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Delineating Differences in How US High Schools are Racialized

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Abstract: Schools' overt or explicit practices are a dominant lens through which education researchers and policymakers attempt to understand how schools are racially inequitable. Yet, Lewis and Diamond (2015) argue that contemporary racial inequalities are largely sustained through implicit factors, like institutional practices and structural inequalities. Victor Ray's (2019) framework on racialized organizations similarly outlines how our racialized sociopolitical structure becomes embedded in organizations, legitimating and perpetuating the racialized hierarchy. We apply illustrative cluster analysis techniques to rich data on schools, teachers, and students from the nationally representative High School Longitudinal Study of 2009 to find that structural inequities (e.g., student body, sector, average achievement) appear to be most salient in delineating the racialization of US high schools, whereas the characteristics of schools and teachers that are typically emphasized for closing racial inequities in educational outcomes (e.g., teacher qualifications, courses offered, stratification practices) are not salient differentiators across schools.

Keywords: Race, Schools, Segregation, Social Context, Tracking, Curriculum, Teachers

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Delineating Differences in How US High Schools are Racialized

Schools' overt practices, such as the courses schools offer and the teachers they hire, are a dominant lens through which education researchers and policymakers attempt to understand how schools are racially inequitable. Nonetheless, after decades of policy focus, racial disparities in educational outcomes persist (Aurini & Hillier, 2018) and undergird disparities in occupational, economic, criminal justice, and health outcomes (Chetty et al., 2018; Williams et al., 2016). Lewis and Diamond (2015, p. 8) point out how "racism has shifted, become much more subtle and implicit… harder to see and harder to challenge… today, rather than functioning through overt practices, contemporary racial patterns are supported by *structural inequities*, *institutional practices*, and *racial ideologies*." Ultimately, our understanding of how schools are racialized may be limited if we focus on overt practices at the exclusion of structural inequities and embedded institutional practices. We integrate these ideas with Ray's (2019) theoretical framework on the racialization of organizations to understand differences in how US high schools are racialized. School racialization describes how our racialized sociopolitical structure becomes embedded in schools, differentiating schools' institutional and overt practices in ways that legitimate and perpetuate racial inequalities. We apply cluster analysis techniques to data on the nation's high schools, teachers, and students from the High School Longitudinal Study of 2009 (HSLS). Cluster analysis is an exploratory technique aimed at clustering cases into groups similar or dissimilar along specified measures (Everitt et al., 2011). We draw on school characteristics identified in the previous literature. Still, cluster techniques allow us to consider multiple school characteristics simultaneously and to identify the factors that independently and reliably delineate patterns in how US high schools are racialized.

Because of the increasingly implicit nature of racial inequality, previous investigations into school racialization that are more nuanced, such as Garcia (2019), are typically theoretical or qualitative. Although recent scholarship emphasizes the non-academic effects of school racialization on students (Brown, 2016; Ispa-Landa & Conwell, 2015; Shedd, 2015), quantitative investigations into school racialization typically focus on school characteristics that relate to achievement, potentially eclipsing other important aspects of schools. Quantitative investigations also typically focus on a single or a few characteristics of schools, which prevents us from understanding how related characteristics operate in tandem. This study integrates multiple measures from the most recent national education dataset with innovative theoretical frameworks from Ray (2019) and Lewis and Diamond (2015). This study also employs a methodological approach, cluster analysis, not yet used in research on differences in how schools are racialized.

OVERT PRACTICES

Researchers and policymakers often attempt to understand how schools are racially inequitable in terms of explicit racism or overt practices. Ray's (2019) theoretical framework demonstrates how our racialized sociopolitical structure becomes embedded in organizations, describing racialized organizations as a feedback loop of the racial substructure, structure, and superstructure. The racial structure (i.e., rules and resources) is undergirded by the racial substructure (i.e., binaries, emotions, implicit views) and results in the racial superstructure (i.e., racial ideology, legitimization of inequalities). Overtly racist practices occur at the racial structure in Ray's (2019) framework, namely through the inequitable distribution of material and social resources. *Courses*, the primary means whereby high schools build human, cultural, and social capital, represent an important resource. Researchers document how Black and Latinx youth attend schools that offer fewer advanced courses or less rigorous versions of courses

(Morton & Riegle-Crumb, 2020; Tyson & Roksa, 2017). *Teachers' qualifications* are another important material resource in schools, representing the overt practices of state, district, and school-level policymakers and administrators as they make decisions on resource distribution (e.g., teacher pay) and which teachers to interview and hire. Teachers with a regular certification are presumably more effective than teachers with an alternative or no certification (Darling-Hammond et al., 2005). Teachers' efficacy should increase with a major in the subject they teach (Kennedy, 2008), a Master's degree (Clotfelter et al., 2010), or professional experience in the subject they teach (Boyd et al., 2011). Years of experience is a teacher characteristic that relates perhaps most consistently with better outcomes for students (Wiswall, 2013). Previous scholarship finds that Latinx and Black youth attend schools with less qualified teachers, as measured by certification status, educational background, professional background, and years of experience (Clotfelter et al., 2010). Teachers' qualifications may be another overt means whereby high schools are racialized.

INSTITUTIONAL PRACTICES

Focusing on schools' overt practices may provide an incomplete perspective of how high schools are racialized. Lewis and Diamond (2015) argue that contemporary racial inequalities are increasingly sustained implicitly rather than explicitly, through, for instance, deeply embedded institutional practices. Institutional practices correspond with the formal and informal rules that, along with resources, comprise the racial structure in Ray's framework. Ray describes how, in the racial structure, organizations connect schemas to resources and rules in ways that advantage some racial groups and disadvantage others. Just as Lewis and Diamond situate institutional practices as the product of racial ideologies, Ray describes the racial structure as undergirded by the racial substructure. The racial substructure is constructed through schemas of binaries,

emotions, and implicit views (Ray, 2019). Binaries—man versus woman, rich versus poor, abled versus disabled—are central in stratification processes because they delineate in- and out-groups, eclipse inter-group heterogeneity that might impair a category's perceived integrity, and evoke universality and inevitability (Gordon & Rosenblum, 2001). The US racial substructure originates in the binary of white versus Black, with whiteness emerging as a notion in the eighth and ninth centuries and largely defined in opposition to Blackness (Dixon & Telles, 2017; Omi & Winant, 1986). Race categories link to emotions and implicit views: white is good, Black is bad; white is normal, Black is abnormal (Erevelles & Minear, 2010; Mills, 1999). Binaries are insufficient for understanding contemporary racial relations, with Latinx youth now comprising a larger share of the US population than Black youth, and Asian immigration projected to continue increasing (Lee & Bean, 2004). Data collection administrators are now grappling with how to measure people of multiple races. We recognize that all US racial categories eclipse the heterogeneous origins, backgrounds, and cultures each represents (Cruz et al., 2021; Windchief & Brown, 2017), but we answer calls to use imperfect categories like these to document inequalities (Hancock, 2007; McNair et al., 2020). This section describes institutional practices that may be an important point of differentiation in the racialized clustering of schools.

School stratification practices (i.e., tracking, ability grouping) represent an implicit means of shaping students' access to resources (Lucas et al., 2020). More advanced coursework represents the material resource of richer content and higher level pedagogy; because students in advanced coursework are likely to have experienced prior achievement successes, which increases school motivation, these courses also represent the social resource of more motivated classroom peers (Carbonaro & Covay, 2010). Schools' formal rules suggest students are stratified into different levels of coursework meritocratically, that is, in ways consistent with

their prior levels of placement and performance (Kelly, 2009). Yet, previous research suggests course placements also happen through informal racialized rules (Muller et al., 2010), with more racially diverse schools engaging in more stratifying course placement practices on average than predominantly white schools, enrolling a lower share of the student body in advanced coursework, for instance (Diamond, 2006; Domina et al., 2016). In these ways, school stratification practices may be a primary axis of differentiation in the racialized clustering of schools.

