



# Associations of School Diversity with Students' Race-based Victimization and School Connectedness: A Combined Influence of Student and Teacher Racial/Ethnic Diversity and Socioeconomic Diversity

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## Abstract

School diversity has been shown to be associated with students' school experiences. However, most studies have focused solely on student racial/ethnic diversity, in spite of the multifaceted nature of diversity. This study assessed how the combined influence of student and teacher racial/ethnic diversity and socioeconomic diversity were related to race-based victimization, school connectedness, and racial/ethnic disparities of these outcomes. The participants were Asian, Black, Latinx, and White students ( $n = 100,408$ ; 46.2–53.5% female) in Grade 7 to Grade 12 attending 278 public schools in California. The participating schools' diversity contexts were categorized into four latent profiles differentiated by varying levels of student and teacher racial/ethnic diversity and socioeconomic diversity. Race-based victimization was the least prevalent in schools with low student racial/ethnic diversity, low socioeconomic diversity, and moderate teacher racial/ethnic diversity. The magnitude of racial/ethnic disparities in race-based victimization differed across the four latent profiles; racial/ethnic disparities were minimal when there were similar numbers of students in each racial/ethnic group. School diversity's relation with school connectedness was minimal. White students perceived higher school connectedness than other racial/ethnic groups across profiles, but the White-Latinx gap was smaller in profiles with schools having a homogeneous Latinx student population. The findings underline the importance of understanding school diversity's interaction with students' characteristics, particularly racial/ethnic identity, on students' school experiences.

**Keywords** Student racial/ethnic diversity · Socioeconomic diversity · Teacher racial/ethnic diversity · Race-based victimization · School connectedness

## Introduction

Given the increasingly diverse U.S. educational context (Fabes et al., 2018), researchers have been interested in how school diversity relates to students' school experiences (e.g., perceived school safety, racial discrimination, and school belonging; Fisher et al., 2015; Juvonen et al., 2018). At the same time, researchers have called for the need to

expand the unit of analysis in diversity research beyond race/ethnicity to include other important aspects of diversity (Crul, 2016). There is increased recognition that diversity aspects (e.g., socioeconomic diversity and racial/ethnic diversity) affect individual experiences interactively and simultaneously within a context (Bottiani et al., 2016; Crul, 2016). However, there is limited research conceptualizing diversity as having multiple aspects or studying their combined influence. To date, research has primarily focused on how student racial/ethnic composition relates to students' school experiences (e.g., Basilici et al., 2022; Muniksma et al., 2022). Yet students' race/ethnicity and socioeconomic background are both salient demographic characteristics empirically relating to group dynamics (Graham, 2006; Park et al., 2013). Teacher racial/ethnic diversity has also been proposed to play a major role influencing school practices and students' functioning

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(Gershenson et al., 2021). To address the need to better understand the combined effect of school diversity aspects and its role in differential school experiences across racial/ethnic groups, this study takes a preliminary step to explore how three prominent diversity aspects (i.e., student race/ethnicity, teacher race/ethnicity, and student socioeconomic background) converge to construct different school diversity contexts among California public schools. Additionally, this study examines how their combined influence is related to students' school experiences (i.e., race-based victimization and school connectedness) and racial/ethnic disparities in these experiences.

### School Diversity and School Experiences

In educational and psychological research, diversity has often been conceptualized as having two elements that describe heterogeneity of group compositions (Rjosk et al., 2017). These two elements are the number of groups and group distribution (Teachman, 1980). According to this conceptualization, an ideal diversity would include a high number of groups and an even distribution of these groups (Graham, 2018). Furthermore, different aspects of diversity can be evaluated (Crul, 2016). In addition to student racial/ethnic diversity which has received the most attention due to its profound impact on group dynamics (Graham, 2006), teacher racial/ethnic diversity and socioeconomic diversity have received research attention because of their theoretical and empirical basis for their influences on students (Gershenson et al., 2021; Park et al., 2013).

### Theoretical Underpinnings

Two primary theories, contact theory and person-context fit theory, help explain the impact of these three aspects of diversity on students' psychosocial experiences. Contact theory states that high racial/ethnic diversity provides a fundamental condition for positive intergroup contacts and abundant opportunities for people to get to know each other (Pettigrew et al., 2011). These positive intergroup contacts are crucial to social harmony because they are related to fewer prejudices. Contact theory's assumption of positive interactions in diverse contexts is built upon a power balance condition (Pettigrew et al., 2011); only when there is equal power across groups will diversity encourage positive intergroup contacts. This power balance thesis has been extended to suggest that the power of a racial/ethnic group is influenced by the relative number of group members (Graham, 2006). In contrast, person-context fit theory proposes that a racially/ethnically diverse setting potentially poses more challenges for positive school experiences and developing belonging to school (Magnusson & Stattin, 1998; Georgiades et al., 2013). According to this theory,

people find it harder to fit in a group if they do not perceive similarities with group members, leading to less connectedness to school (Benner & Graham, 2007; Georgiades et al., 2013). These two theories suggest opposite directions of diversity's impact on students' school experiences; however, they both highlight the importance of numerical representation (i.e., the relative number of group members).

### Relation of Student Racial/Ethnic Diversity with Race-based Victimization and School Connectedness

Research on relations of school diversity with student's school experiences has surged (e.g., Basilici et al., 2022; Parris et al., 2018). In this study, race-based victimization and school connectedness were selected as indicators of negative and positive school experiences because they are robustly related to distal educational and psychological outcomes (Allen et al., 2022; Benner & Wang, 2017). Race-based victimization is a type of identity-based victimization whereby individuals are targeted because of their racial/ethnic identity (Garnett et al., 2014). Experiencing race-based victimization has been shown to adversely affect adolescents' psychosocial, behavioral, and academic adjustment (e.g., Benner & Wang, 2017; Garnett et al., 2014). Perpetrators of race-based victimization usually hold prejudicial beliefs against individuals with lower status because of their perceived group affiliation or stigmatized characteristic (Garnett et al., 2014). Thus, race-based victimization is likely affected by the demographic composition within a context.

Extant findings of student racial/ethnic diversity's impact on race-based victimization are mixed. A recent meta-analysis including 20 empirical studies examining the relations between school/classroom racial/ethnic diversity and bullying victimization indicated that 9.4% of analyses found a negative association, 18.2% observed a positive relation, and while 42.4% reported a null result (Basilici et al. 2022). The inconsistent results could be due to the level of diversity (i.e., school or classroom) that was measured in each study and the students' age (i.e., differences may exist among younger and older students; Basilici et al., 2022). Inconsistencies in results may also differ due to the various ways that diversity has been operationalized. For example, studies have been adopting different operationalizations of diversity (i.e., the percentage of a minority group and a composite diversity score) which may obscure interpretations of diversity's impact.

School connectedness refers to students' perception of being supported by peers and adults in schools and connected to school (Allen et al., 2022). Enhancing students' sense of connectedness to school may help reduce racial/ethnic disparities in educational outcomes and foster positive educational consequences, including dropout, academic

performance, social-emotional development, and school satisfaction (Allen et al., 2022; Chan et al., 2021). However, despite the fact that demographic composition of a context may affect students' sense of belonging to a school based on person-context fit theory (Magnusson & Stattin, 1998), research on how contextual factors is related to school connectedness is relatively less studied (Allen et al., 2022).

