

Racial diversity: A secret of high-performing school districts across the United States

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ABSTRACT

Objectives In this study, we aim to provide insights into the relations between racial composition and students' academic performance in U.S. public school districts.

Methods Extracting data from the Stanford Education Data Archive (SEDA), which includes longitudinal data of state testing scores over a ten-year span, we conducted descriptive and independent-samples *t*-tests to measure the differences in racial diversity between high- and low-performing school districts.

Results The quantitative data analysis of 300 U.S. school districts showed that at any given socioeconomic level: high, low, or national-average, there is a significant difference in racial diversity between high- and low-performing school districts.

Conclusion High-performing districts at all three socioeconomic levels are more racially diverse compared to low-performing districts. This reveals that contrary to the stereotype that more students of color mean lower academic performance, racial diversity of a student body translates to higher academic performance.

Keywords quality education, racial segregation, school choice, academic performance, socioeconomic status, sustainable development goals

INTRODUCTION

Amid the unprecedented challenges the world faces today: the COVID-19 pandemic, the environmental crisis, and the social unrest, leaders and scholars of all fields turn to education for sustainable solutions. While quality education is critical to ensure a better future for humankind, nations, governments, institutions, and individual stakeholders are unable to agree on what quality education should look like. In the United States, school districts in more affluent communities tend to achieve higher test

Highlights

- ▶ This is a youth-centered research study. Youths acted as co-researchers throughout the entire research process.
- ▶ This study carried out a unique design investigating racial diversity among school districts that are in the same socioeconomic levels and therefore produced focused findings on the relations between racial diversity and students' learning outcome independent of the influence of socioeconomic status.
- ▶ This original study is part of the effort to shift conversations around racial diversity and promote unity through research.

scores and thus, perceived as “high-quality” school districts. It is also evident that affluent communities consist of higher percentages of White population. The combination of the two factors led to a stagnant stereotype: the Whiter the school districts, the better they are. Consequently, school districts of less-White communities, and therefore consisting of higher percentages of students of color, are seen as “bad” school districts. However, as Gullen (2012) stated, while there is a substantial correlation between race and socioeconomic status and going to school in a low-income district consisting of more students of color is linked with poorer academic outcomes, it does not account for the entire achievement gap.

In this study, we aim to provide insights into the relations between racial composition and students' academic performance in U.S. public school districts. To ensure that this study is focused on the correlation between racial



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diversity and academic performance and to avoid the influence of socioeconomic factors, we aim to draw comparisons between school districts that are at the same socioeconomic levels. In doing so, we ask the following research question:

To what extent does racial diversity or the lack of it account for the substantial differences in students' academic performance between school districts that are at the same socioeconomic level?

LITERATURE REVIEW

Racial diversity in public schools

What is it like today?

School racial diversity has been the center of stakeholders' attention for generations. Following the Civil Rights movement in the 1950s to 1960s, the most significant declines in school racial segregation were observed in the late 1960s and early 1970s (Reardon & Owens, 2014). After the rolling back of desegregation court orders in the 1990s, Orfield et al. (2012) found that the levels of school racial segregation deepened. Despite much argument about the cause, researchers agree that U.S. public schools are still highly racially and economically segregated today (Reardon et al., 2021). School Choice programs, including magnet and charter schools, had little effect on racial diversity, and in some cases, increased racial segregation (Frankenberg & Lee, 2003; Arcia, 2006; Blatt & Votruba-Drzal, 2021; Wang & Herman, 2017, Chapter 11, p. 158).

Parents' inner conflict

After examining a number of empirical studies on the demographic characteristics of students and families who actively engage in school choice, Lacireno-Paquet (2008) concluded that parents' primary stated motivation in selecting schools is perceived academic quality; the primary influence in terms of documented behavior, however, is peer composition in terms of race and class. White parents say that they want their children to attend racially diverse schools, but when it's time to choose, they choose schools that are disproportionately White and higher income (Roda & Wells, 2013). White parents tend to avoid schools with high minority concentrations (Lacireno-Paquet, 2008). Billingham & Hunt (2016) also found in their experimental study that the proportion of Black students in a hypothetical school has a consistent and significant inverse association with

the likelihood of White parents enrolling their children in that school. These higher levels of stereotype bias further inhibit school enrollment, particularly in schools with higher proportions of Black students (Billingham & Hunt, 2016).