Educators represent a social resource within schools, with *educators' relations with students* important for learning and socioemotional development. Some teachers feel less efficacious with racially marginalized students (Allensworth et al., 2009), perceive their behaviors more negatively (Fish, 2017; Tyson & Roksa, 2016), and hold lower expectations for them (Lewis & Diamond, 2015; Martin, 2009). The previous research documents how teachers' motivations and expectations are lower in schools serving a larger share of racially marginalized students, that is, schools with a much higher need student body and, oftentimes, fewer resources to meet those needs (Allensworth et al., 2009; Clotfelter et al., 2007; Murnane & Steele, 2007). Institutional practices related to educators' expectations for students and motivation levels may be an implicit axis of differentiation in the racialization of schools.

STRUCTURAL INEQUITIES

Lewis and Diamond (2015), finally, argue that implicit structural inequities sustain contemporary racial inequalities. Critical race theorists frame whiteness as a "form of property" (Harris, 1993), legitimizing rights to power, status, and resources (Diamond, 2018; Dixon & Telles, 2017; Omi & Winant, 1986). Ray (2019) builds on these ideas to describe whiteness as a "credential" that "provides access to organizational resources" and expands "white agency"

(Ray, 2019, p. 41). *School sector*, that is, whether a school is public or private, represents a structural inequity that may delineate how high schools are racialized. Although some private schools (e.g., Catholic schools) ostensibly aim to increase opportunities for Black and Latinx youth (Hoffer et al., 1985; Morgan, 2001), many private schools explicitly protect and reproduce white persons' power and status by offering more courses and lower levels of within-school stratification (Cookson & Persell, 1985; Khan, 2012). Our models include measures of how schools differ depending on school sector in terms of, for instance, the courses they offer. School sector, though, may differentiate schools through characteristics of schools unmeasured in our data (e.g., social networks) even after adjusting for these factors.

The racial and socioeconomic composition of a *schools' student body* is a central proxy for structural inequities. In contrast to 27% of Latinx and 31% of Black youth, around 10% of White and Asian youth lived in poverty in the US in 2016 (Wilson & Schieder, 2018). US neighborhoods are racially and socioeconomically segregated (Hirsh, 2009; Orfield, 2014). With children most likely to attend schools close to home, school student bodies reflect the racialized allocation of resources outside of schools. For instance, the extra-school resources available to Black and Latinx youth are quantitatively and qualitatively different because they are more likely to live in neighborhoods characterized by families struggling to make ends meet, less access to dominant US culture (e.g., middle/upper class, White), and tense relations with police (Korver-Glenn, 2018; Orfield et al., 2014; Stewart et al., 2015). Schools are also racially and socioeconomically segregated through parents' selection of, or relegation to, certain neighborhoods and schools (Fiel, 2015; Howell & Korver-Glenn, 2018; Korver-Glenn, 2018). Asian youth are rarely considered in segregation research but may be more likely to live in

neighborhoods that are higher SES and to benefit from ethnic enclaves and intergenerational living (Tran, 2016).

We operationalize schools' average achievement as measures of structural inequity on the basis of several lines of previous research. For one, sociologist James Coleman's groundbreaking 1966 report to the president and Congress demonstrated that factors outside of schools (namely, family SES) explain differences in achievement to a much larger degree than differences in schools or teachers (Coleman, 1990a), a finding that has been corroborated with richer datasets and more sophisticated analytic techniques multiple times since (Gamoran & Long, 2006; Hanselman & Fiel, 2017; Hill, 2016; Reardon, 2011). Similarly, racial disparities in achievement are evident by kindergarten and stay constant throughout youth's educational trajectories (Cheadle, 2008), suggesting that schools fail to close achievement gaps rather than cause them (Downey et al., 2019; Heyns, 1978). These facts are often disregarded by the public and even by policymakers, with schools with lower average test scores ranked as "low-performing" and schools with higher average test scores ranked as "high-performing." These rankings determine whether schools have made Adequate Yearly Progress (AYP), with schools that receive Title 1 funds (federal funds for schools serving predominantly low SES student bodies) at risk of being closed or taken over by the state if they do not make AYP for multiple consecutive years (Manwaring, 2010). This approach to understanding school quality is problematized by reports that show that "low-performing" schools virtually always serve predominantly low SES student bodies, as well as disproportionately Latinx and Black student bodies, whereas "high-performing" schools almost always serve predominantly high SES student bodies (Finster & Miller, 2014; Shifrer, 2022). Asian youth, like White youth, are also more likely than Black and Latinx youth to attend 'high-performing' schools (Hanselman & Fiel, 2017). Studies similarly

show that a student's SES, and thus race, are powerful determinants of outcomes other than test scores, such as attending college (Wilbur & Roscigno, 2016), taking advanced courses (Svoboda et al., 2016), and achieving high course grades (Alessandri et al., 2017).

DATA AND METHODS

Data

We use data from the nationally representative High School Longitudinal Study of 2009, collected by the National Center for Education Statistics (NCES). This dataset follows a cohort of 21,444 respondents in the ninth grade in 2009. Although all analyses are conducted at the school level, we use data from the base year (2009) surveys of respondents' school administrators and counselors and their ninth-grade math and science teachers, as well as the base year surveys of the adolescents themselves. We also use data from a math test administered by NCES to adolescents in 2012 (when most were in their junior year), and transcript data collected in 2014 when most had completed high school. Our analytic sample includes all 944 public and private schools the ninth graders were sampled from in 2009. Descriptive statistics on the study variables are available by request, as are details on the survey items we use to construct each scale.

Analytic Plan

Most measures at the school level are missing on zero to ten percent of cases, except for higher rates (30%) on measures of educator-student relations. Around 10% are missing on student achievement variables. While there is no perfect solution to missingness in cluster analysis (Bock, 2020), we address missing values with multiple imputation by the MICE system of chained equations with the data at the student level (White et al., 2011) and then restrict the sample to the first multiply imputed dataset. Clustering techniques do not support the multiple

datasets that result from multiple imputation, but multiple imputation is preferable to single or mean/mode imputation. To facilitate clustering at the school level, we aggregate some student and teacher level measures to the school level. Consistent with recommendations from Everitt (1981), we standardize continuous variables to increase their substantive meaning and comparability. As recommended by Owen (2014), we create a binary variable for each category for variables with three or more categories. Because the data includes continuous and categorical measures, we use a partitioning method of clustering (Kmeans, specifically (Makles, 2012)) and the Gower measure of dissimilarity, as recommended by Everitt et al. (2011).

We conduct three separate cluster analyses to identify the racialized structure of US high schools. The first focuses entirely on measures NCES collected at the school level. While we expect that these measures are central in the identification of racialized school structures, they may not completely capture the social practices and interactions that truly shape the experiences of students and their teachers in racialized ways. In the second cluster analysis, we add measures describing the ninth-grade math and science teachers of the approximately thirty students sampled from each school that we averaged to be at the school level. In the third cluster analysis, we add student level measures that we averaged to be at the school level. While the second and third cluster analyses potentially facilitate a more rich understanding of how schools are racialized, they are also less robust in that HSLS sampled students to be representative of the nation rather than of individual schools. Because results are similar, we show results from the more qualitatively rich cluster analysis as the main results; the results from the cluster analyses that employ fewer measures are available by request.

