

RESEARCH BRIEF: IMPACT OF SOCIOECONOMIC INTEGRATION ON ACADEMIC ACHIEVEMENT

March 2017



In the following report, Hanover Research examines the academic impact of socioeconomic integration, or policies and practices that reduce high concentrations of poverty within individual schools.

TABLE OF CONTENTS

Executive Summary and Key Findings.....	3
INTRODUCTION	3
KEY FINDINGS.....	4
Research Brief.....	5
INTRODUCTION	5
IMPACT OF POVERTY AND ECONOMIC SEGREGATION.....	5
EVALUATION OF INTEGRATION PROGRAMS.....	10
Hartford: Capitol Region Education Council (CREC) Inter-District Magnet Schools.....	11
Wake County Public Schools	14
NON-ACADEMIC IMPACT OF DIVERSE SCHOOLS AND CLASSROOMS.....	16
Appendix A: Bibliography	17

EXECUTIVE SUMMARY AND KEY FINDINGS

INTRODUCTION

Throughout the United States, many public school districts are examining the value of socioeconomic integration as a potential consideration in their school boundary design and student assignment policies. Many of these districts are examining the value of socioeconomic integration as a potential consideration in their plans. In this report, Hanover Research (Hanover) reviews the research on socioeconomic integration to examine its potential impact on student achievement. The following report focuses on research-based findings on three major topics related to socioeconomic integration:

- **Impact of Poverty and Economic Segregation** – Reviews the academic research surrounding school socioeconomic composition and its impact on student achievement.
- **Evaluation of Integration Programs** – Examines case studies of two socioeconomic integration programs: Hartford Capitol Region Educational Council Magnet Schools and Wake County Public Schools’ socioeconomic integration plan.
- **Non-Academic Impact of Diverse Schools and Classrooms** – Explores non-academic factors related to socioeconomic integration.

The **Appendix** provides a brief summary of the 17 individual studies on school integration drawn on for this report.

KEY FINDINGS

- **Most research-based evidence shows that high concentrations of poverty within schools are linked to poor academic achievement**, though there is no clear consensus regarding the strength of “school composition effects.” Several recent studies over the last decade suggest that schools with a very high proportion of low-SES students—sometimes defined as 75 percent or higher—can have extremely detrimental impact on students regardless of their own background SES.
- **There are multiple, interrelated reasons that schools with a high concentration of poverty have a negative impact on students.** Studies suggest that “peer effects,” or the phenomenon that a student surrounded by high-achieving students will tend to learn more than a student surrounded by low-achieving students, can compound challenges in schools with a large concentration of high-needs students. Additional factors associated with more advantaged schools – including access to high-quality teachers, robust school facilities, and parents’ social capital – have also been shown correlate to higher student achievement.
- **The impact of socioeconomic integration plans at individual school districts can be difficult to assess.** For example, the Hartford Capitol Region Education Council Magnet School Program, which aims to create innovative and diverse magnet programs for students in Hartford Public Schools (CT), found that increased socio-economic integration in schools effectively reduced the achievement gap over a six-year period. However, the direct benefits of socioeconomic integration remain difficult to disentangle from the impact of other school inputs, such as high-quality teachers, strong school leadership, and high-tech facilities. Furthermore, academic research on integration plans at Wake County Public Schools (NC) finds mixed results as to whether the reduction in the achievement gap between White and minority students in the early 2000s can be attributed to the district’s socioeconomic integration plan.
- **In addition to academic benefits, a growing body of research suggests that there are significant, non-academic benefits from attending socioeconomically and racially diverse schools and classrooms for students of all backgrounds.** In addition to the inherent value of exposing students to a diverse and equitable learning environment, non-academic benefits include increased comfort in multicultural settings, greater cultural flexibility, and reduced prejudice.

RESEARCH BRIEF

INTRODUCTION

Since the first court-ordered school integration policies were implemented in the United States following *Brown v. Board of Education*, researchers have examined the long- and short-term impact of school assignment practices on students from diverse backgrounds. The following report aims to summarize the major findings of this research surrounding the relationship between a student’s background, the population of a student’s school, and academic achievement. Throughout this research brief, Hanover focuses on the impact of **socioeconomic integration**, rather than integration based on race or ethnicity. However, it should be noted that socioeconomic status cannot always be examined in isolation of race and ethnicity, as many minority children, particularly Black and Hispanic children, experience poverty disproportionately compared to their White peers,¹ and are also more likely to attend high-poverty schools.²

Many of the studies referenced in this report examine the impact of segregation and integration related to both factors. The definition of individual and school level socioeconomic status (SES) varies across reports; many studies rely on simple measures such as designating students who receive free or reduced price lunch (FRPL) as “low SES,” while students who do not qualify are considered “middle” or “high SES.” Other studies consider additional factors to determine student or family “social status” including parental educational attainment or occupation.

IMPACT OF POVERTY AND ECONOMIC SEGREGATION

In 1966, Coleman et al published the first major study in the United States examining the impact of school segregation, race, and socioeconomic status on school performance. Coleman’s extensive study found that while student characteristics, such as family socioeconomic status, were the strongest predictive factor for how well a student would fare in school, **school quality and the composition of a given school’s student population was also a meaningful predictor**. Furthermore, the study asserted that school quality and composition were more powerful for low SES minority students than high SES, White students. Essentially, a minority student from a low SES background would experience a stronger benefit from attending an advantaged school with high SES peers, and a stronger negative impact from attending a disadvantaged school with low SES peers, than a student from a high SES background in the same situation.³

¹ “Child Poverty Rates, by Race and Ethnicity.” Pew Research Center, July 10, 2015. http://www.pewresearch.org/fact-tank/2015/07/14/black-child-poverty-rate-holds-steady-even-as-other-groups-see-declines/ft_15-06-30_poverty_310px/

² “Percent of Students in High-Poverty Schools: United States, All Public Schools, 2010-2014.” National Equity Atlas. http://nationalequityatlas.org/indicators/School_poverty

³

Since Coleman’s formative study, many researchers have examined the impact of school population, school quality, and student socioeconomic status on academic achievement. The majority of the academic research surrounding school poverty comes to the same conclusion: schools with a high concentration of poverty are linked to poor academic outcomes. For example, a large meta-analysis of more than 50 studies that examine the impact of school integration on mathematics outcomes found that “the research record is also unambiguous about the overall effects of school socioeconomic composition on mathematics outcomes: concentrated school poverty has a negative effect on the mathematics outcomes of all students who attend such institutions.”⁴

“...the research record is also unambiguous about the overall effects of school socioeconomic composition on mathematics outcomes: concentrated school poverty has a negative effect on the mathematics outcomes of all students who attend such institutions.”