Racial diversity vs. academic outcomes

A holistic approach

A large body of literature discusses the need for and the significance of closing the achievement gap or test-score gap between racial groups and socioeconomic levels; for example, Orfield et al. (2012), Debs (2016), Matheny et al. (2021), Reardon et al. (2021), and many more. Among the efforts, three research threads were found: (1) observation of the widening or stagnating achievement gap and the causes, (2) the extent to which the achievement gap is harmful to underrepresented and disadvantaged students, families, and communities, (3) effective ways to close the achievement gap. All three threads address the issue from a holistic, or closing-the-gap viewpoint, i.e., how education or schooling as a whole can be improved.

A survival mindset

School choice programs are created to give parents more options for their children's schooling. While research focuses on how to improve education as a whole, parents simply want the best for their own children. Roda & Wells (2013) found that many upper-middle-class parents are bothered by the racial and socioeconomic segregation within and among schools, but they are simultaneously anxious and concerned that their children win the "race to the top" of a highly competitive and stratified system. The disconnection between the holistic research approach and individuals' survival mindset continues to drive parents away from real effort and contribution to racial diversity.

Benefits instead of morals

Instead of discussing the extent to which the exacerbated achievement gap is harmful to low-income students and racial minorities, studies that present academic and social-emotional benefits of enrolling children in racially diverse schools are more likely to speak to parents. As the study of Schneider et al. (2021) indicates, White students in racially integrated schools appear to have more positive experiences than White students in less diverse schools, while achieving

at the same rates or higher as measured by standardized tests. This type of work marks an important step in making a research-based case to White and higher-income families about the benefits of racial diversity. As history indicates, the moral imperative is not enough (Schneider et al., 2021).

In the current study, we join the effort to uncover the benefits of racial diversity to students' academic performance measured by standardized test scores.

METHODS

This is an original study using quantitative data collected from the Stanford Education Data Archive and National Center for Education Statistics databases. We applied a multistage sampling design incorporating stratified and cluster sampling methods to compile three data sets and six data groups. Then, we employed descriptive and independent-samples t-tests to conduct quantitative data analysis.

Student learning rate and socioeconomic status data

This is an original study using quantitative data collected from the Stanford Education Data Archive and National Center for Education Statistics databases. We applied a multistage sampling design incorporating stratified and cluster sampling methods to compile three data sets and six data groups. Then, we employed descriptive and independent-samples t-tests to conduct quantitative data analysis.

To investigate the between-district differences in students' academic performance, we relied on the data provided by Stanford Education Data Archive (SEDA). The SEDA longitudinal data consist of state testing scores from spring 2009 to spring 2018 in more than 13,000 public school districts across the United States. Despite many challenges that come with state testing data, SEDA was able to place the proficiency thresholds on the same scale, estimate the mean test scores in each school, district, and county from the raw data and the threshold estimates, scale the estimates so they are measured in terms of grade levels, and therefore create estimates of three parameters: average scores, student learning rates (SLR), and trends in average scores. Each of the parameters presents student performance in a unique way. We chose to use the SLR to measure school district academic performance, reasoning that it is the only parameter that reflects how much students improve from one year to the next. The SEDA database also provides the data of the average

families' socioeconomic status (SES) of school districts in the United States. SES is a broad measure calculated using income, educational attainment, and employment data of all families living in the community that is served by a school district.

School district racial profiles

School district demographics data were gathered from the database of the National Center for Education Statistics (NCES). The NCES is part of the Institute of Education Sciences. The NCES database provides data on school district characteristics via the Education Demographic and Geographic Estimates (EDGE) program. The EDGE program uses the U.S. Census Bureau's American Community Survey, along with spatial data collected by NCES and the Census Bureau, to create indicators of demographic, social, and economic conditions.

Of the abundance of approaches to the measurement of racial diversity, we chose the simplistic majority-minority approach (Budescu & Budescu, 2012). According to the U.S. Census Bureau's 2021 report, 60.1% of the U.S. population are White – majority, while Black, Hispanic, Asian, Native American, and others together make up less than 40% of the U.S. population – minority. In this study, we measured school districts' racial diversity using the percentages of White population. Based on the simplistic majority-minority approach, a higher percentage of majority (White) population means that the district's racial diversity is low, and a higher percentage of minority population means that district is measured higher in racial diversity.