We estimate each of these three cluster analyses eight times, specifying from three to ten clusters, using the Calinski-Harabasz pseudo-F index to determine the number that produces the

most distinct clusters. Next, we estimate descriptive statistics on the characteristics of each cluster, as well as whether differences across clusters are statistically significant. Because school characteristics covary (for instance, schools that serve a larger share of Black students also tend to serve a larger share of students eligible for free/reduced lunch), these bivariate estimates of differences across clusters do not highlight which school characteristics are most salient for cluster determinations. To understand which school characteristics independently delineate each cluster, we use three linear probability models to predict inclusion in each combination of clusters. We narrow our focus on the school characteristics that retain a significant relationship with the clusters, net of other related differences across schools. Sensitivity analyses use similar regression models predicting the clusters but estimated with school-level measures only and with the addition of measures describing ninth graders' teachers.

Measures

Structural Inequities. We measure *school student body* with continuous measures of the percent of students at the school who are white, Black, Latinx, Asian/Pacific Islander, American Indian/Alaska Native, and eligible for free/reduced lunch. We measure *school sector* with a categorical measure of whether the school is public, Catholic, or non-Catholic private. We measure *school average achievement* through the school administrator's reports of whether the school was federally deemed to have failed to make 'adequate yearly progress' for two subsequent years, and the percent of the school's seniors who progressed into a four-year college immediately after high school. We use transcript data to capture the proportions of school's students who progressed past Algebra II and completed Physics by the end of high school, as well as students' average grade point average (GPA) in core coursework (i.e., math, science, English, social studies, fine arts, foreign languages) (ranges 0 to 4). Finally, we average students'

scores on the math test NCES administered in 2012, when most of the sample was in the 11th grade. As advised by the HSLS users' guide (Ingels et al., 2011), we use the theta version, which is a norm-referenced measure of achievement (ranges -0.79 to 2.44).

Institutional Practices. We measure *school stratification practices* first with the school administrator's report of the percent of the student body that repeated grade nine in the previous year. We consider this a measure of stratification because there are several ways schools can respond to poor grades and course failures, with grade retention increasing the risk of high school dropout (Wood et al., 2017). We aggregate measures to the school level by averaging across students at the same school: proportion whose ninth-grade math course reflects advancement relative to the level of their eighth-grade math course; proportion whose ninth-grade science course is a core science; and the proportion of ninth graders' courses that are high level, include at least one low-level ninth grade course or one English as a Second Language (ESL) course. We construct these variables at the student level using transcript data, considering courses high-level if they are flagged as college prep, honors or advanced, AP, or IB; low-level if they are flagged as remedial, credit recovery, or special education. We measure *educator-student relations*, first, with a scale measure of poor peer climate, which averages school administrator reports on student tardiness, absenteeism, class cutting, apathy, etc. (alpha=0.92). We constructed a scale of school staff expectations for students by averaging school counselors' survey responses (alpha=0.91). We construct scales from reports from ninth graders' math teachers on the school's math teachers' motivation (alpha=0.91), ninth graders' science teachers on the school's science teachers' motivation (alpha=0.91), and both math and science teachers on motivation levels across all the school's teachers (alpha=0.87). Ninth grade math and science

teachers self-reported their teaching self-efficacy (alpha=0.82). Finally, students described whether they perceive their math and science teacher as fair and efficacious (alpha=0.89).

Overt Practices. We measure *school offerings* with dichotomous measures of whether the school offers courses available to be taken for high school and college credit, courses available as part of a tech prep or career program, Advanced Placement / International Baccalaureate (AP/IB) math courses, Calculus on-site, and all three core sciences (biology, chemistry, physics). Dichotomous measures indicate whether the school offers honors or IB diplomas. We measure schools' *teachers' qualifications* with five measures we construct from the administrator survey: proportions math/science teachers certified, percent teachers absent on an average day, and proportions math/science teachers who left the school the previous year. NCES did not ask administrators about the certification and retention of teachers of other subjects. NCES also surveyed each ninth-grade respondent's math and science teachers. We average these responses across teachers at the same school to capture schools' proportion of teachers with a Master's degree or higher, proportion who majored in the subject they are teaching for their bachelor's degree, mean number of college courses completed in the subject they are teaching, proportion who entered through an alternative certification program, and mean years of experience teaching.

RESULTS

We conducted cluster analyses with three sets of variables: 1) school-level measures only, 2) additional measures describing teachers aggregated to the school level, and 3) additional measures describing sampled adolescents aggregated to the school level. Across all three analyses, the Calinski-Harabasz pseudo-F value was the largest for the 3-cluster solution, indicating that this solution produced the most distinct set of clusters. While main analyses focus on results from the cluster analysis using the largest number of variables, the fact that the three

different sets of variables all indicated a three-cluster solution was best, and produced qualitatively similar clusters (details available by request), increases our confidence in our analytic approach. Moreover, our exploratory analyses show that most schools were assigned to the same cluster across the three sets of analyses (54%). An additional 34% of schools were assigned to the same cluster in the results shown here and one of the other two cluster approaches. Means and proportions showing average differences in schools clustered consistently or inconsistently are available by request.

Insert Table 2 About Here

Table 1 uses means, proportions, and standard deviations to show differences in the characteristics of the schools in each cluster. Although continuous measures are standardized in analyses that determine clusters, estimates in this table use unstandardized versions for increased substantive meaning. Columns headed "Bv." show the statistical significance of differences across clusters based on estimates from bivariate analyses. Columns headed "Mv." show the statistical significance of the school characteristic as a predictor in a multivariate regression model predicting being in one cluster versus another (full models available by request). We shade the cells of school characteristics that did not significantly predict the school being in that cluster versus either of the other two clusters, to indicate that the characteristic is not a main delineator of cluster determinations and so not a point of discussion in this section.

Table 1 first shows that, in analyses that consider multitudes of differences across schools simultaneously, a large share of measures of structural inequities significantly contribute to delineating the racialization of high schools. *School sector* significantly predicts cluster assignment, with the vast majority of Cluster A and B schools public and only 0.43 of Cluster C schools public. Measures of *schools' student bodies* also significantly predict cluster assignment.

Relative to Cluster B schools, there are significantly larger percentages of Latinx students in Cluster A schools and significantly larger percentages of Asian students in Cluster C schools. In a central axis of differentiation, an average of 66.3% of students in Cluster A schools are eligible for free/reduced lunch in contrast to 36.5% at Cluster B schools and 9.3% at Cluster C schools. To increase the substantive meaning of results, from this point on, we refer to Cluster A schools as Predominantly-Latinx/Black-Public schools, Cluster B schools as Predominantly-White-Public schools, and Cluster C schools as Predominantly-White-Private schools. Although the multivariate analyses suggest that the poverty level of the student body is a more salient predictor of the clusters than the racial composition, we refer to the clusters in terms of race because family socioeconomic status is highly correlated with race in the US.

Table 1 next shows that most measures of *schools' average achievement* significantly predict cluster assignment. The mean percent of seniors who attend a four-year college is highest at Predominantly-White-Private schools (79.8%) and lowest at Predominantly-Latinx/Black-Public schools (36.2%), with Predominantly-White-Public schools in the middle (42.4%). Similarly, mean core GPAs are highest at Predominantly-White-Private schools (2.96) and lowest at Predominantly-Latinx/Black-Public schools (2.12), with Predominantly-White-Public schools in the middle (2.51). In addition to significantly higher math test scores (1.12 v. -0.26), students at Predominantly-White-Private schools are also significantly more likely to progress past Algebra II (0.59 v. 0.30) and complete Physics (0.54 v. 0.23) than students in Predominantly-White-Public schools.