Furthermore, a 2016 study on the impact of school poverty on the reasoning skills of elementary school students found that “extreme poverty” schools—or, those with more than 75 percent of its students receiving FRPL—had a detrimental impact on student reasoning skills for all students regardless of individual SES background.⁵ A national-level study of Hispanic adolescent performance on a vocabulary-based exam found that “socioeconomic composition of the school, but not race composition, is an important predictor” of Hispanic students’ test scores.⁶ One study of Grade 4 student performance on state standardized exams across 16 districts in Madison-Dane County, Wisconsin concluded that:

... the difference between a low-income pupil’s attending a school with 45% middle-class classmates... and that pupil’s attending a school with 85% middle-class classmates... would typically be a 20 to 32 percentage point improvement in that low-income pupil’s test scores.⁷

However, while the negative impact of high-poverty schools is generally acknowledged across studies, findings vary on the strength of these school effects, the reasons that high-poverty schools tend to hurt academic achievement, and the degree to which these effects impact certain types of students more than others.

⁴ Mickelson, R.A. and Bottia, M. “Integrated Education and Mathematics Outcomes: A Synthesis of Social Science Research.” *North Carolina Law Review*, 88:3, 2010, p. 1037.

<http://scholarship.law.unc.edu/cgi/viewcontent.cgi?article=4423&context=nclr>

⁵ Rogers, M. “The Promise of Economic-Integration: Examining the Relationships Among School Poverty, Individual Poverty, and Reasoning Skills.” *eJournal of Education Policy*, 2016.

https://nau.edu/COE/eJournal/_Forms/spring2016/Rogers/

⁶ Ryabov, I and Van Hook, J. “School Segregation and Academic Achievement Among Hispanic Children.” *Social Science Research*, 36:2, 2007, p. 782. <http://www.sciencedirect.com/science/article/pii/S0049089X06000202>

⁷ Rusk, D. “Classmates Count A study of the interrelationship between socioeconomic background and standardized test scores of 4th grade pupils in the Madison-Dane County public schools.” Madison-Dane County, 2002, p. 3. <http://www.schoolinfosystem.org/archives/Unifiedfinalreport.pdf>

As previously noted, Coleman’s study found that school effects were significantly less influential than individual student background when predicting future academic success. However, some researchers over the last several decades have found evidence that suggests school SES may be a more powerful factor in student achievement than originally suggested. In 1997, Caldas and Bankston examined the relationship between school SES and student performance using the results of the Grade 10 Louisiana Graduate Exit Examination. The study found that school poverty level, independent of racial or ethnic composition, had a strong impact on student performance, second only to individual socioeconomic status.⁸ In 2005, Rumberger and Palardy used data from the National Education Longitudinal Survey to conduct a large-scale, national study of the test performance of more than 14,000 high school students, finding that the impact of school SES may be even more influential than individual student background in cases of high poverty schools. The authors noted: “In our study, **all students**—whatever their race, social class, or academic background—**who attended high schools with other students from high social class backgrounds learned more**, on average, **than students who attended high schools with other students from low social class backgrounds.**”⁹

In one compelling case, Borman and Dowling revisited Coleman’s study in 2010, applying more sophisticated statistical analysis to the same dataset used in 1966. Borman and Dowling’s model examined student performance in greater context, effectively simulating the hierarchical nature of school effects by modeling “students nested within classrooms, and classrooms nested within schools.” The researchers ultimately concluded that a higher level of variability in student performance observed between schools was related to school characteristics rather than student background (up to 40 percent), and found that high-poverty schools have a stronger impact on student achievement than individual student SES.¹⁰

Different studies typically link the negative impact of high-poverty schools to several related school-level characteristics that this report will refer to as “school quality” and “peer effects” and “social capital” defined in Figure 1 below. The “school quality” approach suggests that low-SES schools are typically under-resourced compared to high-SES schools, including resulting in disparities between schools in factors such as access to a wide and rigorous curriculum, sufficient supplies and materials, adequate facilities, enrichment programs, and qualified teachers and staff. In contrast, the “social capital” explanation suggests that middle- and high-SES parents tend to have more social capital to advocate for their children attending public schools, likely due to higher educational attainment, increased individual resources,

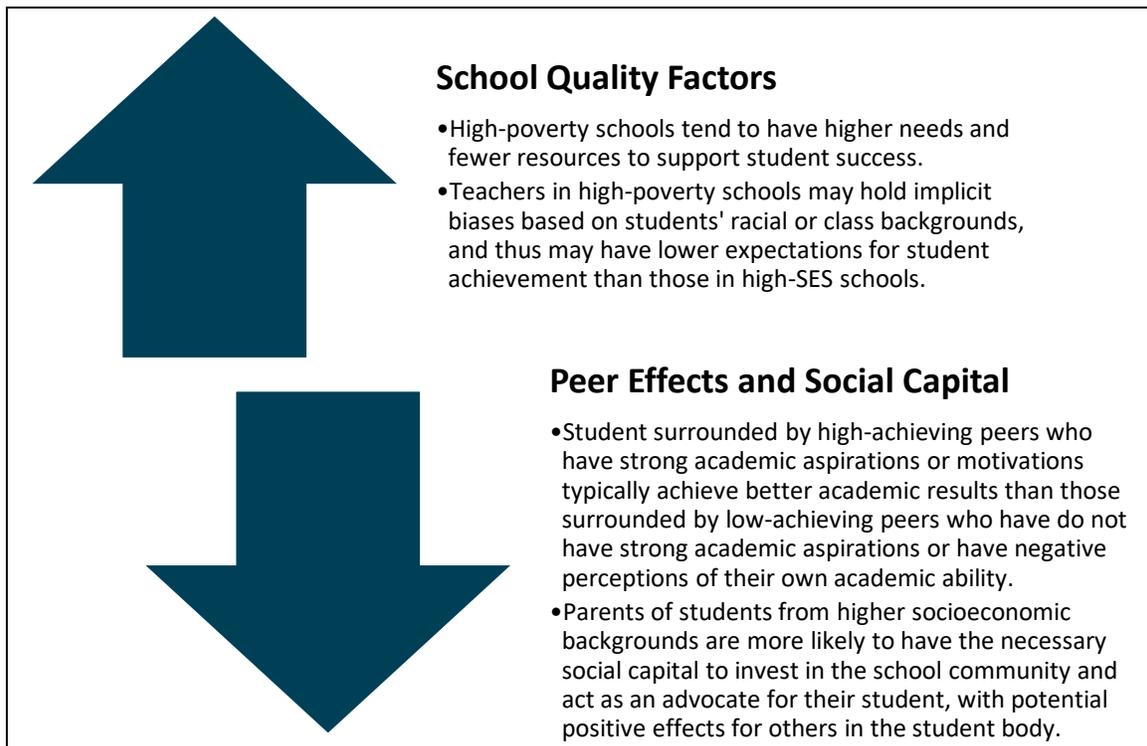
⁸ Caldas, S.J. and Bankston, C. “Effect of School Population Socioeconomic Status on Individual Academic Achievement.” *The Journal of Educational Research*, 90:5, 1997, pp. 269-277.
<http://www.tandfonline.com/doi/pdf/10.1080/00220671.1997.10544583?needAccess=true>