Regarding student racial/ethnic diversity's connections to school connectedness, little research has directly assessed its association. One study indicated that student racial/ethnic diversity was related to better perceived safety and less loneliness at school among Black, Asian, Latino, and White middle students in the U.S. (Juvonen et al., 2018). Another study observed negative associations of student racial/ethnic diversity with school climate and connectedness (Parris et al., 2018). Again, differences in findings may be due to different ways of operationalizing diversity and controlling for different covariates in the analyses. For instance, the study conducted by Parris et al. (2018) did not control for other school-level variables whereas the study of Juvonen et al. (2018) included classroom-level diversity and its interaction with school-level diversity. These two studies also employed different diversity operationalizations. Collectively, diversity has been operationalized inconsistently across studies, and existing studies often did not consider other school-level factors when assessing the influences of student racial/ethnic diversity.

### **Relation of Socioeconomic Diversity with Race-based Victimization and School Connectedness**

Little empirical research has investigated socioeconomic diversity that exists among students in schools. However, socioeconomic differences have been hypothesized to create social distance and discontent between members of a community (Eglar et al., 2009). Students' perception of their social status and power is likely to be affected by socioeconomic diversity as well (Park et al., 2013). Income inequality was associated with school bullying among a large sample of 66,910 11-year-olds across 37 countries (Eglar et al., 2009). In a study conducted across 15 countries, schools with high socioeconomic diversity experienced a higher frequency of bullying when compared to schools with homogeneously low and high socioeconomic status (Menzer & Torney-Purta, 2012).

Compared with studies on bullying and victimization, research on socioeconomic diversity's association with positive school experiences is even fewer. One study identified that higher socioeconomic diversity was associated with a higher frequency of cross-class interactions among college students (Park & Densone, 2013). Moreover, school socioeconomic composition is also often associated with overall school and neighborhood resources, which are

robustly associated with educational outcomes (Palardy, 2013). A review of the current literature reveals that socioeconomic diversity's impact on students' school experiences is understudied despite its association with group affiliation and perceived power (Park et al., 2013).

### **Relation of Teacher Racial/Ethnic Diversity with Race-based Victimization and School Connectedness**

In addition to socioeconomic diversity and the racial/ethnic diversity of students, teacher racial/ethnic diversity is another prominent aspect of diversity that impacts school outcomes (Gershenson et al., 2021). Diversifying the teacher workforce seems to be a promising intervention to addressing inequities and discrimination in U.S. public schools, and diversification efforts have been invigorated at the state and national levels (Sleeter et al., 2014). These efforts to diversify the teacher workforce are grounded in the arguments that early and regular exposure to a diverse population combats bias and has benefits for educational outcomes (Gershenson et al., 2021). The voices of teachers of color can enhance justice and fairness in school practices (Hughes et al., 2020; Lindsay & Hart, 2017) and remedy racial/ethnic gaps in teachers' expectations of students' performance (Gershenson et al., 2021). Among the few research studies focused on teacher racial/ethnic diversity's association with victimization, there is some evidence to support the positive impact of having high teacher racial/ethnic diversity. For example, higher teacher racial/ethnic diversity has been associated with lower levels of discrimination and racial bullying in school (Benner & Graham, 2011; Larochette et al., 2010). Despite strong theoretical foundations, there is a limited amount of research directly assessing the influence of teacher racial/ethnic diversity on students' school experiences.

### **Racial/Ethnic Disparities in Race-based Victimization and School Connectedness**

Research has consistently revealed that some racial/ethnic groups report less support from school personnel, less connectedness to school, and more victimization (e.g., Furlong et al., 2011; Voight et al., 2015). The role of school diversity in racial/ethnic disparities in school experiences is understudied. Apart from the direct effect of school diversity on the school-level outcomes, racial/ethnic groups are likely to have differential school experiences in the same school context, as proposed by cultural-ecological theory. This theory recognizes racial/ethnic identity as a salient social identity, which significantly affects individuals' experiences and behaviors in an environment (La Salle et al., 2015) and perceived status characteristics in peer relationships (Graham, 2006). Moderating effects of

diversity, mainly student racial/ethnic diversity, were shown in the relations of students' racial/ethnic identity with school experiences (Bottiani et al., 2016; Fisher et al., 2015). A study indicated that students were more likely to experience race-based victimization in a school where they belonged to a numerical minority group (Fisher et al., 2015). This study also found that White students were at a higher risk for victimization than Black students when they were the minority group. Another study revealed that racial/ethnic disparities in perceived school support between Black and White students were lower in schools with higher student racial/ethnic diversity than schools with primarily Black or White students (Bottiani et al., 2016). An understanding of contextual factors' role in racial/ethnic disparities may help address inequities at a structural level.

### Combined Influence of School Diversity Aspects

Instead of assessing the individual effect of each aspect of diversity (i.e., student racial/ethnic diversity, teacher racial/ethnic diversity, socioeconomic diversity), researchers have argued that the analysis unit of diversity should consider combinations of various diversity aspects (Crul, 2016). However, prior research has rarely examined diversity by understanding the combined impact of several school contextual factors together (i.e., student racial/ethnic diversity, teacher racial/ethnic diversity, socioeconomic diversity). Among the few existing studies examining multiple school contextual factors together, student racial/ethnic and socioeconomic compositions have been found to intersect to influence students' school experiences (Ackert, 2018; Bottiani et al., 2016). For instance, based on a sample of 16,200 students in 750 schools throughout the U.S., racial/ethnic minority students in schools with a higher proportion of White peers and higher school socioeconomic status expressed lower satisfaction with school and lower levels of academic engagement (Ackert, 2018). However, this study only examined the proportions of White students rather than examining racial/ethnic diversity across the student population. To assess the collective impact of socioeconomic diversity and racial/ethnic composition on students, one study grouped schools into six categories (e.g., primarily White, lower socioeconomic status) using a sample of 19,726 Black and White students from 58 U.S. high schools (Bottiani et al., 2016). When grouping schools based on these school characteristics, a racially/ethnically diverse school with upper and lower socioeconomic status showed the smallest racial/ethnic gap in perceived equity than schools with low racial/ethnic diversity. However, perceived equity at the school level was also lower in high racially/ethnically diverse schools. These findings reveal that students' experiences are likely affected by a combination of coexisting diversity aspects rather than a single

diversity aspect. Grounded in the conceptual and empirical relations of teacher racial/ethnic diversity, student racial/ethnic diversity, and socioeconomic diversity with students' experiences of race-based victimization and school connectedness (Ackert, 2018; Basilici et al., 2022), research on the combined influence of these three diversity aspects may help better inform students' school experiences in different school contexts.

In order to examine the combined influence of these three diversity aspects (i.e., student racial/ethnic diversity, teacher racial/ethnic diversity, and school socioeconomic diversity), this study uses latent profile analysis. This mixture modeling approach presents multiple benefits to understanding diversity and its relation to students' school experiences. Latent profile analysis allows for a multidimensional understanding of diversity to create combined categorizations of diversity, thus moving beyond a single aspect of diversity. Additionally, this analytical approach is exploratory, which has the advantage of objectivity compared with previous research heavily relying on researchers' decisions to categorize school contexts (e.g., Bottiani et al. 2016); this exploratory approach allows for a more nuanced understanding to emerge. Further, the categorical nature of the latent profile analysis posits that diversity profiles are different from each other in meaningful ways, specifically allowing for the relations among other variables to be different for the emergent profiles of diversity. That is, this approach does not assume that the impact of diversity is either additive or linear.