Table 1 next shows the extent to which institutional practices contribute to delineating the racialization of high schools. A couple of measures of *school stratification practices* significantly predict cluster assignment. For one, the proportion of Predominantly-White-Private

students whose 9th-grade math course reflects advancement (0.78) is significantly higher than that in Predominantly-Latinx/Black-Public schools (0.69). Second, a significantly higher proportion of students in Predominantly-White-Private schools are in a core ninth-grade science course relative to students in Predominantly-White-Public schools (0.57 v. 0.31). Most measures of *educator-student relations* are not significant predictors of the clusters. In one exception, teachers' mean self-reported self-efficacy is significantly higher in Predominantly-White-Private schools than in Predominantly-Latinx/Black-Public schools.

Table 1 next focuses on the extent to which measures of overt practices delineate the racialization of high schools. In the only measure of *school offerings* that significantly predicts the clusters, a significantly higher proportion of Predominantly-White-Public (0.95) and Predominantly-White-Private (0.92) schools offer an IB diploma, relative to Predominantly-Latinx/Black-Public (0.83) schools. Two measures of *teachers' qualifications* significantly predict clusters. A significantly lower share of math teachers at Predominantly-White-Private schools (0.88) are certified relative to teachers at Predominantly-Latinx/Black-Public (0.96) and Predominantly-White-Public (0.97) schools. Because teacher certification typically does not relate to differences in student achievement, and is quite common at public schools (Croninger et al., 2007), this measure may be capturing a related nuanced distinction in the teachers that private schools hire. Seemingly, the other measure of teachers' qualifications that significantly predicts clusters suggests that the teachers at Predominantly-Latinx/Black-Public schools are less qualified, although in a way not often captured in administrative data: whereas teachers in Predominantly-Latinx/Black-Public schools completed an average of 4.79 college courses in the subject they teach, teachers at Predominantly-White-Public and Predominantly-White-Private schools respectively completed 6.42 and 6.41. Ultimately, full regression models (available by

request) support these results, with the coefficients for measures of school sector, school student body composition, and school average achievement the only substantively significant coefficients (i.e., coefficients appearing substantially different from zero).

DISCUSSION

We use rich data on the nation's high schools, teachers, and students from the High School Longitudinal Study of 2009 to delineate the racialization of high schools using cluster analysis techniques. Ultimately, structural inequities appear to be most salient for delineating high schools. The characteristics of schools and teachers that are typically emphasized by policymakers for closing racial inequities in educational outcomes (e.g., teacher qualifications, courses offered, stratification practices) are not salient differentiators across schools in this study. This is consistent with Lewis and Diamond's (2015) point that racial inequality is increasingly implicit rather than explicit, largely sustained through factors like structural inequalities rather than overt practices within schools. More specifically, our results suggest three major axes of differentiation: 1) student body, 2) sector, and 3) average achievement. We reference the clusters in terms of the first two qualities. Whereas schools in the Predominantly-Latinx/Black-Public cluster have the lowest average achievement, average achievement levels are slightly higher in Predominantly-White-Public schools and much higher in Predominantly-White-Private schools. In addition to contributing a highly theoretically driven quantitative investigation into how schools are racialized, this study provides a framework for investigating the racialization of other organizations.

Our findings demonstrate how structural inequalities outside of schools are interbound with racial inequalities in our schools. Public education ostensibly began as a means of ensuring a working democracy, and the possibility of upward social mobility for anyone who works hard

(Labaree, 1997; Nord, 1995). Antithetical to this meritocratic vision, private schools are disproportionately accessed by White and Asian students, reproducing racial inequities in socioeconomic status. Racial segregation is also accomplished across public schools, with public schools serving a predominantly white student body (76% on average) delineated in this study's cluster analyses as distinct from public schools serving racially diverse student bodies (35% Latinx on average, 32% Black, and 26% white). The share of predominantly Black or Latinx schools has actually increased since the early 2000s (U.S. Government Accountability Office, 2016), and Latinx[1] youth now experience more school segregation than Black youth (Orfield et al., 2014). In 2008, around 70% of Black and 80% of Latinx students attended majority-Black/Latinx schools, in contrast to 40% of white students (Aud et al., 2010). This represents an implicit rather than explicit form of how schools are racialized because, in dominant narratives, segregation is often framed as an inevitable result of how people are sorted across neighborhoods, framed as something that is beyond the control of policymakers; school segregation is also framed as a product of parents' choice, even the choice of Black and Latinx parents (Orfield, 2015; Rothstein, 2015). These narratives eclipse the long history of overt practices that produced these patterns of school and neighborhood segregation.

Finally, we find that differences in average achievement are a main axis of differentiation across high schools. Because of structural inequities, achievement levels are racialized upon students' entry into the K-12 school system. In the most consistent predictor of school cluster, the percent of students eligible for free or reduced lunch is around 66% in Predominantly-Latinx/Black-Public schools, 36% in Predominantly-White-Public schools, and 9% in Predominantly-White-Private schools. Family SES is more predictive of youth's academic outcomes than any characteristic of schools or teachers (Gamoran, 2016; Hanselman & Fiel,

2017; Hill, 2016; Hofflinger & von Hippel, 2020). Schools and teachers are not sufficiently equipped to solve the racial inequities of our broader society (Merolla & Jackson, 2019). Offering more courses and maintaining high expectations is simply an insufficient remedy for the structural and socioemotional barriers students face in many high-poverty schools (Roderick et al., 2011; Rothstein, 2004). School average achievement represent an implicit rather than explicit way that schools are racialized because school accountability rankings frame predominantly Black/Latinx schools as bad schools staffed with low-quality teachers (Downey, 2018; Shifrer, 2022; Stevens, 2018), eclipsing structural racism as the fundamental cause of racial differences in achievement (Merolla & Jackson, 2019). Just as Ray (2019, p. 38) states that "while white organizations are seen as normative and neutral, non-white organizations are seen as deviations from the norm and often stigmatized." In this way, school accountability rankings help construct the racial superstructure, with data on schools' average achievement levels used to legitimate and perpetuate racial ideology and inequality.

Limitations merit mention. Although we took multiple steps to measure ninth-grade course placements in a way that captures the part that is due to schools, the possibility remains that these variables capture other influences on course placements, such as student choice or parental influence. It is also possible that course placements that seem discrepant reflect unmeasured student qualities that are actually appropriate considerations (e.g., behaviors). Courses that received the same code from NCES may vary in content across and even within schools (Domina et al., 2016). Our measures of educator-student relations likely lack validity or do not capture the totality of how teachers relate with their students. Similarly, administrators' perception of the school's peer climate may also be biased. Some of our measures of school processes have more nuanced effects than is possible to incorporate into the framing of this

broadly focused study. School stratification (e.g., tracking, grade retention), for instance, is generally portrayed as detrimental but some studies show that grade retention can at least have short-term positive effects on outcomes like test scores (Eide & Goldhaber, 2005). Although attending college is a common measure of postsecondary success, we recognize that this is not a comprehensive measure of the different paths that may represent success for diverse young adults. While our measures describing teachers are sometimes focused on math and science teachers, our school and student-level measures are not STEM-specific. Our confidence in our results is increased by the fact that results are similar in analyses that include only school-level measures; school and teacher level measures; and school, teacher, and student-level measures. Although findings were similar across a range of sensitivity analyses (details available by request), these analyses are exploratory by design and we cannot draw causal conclusions. School racialization is implicit by nature, such that the broad patterns identified in this study provide direction for future qualitative efforts.