⁹ Rumberger, R.W. and Palardy, G.J. “Does Segregation Still Matter? The Impact of Student Composition on Academic Achievement in High School.” *Teachers College Record*, 107:9, 2005, p. 2020.
[http://intranet.niacc.edu/pres_copy\(1\)/ILC/Does%20Segregation%20Still%20Matter%20-The%20Impact%20of%20Student%20Composition%20on%20Academic%20Achievement%20in%20High%20School.pdf](http://intranet.niacc.edu/pres_copy(1)/ILC/Does%20Segregation%20Still%20Matter%20-The%20Impact%20of%20Student%20Composition%20on%20Academic%20Achievement%20in%20High%20School.pdf)

¹⁰ Borman, G.D. and Dowling, M. “Schools and Inequality: A Multilevel Analysis of Coleman’s Equality of Educational Opportunity Data.” *Teachers College Record*, 2010. <http://www.tcrecord.org/Content.asp?ContentId=15664>

and greater involvement in school activities. Essentially, middle- and high-SES parents may be better-positioned to make schools work for their children than low-SES parents. Finally, the “peer effects” explanation of why high-poverty schools can be particularly harmful to students suggests that a student who is surrounded by high-achieving peers tend to learn more than a student who is surrounded by low-achieving peers. This does not suggest that low-SES students are inherently low-achievers, but rather, that classrooms where a higher proportion of students have high needs will likely observe poorer results than classrooms where a lower proportion of students have high needs.

Figure 1: Factors in the Impact of High-Poverty Schools



Source: Multiple¹¹

While most studies consider all of these factors in aggregate, some studies of school SES attempt to separate the impact of school-quality factors from peer-effect factors. For example, Rumberger and Palardy defined school quality factors as “alterable characteristics of schools” that may be reformed as a possible alternative to socioeconomic school integration.¹² Ultimately, their study found that school structure and resources did not account for the impact of low SES schools; however, school policies and practices, such as “teacher expectations and the academic climate” did account for at least some of the

¹¹ Figure drawn from multiple sources, including: [1] Ryabov, I and Van Hook, J. Op. cit., p. 769-770.

[2] Rumberger and Palardy, Op. cit., p. 2002.

[3] Borman, G.D. and Dowling, M. “Schools and Inequality: A Multilevel Analysis of Coleman’s Equality of Educational Opportunity Data.” *Teachers College Record*, 112:5, 2010, p. 1206.
<http://www.tcrecord.org/Content.asp?ContentId=15664>

¹² Rumberger and Palardy, Op. cit., p. 2002.

negative effect of low SES schools. Thus, they hypothesize, the impact of a high poverty school may be mitigated if teacher expectations and the academic climate of the school reflects those observed at high-performing, high-SES schools.¹³

In a 2008 study of high school SES and student characteristics, Palardy later found that within a national sample of high school students, students attending a low-SES high school began Grade 9 with lower levels of learning, and learned less over the course of their high school careers, than similar students attending high-SES schools, estimating a total loss of 5.7 grade levels due to attendance at low-SES schools. Palardy controlled for multiple school inputs and student characteristics in order to isolate the impact of school SES, including individual student socioeconomic background, school resources, and perceptions of school safety, and continued to find a gap between student learning across high- and low-SES schools. He ultimately concluded:

Even after adjusting for a large number of student characteristics and school inputs and practices, the mean learning rate at high social class composition schools is 30% higher than at low social class composition schools.¹⁴

Finally, while mixed-SES schools appear to have a clear, positive effect for students from disadvantaged backgrounds over low-SES schools, it must be noted that some studies find a slight to moderate negative impact on advantaged students attending integrated schools compared to if they were to attend a school with a higher percentage of advantaged peers. For example, in their 1997 study of school socioeconomic composition and student achievement, Caldas and Bankston found that increasing the percentage of low-SES students in a high-SES school did result in lower achievement among high-SES students compared to high-SES peers in high-SES schools. The researchers suggested that maintaining a majority high-SES students while integrating a proportion of low-SES students may be a way to implement socioeconomic integration plans without affecting the achievement of advantaged students, but did not examine this in the current scope of research.¹⁵