### Demographic Influences on Race-based Victimization and School Connectedness

Several school and student demographic variables have been shown to relate to school connectedness and victimization in school. Regarding school characteristics, school size was observed to be positively associated with bullying victimization (Bowes et al., 2009). Mixed findings have been found regarding the association between school level (e.g., elementary, middle, and high school) and school connectedness; some studies observed higher school level associated with lower school connectedness and some did not find a significant relation (Allen & Kern, 2017). Regarding student demographics, the relations of individual characteristics (i.e., gender, grade level, sexual orientation, and English proficiency) with students' race-based victimization and school connectedness have been documented (e.g., Larochette et al., 2010; Xu et al., 2020). For instance, sexual minorities, female students, and lower English proficiency were observed to experience lower school connectedness (Hughes et al., 2015; Joyce, 2015); students with stigmatized identities (i.e., gender and sexual minorities) and higher grade level reported more victimization (Price et al., 2019; Salmon et al., 2018). Empirical evidence

suggests that these school- and student-level characteristics likely affect school experiences; As such, these school (i.e., school level and school size) and individual characteristics (i.e., gender identity, sexual orientation, socioeconomic status, and language mostly spoken at home) were included as covariates in the current study.

### Current Study

Rarely has prior research examined how the combined effect of different school diversity aspects is related to students’ school experiences and racial/ethnic gaps in these experiences. Hence, latent profile analysis was employed to explore school diversity profiles indicated by student racial/ethnic diversity, socioeconomic diversity, and teacher racial/ethnic diversity in this study. Figure 1 shows the conceptual models. Different configurations of school diversity profiles were expected to emerge. Profiles’ association with students’ self-reported race-based victimization and school connectedness

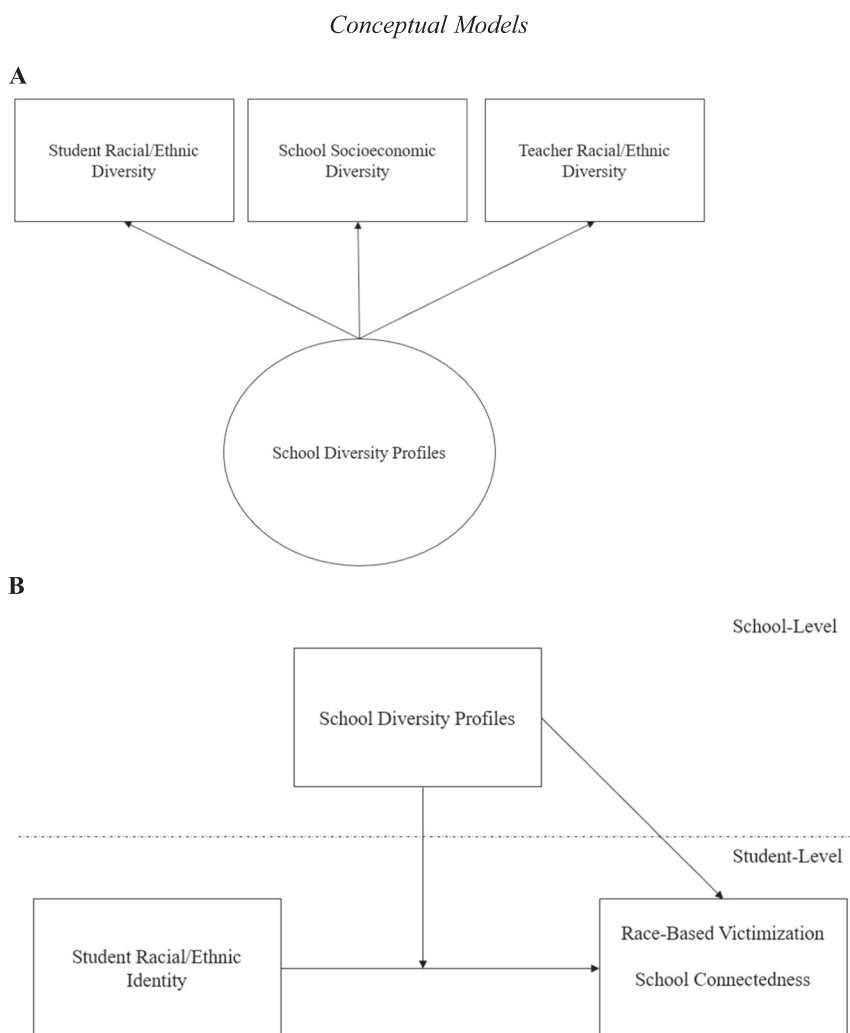
were assessed by multilevel multigroup analysis. School-level race-based victimization and school connectedness were anticipated to vary across the various diversity profiles. Based on cultural-ecological theory, the emerging profiles were expected to moderate racial/ethnic disparities in school connectedness and race-based victimization. Given the evidence of school characteristics’ (i.e., school size and school level) and student demographics’ (i.e., gender, sexual orientation, grade level, and English proficiency) impacts on the two outcomes (i.e., school connectedness and race-based victimization), their effects were controlled.

### Method

#### Procedure

This study included school-level and student-level data. Student-level data were from the California Healthy Kids Survey (CHKS), which is California’s biennial statewide

**Fig. 1** Conceptual Models. Note. Model A depicts the latent profile analysis of school diversity profiles. Model B depicts the multilevel multigroup analysis with school diversity profiles predicting school-level race-based victimization and school connectedness and moderating racial/ethnic disparity in race-based victimization and school connectedness upon controlling school- and student-level demographic covariates



**Table 1** Student demographics

Participating students ( <i>n</i> = 100,408)				
Variables	Asian ( <i>n</i> = 15,354)	Black ( <i>n</i> = 2692)	Latinx ( <i>n</i> = 53,047)	White ( <i>n</i> = 29,315)
Female	49.1%	46.2%	53.5%	50.3%
FRPM	21.8%	50.2%	69.8%	18.2%
Sexual Minorities	17.0%	16.1%	15.8%	16.9%
Non-English Home Language	40.9%	9.7%	50.1%	5%
Grade 7	25.4%	26.1%	16.4%	19.4%
Grade 8	3.7%	5.1%	4.7%	4.1%
Grade 9	25.5%	25.8%	26.0%	28.7%
Grade 10	11.5%	8.8%	13.5%	11.5%
Grade 11	23.3%	26.1%	28.0%	26.1%
Grade 12	10.5%	8.1%	11.4%	10.1%
Race-based Victimization (at least 1 time)	19.3%	27.8%	12.6%	10.2%
<i>M</i> ( <i>SD</i> )				
School Connectedness	3.70 (0.75)	3.42 (0.88)	3.54 (0.80)	3.71 (0.81)
Participating Schools ( <i>n</i> = 278)		M (SD)/Percentage		
Free or Reduced-Price Meal	55% (27.1%)			
School Size	1057 (710)			
<i>School Level</i>				
Elementary	16.8%			
Middle	38%			
High	45.2%			

survey that anonymously inquires about student risk and resilience factors. Participants responded to the survey between October 2017 and June 2019. The demographics in the current sample were similar to California's 2019–2020 public school enrollment in terms of the gender and racial/ethnic distribution (California Department of Education [CDE], 2020). The proctors' survey administration was standardized. Designated school personnel administered the CHKS following a script that reminded students that the survey was anonymous and voluntary. Students completed the survey during school hours. Parents provided passive consent following the standard procedures (see <http://chks.wested.org/administer/instructions>).

## Samples

The original dataset included 119,756 students attending 294 public high, middle, and elementary schools in California. Sixteen schools were excluded: one private school, schools with student enrollment less than 100, and schools with less than 10 respondents. Considering the power for school- and student-levels estimates and current suggestions for sample size in multilevel analysis (Hoyle & Gottfredson, 2015;

Snijders & Bosker, 2011), the sample sizes for each level were sufficient. The final analysis included 278 public schools. School information (students' ethnicity composition, percentage of students in Free or Reduced-Price Meals [FRPM], and teachers' race/ethnicity composition) in the academic years of 2017–2018 of public schools were extracted from the California Department of Education (CDE) public dataset.