Conclusion

Sociologists have advocated for desegregation for decades, but the researchers who have the ears of policymakers, e.g., economists and education policy researchers, typically focus on how to make 'separate' schools equal. Similarly, sociologists may be well versed in discourse on racial inequities, but educators and policymakers are often encouraged to be anti-racist by being color-blind or race-neutral, which only further entrenches and masks structural racism (Cobb, 2017; Nelson et al., 2021; Turner, 2020). Corresponding to the ruling of separate schools as "inherently unequal" nearly 70 years ago, Small and Pager (2020) point out how organizations are a key means whereby historical racial discrimination has contemporary consequences. Efforts aimed at equalizing funding and resources do not address the impacts of concentrated poverty

and limited access to dominant US culture in predominantly Black/Latinx schools (Noguera, 2003; Orfield, 2014; Rothstein, 2004). Just as scholars using Critical Race Theory (CRT) argue that the impact of our racialized society on education systems remains under-articulated in part because racial inequities in educational outcomes are too often attributed entirely to racial differences in socioeconomic status (Annamma and Morrison 2018; Bonilla-Silva 1997; Carbado 2011), this study's findings demonstrate the importance of Victor Ray's call for scholars to shift focus from race at the macro- and micro-levels to race at the meso-level, i.e., to racialized organizations.

Researchers must persist in documenting how racial inequity is legitimated and perpetuated through structural inequities outside of schools and then through the inequitable sorting of students across schools, rather than defaulting to a focus on the overt practices of schools and teachers. Our results show that the characteristics of schools and teachers that are typically emphasized for closing racial inequities in educational outcomes (e.g., teacher qualifications, stratification practices) are not salient differentiators across schools. This corresponds with the literature demonstrating how racial inequities in resources outside of schools contribute more to racial disparities in achievement than differences in schools or teachers (Gamoran & Long, 2006; Hill, 2016). CRT similarly emphasizes a focus on 'legislated structural racism,' and the embeddedness of White supremacy in the US, over individuals' racist actions (Bonilla-Silva 1997; Carbado 2011; Ledesma and Calderon 2015). Addressing racial inequities outside of schools is central for our youth's educational, occupational, and health outcomes, as well as the quality of our democratic society. Wealth inequality is higher in the United States than in the 54 other wealthiest countries, just as political support for structural supports is lower (Inglehart & Norris, 2016; Piketty & Saez, 2004; Sherman, 2015). Progressive

initiatives like universal healthcare, a living wage, and expanded social services in schools are key for closing racial inequalities in educational outcomes. Noted sociologist of education James Coleman (1990b) advocated for a shift in focus from equitable inputs to what is needed to achieve equitable outcomes: schools serving populations who do not have access to equitable resources outside of schools need disproportionately more funds, more teachers, and more resources than schools serving more privileged populations of students. Finally, building on recent studies (Brooms & Davis, 2017; Brown, 2016; Hanselman et al., 2014; Tyson et al., 2005), future research must also encompass consideration of how we can address the psychosocial risks of racially integrated spaces for Black and Latinx youth.

REFERENCES

Alessandri, G., Zuffiano, A., Eisenberg, N., & Pastorelli, C. (2017). The role of ego-resiliency as mediator of the longitudinal relationship between family socio-economic status and school grades. *Journal of Youth and Adolescence, 46*, 2157–2168.

Allensworth, E., Ponisciak, S., & Mazzeo, C. (2009). *The Schools Teachers Leave: Teacher Mobility in Chicago Public Schools*. Consortium on Chicago School Research, Urban Education Institute, University of Chicago.

Aud, S. L., Hussar, W. J., Planty, M., Snyder, T. D., Bianco, K., Fox, M. A., Frohlich, L., Kemp, J., & Drake, L. (2010). *The Condition of Education 2010 (NCES 2010-028)*. National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

Aurini, J., & Hillier, C. (2018). Reopening the black box of educational disadvantage: Why we need new answers to old questions. In J. Mehta & S. Davies (Eds.), *Education in a New Society: Renewing the Sociology of Education* (pp. 309–333). Chicago University Press.

Bock, T. (2020). 5 ways to deal with missing data in cluster analysis. *Data Science.* https://www.displayr.com/5-ways-deal-missing-data-cluster-analysis/

Boyd, D., Grossman, P., Ing, M., Lankford, H., Loeb, S., O'Brien, R., & Wyckoff, J. (2011). The Effectiveness and Retention of Teachers with Prior Career Experience. *Economics of Education Review*, *30*, 1229–1241.

Brooms, D. R., & Davis, A. R. (2017). Staying focused on the goal: Peer bonding and faculty mentors supporting black males' persistence in college. *Journal of Black Studies, 48*(3), 305–326.

Brown, K. L. (2016). The "Hidden Injuries" of School Desegregation: Cultural Trauma and Transforming African American Identities. *American Journal of Cultural Sociology, 4*(1), 196–220.

Carbonaro, W., & Covay, E. (2010). School Sector and Student Achievement in the Era of Standards Based Reforms. *Sociology of Education, 83*(2), 160–182.

Cheadle, J. E. (2008). Educational Investment, Family Context, and Children's Math and Reading Growth from Kindergarten Through the Third Grade. *Sociology of Education, 81*(1), 1–31.

Chetty, R., Hendren, N., Jones, M. R., & Porter, S. R. (2018). *Race and economic opportunity in the United States: An intergenerational perspective (Working paper number CES-18-40R)*. Center for Economic Studies (CES).

Clotfelter, C., Ladd, H. F., Vigdor, J., & Wheeler, J. (2007). High-Poverty Schools and the Distribution of Teachers and Principals. *North Carolina Law Review, 85*(5), 1345–1379.

Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2010). Teacher Credentials and Student Achievement in High School: A Cross-Subject Analysis with Student Fixed Effects. *Journal of Human Resources, 45*(3), 655–681.

Cobb, J. S. (2017). Inequality frames: How teachers inhabit color-blind ideology. *Sociology of Education, 90*(4), 315–332.

Coleman, J. S. (1990a). A Brief Summary of the Coleman Report. In *Equality and Achievement in Education* (pp. 69–74). Westview Press.

Coleman, J. S. (1990b). *Equality and Achievement in Education*. Westview Press.

Cookson, P. W., & Persell, C. H. (1985). *Preparing for Power: America's Elite Boarding Schools*. Basic Books.

Croninger, R. G., Rice, J. K., Rathbun, A., & Nishio, M. (2007). Teacher Qualifications and Early Learning: Effects of Certification, Degree, and Experience on First-Grade Student Achievement. *Economics of Education Review, 26*, 312–324.

Cruz, R. A., Kulkarni, S. S., & Firestone, A. R. (2021). A QuantCrit analysis of context, discipline, special education, and disproportionality. *AERA Open, 7*(1), 1–16.

Darling-Hammond, L., Holtzman, D. J., Gatlin, S. J., & Heilig, J. V. (2005). Does Teacher Preparation Matter? Evidence about Teacher Certification, Teach for America, and Teacher Effectiveness. *Education Policy Analysis Archives, 13*(42), 1–51.

Diamond, J. B. (2006). Still Separate and Unequal: Examining Race, Opportunity, and School Achievement in "Integrated" Suburbs. *The Journal of Negro Education*, *75*(3), 495–505.

Diamond, J. B. (2018). Race and white supremacy in the sociology of education: Shifting the intellectual gaze. In J. Mehta & S. Davies (Eds.), *Education in a New Society: Renewing the Sociology of Education* (pp. 345–362). Chicago University Press.

Dixon, A. R., & Telles, E. E. (2017). Skin Color and Colorism: Global Research, Concepts, and Measurement. *Annual Review of Sociology*, *43*, 405–424.