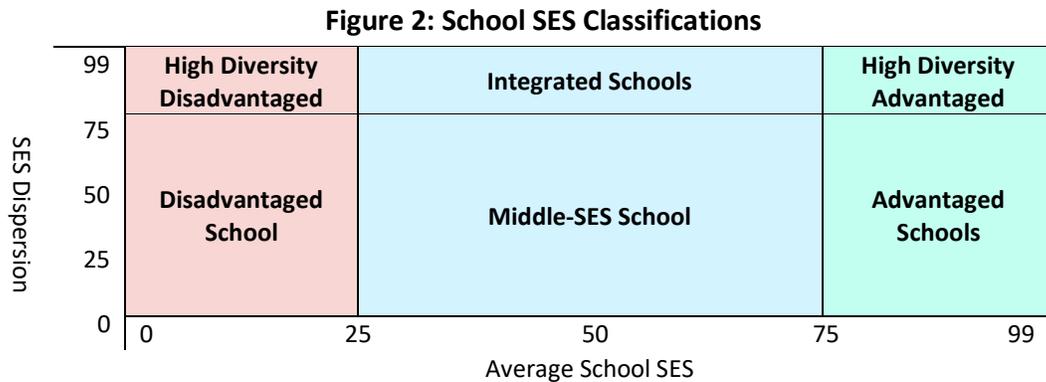
More recently, a 2016 article on the results of the 2009 Programme of International Student Assessment (PISA) exam examined student performance by school context across the 34 OECD countries and 40 partner countries and regions. The PISA exam is administered to 15-year-old students in each country, along with a survey about the student's home life, motivation level, and engagement in school. This study considered each student's SES based on their national context, as well as self-reported survey results on parental educational attainment, occupation, and household belongings. School-level factors considered in the study included school size and class size, as well as presence of academic tracking and other organizational factors. School SES was determined using a combination of *average* SES of the

¹³ Ibid., pp. 2021-2023.

¹⁴ Palardy, G.J. "Differential School Effects Among Low, Middle, and High Social Class Composition Schools: A Multiple Group, Multilevel Latent Growth Curve Analysis." *School Effectiveness*, 19:1, 2008, pp. 36-37.
https://facultyprofiles.ucr.edu/gsoe_dept/faculty/Gregory_Palardy/Palardy%202008%20%20School%20Effectiveness%20and%20School%20Improvement.pdf

¹⁵ Caldas and Bankston, Op. cit.

student population overall and *dispersion* of SES levels within the school, as displayed in Figure 2 below.



Source: *Comparative Education Review*¹⁶

The study found that low-SES students attending integrated or middle-SES school performed significantly better than low-SES students attending disadvantaged schools on the PISA reading exam; however, these performance benefits were largely offset by lower performance among high-SES students attending integrated and middle-SES schools across the 74 countries and regions overall. The researchers noted that some school characteristics could prevent performance loss for high-SES students while also benefiting low SES students. These factors included large class sizes and larger-than-average school sizes. Furthermore, certain countries, including Canada, Denmark, Slovenia, and Tunisia, observed middle-income and integrated SES schools that did not hinder the performance of high-SES students, suggesting that these outcomes are possible in effectively integrated schools.¹⁷ Ultimately, the researchers concluded:

It is likely that successful integration would involve a package of measures that include pedagogical and organizational adjustments that enhance instruction in a more diverse socioeconomic environment, while ensuring that integrated schools are ready to manage the resource and political consequences of increased diversity in each school.¹⁸

EVALUATION OF INTEGRATION PROGRAMS

While most studies examined in the previous subsection compare the academic performance in more schools and classrooms serving more homogeneous populations, this subsection focuses on two case studies of district socioeconomic integration programs. In both instances, these programs aimed to change school assignment policies or practices to reduce the occurrence of high-poverty schools and increase socioeconomic diversity across schools. This

¹⁶ Figure adapted from: Montt, G. "Are Socioeconomically Integrated Schools Equally Effective for Advantaged and Disadvantaged Students?" *Comparative Education Review*, 60:4, 2016, p. 811. <http://www.journals.uchicago.edu/doi/pdfplus/10.1086/688420>

¹⁷ *Ibid.*, pp. 815-823.

¹⁸ *Ibid.*, p. 823.

subsection focuses on the impact of these programs on student academic achievement, although non-academic outcomes are noted where possible.

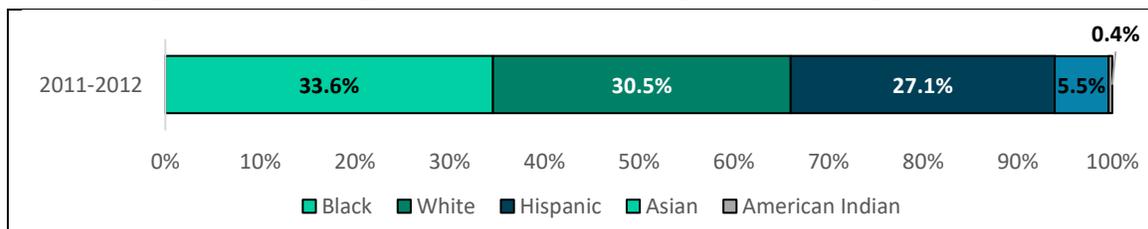
HARTFORD: CAPITOL REGION EDUCATION COUNCIL (CREC) INTER-DISTRICT MAGNET SCHOOLS

Hartford Public Schools is a large, urban school district in Hartford, Connecticut. In an effort to promote school diversity and integration—and to improve educational opportunities and outcomes for disadvantaged students—the Capitol Region Education Council (CREC) Magnet Program of the Greater Hartford area operates several inter-district magnet programs in Hartford and the surrounding area that draw students from within the city as well as 35 school districts from 80 surrounding towns.¹⁹ As of academic year 2015-2016, CREC operated 18 magnet schools and enrolled more than 8,000 students across the Greater Hartford area.²⁰ CREC magnets are designed to appeal to diverse groups of students and their families, and offer such thematic focus areas as:²¹

- Montessori
- Reggio Emilia
- International Baccalaureate
- Public Safety
- Medical Professions and Teacher Preparation
- Aerospace and Engineering
- Advanced Mathematics and Science
- Scientific Discovery
- Museum Studies
- Global Studies
- Arts

The CREC district uses a school-choice model to create diverse learning communities that appeal to students across neighborhood and even school district lines. Essentially, innovative programming offered through the magnet program attracts both disadvantaged students, who tend to have less access to high-quality neighborhood schools, and more affluent students from more advantaged neighborhoods. Compared to Connecticut state averages, CREC magnet schools enroll a more racially and ethnically diverse group of students (see Figure 3) and enroll a higher-than-average proportion of students who are eligible for FRPL.