In the participating schools, the number of respondents ranged from 10 to 3268 (Mean = 369; Median = 220) from the CHKS completed between 2017 and 219. Given the dataset's characteristics and sample sizes of each group, this study chose to focus on Latinx, White, Black, and Asian students, resulting in 100,408 participants. Table 1 shows the demographic information of participants in the present study per racial/ethnic groups and the schools' demographics.

## Measures

### Profile indicators: student and teacher racial/ethnic diversity

The Simpson's *D* formula was used to calculate the diversity of student and teacher race/ethnicity. This index is

interpreted as the probability of having two randomly picked people from two different racial/ethnic groups (Rjosk et al., 2017). That means the higher the Simpson's  $D$  index, the more diverse the group is. Groups included in the calculation were percentages of Black, White, Latinx, Asian (i.e., Asian and Filipino), and Others (i.e., American Indian or Alaska Native, Pacific Islanders, and Two or More Races) among students/teachers within each school. The following is the Simpson's  $D$  equation, whereby  $p_i$  is the proportion of the racial/ethnic group.

$$\text{Simpson's } D = 1 - \sum p_i^2$$

### Profile indicators: socioeconomic (SES) diversity

School socioeconomic diversity was indicated by the percentage of students eligible for Free or Reduced-Price Meal (FRPM). The use of FRPM as a proxy has been shown to be a satisfactory indicator of students' educational disadvantages better than other indicators (e.g., income; Domina et al., 2018). A school's socioeconomic diversity can be reflected by its enrollment percentage in FRPM, with low or high FRPM percentage representing homogeneously low or high school SES. When the enrollment percentage is close to 50%, it means a balanced representation of students from relatively low and high socioeconomic status, indicating high SES diversity (Park et al., 2013).

### Race-based victimization

An item from the 2017–2019 California Healthy Kids Survey was used to assess experiences with race-based victimization. Students were presented with the prompt: "During the past 12 months, how many times on school property were you harassed or bullied for any of the following reasons?" Types of bias-based victimization that were presented include "your race, ethnicity, or national origin." Possible responses were: 0 times, 1 time, 2 to 3 times, and 4 or more times. Analyzing the skewed distribution of the responses, combined with prior research indicating that even infrequent victimization may negatively affect adolescent health (Gower & Borowsky, 2013), responses were recoded as never (0) or one or more times (1) experiencing victimization in the past 30 days.

### School connectedness

The School Connectedness Scale (SCS) measured students' general feelings towards interpersonal relationships and attitudes towards the school (Libbey, 2004). The five items from the SCS that are included on the CHKS were adapted from the original Add Health study (McNeely et al., 2002).

Previous research has supported the validity and reliability of the SCS across socio-cultural groups (Furlong et al., 2011). An example is *I feel close to people at this school*. The response scale is *strongly disagree* (1), *disagree* (2), *neither disagree nor agree* (3), *agree* (4), and *strongly agree* (5). Higher mean scores indicate stronger school connectedness. The omega value of the internal reliability is 0.83.

### Racial/ethnic identity

Students were asked about their race and ethnicity by two questions. Students reported six racial identifications (*American Indian, Asian, Black or African American, Native Hawaiian or Pacific Islander, White, or Mixed Race*) to the question "What is your race?" Students were also asked if they were Latinx (*yes or no*). Students with intersecting racial/ethnic identities (e.g., Latinx Black and Mixed race) were excluded from the study due to findings in the literature suggesting they may have different outcomes and experiences (Dixon et al., 2021). Moreover, students who identified with more than one racial/ethnic identity, American Indian, and Native Hawaiian or Pacific Islander had small sample sizes in the dataset. Thus, this study chose to focus on students who identified as non-Latinx Black, non-Latinx White, non-Latinx Asian, and Latinx.

### School and student demographics

School size and school level (elementary, middle, and high school) were included in the dataset as control variables. Students' sexual orientation, gender identity, grade level, socioeconomic background, and home language were added to the analysis as covariates. Grade level was included as a continuous variable. Socioeconomic status was indicated by participation in FRPM using three categories (*yes, no, or don't know*), with students selecting "don't know" categorized the same as missing responses. Students responded to the gender identity item using a binary option (*female, male*). Students were asked about their preferred sexual orientation using six categories (*straight, gay or lesbian, bisexual, I am not sure yet, something else, or decline to respond*), which were regrouped into *straight* and *sexual minorities*. "What language was spoken most of the time at home" was adopted as a proxy for students' and their families' acculturation to the U.S. and was regrouped into *English* and *Non-English*.

### Data Analysis

The analyses were conducted in three primary stages with Mplus 8.4 (Muthén & Muthén, 2017) using maximum likelihood estimation with robust standard errors (MLR).

First, data were screened for their pattern of missing values and descriptive statistics. Then, LPA was employed to explore school diversity profiles among the school-level data from CDE. Using the three indicators (i.e., student and teacher Simpson's  $D$  index values and percentage of students' enrollment in FRPM), 1-to 7-class LPA models were estimated. Since latent profiles can vary by indicators' variances and covariances, four model structures were analyzed with different constraints placed on indicators' variances and covariances (Masyn, 2013). The final model was selected based on relative fit indices of the plausible competing models along with conceptual merits and profiles' meaning (Masyn, 2013). The fit statistics, suggested by current best practices in mixture modeling (Nylund-Gibson & Choi, 2018), are: Bayesian information criterion (BIC), sample size adjusted BIC (saBIC), consistent Akaike information criterion (CAIC), approximate weight of evidence criterion (AWE), Bayes factor (BF), correct Model probability (cmP), bootstrap likelihood ratio test (BLRT; McLachlan & Peel, 2000), and Vuong–Lo–Mendell–Rubin LRT (VLMR-LRT; Vuong, 1989). Lower information criterion values suggest a better model fit among the models compared (Nylund-Gibson & Choi, 2018). Higher BF values and cmP values provide more robust evidence to the specific model as the best fitting relative to other models considered (Masyn, 2013). The BLRT and the VLMR-LRT tests compare the fit of a  $k$ -class model with a  $k-1$  class solution. Non-significant  $p$  values suggest there is evidence supporting the  $k-1$  class solution compared to the  $k$ -class model.

After confirming the final model for this study, a multi-level multigroup analysis was employed to examine profiles' association with school connectedness and race-based victimization, and the moderating role of school profiles in the relation between students' race/ethnicity and outcomes. Schools were coded into four groups based on the results from latent profile analysis. School-level outcomes' means/threshold values and student-level relations of racial/ethnic identity with the outcomes were estimated in each profile. Then, Wald tests were used to assess the significance of the school-level outcomes' means/threshold values differences and the magnitude of student-level racial/ethnic disparities between profiles. School demographic variables (i.e., school size and school level) and student demographic variables (i.e., language used at home, sexual orientation, gender, and enrollment in FRPM) were included as control variables. School-level covariates were regressed on the latent profiles; school- and student-level covariates were regressed on each outcome. The estimates of control variables were fixed to be the same across profiles. Student-level variables, including gender (0 = male, 1 = female), enrollment in FRPM (0 = no, 1 = yes), language used at home (0 = English, 1 = non-English) and sexual orientation

(0 = straight, 1 = sexual minorities), were grand-mean centered to ease interpretation of the results (Enders & Tofighi, 2007). School-level continuous variables (i.e., enrollment in FRPM and school size) were grand-mean centered.

## Missing Data Analysis

At the school level, the rate of missing responses to the items measuring the profile indicators and demographics ranged from 0.4% to 2.8%. At the student level, the missing rates of the demographic and dependent variables were all under 5.0%, except for sexual orientation with 5.5% missing responses, and FRPM with 13.1% missing or "don't know" responses. Thus, the proportions of the missingness for most items were at an acceptable range (Dong and Peng 2013). For the items with relatively high missing rates, independent  $t$ -tests and chi-square tests were conducted to assess if the missingness had a significant influence on responses to the distal outcomes. A significant statistical difference of school connectedness between those who responded to the FRPM item and those that did not respond or know the answer was small, with a negligible effect size (Cohen's  $d = 0.04$ ). A significant chi-square test result between missingness on sexual orientation and race-based victimization was observed, but the effect size was minimal ( $\phi = 0.02$ ). These results were adequate to assume data were missing-at-random (MAR; Enders 2010). Missing data were handled using full information maximum likelihood (FIML).