Domina, T., Hanselman, P., Hwang, N., & McEachin, A. (2016). Detracking and Tracking Up: Mathematics Course Placements in California Middle Schools, 2003–2013. *American Educational Research Journal*, *53*(4), 1229–1266. https://doi.org/10.3102/0002831216650405

Downey, D. B. (2018). Schools as great distractors: Why socioeconomic-based achievement gaps persist. In J. Mehta & S. Davies (Eds.), *Education in a New Society: Renewing the Sociology of Education* (pp. 334–344). Chicago University Press.

Downey, D. B., Quinn, D. M., & Alcaraz, M. (2019). The distribution of school quality: Do schools serving mostly white and high-SES children produce the most learning? *Sociology of Education*, *92*(4), 386–403.

Eide, E. R., & Goldhaber, D. D. (2005). Grade retention: What are the costs and benefits? *Journal of Education Finance*, *31*(2), 195–214.

Erevelles, N., & Minear, A. (2010). Unspeakable Offenses: Untangling Race and Disability in Discourses of Intersectionality. *Journal of Literary & Cultural Disability Studies*, *4*(2), 127–145.

Everitt, B. S. (1981). *Cluster Analysis*. Heinemann Educational Books.

Everitt, B. S., Landau, S., Leese, M., & Stahl, D. (2011). *Cluster Analysis, 5th Edition*. John Wiley & Sons, Ltd.

Fiel, J. (2015). Closing Ranks: Closure, Status Competition,and School Segregation. *American Journal of Sociology*, *121*(1), 126–170.

Finster, M., & Miller, J. (2014). *Who's at the Top? It Depends... Identification of Highest Performing Schools for Newsweek's 2014 High School Rankings*. Westat.

Fish, R. (2017). The Racialized Construction of Exceptionality: Experimental Evidence of Race/Ethnicity Effects On Teachers' Interventions. *Social Science Research, 62*, 317–334.

Gamoran, A. (2016). Gamoran Comment on Downey and Condron. *Sociology of Education*, *89*(3), 231–233.

Gamoran, A., & Long, D. A. (2006). *Equality of Educational Opportunity: A 40-Year Retrospective (WCER Working Paper No. 2006-9)*. University of Wisconsin-Madison.

Garcia, G. A. (2019). *Becoming Hispanic-Serving Institutions: Opportunities for colleges and universities*. Johns Hopkins University Press.

Gordon, B. O., & Rosenblum, K. E. (2001). Bringing Disability into the Sociological Frame: A Comparison of Disability with Race, Sex, and Sexual Orientation Statuses. *Disability & Society*, *16*(1), 5–19.

Hancock, A.-M. (2007). When multiplication doesn't equal quick addition: Examining intersectionality as a research paradigm. *Perspectives on Politics*, *5*(1), 63–79.

Hanselman, P., Bruch, S. K., Gamoran, A., & Borman, G. D. (2014). Threat in context: School moderation of the impact of social identity threat on racial/ethnic achievement gaps. *Sociology of Education*, *87*(2), 106–124.

Hanselman, P., & Fiel, J. E. (2017). School Opportunity Hoarding? Racial Segregation and Access to High Growth Schools. *Social Forces*, *95*(3), 1077–1104.

Harris, C. I. (1993). Whiteness as property. *Harvard Law Review*, *106*(8), 1707–1791.

Heyns, B. (1978). *Summer Learning and the Effects of Schooling*. Academic Press.

Hill, H. C. (2016). 50 Years Ago, One Report Introduced Americans to the Black-White Achievement Gap. Here's What We've Learned Since. *Chalkbeat*.

Hirsh, E. (2009). The Strength of Weak Enforcement: The Impact of Discrimination Charges, Legal Environments, and Organizational Conditions on Workplace Segregation. *American Sociological Review*, *74*(2), 245–271.

Hoffer, T., Greeley, A. M., & Coleman, J. S. (1985). Achievement Growth in Public and Catholic Schools. *Sociology of Education*, *58*(2), 74–97.

Hofflinger, A., & von Hippel, P. T. (2020). Does achievement rise fastest with school choice, school resources, or family resources? Chile from 2002 to 2013. *Sociology of Education*, *93*(2), 132–152.

Howell, J., & Korver-Glenn, E. (2018). Neighborhoods, race, and the twenty-first-century housing appraisal industry. *Sociology of Race and Ethnicity*, *4*(4), 473–490.

Ingels, S. J., Pratt, D. J., Herget, D. R., Burns, L. J., Dever, J. A., Ottem, R., Rogers, J. E., Jin, Y., & Leinwand, S. (2011). *High School Longitudinal Study of 2009 (HSLS:09). Base-Year Data File Documentation (NCES 2011-328)*. National Center for Education Statistics, U.S. Department of Education.

Inglehart, R. F., & Norris, P. (2016). *Trump, Brexit, and the Rise of Populism: Economic Have-Nots and Cultural Backlash*. the annual meeting of the American Political Science Association.

Ispa-Landa, S., & Conwell, J. (2015). "Once you go to a White school, you kind of adapt": Black adolescents and the racial classification of schools. *Sociology of Education*, *88*(1), 1–19.

Kelly, S. (2009). The Black-White Gap in Mathematics Course Taking. *Sociology of Education*, *82*(1), 47–69.

Kennedy, M. M. (2008). Contributions of Qualitative Research to Research on Teacher Qualifications. *Educational Evaluation and Policy Analysis*, *30*(4), 344–367.

Khan, S. R. (2012). *Privilege: The making of an adolescent elite at St. Paul's school*. Princeton University Press.

Korver-Glenn, E. (2018). Compounding inequalities: How racial stereotypes and discrimination accumulate across the stages of housing exchange. *American Sociological Review*, *83*(4), 627–656.

Labaree, D. F. (1997). Public Goods, Private Goods: The American Struggle Over Educational Goals. *American Educational Research Journal*, *34*(1), 39–82.

Lee, J., & Bean, F. D. (2004). America's Changing Color Lines: Immigration, Race/Ethnicity, and Multiracial Identification. *Annual Review of Sociology*, *30*, 221–242.

Lewis, A. E., & Diamond, J. B. (2015). *Despite the Best Intentions: How Racial Inequality Thrives in Good Schools*. Oxford University Press.

Long, M. C., Iatarola, P., & Conger, D. (2009). Explaining Gaps in Readiness for College-Level Math: The Role of High School Courses. *Education Finance and Policy*, *41*(1), 1–33.

Lucas, S. R., Molina, S. J., & Towey, J. M. (2020). Race/ethnicity over fifty years of structural differentiation in K-12 schooling: Period-specific and life-course perspectives. *Annual Review of Sociology*, *46*, 355–378.

Makles, A. (2012). Stata tip 110: How to get the optimal k-means cluster solution. *Stata Journal*, *12*(2), 347–351.

Manwaring, R. (2010). *Restructuring "restructuring": Improving interventions for low-performing schools and districts*. Education Sector.

Martin, D. B. (2009). Researching race in mathematics education. *Teachers College Record*, *111*(2), 295–338.

McNair, T. B., Bensimon, E. M., & Malcom-Piqueux, L. (2020). *From equity talk to equity walk: Expanding practitioner knowledge for racial justice in higher education*. John Wiley & Sons, Inc.

Merolla, D. M., & Jackson, O. (2019). Structural Racism as the Fundamental Cause of the Academic Achievement Gap. *Sociology Compass*, *13*(6), 1–13.

Mills, C. W. (1999). *The racial contract*. Cornell University Press.

Morgan, S. L. (2001). Counterfactuals, Causal Effect Heterogeneity, and the Catholic School Effect on Learning. *Sociology of Education, 74*, 371–374.

Morton, K., & Riegle-Crumb, C. (2020). Is school racial/ethnic composition associated with content coverage in Algebra? *Educational Researcher*, *Published online first*, 1–7.