Figure 3: CREC Magnet School Enrollment by Race/Ethnicity, 2011-2012



¹⁹ “About School Choice.” CREC Schools. <http://www.crecschools.org/for-parents/about-school-choice/>

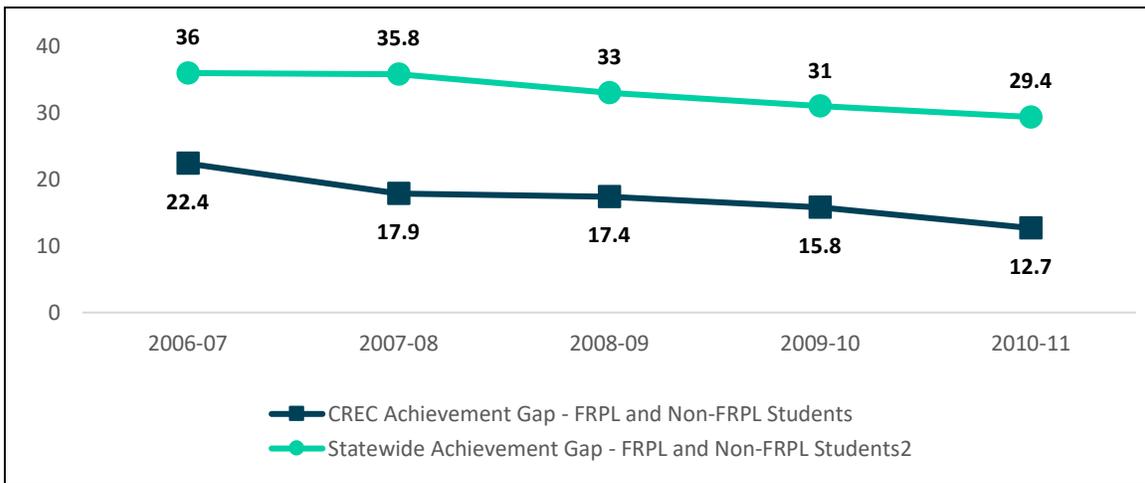
²⁰ “2015-2016 Annual Report.” Capitol Region Education Council, 2016. http://www.crec.org/about/docs/annual/AR_2016.pdf

²¹ Ellsworth, S. “Capitol Region Education Council (CREC) Student Achievement Overview.” Capitol Region Education Council, 2012, p. 2. http://sheffmovement.org/wp-content/uploads/2014/04/2012_CRE_Council_Research-Brief.pdf

Source: Capitol Region Education Council²²

Within these diverse schools, CREC has achieved impressive academic results for students across all subgroups. Between 2006-07 and 2011-12, White, Black, and Hispanic students achieved higher scores on the Connecticut Mastery Test (CMT) in reading and mathematics than their same-race peers at the state level. Among students who qualify for FRPL, a higher percentage of students scored at or above proficient *and* at or above goal (advanced) than the average rate for FRPL students across the state in both reading and mathematics as measured by the CMT. Furthermore, CREC magnet schools have reduced the academic achievement gap between advantaged and disadvantaged students, including a declining CMT achievement gap for Black and Hispanic students compared to White students and a declining CMT achievement gap between economically advantaged and disadvantaged students, as measured by eligibility for FRPL (see Figures 4 and 5 below).

Figure 4: CMT Achievement Gap in Reading, Grades 3-8, By Eligibility for FRPL

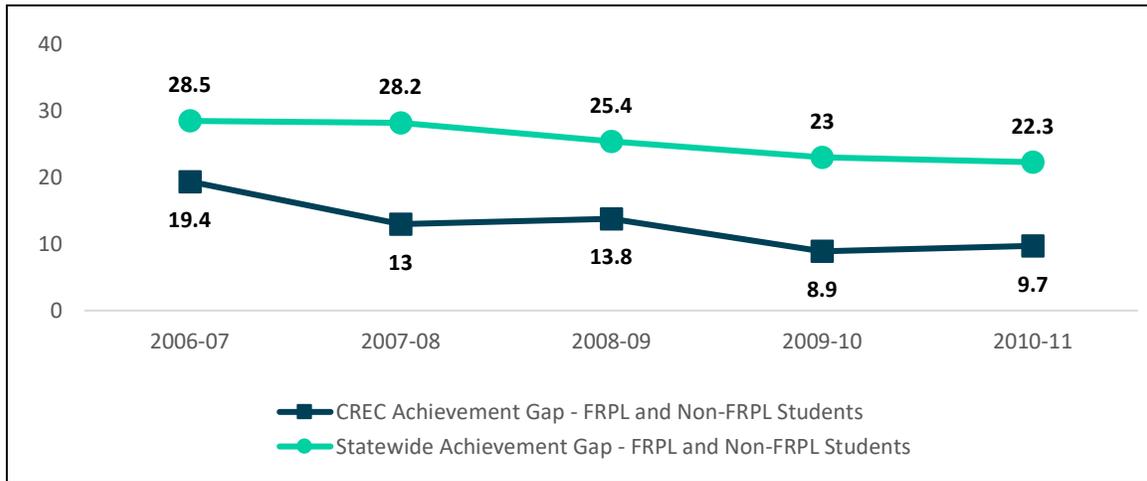


Source: Capitol Region Education Council²³

²² Ibid., p. 3.

²³ Figure created with data from: Ibid., p. 9.

Figure 5: CMT Achievement Gap in Mathematics, Grades 3-8, By Eligibility for FRPL



Source: Capitol Region Education Council²⁴

Notably, achievement evidence from academic year 2010-2011 also suggests that CREC magnet students in Grades 3-8 typically outperformed students in the neighborhood schools they would have attended in reading and mathematics on the CMT exam, even among students from more advantaged neighborhoods.²⁵ Furthermore, results from academic year 2010-2011 revealed several promising results, including the following:²⁶

- Students attending CREC magnet schools consistently outperform the state on the CMT in the percentage scoring at or above Proficient in mathematics and reading;
- Hispanic students experienced double-digit increases in the percent scoring at or above Proficient in mathematics and reading on the CMT from 2007 to 2011;
- The achievement gap between Black and White, and Hispanic and White students was eliminated in Grade 3 reading on the 2011 CMT;
- The achievement gap between Hispanic and white students was eliminated in Grade 5 reading on the 2011 CMT; and
- Students who attend a CREC magnet school consistently outperform their peers who attend a regular school in their town of residence.