## Results

### Preliminary Analysis

Intraclass correlations (ICCs) were examined to assess the proportion of variance in each outcome that is due to between-school differences (Sommet & Morselli, 2017). An ICC greater than 5% and a design effect greater than 2 indicates that a significant proportion of the variance occurs across schools; thus, the use of HLM is appropriate (Snijders & Bosker, 2011). The ICCs of school connectedness and race-based victimization were 8% (design effect = 43.54) and 14% (design effect = 100.26) respectively.

### School Diversity Profiles

Table 2 shows fit statistics of profile enumeration. The 1–7 class models converged for both Models 1 and 2. Model 3 did not converge after a 6-profile solution, and Model 4 did not converge after a 5-profile solution. The information given by fit statistics across models seemed to suggest a 2–4



**Table 2** Fit statistics for LPA class enumeration ( $n = 278$ )

	$k$	LL	BIC	saBIC	CAIC	AWE	BLRT $p$	VLMR-LRT $p$	$cmP$
Model 1	1	139.493	-245.01	-264.04	-239.01	-193.03	-	-	<0.001
	2	235.400	-414.17	-445.88	-404.17	-327.54	<0.001	<0.001	<0.001
	3	268.436	-457.59	-501.99	-443.59	<b>-336.31</b>	<0.001	<0.001	0.001
	4	288.893	<b>-475.85</b>	-532.93	<b>-457.85</b>	-319.92	<0.001	<b>0.02</b>	13.05
	5	299.233	-473.88	-543.65	-451.88	-283.30	<0.001	0.67	4.87
	6	314.792	-482.35	-564.80	-456.35	-257.11	<0.001	0.02	<b>335.59</b>
	7	321.479	-473.07	<b>-568.20</b>	-443.07	-213.18	0.03	0.24	3.24
Model 2	1	139.493	-245.01	-264.04	-239.01	-193.03	-	-	<0.001
	2	279.902	-486.19	-592.11	-473.19	<b>-373.57</b>	<0.001	<b>&lt;0.001</b>	0.003
	3	303.676	-494.09	-657.05	<b>-474.09</b>	-320.83	<0.001	0.58	0.136
	4	325.341	<b>-497.78</b>	-717.77	-470.78	-263.88	<0.001	<b>0.01</b>	<b>0.861</b>
	5	336.356	-480.17	-757.20	-446.17	-185.63	<0.001	0.69	<0.001
	6	353.912	-475.64	-809.71	-434.64	-120.46	<0.001	0.02	<0.001
	7	349.499	-427.18	<b>-818.27</b>	-379.18	-11.35	0.03	0.24	<0.001
Model 3	1	208.365	-365.76	-394.30	-356.76	-287.80	-	-	<0.001
	2	265.269	-439.93	-570.30	-423.93	-301.32	<0.001	<0.001	<0.001
	3	294.021	<b>-457.79</b>	-645.19	<b>-434.79</b>	<b>-258.55</b>	<0.001	<b>0.004</b>	<b>0.934</b>
	4	311.192	-452.50	-696.93	-422.50	-192.61	<b>&lt;0.001</b>	0.224	0.066
	5	320.998	-432.47	-733.94	-395.47	-111.94	0.217	0.392	<0.001
	6	338.082	-426.99	<b>-785.50</b>	-382.99	-45.82	<0.001	0.271	<0.001
Model 4	1	208.365	-365.76	-394.30	-356.76	-287.80	-	-	<0.001
	2	299.942	<b>-492.29</b>	-647.10	<b>-473.29</b>	<b>-327.69</b>	<0.001	<b>&lt;0.001</b>	<b>0.99</b>
	3	323.788	-483.35	-719.64	-454.35	-232.12	<b>&lt;0.001</b>	0.10	0.01
	4	338.558	-456.26	-774.03	-417.26	-118.41	0.03	0.02	<0.001
	5	357.959	-438.43	<b>-837.68</b>	-389.43	-13.95	<0.001	0.23	<0.001

Model 1 indicates fixed variance across classes and no covariances specified. Model 2 indicates within-class variance are specified; Model 3 specified within-profile covariance; Model 4 specified within-profile covariance and variance. Bold values = best fit statistic for each individual statistic

$k$  number of classes, LL model log likelihood, BIC Bayesian information criterion, saBIC sample size adjusted BIC, CAIC consistent Akaike information criterion, AWE approximate weight of evidence criterion, BLRT bootstrapped likelihood ratio test, VLMR-LRT Vuong-Lo-Mendell-Rubin adjusted likelihood ratio test,  $p$   $p$  value,  $cmP$  Correct Model Probability

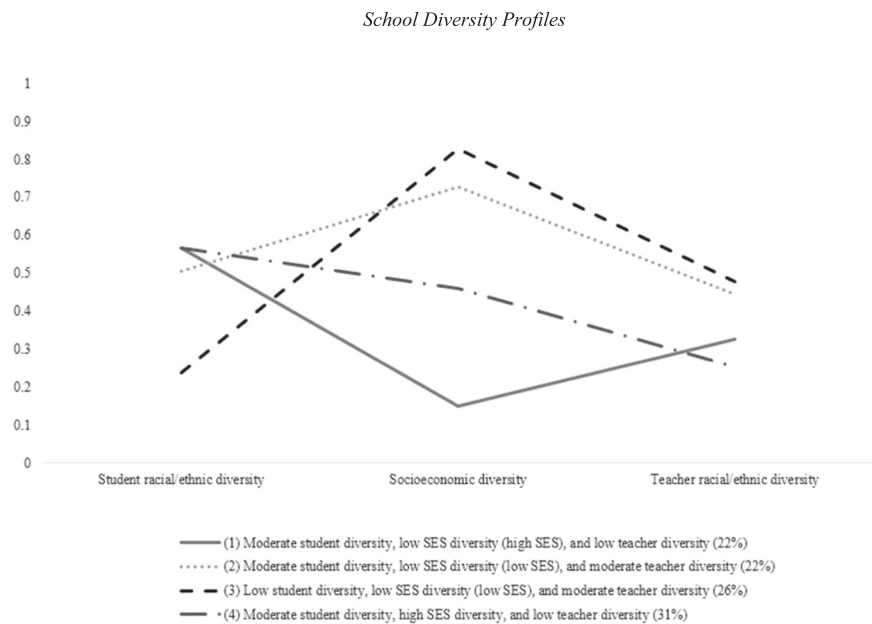
profile solution. Comparing across all converged models, Model 2 generally exhibited a slightly better fit than other models across the 1–4 profile solutions, as shown by the lower information criteria statistics. However, Model 1 might be a better model structure when considering model parsimony, sample size, and degree of differences. Thus, the 2–4 profile solutions in Model 1 and 2 were closely examined.

In Model 1 and 2, saBIC and BLRT are not informative as they showed better fit with increasing profiles. The 4-profile solution in either Model 1 and Model 2 was supported by more fit statistics than 2–3 profile solutions, including lower BIC and CAIC, VLMR-LRT, and  $cmP$ . Three profiles in the Model 1 four-profile solution have similar configurations as Model 2. Another profile in Model 2 with relatively high student racial/ethnic diversity, high socioeconomic diversity, and moderate teacher racial/ethnic diversity is replaced by a profile featuring moderate student

racial/ethnic diversity, low socioeconomic diversity (low SES), and moderate teacher racial/ethnic diversity in Model 1. When considering the added parameters in Model 2 and the non-significant statistical difference of the four-profile solution between Model 1 and Model 2, the four-profile solution in Model 1 is preferred. Thus, the 4-profile solution was chosen to best represent these data.