Muller, C., Riegle-Crumb, C., Schiller, K. S., Wilkinson, L., & Frank, K. A. (2010). Race and Academic Achievement in Racially Diverse High Schools: Opportunity and Stratification. *Teachers College Record*, *112*(4), 4–5. [Add Health/AHAA].

Murnane, R. J., & Steele, J. L. (2007). What is the Problem? The Challenge of Providing Effective Teachers for All Children. *Future of Children, 17*(1), 15–43.

Nelson, I. A., Graham, H. J., & Rudin, N. L. (2021). Saving face while (not) talking about race: How undergraduates inhabit racialized structures at an elite and predominantly White college. *Social Problems*, *Published online first*.

Noguera, P. (2003). *City Schools and the American Dream: Reclaiming the Promise of Public Education*. Teachers College Press.

Nord, W. A. (1995). *Religion and American Education: Rethinking a National Dilemma*. University of North Carolina Press.

Omi, M., & Winant, H. (1986). Racial Formations. In M. Omi & H. Winant (Eds.), *Racial Formation in the United States* (Second Edition, pp. 3–13). Routledge.

Orfield, G. (2014). Tenth Annual Brown Lecture in Education Research: A New Civil Rights Agenda for American Education. *Educational Researcher, 43*(6), 273–292.

Orfield, G. (2015). Housing segregation produces unequal schools: Causes and solutions. In P. Carter & K. G. Welner (Eds.), *Closing the opportunity gap: What America must do to give every child an even chance*. Oxford University Press.

Orfield, G., Frankenberg, E., Ee, J., & Kuscera, J. (2014). *Brown at 60: Great Progress, a Long Retreat and an Uncertain Future*. The Civil Rights Project, University of California, Los Angeles.

Owen, S. (2014). K-means clustering for mixed numeric and categorical data. *Data Science*. https://datascience.stackexchange.com/questions/22/k-means-clustering-for-mixed-numeric-and-categorical-data

Piketty, T., & Saez, E. (2004). Income Inequality in the United States, 1913-2002. In A. B. Atkinson & T. Piketty (Eds.), *Top Incomes over the Twentieth Century* (pp. 141–225). Oxford University Press.

Ray, V. (2019). A Theory of Racialized Organizations. *American Sociological Review, 84*(1), 26–53.

Reardon, S. F. (2011). The Widening Academic Achievement Gap Between the Rich and the Poor: New Evidence and Possible Explanations. In *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances*. Russell Sage Foundation.

Roderick, M., Coca, V., & Nagaoka, J. (2011). Potholes on the Road to College: High School Effects in Shaping Urban Students' Participation in College Application, Four-year College Enrollment, and College Match. *Sociology of Education*, *84*(3), 178–211.

Rothstein, R. (2004). *Class and Schools: Using Social, Economic, and Educational Reform to Close the Black-White Achievement Gap*. Teachers College Press.

Rothstein, R. (2015). The racial achievement gap, segregated schools, and segregated neighborhoods: A constitutional insult. *Race and Social Problems, 7,* 21–30.

Shedd, C. (2015). *Unequal city: Race, schools, and perceptions of injustice*. Russell Sage Foundation.

Sherman, E. (2015). America is the richest, and most unequal, country. *Fortune*.

Shifrer, D. (2022). Contextualizing Educational Disparities and the Evaluation of Teacher Quality. *Social Problems*, *69*(2), 841–886.

Small, M. L., & Pager, D. (2020). Sociological perspectives on racial discrimination. *Journal of Economic Perspectives*, *34*(2), 49–67.

Stevens, M. L. (2018). What's next for sociology of education? In J. Mehta & S. Davies (Eds.), *Education in a New Society: Renewing the Sociology of Education* (pp. 407–410). Chicago University Press.

Stewart, E. A., Martinez, Jr., R., Baumer, E. P., & Gertz, M. (2015). The social context of Latino/a threat and punitive Latino/a sentiment. *Social Problems*, *62*(1), 68–92.

Svoboda, R. C., Rozek, C. S., Hyde, J. S., Harackiewicz, J. M., & Destin, M. (2016). Understanding the relationship between parental education and STEM course taking through identity-based and expectancy-value theories of motivation. *AERA Open*, *2*(3), 1–13. https://doi.org/10.1177/2332858416664875

Tran, V. C. (2016). Ethnic Culture and Social Mobility among Second-Generation Asian Americans. *Ethnic and Racial Studies*, *39*(13), 2398–2403.

Turner, E. O. (2020). *Suddenly diverse: How school districts manage race & inequality*. The University of Chicago Press.

Tyson, K., Darity, W., & Castellino, D. R. (2005). It's Not "A Black Thing": Understanding the Burden of Acting White and Other Dilemmas of High Achievement. *American Sociological Review*, *70*(4), 582–605.

Tyson, W., & Roksa, J. (2016). How Schools Structure Opportunity: The Role of Curriculum and Placement in Math Attainment. *Research in Social Stratification and Mobility*, *44*(1), 124–135.

Tyson, W., & Roksa, J. (2017). Importance of Grades and Placement for Math Attainment. *Educational Researcher*, *46*(3), 140–142.

U.S. Government Accountability Office. (2016). *K-12 Education: Better Use of Information Could Help Agencies Identify Disparities and Address Racial Discrimination (GAO-16-345)*. U.S. Government Accountability Office.

White, I. R., Royston, P., & Wood, A. M. (2011). Multiple Imputation Using Chained Equations: Issues and Guidance for Practice. *Statistics in Medicine*, *30*(4), 377–399.

Wilbur, T. G., & Roscigno, V. J. (2016). First-generation disadvantage and college enrollment/completion. *Socius*, *2*, 1–11.

Williams, D. R., Priest, N., & Anderson, N. (2016). Understanding Associations between Race, Socioeconomic Status and Health: Patterns and Prospects. *Health Psychology*, *35*(4), 407–411.

Wilson, V., & Schieder, J. (2018). *The Rise in Child Poverty Reveals Racial Inequality, More than a Failed War on Poverty*. Economic Policy Institute.

Windchief, S., & Brown, B. (2017). Conceptualizing a mentoring program for American Indian/Alaska Native students in the STEM fields: A review of the literature. *Mentoring & Tutoring: Partnership in Learning*, *25*(3), 329–345.

Wiswall, M. (2013). The Dynamics of Teacher Quality. *Journal of Public Economics*, *100*(61–78).

Wood, L., Kiperman, S., Esch, R. C., Leroux, A. J., & Truscott, S. D. (2017). Predicting Dropout Using Student- and School-Level Factors: An Ecological Perspective. *School Psychology Quarterly*, *32*(1), 35–49.