It should be noted that in addition to a commitment to school diversity and equity in educational opportunities, CREC magnet schools also appear to be committed to overall school quality, including innovative educational programming, teacher quality, and strong leadership. The CREC district website describes the schools as follows:

²⁴ Ibid., p. 9.

²⁵ Ibid., p. 10.

²⁶ Bullets verbatim from: Ibid., p. 1.

CREC's Magnet Schools are leading the way in public education with theme-based programs that provide all students with college and career-focused educational opportunities. With highly qualified teachers, cutting-edge curricula and state-of-the-art buildings, CREC magnet schools give students from diverse backgrounds a chance to excel in ways that are designed to inspire and motivate.²⁷

Accordingly, it is difficult to disentangle the impact of school resources, philosophy, and leadership from the impact of socioeconomic integration.

WAKE COUNTY PUBLIC SCHOOLS

Wake County Public Schools (WCPS) is a large, suburban district that encompasses Raleigh, North Carolina and surrounding towns. The district enrolled a total of 155,820 students across 174 schools as of academic year 2014-2015.²⁸ WCPS is an outlier in terms of its relatively high degree of racial integration, even as districts across the state have moved toward more segregated schools overall since the 1990s. It should be noted that WCPS has had a somewhat tumultuous history of socioeconomic integration over the last two decades; the following profile examines the characteristics of the district's policies and their results for student achievement.

WCPS replaced its race-conscious integration policy with an income-conscious integration policy in 2000, to promote integration along socioeconomic lines.²⁹ The WCPS socioeconomic integration plan used a combination of school choice and mandatory assignment policies to promote diverse schools; district offered several magnet schools to attract more advantaged students to schools in low-income and minority neighborhoods, along with mandatory assignment based on school boundaries to ensure desegregated schools. With the transition of its race-conscious assignment policy to an income-conscious policy, the district set a goal to limit the percentage of students eligible for FRPL to no more than 40 percent in a given school.³⁰ In order to meet this goal, the district sometimes employed bussing, typically to send low-income students to schools in more affluent, suburban areas, sometimes up to 12 miles away from their homes and neighborhoods. The district also pursued policies that caused mandatory re-assignments of students to maintain socioeconomic balance.³¹

²⁷ "About School Choice," Op. cit.

²⁸ "Common Core of Data." National Center for Education Statistics. <https://nces.ed.gov/ccd/districtsearch/>

²⁹ McMillian, M.M. et al. "Can Class-Based Substitute for Race-Based Student Assignment Plans? Evidence from Wake County, North Carolina." *Urban Education*, 2015, pp. 9-10. https://www.researchgate.net/profile/William_Darity/publication/295884881_Can_Class-Based_Substitute_for_Race-Based_Student_Assignment_Plans_Evidence_From_Wake_County_North_Carolina/links/56cf551008ae85c82344a4e3.pdf?inViewer=0&pdfJsDownload=0&origin=publication_detail

³⁰ [1] Kahlenberg, R.D. "From All Walks of Life: New Hope for School Integration." *American Educator*, Winter 2012-2013. <http://files.eric.ed.gov/fulltext/EJ995900.pdf>

[2] Kahlenberg, R.D. "The New Integration." *Educational Leadership*, May 2006.

<https://bsdweb.bsdt.org/district/EquityExcellence/Research/KahlenbergNewIntegration.pdf>

³¹ Ciolli, A. "Economic Integration of Schools: Evaluating the Wake County Experiment." *University of Massachusetts Law Review*, 6:3, 2011, pp. 69-74.

<http://scholarship.law.umassd.edu/cgi/viewcontent.cgi?article=1093&context=umlr>

While WCPS has been lauded as an example of a successful socioeconomic integration initiative, it must be noted that the district moved away from a policy of socioeconomic integration in 2009. This has largely been attributed to increasing enrollment and an opposition movement in the County, which favored neighborhood schools and residence-based zoning practices.³² Since 2012, the district has cautiously moved toward reinstating some level of income-conscious school assignment practices, largely by using school choice mechanisms such as magnet schools to promote voluntary integration.³³

Evidence of the success of WCPS's socioeconomic integration policies are somewhat mixed. In 2011, Anthony Ciolli's study on the district suggested that improvements in minority student achievement during the years the socioeconomic integration policy was in place were part of a larger, state-wide trends in improving test scores among Black and Latino students. Upon further examination of WCPS test scores compared to the state level, Ciolli **concluded that the economic integration may have had no effect at all for minority students**, noting that: "While such large achievement gains in such a short period of time are impressive, Wake County's increases do not differ significantly from the rest of North Carolina."³⁴

In contrast, McMillian's 2015 study of the WCPS transition from race-based to income-based integration policies compared trends observed in the district to those at other large school districts in the state. Overall, the researchers found that income-based integration policies resulted in schools that were slightly more segregated along racial lines than those observed under the race-conscious admission policy. However, during the same time period, student achievement on state standardized exams increased and the achievement gap observed between White and minority students decreased when compared to other large districts in the state. The researchers noted that while they cannot explicitly demonstrate that income-based school assignment practices resulted in improved achievement, WCPS's policy is "clearly associated" with learning gains, adding that:

... reading and mathematics scores increased under the income-conscious plan and the achievement gaps between White and Black students and between White students and Latino students narrowed. Comparisons with the student performance observed in the other four large districts show that WCPSS achievement scores improved relative to the other districts under the non-race-based assignment era.³⁵

However, it is also worth noting that this study did not account for several school- and classroom-level factors, including "teacher quality, class composition, and racial attitudes of teachers," all of which could also contribute to changes in student achievement results.³⁶

³² Kahlenberg, "From All Walks of Life: New Hope for School Integration," Op. cit., pp. 10-11.

³³ Hui, T.K. "Study Finds Diversity Plan Lessened Wake County School Segregation." *The News & Observer*, November 30, 2015. <http://www.newsobserver.com/news/local/education/wake-ed-blog/article47213885.html>

³⁴ Ciolli, Op. cit., p. 60.

³⁵ McMillian, et al., Op. cit., p. 26.

³⁶ Ibid., p. 27.