Figure 2 shows the four-profile solution. The profile labels chosen were (1) *Moderate Student Diversity, Low SES Diversity (High SES), and Low Teacher Diversity*, (2) *Moderate Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity*, (3) *Low Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity*, (4) *Moderate Student Diversity, High SES Diversity, and Moderate Teacher Diversity*. The entropy of this LPA model was 0.79. The closer the entropy to 1 is the more accurate profile membership (Asparouhov & Muthén, 2014).

Fig. 2 School diversity profiles



#### Moderate student diversity, low SES diversity (high SES), and low teacher diversity

Schools in this profile contained a moderate student racial/ethnic diversity (Simpson's  $D$  index = 0.56). The overall SES composition of these schools was homogeneously high, with the lowest percentage of students enrolling in FRPM (15%) compared to other profiles. There was also relatively low teacher racial/ethnic diversity (Simpson's  $D$  index = 0.34) in schools belonging to this profile. The profile size was 21.54%.

#### Moderate student diversity, low SES diversity (low SES), and moderate teacher diversity

Schools belonging to this profile (22.25%) also consisted of a moderate student racial/ethnic diversity (Simpson's  $D$  index = 0.51). However, a high percentage of students in schools belonging to this profile enrolled in FRPM ( $M = 73\%$ ), meaning the school SES was homogeneously low. These schools had relatively higher teacher racial/ethnic diversity (Simpson's  $D$  index = 0.45).

#### Low student diversity, low SES diversity (low SES), and moderate teacher diversity

In the second largest profile (25.68%), schools had the lowest student racial/ethnic diversity (Simpson's  $D$  index = 0.24) than schools in other profiles. Schools in this profile contained the highest percentage of students enrolling in FRPM ( $M = 83\%$ ), and a higher teacher racial/ethnic diversity (Simpson's  $D$  index = 0.48).

#### Moderate student diversity, high SES diversity, and low teacher diversity

This profile is the largest (30.52%); these schools had moderate student racial/ethnic diversity (Simpson's  $D$  index = 0.57). These schools had a balanced representation of students from low and high SES, indicating its high SES diversity within schools. However, these schools had the lowest teacher racial/ethnic diversity (Simpson's  $D$  index = 0.25).

#### Association of School Diversity with Race-based Victimization and School Connectedness

Table 3 shows threshold and mean estimates of the two outcomes (i.e., race-based victimization and school connectedness) at the school-level. With school level (i.e., elementary, middle, and high school) and school size controlled (see Table 4), profile (3) *Low Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity* had the lowest prevalence of students experiencing race-based victimization, with 9%<sup>1</sup> of students experiencing victimization at the school level. Schools in the profiles (1) *Moderate Student Diversity, Low SES Diversity (High SES) and Low Teacher Diversity* and (4) *Moderate Student Diversity, High SES Diversity, and Low Teacher Diversity* had the highest probabilities of students reporting race-based victimization, 17% and 16% respectively. The variation of school connectedness

<sup>1</sup> The percentages of race-based victimization at the school-level of each profile were calculated using the equation,  $1 / (1 + \exp(\text{threshold value}))$ . Threshold values of school-level race-based victimization were listed in Table 3.

**Table 3** Odds ratios/standardized regression coefficients and standard error of race-based victimization and school connectedness across school diversity profiles ( $n = 81,980$ )

	1. Moderate Student Diversity, Low SES Diversity (High SES), and Low Teacher Diversity	2. Moderate Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity	3. Low Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity	4. Moderate Student Diversity, High SES Diversity, and Low Teacher Diversity
<i>Race-Based Victimization</i>				
<i>School Level</i>				
Threshold Estimate	1.57 (0.06) <sup>**a</sup>	1.99 (0.06) <sup>**b</sup>	2.29 (0.06) <sup>**c</sup>	1.69 (0.07) <sup>**a</sup>
<i>Student Level</i>				
Asian (reference = Latinx)	0.94 (0.09) <sup>b</sup>	2.44 (0.37) <sup>***a</sup>	3.79 (0.41) <sup>***c</sup>	1.69 (0.18) <sup>***a</sup>
Asian (reference = White)	2.34 (0.36) <sup>***a</sup>	1.22 (0.21) <sup>b</sup>	1.05 (0.12) <sup>b</sup>	2.68 (0.39) <sup>***a</sup>
Black (reference = Latinx)	2.01 (0.27) <sup>***a</sup>	2.19 (0.24) <sup>***a</sup>	3.83 (0.67) <sup>**b</sup>	2.62 (0.34) <sup>***a</sup>
Black (reference = White)	5.04 (0.85) <sup>***a</sup>	1.09 (0.14) <sup>b</sup>	1.07 (0.21) <sup>b</sup>	4.16 (0.81) <sup>***a</sup>
White (reference = Latinx)	0.40 (0.04) <sup>***a</sup>	2.00(0.22) <sup>**b</sup>	3.60(0.33) <sup>***c</sup>	0.63 (0.09) <sup>***d</sup>
<i>School Connectedness</i>				
<i>School-Level</i>				
Intercepts	3.60 (0.03) <sup>***a</sup>	3.46 (0.03) <sup>***b</sup>	3.54 (0.02) <sup>***a</sup>	3.55 (0.02) <sup>***a</sup>
<i>Student-Level</i>				
Asian (reference = Latinx)	0.07 (0.01) <sup>***a</sup>	0.03 (0.01) <sup>**a</sup>	0.02 (0.00) <sup>***a</sup>	0.03 (0.01) <sup>***a</sup>
Asian (reference = White)	-0.03 (0.01) <sup>a</sup>	0.01 (0.04) <sup>b</sup>	0.02 (0.01) <sup>b</sup>	-0.01 (0.01) <sup>a</sup>
Black (reference = Latinx)	-0.01 (0.01) <sup>a</sup>	-0.04 (0.01) <sup>***a</sup>	-0.02 (0.01) <sup>a</sup>	-0.04 (0.01) <sup>***a</sup>
Black (reference = White)	-0.04 (0.01) <sup>***ab</sup>	-0.05 (0.01) <sup>***ab</sup>	-0.03 (0.01) <sup>a</sup>	-0.06 (0.01) <sup>***b</sup>
White (reference = Latinx)	0.10 (0.01) <sup>***a</sup>	0.03(0.01) <sup>b</sup>	0.01 (0.01) <sup>b</sup>	0.07 (0.01) <sup>***a</sup>

The odd ratios and coefficients represent differences between the racial/ethnic groups and the reference group in each profile. Parameter estimates that do not share superscripts within a row differ by  $p < 0.05$  on pairwise Wald tests of equality for racial/ethnic disparities in outcomes across profiles. Coefficients of demographic covariates were estimated for the overall model; thus, they are same across profiles

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$  (two-tailed tests)

**Table 4** Standardized coefficients of school level and student level covariates

	Race-based victimization $\beta$ (SE)	School connectedness $\beta$ (SE)
<i>Student level</i>		
FRMP	0.01 (0.03)	-0.02 (0.01)**
Grade level	-0.06 (0.03) <sup>***</sup>	-0.09 (0.01) <sup>***</sup>
Non-English Home Language	0.14 (0.04) <sup>***</sup>	-0.03 (0.01) <sup>***</sup>
Female	0.07 (0.03) <sup>*</sup>	-0.04 (0.01) <sup>***</sup>
Sexual minorities	0.30 (0.03) <sup>***</sup>	-0.10 (0.01) <sup>***</sup>
<i>School level</i>		
Elementary	0.13 (0.10)	0.14 (0.11)
Middle	-0.06 (0.07)	0.00 (0.13)
School Size	0.00 (0.00)	-0.19 (0.10)

The parameters were estimated for the overall model; thus, they were the same across profiles

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$  (two-tailed tests)

at the school level across profiles was minimal. The profile of (2) *Moderate Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity* had a slightly higher school-level school connectedness than other profiles. This suggests that school diversity profiles had a stronger association with race-based victimization than school connectedness at the school-level.