Sampling & data analysis

Based on the SES values provided by SEDA, we first divided the 13,000 U.S. public school districts into three socioeconomic levels: high-SES, low-SES, and national-average-SES. Then, we compiled three data sets of a total of 600 school districts, 200 districts from each SES category. The complete data of three data sets were ranked separately by SLR. In each data set, a high-SLR group and a low-SLR group were generated. Each group consists of 50 districts (Table 1).

Then, we conducted descriptive and independent-samples t-tests to examine the differences in racial diversity between high- and low-performing groups at each SES level. The descriptive statistics consisted of the mean and standard deviation of percentages of

Table 1 Sampled data sets and groups

<i>Data Sets</i>		
Low-SES Districts (Data Set L)	Group A High-SLR Group	Group B Low-SLR Group
National Average-SES Districts (Data Set M)	Group C High-SLR Group	Group D Low-SLR Group
High-SES Districts (Data Set H)	Group E High-SLR Group	Group F Low-SLR Group

White population in high- and low-performing groups at three SES levels.

RESULTS

Data Set L

Data Set L consists of 100 low-SES communities. These are the poorest school districts in the United States with a median household annual income of \$30,625. Economically, there is little to no difference between the two groups in this data set. However, the 50 districts of Group A achieved a 12% higher academic growth per year compared to the national average while the academic growth of Group B is 32% lower compared to the national average.

Independent-samples t-tests were conducted to assess statistical difference in percentages of White population between high- and low-performing groups. In Data Set L, Group A had a lower percentage of White population ($M = 0.17$, $SD = 0.22$) than Group B ($M = 0.32$, $SD = 0.24$). A statistically significant difference in racial diversity between Group A and Group B was found ($p < .05$).

Data Set M

Data Set M consists of 100 average-SES communities. These are average U.S. communities with a median household annual income of \$53,008. Economically, there is little to no difference between the two groups in this data set. However, the 50 districts of Group C achieved a 13% higher academic

growth per year compared to the national average while the academic growth of Group D is 15% lower compared to the national average.

Independent-samples t-tests were conducted to assess statistical difference in percentages of White population between high- and low-performing groups. In Data Set M, Group C had a lower percentage of White population ($M = 0.76$, $SD = 0.27$) than Group D ($M = 0.84$, $SD = 0.16$). A statistically significant difference in racial diversity between Group C and Group D was found ($p < .05$).

Data Set H

Data Set H consists of 100 high-SES communities. These are the richest school districts in the United States with a median household annual income of \$123,387. Economically, there is little to no difference between the two groups in this data set. However, the 50 districts of Group E achieved a 28% higher academic growth per year compared to the national average while the academic growth of Group F is 3% lower compared to the national average.

Independent-samples t-tests were conducted to assess statistical difference in percentages of White population between high- and low-performing groups. In Data Set H, Group E had a lower percentage of White population ($M = 0.75$, $SD = 0.21$) than Group F ($M = 0.83$, $SD = 0.12$). A statistically significant difference in racial diversity between Group E and Group F was found ($p < .05$).

Table 2 T-test statistics for Data set L, M, H

Dataset	Percentage of White Population					
	High-Performing Group		Low-Performing Group		df	t
	M	SD	M	SD		
L - Low SES	0.17	0.22	0.32	0.24	96.268	-3.269
M - Average SES	0.76	0.27	0.84	0.16	80.847	-1.946
H - High SES	0.75	0.21	0.83	0.12	77.122	-2.383

* $p < .05$

DISCUSSION

Racial diversity and quality education

In the beginning of the study, we asked the research question: To what extent does racial diversity or the lack of it account for the substantial differences in students' academic performance between school districts that are at the same socioeconomic level? The results of our descriptive independent samples t-tests found statistically significant differences ($p < .05$) in racial diversity between high- and low-performing groups at all three SES levels: high-, low-, and average-SES. These results show that high-performing groups are consistently associated with a more diverse population. The statistical significance and consistency across SES levels indicate that (1) racial diversity accounts for the substantial differences in students' academic performance between school districts that are at the same socioeconomic level, and (2) school district racial diversity has a positive and significant impact on the learning outcomes of all students.