NON-ACADEMIC IMPACT OF DIVERSE SCHOOLS AND CLASSROOMS

Finally, while this report focuses on academic impact, many researchers assert that socioeconomic and racial integration also has value for non-academic student outcomes. In recent years, a body of research has emerged that examines these non-academic effects for students attending integrated schools and classrooms, including increased comfort in multicultural settings, greater cultural flexibility, and reduced prejudice.³⁷ Furthermore, Bowman and Denson found in a 2012 study that diverse K-12 classrooms prepare students to engage with diverse classmates in college.³⁸

In a recent report on the literature surrounding the impact of diverse schools and classrooms, The Century Foundation noted that much more research has been conducted on the non-academic impact of diversity at the postsecondary level than within K-12 schools. However, the report argues that the findings from higher education likely also apply to K-12 schools and classrooms. The authors note that postsecondary studies find that students experience a number of benefits from participating in a diverse student body in college, including:³⁹

- **Increased Intercultural and Cross-Racial Knowledge, Understanding, and Empathy** – students who participate in integrated classrooms and campuses may express more cross-cultural understanding and empathy for those who are different from themselves.
- **Better Preparation for Employment in the Global Economy** – students who have experiences working and sharing ideas with diverse groups of peers will be better prepared to entire diverse workplaces.
- **Increased “Democratic Outcomes,” including Engagement in Political Issues and Participation in Democratic Processes** – multiple studies of college students indicate a correlation between participation in a diverse campus life with more developed “civic attitudes” and stronger engagement in civic life.

³⁷ [1] Siegel-Hawley, G. “How Non-Minority Students Also Benefit from Racially Diverse Schools.” The National Coalition on School Diversity, October 2012. <http://school-diversity.org/pdf/DiversityResearchBriefNo8.pdf>

[2] Carter, P.L. “Race and Cultural Flexibility Among Students in Different Multiracial Schools.” *Teachers College Record*, 112:6, June 2010. <https://pdfs.semanticscholar.org/57e2/97cba683ee8cd26c234d60609b13d6cf8495.pdf>

³⁸ Bowman, N.A. and Denson, N. “What’s Past is Prologue: How Precollege Exposure to Racial Diversity Shapes the Impact of College Interracial Interactions.” *Research in Higher Education*, 2012.

³⁹ Wells, A.S., Fox, L., and Cordova-Cabo, D. “How Racially Diverse Schools and Classrooms Can Benefit All Students.” The Century Foundation, February 9, 2016, pp. 8-11. https://s3-us-west-2.amazonaws.com/production.tcf.org/app/uploads/2016/02/09142501/HowRaciallyDiverse_AmyStuartWells-11.pdf

APPENDIX A: BIBLIOGRAPHY

The figure below reviews the major sources used to develop this research brief, including a summary of each study and its findings. Sources are hyperlinked in the leftmost column.

Figure A.1: Bibliography of Sources

TITLE AND YEAR	AUTHOR, PUBLISHING ORGANIZATION	SUMMARY
KEY LONG-TERM STUDIES ON RACIAL AND SOCIOECONOMIC SCHOOL INTEGRATION		
<p>“Equality of Educational Opportunity”</p> <p>1966</p>	<p>J.S. Coleman et al., National Center for Education Statistics</p>	<p>This national level study of the American K-12 education system is a seminal work on school segregation. The study examines the impact of student background and school context on academic performance, ultimately finding that while socioeconomic background is the strongest predictor of an individual student’s academic performance, the academic achievement of minority students is disproportionately affected by school quality and peer effects compared to majority students. This means that a minority student whose parents have a low level of educational attainment will experience strong benefits from attending a school with quality facilities and resources and in which their peers come from families that have a “strong educational background,” whereas these factors (or lack thereof) are less likely to impact the achievement of students from the majority culture.</p>
<p>“Long-Run Impacts of School Desegregation & School Quality on Adult Attainments”</p> <p>2011, Revised 2015</p>	<p>Rucker C. Johnson, National Bureau of Economic Research</p>	<p>This long-term study follows the educational and adult life experiences of individuals born between 1945 and 1968 using a quasi-experimental method to compare the outcomes for students who participate in court-ordered desegregation programs in the 1960s, 70s, and 80s. The study finds that black students who participated in desegregation programs experienced: “significantly increased both educational and occupational attainments, college quality and adult earnings, reduced the probability of incarceration, and improved adult health status; desegregation had no effects on whites across each of these outcomes.”</p>
<p>“Brown at 60: Great Progress, A Long Retreat and an Uncertain Future”</p> <p>2014</p>	<p>Gary Orfield and Erica Frankenburg, with Jongyeon Ee and John Kuscera, The Civil Rights Project</p>	<p>This study of national statistics between 1960 and 2010 examines the progress of racial desegregation in the United States. The study finds that levels of segregation by race in the American South have increased substantially since the 1980s, returning to levels observed in approximately 1967 by 2010, despite decades of research that indicates positive outcomes for minority students in desegregated settings without negative impact on white students. The report also confirms that racial segregation is closely tied to economic segregation.</p>