**School Diversity Profiles’ Moderating Role in Racial/Ethnic Disparities**

Table 3 shows racial/ethnic disparities of the two outcomes (i.e., race-based victimization and school connectedness) of each profile. The magnitude of race-based victimization disparities differed across profiles. Although schools in (3) *Low Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity* profile had the lowest prevalence of race-based victimization, the schools in this profile contains significant racial/ethnic disparities, in which

Latinx students consistently reported lower probabilities of race-based victimization than the other three racial/ethnic groups. The largest racial/ethnic gap in race-based victimization was found between White and Black students in schools belonging to profiles (1) *Moderate Student Diversity, Low SES Diversity (High SES), and Low Teacher Diversity* profile and (4) *Moderate Student Diversity, High SES Diversity, and Low Teacher Diversity*. The probability of Black students being victimized due to their race/ethnicity was five times higher than White students in schools belonging to profile (1) and four times higher in schools belonging to profile (4). However, there was not a racial/ethnic gap in race-based victimization between Black and White students in the schools in profiles (2) *Moderate Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity* and (3) *Low Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity*. In addition, Black students consistently reported higher odds of experiencing race-based victimization than Latinx students across all the profiles. Generally, the magnitude of racial/ethnic disparities in race-based victimization varied across profiles and comparison groups.

A moderating effect of profiles in racial/ethnic gaps in school connectedness was only observed between White and Latinx students. Black and Latinx students reported lower school connectedness than White and Asian students across all profiles. The White-Latinx gap was significantly larger in profiles (1) *Moderate Student Diversity, Low SES Diversity (High SES), and Low Teacher Diversity* profile and (4) *Moderate Student Diversity, High SES Diversity, and Low Teacher Diversity* than the other two profiles.

## Discussion

Although different diversity aspects are proposed to intersect (Crul, 2016), little research has studied the combined effect of multiple diversity aspects. Moreover, limited research has investigated the role of school diversity in racial/ethnic disparities of school experiences. To better understand the association of school diversity with students' school experiences and racial/ethnic disparities in these experiences, this study examined the combined influence of three salient diversity aspects (i.e., student race/ethnicity, teacher race/ethnicity, and socioeconomic status) on students' experiences of race-based victimization and school connectedness. The findings reveal considerable racial/ethnic disparities in students' experiences of race-based victimization within the same school diversity profile; the magnitude of these racial/ethnic disparities differed across profiles. In addition, school connectedness did not show strong associations with school diversity profiles.

## School Diversity Profiles

Four school diversity profiles emerged using three school-level indicators. Contrary to our expectation that profiles would differ by varying levels of student racial/ethnic diversity, three school profiles were characterized by a moderate student racial/ethnic diversity index. These diversity index values ranged from 0.5 to 0.56, representing over 70% of schools in the sample. Despite similar diversity index values, these three profiles differed in their student racial/ethnic compositions. In profile (1) *Moderate Student Diversity, Low SES Diversity (High SES), and Low Teacher Diversity*, 65% of the schools had White students as the largest group and 35% of the schools had White students as the second largest group; 36% of the schools had Asian students as the largest or second largest group within a school. In contrast, Latinx students were the numerically largest group (>50%) in 75% of the schools in profile (2) *Moderate Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity*. The largest profile, (4) *Moderate Student Diversity, High SES Diversity, and Low Teacher Diversity*, comprised 66% of the schools with Latinx students as one of the two largest racial/ethnic groups and 82% of the schools with White students as one of the two largest racial/ethnic groups. Unlike those schools with moderate student racial/ethnic diversity, in profile (3) *Low Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity*, all schools were composed of more than 70% Latinx students, except one with 41% Latinx students. These subtleties of racial/ethnic compositions in each profile help understand the numerical representation of racial/ethnic groups among students at the schools belonging to the four profiles, which are masked when using a diversity composite score (Graham, 2016).

Schools belonging to profiles (2) *Moderate Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity* and (3) *Low Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity* consisted of 42% of the total participating schools. In the schools belonging to these two profiles, Latinx students are the racial/ethnic majority in most of the schools. These schools also contained a higher proportion of students from lower socioeconomic backgrounds than the schools in the other two profiles. The findings of more than 40% of schools belonging to profiles (2) and (3) characterized by majority Latinx students and students from low socioeconomic status echoes other studies' findings on school segregation in race/ethnicity and socioeconomic backgrounds (e.g., Marcotte & Dalane, 2019). The emerging latent profiles reveal the existence of racial/ethnic and socioeconomic segregation in a significant portion of California public schools, regardless of school level and school size. Meanwhile, these two profiles comprise a relatively

higher teacher racial/ethnic diversity, suggesting that teachers of color are more likely to work in schools with a higher concentration of culturally marginalized and financially disadvantaged students, in line with the findings depicted in the literature (Carver-Thomas et al., 2017). Unfortunately, there is a higher level of teacher turnover in high-poverty schools (Simon & Johnson, 2015). Considering the multiple benefits of a high teacher racial/ethnic diversity on students and teachers of color already in the field (Carver-Thomas et al., 2017), more research is needed to understand how to retain teachers of color in high-poverty schools.

### School Diversity Profiles and Race-based Victimization

There were differences across the profiles with regard to race-based victimization and its racial/ethnic disparities. Schools with homogeneous student populations in terms of racial/ethnic diversity and socioeconomic backgrounds and moderate teacher racial/ethnic diversity (profile 3) were associated with the lowest prevalence of race-based victimization. This result aligns with prior research showing student racial/ethnic diversity's positive association with victimization and bullying (Jansen et al., 2016). However, this study's findings also reveal that higher race-based victimization was not only contributed by student racial/ethnic diversity, but also its interplay with socioeconomic and teacher racial/ethnic diversity. For example, three profiles were characterized with moderate student racial/ethnic diversity, but the schools in profile (1) *Moderate Student Diversity, Low SES Diversity (High SES), and Low Teacher Diversity* had significantly higher school-level victimization than (2) *Moderate Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity*. This result suggests that a school context composed of low teacher racial/ethnic diversity is associated with more race-based victimization. In other words, race-based victimization is likely affected by the interplay of diversity aspects in addition to student racial/ethnic diversity. A high teacher diversity may help reduce race-based victimization in schools with a highly diverse student population.

The importance of studying interactions between contexts and diverse individual characteristics was also elucidated by the current study's results. The four racial/ethnic groups had considerably different school experiences under the same school diversity context. With the lowest prevalence of race-based victimization in profile (3) *Low Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity*, racial/ethnic disparities were consistently observed between Latinx and the other three groups. The magnitude of Latinx-Asian/White/Black gaps in this profile was significantly larger than other profiles.

Examining the associations between school diversity and outcomes at the school level would have been insufficient to recognize distinctive school experiences that students may have due to different individual characteristics. It will be critical to obtain a complete understanding of interactions between school diversity and individual differences when working towards creating a safe and welcoming environment for all students.