The existing body of literature on the academic benefits of racial diversity measured by standardized test scores is rather small and the findings are mixed. For example, McNalley (2005) hypothesized that White, middle-class children would do as well academically in racially mixed schools as in all-White schools. Using elementary school children's standardized test scores in reading and math, the study found no association between White, middle class children's test scores and the percent minority students in their schools. Methodologically, these studies often employed regression analysis to determine if racial factors and students' test scores are associated. Regression models are powerful statistical tools, but when used to find associations between racial factors,

and test scores, controlling other variables such as teaching practices, school culture, socioeconomic status, and students' social-emotional and cognitive development can be very challenging, if not impossible. Our study employed t-test analysis to determine if there are statistically significant differences in racial diversity between high- and low-performing school districts. This variation in research design offers a possible explanation for the differences between our results and those of previous studies. Besides methodological reasons, historical factors could offer additional insights and explanations. Studies in the 1990s and early 2000s largely aimed at providing research-based evidence to change White, middle class parents' negative view on students of color. Instead of presenting the benefits of racial diversity, these studies strived to prove that racial diversity was harmless. Despite this limitation, these studies advanced the conversation about racial diversity in schools and helped reduce the stigma attached to students of color. Because of these studies, today's researchers are able to ask bolder research questions and showcase a plethora of benefits of racial diversity.

Horizontal and vertical comparisons of school district SLR

Student Learning Rate or SLR is a parameter provided by Stanford Education Data Archive. It is calculated by comparing students' average scores in one grade and year to those in the next grade and year. In other words, this parameter keeps track of grade-to-grade improvements in performance within each student cohort. The uniqueness of the parameter makes it a more accurate indicator of the education quality of schools and districts (Stanford Education Data Archive, 2021).

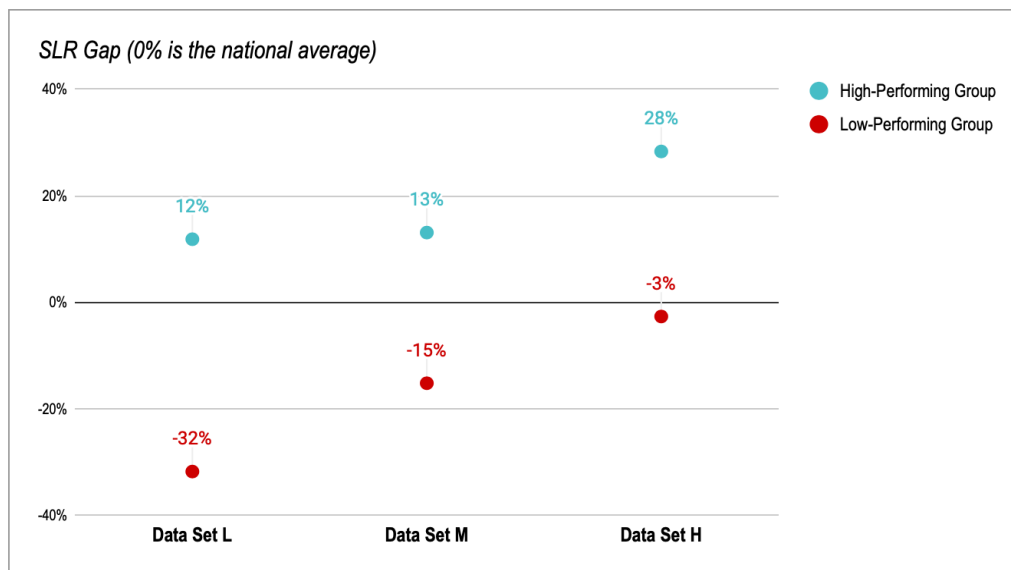


Figure 1 Student learning rate gap between high- and low-performing school districts in each data set.

Figure 1 above presents the Student Learning Rates (SLR) between high- and low-performing groups at three SES levels: low-SES (Data Set L), average-SES (Data Set M), and high-SES (Data Set H).

