to analyze, navigate, and challenge race and class inequality. *Teachers College Record*, *118*(12), 1–54.

Shor, I. (1992). *Empowering education: Critical teaching for social change*. Chicago, IL: University of Chicago Press.

Silvia, P. J., & Kashdan, T. B. (2009). Interesting things and curious people: Exploration and engagement as transient states and enduring strengths. *Social and Personality Psychology Compass*, *3*, 785–797. https://doi.org/10.1111/j.1751-9004.2009.00210.x

Smith, C. E., & Cribbie, R. A. (2013). Multiplicity control in structural equation modeling: Incorporating parameter dependencies. *Structural Equation Modeling: A Multidisciplinary Journal*, *20*(1), 79–85. https://doi.org/10.1080/10705511.2013.742385

StataCorp. (2018). *Stata 15.1 [computer software]*. College Station, TX: StataCorp.

Verba, S., Burns, N., & Schlozman, K. L. (1997). Knowing and caring about politics: Gender and political engagement. *The Journal of Politics*, *59*, 1051–1072. https://doi.org/10.2307/2998592

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. *2011*, pp. 43–57).

Watts, R. J., & Flanagan, C. (2007). Pushing the envelope on youth civic engagement: A developmental and liberation psychology perspective. *Journal of Community Psychology*, *35*, 779–792. https://doi.org/10.1002/jcop.20178

Younnis, J., & Yates, M. (1997). *Community service and social responsibility in youth*. Chicago, IL: The University of Chicago Press.

Zaff, J. F., Hart, D., Flanagan, C. A., Youniss, J., & Levine, P. (2010). Developing civic engagement within a civic context. In R. M. Lerner, M. E. Lamb, & A. M. Freund (Eds.), *The handbook of life-span development* (pp. 590–630). Hoboken, NJ: Wiley.

Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Appendix A: Table A1. Descriptions of participating schools (J=6).

Appendix B: Table B1. Missing Values at each Time Point.

Appendix C: Examination of Linearity of Construct Scores Across Time.

Appendix D: Table D1. Wald tests comparing construct correlations.