The findings also provide empirical evidence to the power balance thesis (Graham, 2006; Pettigrew et al., 2011). Although prior studies have found that students have encountered race-based victimization when they were the numerical minority (Fisher et al., 2015), rarely did empirical studies assess this power balance thesis. The patterns of racial/ethnic disparities across profiles in this study substantiates the power balance assumption. Looking into the significant Black-White and Asian-White differences and their non-significant racial/ethnic differences of race-based victimization in the four profiles, Black and Asian students reported significantly higher odds of being victimized than White students only in schools where White students considerably outnumbered them. Thus, it is likely that when there are balanced representations across groups regarding student race/ethnicity, power balance is more likely to be maintained (Graham, 2006), resulting in less racial/ethnic differences in experiences of race-based victimization. As such, it may be critical to consider how to maintain the power balance across racial/ethnic groups within a context to reduce racial/ethnic disparities in race-based victimization.

### School Diversity Profiles and School Connectedness

Variations of school connectedness across schools were negligible across each of the profiles. Regarding racial/ethnic differences, White students reported the highest level of school connectedness, followed by Asian students, then Latinx and Black students across profiles. This study's results are similar to prior research (e. g., Voight et al., 2015), which consistently reveal that students of color generally perceive less favorable school connectedness than White students. Instead of the contextual factor of diversity, other school practices and structures (e.g., inequitable disciplinary practices; Skiba et al., 2011) in current U.S. public schools may make it more challenging for students of color to build a sense of connectedness (Pena-Shaff et al., 2019). The different magnitude of Latinx-White gaps between profiles suggests that a high proportion of same-racial/ethnic peers serves as a protective factor for students of color's perceived school connectedness. The Latinx-White disparity was the smallest in profiles (3) *Low Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity* and (2) *Moderate Student Diversity, Low SES Diversity (Low SES), and Moderate Teacher Diversity*,

where Latinx students were the numerical majority in most schools. This finding implies that being in a school with a homogenous representation of students' own race/ethnicity may promote students' sense of belonging for culturally minority students; this finding aligns with person-context fit theory (Magnusson & Stattin, 1998). The non-significant difference in racial/ethnic disparity of school connectedness across Asian and Black students may be due to the small representation of Asian and Black students in all profiles.

### Limitations and Future Directions

There are several limitations in this study. First, due to the sample and dataset used, this study was unable to investigate students from other racial/ethnic groups or intersecting racial/ethnic identities. Students with intersecting racial/ethnic identities have different experiences than students who identify with one race/ethnicity (Dixon et al., 2021). Future research should explore the experiences of students with intersecting racial/ethnic identities. Additionally, this study grouped students within racial/ethnic identities together, which masked within-group differences. This limitation urges cautious interpretation and further study with sufficient and diverse sample sizes to explore within-group differences.

Second, when measuring diversity in quantitative studies, groupings are inevitable. Groupings in this study were limited by the dataset, such as only creating two groups in representing school socioeconomic status (receiving Free or Reduced-Price Meals or not). More considerations and research are needed in categorization when measuring diversity. Third, the generalizability of the findings is limited by the sample, because it only included students from California with its characteristics of a high proportion of Latinx students and a low proportion of Black students. Moreover, limited by the sample, school diversity profiles with high student racial/ethnic diversity did not emerge and the teacher racial/ethnic diversity range was small; thus, students' experiences in such diversity ranges were not assessed in this study. Research is needed to explore more qualitatively different school diversity profiles. Fourth, this study chose to dichotomize the item for measuring race-based victimization. Alternative approaches for handling this construct may increase precision for such discrete and highly skewed distribution of the outcome variable. A final limitation is related to the assignment errors of profile membership. Schools with higher levels of diversity were grouped into the four profiles due to the small number of these schools.

Future research with schools spreading across the range of the Simpson's *D* index will likely improve the model's entropy and result in more varied configurations of school diversity profiles. Additional research exploring the combined effects of multiple diversity aspects (e.g., language, religion, sexual orientation) can examine different unique diversity

contexts on group interactions and individuals' psychological processes and behaviors, and control for additional school- and community-level variables (e.g., urbanicity and community-level diversity). Moreover, the current findings reveal the importance of future research examining the cross-level contextual interaction of school diversity with individual characteristics on educational and social-emotional outcomes.

### Practical Implications

This study has several implications for practice that are consistent with, and build upon, research related to race-based victimization and school connectedness. Results suggest that numerical representation is key for preventing race-based victimization and promoting school belonging among students of color. Unfortunately, practices such as redlining, school choice, and other means of segregation have created distinct school diversity contexts that benefit White students to the detriment of other racial/ethnic groups (Percy, 2020). Thus, for schools with unequal representation, practices that enhance numerical or cultural minority groups' perceived power may help reduce inter-groups conflicts. Integrating students from various socioeconomic and racial/ethnic backgrounds, having a culturally representative student union, implementing culturally responsive practices (Bottiani et al., 2020), increasing school cultural socialization (Wang et al., 2022), and teaching culturally and linguistically minoritized students from strength-based approaches (Zacarian & Soto, 2020) may work to reduce inter-group conflicts. However, more research is warranted to understand what factors can enhance each racial/ethnic groups' perceived power within a context.

Increasing teacher racial/ethnic diversity may be an efficient school-wide approach to reduce overall racial/ethnic conflicts and enhance students of color's school connectedness; the differential outcomes across profiles support this recommendation. Additionally, this study corroborates past findings that racial/ethnic minorities in the U.S. perceived lower school connectedness than White students (Furlong et al., 2011; Voight et al., 2015). White students' perception of school connectedness appears to be less impacted by the demographic composition of the school context, but students of color tend to perceive higher school connectedness when there is a high same-racial/ethnic group proportion. This observation suggests the need for interventions designed to promote school connectedness among students of color in schools with diverse student populations.

### Conclusion

School diversity research has primarily focused on student racial/ethnic diversity. This is insufficient given the solid

understanding that school contexts are constructed by multiple diversity aspects. This study contributed to understanding the combined effect of three salient diversity aspects (i.e., student racial/ethnic diversity, socioeconomic diversity, and teacher racial/ethnic diversity). The findings reveal the importance of looking into the interaction between school diversity and students' racial/ethnic identity in students' school experiences. Considerable variations of racial-based victimization experiences between racial/ethnic groups within schools with different diversity configurations were observed. Racial/ethnic disparities in race-based victimization were minimal when there were similar numbers of students in groups based on their racial/ethnic diversity. Moreover, schools with a homogeneous student population with regard to race/ethnicity were observed to have higher school connectedness among Latinx students. An increasingly diverse student population may make it harder for students of color to develop a sense of belonging to their schools, indicating the need for culturally responsive interventions. The results of this study have important implications for school-wide policies to prevent race-based victimization for all racial/ethnic groups by increasing numerical minority groups' perceived power and other practices to build school connectedness of students from minority or marginalized groups.

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**Data Sharing Declaration** The student-level and school-level datasets analyzed during the current study are available in the CalSCHLS repository upon request, CalSCHLS@wested.org, and California Department of Education's DataQuest reporting system, <https://dq.cde.ca.gov/dataquest/>, respectively.

**Authors' Contributions** M.C. developed the initial research questions, designed the data analysis plan, conducted the analysis, and drafted the manuscript; J.S. refined the research questions and the data analysis plan, interpreted analyses, and revised the manuscript; K.N.-G. refined the data analysis plan, assisted with analysis, interpreted results, and revised the manuscript; E.D. interpreted the analyses and revised the manuscript. All authors read and approved the final manuscript.

## Compliance with Ethical Standards

**Conflict of Interest** The authors declare no competing interests.

**Ethical Approval** This study involved human participants and was conducted in accordance with the ethical standards of the institutional review board of University of California Santa Barbara.

**Informed Consent** Passive consent was received from the parents of the participants and informed assent was obtained from all participants in the study.

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