Table 1, Part 1 of 3: Differences across the Schools in the Predominantly-Latinx/Black-Public (PLBP), Predominantly-White-Public (PWPu), and Predominantly-White-Private (PWPr) Clusters

	Cluster A (PLBP)		Cluster B (PWPu)		Cluster C (PWPr)		PLBP v. PWPu		PLBP v. PWPr		PWPu v. PWPr	
	M/P	(SD)	M/P	(SD)	M/P	(SD)	Bv.	Mv.	Bv.	Mv.	Bv.	Mv.
STRUCTURAL INEQUITIES												
School Sector:												
									**		**	
Public (ref)	0.97		0.96		0.43			-	*	-	*	-
								**	**		**	**
Catholic	0.03		0.01		0.35		+	*	*	+	*	*
								**	**		**	**
Non-Catholic private	0.01		0.03		0.22			*	*	*	*	*
School Student Body												
	26.19	(18.60)	76.62	(18.90)	72.73	(22.48)	**		**			
Percent students White							*		*		*	
	32.46	(27.21)	10.51	(12.12)	9.74	(11.93)	**		**			
Percent students Black							*		*			
	34.79	(28.47)	8.79	(11.42)	10.24	(14.67)	**		**			
Percent students Latinx							*	*	*			
											**	
Percent students Asian/Pacific Islander	4.15	(7.70)	2.59	(4.96)	6.48	(9.47)	*		**		*	*
Percent students American Indian/Alaska Native	2.26	(11.14)	1.11	(3.06)	0.46	(0.92)	*		**			
Percent students eligible for free/reduced lunch	66.30	(17.48)	36.50	(16.46)	9.29	(13.17)	** *	** *	** *	** *	** *	** *
School Average Achievement[b]												

School in need of improvement per Adequate Yearly Progress rankings	0.70		0.39		0.12		** *		** *		** *	
Percent seniors went to four-year college	36.16	(18.04)	42.38	(16.68)	79.80	(16.47)	** *		** *	** *	** *	** *
Proportion progressed past Algebra II	0.24	(0.16)	0.30	(0.16)	0.59	(0.18)	** *		** *		** *	** *
Proportion completed Physics	0.26	(0.23)	0.23	(0.20)	0.54	(0.24)			** *		** *	** *
Mean math test score	-0.88	(0.70)	-0.26	(0.66)	1.12	(0.73)			** *		** *	**
Mean core grade point average	2.12	(0.33)	2.51	(0.29)	2.96	(0.25)	** *	** *	** *	**	** *	*
INSTITUTIONAL PRACTICES												
School Stratification Practices[b]												
Proportion student body repeating grade nine	10.63	(13.04)	4.84	(5.89)	1.32	(3.12)	** *		** *		** *	
Proportion whose 9th grade math course reflects advancement	0.69	(0.17)	0.75	(0.16)	0.78	(0.16)	** *		** *	*	*	

Table 1, Part 2 of 3: Differences across the Schools in the Predominantly-Latinx/Black-Public (PLBP), Predominantly-White-Public (PWPu), and Predominantly-White-Private (PWPr) Clusters

	Cluster A (PLBP)		Cluster B (PWPu)		Cluster C (PWPr)		PLBP v. PWPu		PLBP v. PWPr		PWPu v. PWPr	
	M/P	(SD)	M/P	(SD)	M/P	(SD)	Bv.	Mv.	Bv.	Mv.	Bv.	Mv.
INSTITUTIONAL PRACTICES, continued												
School Stratification Practices[b], continued												
Proportion in a core 9th grade science course	0.41	(0.26)	0.31	(0.27)	0.57	(0.33)	** *		** *		** *	**
Mean proportion 9th grade courses high-level	0.13	(0.12)	0.13	(0.14)	0.20	(0.19)			** *		** *	
Proportion in at least one low-level ninth grade course	0.20	(0.19)	0.14	(0.16)	0.16	(0.18)	** *		*			
Proportion in at least one 9th grade English as a Second Language course	0.20	(0.18)	0.12	(0.14)	0.16	(0.18)	** *		*		**	
Educator-Student Relations[a]												
Administrator report of poor peer climate	0.73	(0.79)	-0.21	(0.76)	-0.84	(0.77)	** *		** *		** *	
School staff expectations per counselor	-0.33	(0.96)	-0.11	(0.95)	-0.36	(0.84)	**		** *		** *	
Math teachers' motivation per math teacher	-0.22	(0.53)	-0.09	(0.56)	-0.28	(0.45)	**		** *		** *	

Science teachers' motivation per science teacher	-0.24	(0.54)	-0.04	(0.51)	0.19	(0.60)	** *		** *		** *	
Teachers' motivation per math/science teachers	-0.34	(0.58)	-0.09	(0.57)	0.36	(0.58)	** *		** *		** *	
Mean self-reported self-efficacy	-0.53	(0.40)	-0.18	(0.50)	0.65	(0.58)	** *	+	** *	*	** *	
Mean 9th graders' perceptions as fair and effective	-0.07	(0.28)	-0.02	(0.31)	0.07	(0.31)	+		** *		** *	
OVERT PRACTICES												
School Offerings												
Courses available to be taken at postsecondary institution for high school and college credit	0.52		0.62		0.50		** *				** *	+
Courses available as part of a tech prep program	0.27		0.28		0.16				** *		** *	
Courses available as part of a career academy	0.25		0.17		0.14		**		** *			
Offers Advanced Placement/International Baccalaureate math courses	0.88		0.89		0.96					+		
Offers Calculus on-site	0.86		0.94		0.98		**		** *		*	
Offers all three core sciences	0.88		0.96		0.96		** *		**			+

Offers honors diploma	0.23	0.25	0.20				**	
Offers International Baccalaureate diploma	0.83	0.95	0.92		** *	*		*

Table 1, Part 3 of 3: Differences across the Schools in the Predominantly-Latinx/Black-Public (PLBP), Predominantly-White-Public (PWPu), and Predominantly-White-Private (PWPr) Clusters

	Cluster A (PLBP)		Cluster B (PWPu)		Cluster C (PWPr)		PLBP v. PWPu		PLBP v. PWPr		PWPu v. PWPr	
	M/P	(SD)	M/P	(SD)	M/P	(SD)	Bv.	Mv.	Bv.	Mv.	Bv.	Mv.
OVERT PRACTICES, continued												
Teachers' Qualifications[a]												
Proportion math teachers certified	0.96	(0.14)	0.97	(0.14)	0.88	(0.25)		*	** *		** *	*
Proportion science teachers certified	0.95	(0.17)	0.97	(0.12)	0.86	(0.27)			** *		** *	
Percent teachers absent on an average day	4.16	(2.53)	3.64	(4.66)	2.39	(1.93)			** *		** *	
Proportion full-time math teachers left school	0.15	(0.18)	0.10	(0.14)	0.08	(0.12)	** *		** *		*	
Proportion full-time science teachers left school	0.14	(0.15)	0.09	(0.16)	0.09	(0.14)	** *		**			
Proportion with Master's degree or higher	0.47	(0.21)	0.50	(0.23)	0.56	(0.24)			** *	+	** *	
Proportion majored in subject teaching for Bachelor's degree	0.42	(0.18)	0.39	(0.20)	0.46	(0.21)	+		+		** *	
Number of college courses in subject teaching	4.79	(2.83)	6.42	(3.06)	6.41	(3.18)	** *		** *			*
Proportion completed alternative certification	0.37	(0.17)	0.23	(0.16)	0.21	(0.17)	** *	+	** *	+		
Mean years of experience teaching	10.86	(3.97)	12.99	(4.52)	15.42	(6.65)	** *		** *		** *	
Schools (n)	172		502		250							

Note: M/P=Means and proportions. SD=Standard deviations. Although continuous measures are standardized in analyses that determine clusters, these estimates use unstandardized versions for increased substantive meaning. Columns headed "Bv." show the statistical significance of differences across clusters in school characteristics in bivariate analyses. Columns headed "Mv." show the statistical significance of the school characteristic as a predictor in a multivariate regression model predicting being in one cluster versus another (full models in Online Table 6); cells are shaded for school characteristics that did not significantly predict the school being in that cluster versus either of the other two clusters.

a-Italicized measures in this section are aggregated to the school level by averaging data describing the 9th grade math and science teachers of the approximately thirty students sampled from each school.

b-Italicized measures in this section are aggregated to the school level by averaging data describing the outcomes and 9th grade course placements of the approximately thirty students sampled from each school.

***p<0.001, **p<0.01, *p<0.05, +p<0.10.