The data points, as shown in Figure 1, present a great amount of information that was previously hidden. First, a horizontal examination provides information on SES and its effects. Observing the SLR of three low-performing groups (Figure 1, red data points), we can see that the average SLR of low-SES districts is -32% while the number of high-SES districts is -3%. Similarly, a comparison of the three high-performing groups (Figure 1, blue data points) shows that the high-SES districts' average SLR is 28% while the national-average-SES districts' average SLR is 13%, and the low-SES districts' average SLR is 12%. This visual presentation shows how the stratified economic system advances the wealthy and deserts the needy, and unfortunately, the same effects are found in the education system. Although socioeconomic status is not the focus of our study, it is worth mentioning that our results confirm the findings of previous studies on SES and its great effects on students' learning.

A vertical examination reveals that although school districts within each given socioeconomic level had similar amounts of resources and faced similar challenges, the three high-performing groups (50 districts in each group) provided far greater learning opportunities to their students than the three low-performing groups (50 districts in each group) did. For

example, in Data Set L, the students in the 50 high-performing school districts had a learning rate that is 12% above the national average, while those in the 50 low-performing school districts had a learning rate that is 32% below the national average SLR. Because of the scope of the current descriptive study, we are unable to investigate further into the causality of what was presented through the vertical examination. However, we strongly encourage future researchers to conduct causal studies on this interesting, yet often overlooked phenomenon.

CONCLUSION

School choice programs have been around for more than a half century, so has choice-based racial segregation, even when a growing number of parents say that they want their children to attend racially diverse schools (Roda & Wells, 2013). Besides legislative shortcomings, the lack of quantifiable and replicable evidence for the benefits of school racial diversity also plays a role. Utilizing quantitative data extracted from SEDA and NCES databases, our study found that high-performing school districts are consistently associated with a more diverse population, and this association is strong across all socioeconomic levels. The findings of our study suggest that when choosing schools for their children, parents should put aside their own preference for race, and seek schools and districts that are more racially diverse. As more and

more studies indicate, school racial diversity offers great benefits to children's learning and development. Meanwhile, our findings suggest that all stakeholders – students, parents, educators, researchers, and policymakers – should acknowledge that racial diversity is not charity. No one race is helping another or losing their advantage in achieving racial diversity. All children need a racially diverse learning environment to succeed.

Highlighted by the research aim, an area of significance of our study is that it is part of the effort to shift the conversation around racial diversity. The COVID-19 pandemic exposed the deep division in the society around almost all issues, extending to social, economic, environmental dimensions, and beyond (Bhopal & Munro, 2021; Davis, 2022, Foreword, p. 19). Arguments around racial diversity often became about who the beneficiary should be, implying that only some can benefit from the advancement of racial diversity. Aimed at investigating the extent to which racial diversity is beneficial to all students, we were able to join forces in promoting unity through our research. Another area of significance of the study is that our research design minimized the influence of socioeconomic status on the analyses of the relationship between racial diversity and student learning outcome. Researchers have long recognized that racial and socioeconomic factors are closely intertwined, and it is difficult to separate the two when needed (Longstreth, 1978; Callenbach et al., 1981; Clayton, 2001). LaVeist (2005) stated that the problem of disentangling race and socioeconomic status is as much conceptual as it is methodological. By designing our study to investigate school districts within individual socioeconomic levels, we were able to collect focused data and produce more cogent findings. We hope our research design helps to shine a light on this challenge, and we hope future researchers continue to explore effective methods and chart various paths for learning the benefits of racial diversity.

There are some limitations of our study. Despite that SEDA – the database that made comparing longitudinal student test score data at a national level and across socioeconomic spectrum possible – consists of data of 13,000 U.S. school districts, we were only able to include 300 school districts. Also, the simplistic majority-minority approach that we employed meant that individual groups of racial minorities, such as Black, Hispanic, Asian, Native American, and others, did not have individual representations in our findings.

Furthermore, the scope of our research is limited to academic benefits measured by standardized test scores. Therefore, we suggest that future researchers conduct studies on school racial diversity with larger samples, utilize methods to the measurement of racial diversity that allow individual representations for minority groups, and investigate benefits beyond standardized test scores.

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