TITLE AND YEAR	AUTHOR, PUBLISHING ORGANIZATION	SUMMARY
RECENT STUDIES ON SOCIO-ECONOMIC SEGREGATION AND INTEGRATION		
<p>“The Promise of Economic-Integration: Examining the Relationships Among School Poverty, Individual Poverty, and Reasoning Skills”</p> <p>2016</p>	<p>Michelle Rogers, <i>eJournal of Education Policy</i></p>	<p>This study examined the performance of elementary school students on the CogAT7, a test of general, nonverbal, quantitative, and verbal reasoning skills, at 180 elementary schools in the United States. The study found that on average, low SES students, defined as those who receive FRPL, scored lower on measures of reasoning skills compared to high-SES peers. However, students of both high and low SES performed as well on reasoning exams in economically integrated schools as in low poverty schools, meaning that increasing the percentage of low SES students in an elementary school from less than 25 percent to between 25 and 50 percent had a limited impact on student scores on reasoning tests, regardless of individual SES background. However, the study found that all students, and particularly low SES students, experienced a strong negative impact on reasoning skills by attending an “extreme poverty” school, in this case defined as a school in which 75% or more students qualified for FRPL.</p>
<p>“Are Socioeconomically Integrated Schools Equally Effective for Advantaged and Disadvantaged Students?”</p> <p>2016</p>	<p>Guillermo Montt, <i>Comparative Education Review</i></p>	<p>This article examines student performance on the 2009 Programme of International Student Assessment (PISA) exam across the 34 OECD countries as well as 40 partner countries and regions, including factors related to individual student SES (such as parental education and occupation and “home belongings”) and school organization (such as school and class size). The study finds that, overall, low SES students achieve higher performance in middle-SES and integrated schools over disadvantaged schools in which the average SES of students is in the 25th percentile or below for that country. However, high SES students, on average, perform at a lower level in middle-SES and integrated schools than if they were to attend advantaged schools (where the average SES of students is in the 75th percentile or higher for the country).</p> <p>Several individual countries observed middle-SES and integrated schools in which disadvantaged students benefited in their academic performance without any negative impact on advantaged students, including Canada and Denmark. This suggests that integrated and middle-SES schools are not a blanket solution, but may work for all students in certain contexts.</p>
<p>“Changing Diversity in U.S. Schools: The Impact on Elementary Student Performance and Achievement.”</p> <p>2011</p>	<p>Jennifer K. Clayton <i>Education and Urban Society</i></p>	<p>This study examines Grade 5 student performance on the Virginia Standards of Learning (SOL) reading and math exams at selected elementary schools in 24 Virginia school districts. In particular, the study tries to capture school-level diversity, poverty, and teacher quality on student performance. Researchers found that the relationships between poverty and school diversity in Northern Virginia are complex and difficult to examine; White students tended to attend low-poverty schools with a larger share of high-quality teachers, while Black and Hispanic students tended to attend higher poverty schools with a smaller share of high-quality teachers. Overall, the study concluded that students in high-poverty and high-minority schools “displayed lower pass rates at both the standard and advanced pass levels.”</p>
<p>“School Composition and Contextual Effects on Student Outcomes.”</p> <p>2010</p>	<p>J. Douglas Willms <i>Teachers College Record</i></p>	<p>This study uses results of the 2006 Programme for International Student Assessment (PISA) science exam to examine the relationship between student background, school context, and student achievement in science across 57 countries. The study found that countries that have a low level of “horizontal segregation”—or, segregation based on neighborhood and, in effect, socioeconomic status—achieve the most successful overall in terms of science performance.</p>

TITLE AND YEAR	AUTHOR, PUBLISHING ORGANIZATION	SUMMARY
<p>“Integrated Education and Mathematics Outcomes: A Synthesis of Social Science Research.”</p> <p>2010</p>	<p>Roslyn Arlin Mickelson and Martha Bottia,</p> <p><i>North Carolina Law Review</i></p>	<p>This article conducts a meta-analysis of 59 rigorous studies that consider racial and/or socioeconomic composition of schools or classrooms and its impact on student mathematics achievement, including test scores, grade point average, and/or high school mathematics proficiency or attainment, conducted between 1990 and 2010. Considering all 59 studies, the meta-analysis concluded that high poverty (or low-SES) schools clearly have a detrimental impact on student achievement in mathematics, particularly for middle and high school students.</p>
<p>“Schools and Inequality: A Multilevel Analysis of Coleman’s Equality of Educational Opportunity Data.”</p> <p>2010</p>	<p>Geoffrey D. Borman and Maritza Dowling,</p> <p><i>Teachers College Record</i></p>	<p>This article revisits Coleman et al.’s seminal Equality of Educational Opportunity study in order to re-examine the data using Coleman’s original statistical models and compare to a “two-level hierarchical linear model” that considered additional factors related to school characteristics, including school SES, resources, teacher quality, and peer characteristics. Borman and Dowling found that a higher level of variability in student performance observed between schools was related to school characteristics rather than student background (up to 40 percent). The researchers even suggest that school-level factors, including school SES, are more powerful predictors of student performance even than student background in cases of highly segregated, high-poverty schools.</p>
<p>“Differential school effects among low, middle, and high social class composition schools: a multiple group, multilevel latent growth curve analysis”</p> <p>2008</p>	<p>Gregory J. Palardy,</p> <p><i>School Effectiveness and School Improvement</i></p>	<p>This study examines the impact of student background, school resources, and school practices on student learning within low, middle, and high SES schools. The study draws survey and test-based performance data from the 1988 National Education Longitudinal Study. Overall, the study finds that different school factors do not have a “global effect” across all types of high schools. For example, large high schools appear to have a positive impact for student achievement for low SES schools, but not for middle- or high-SES schools, likely because larger schools have a broader curriculum that may be lacking in small, low-SES schools. Furthermore, student perceptions of fair disciplinary practices and teacher salary have a more powerful effect on student performance in low-SES schools, with little to no effect on student performance in middle- and high-SES schools. Finally, the study found that school inputs and practices had a stronger impact on low-SES students, particularly those in low-SES schools, than on middle- or high-SES schools.</p>
<p>“School Segregation and Academic Achievement Among Hispanic Children.”</p> <p>2007</p>	<p>Igor Ryabov and Jennifer Van Hook</p>	<p>This study examines the relationship between academic achievement and vocabulary-based test scores, family background, and school context across a group of 4,066 adolescent Hispanic students at 132 schools in the United States. The study draws data from the 1995 National Longitudinal Study of Adolescent Health (Add Health), including student performance on the Add Health Picture Vocabulary Test (AHPVT). Ultimately, the study found that student performance on the AHPV exam is affected by school socioeconomic composition, but not by racial composition.</p>
<p>“Does Segregation Still Matter? The Impact of Student Composition on Academic Achievement in High School.”</p> <p>2005</p>	<p>R.W. Rumberger and G. Palardy,</p> <p><i>Teachers College Record</i></p>	<p>This study examines the impact of student background and school characteristics on math, science, history, and reading test results from the National Education Longitudinal Survey of 1988 across a sample of 14,217 high school students at 913 high schools in the United States. Results of the study indicated that student performance was more closely tied to school poverty level (socioeconomic status) than school racial composition, with strong positive effect sizes observed for students who attend middle- and high-SES schools.</p>

TITLE AND YEAR	AUTHOR, PUBLISHING ORGANIZATION	SUMMARY
<p>“Classmates Count: A study of the interrelationship between socioeconomic background and standardized test scores of 4th grade pupils in the Madison-Dane County public schools.”</p> <p>2002</p>	<p>David Rusk, Madison-Dane County</p>	<p>This study examines the test scores of Grade 4 students at 60 schools across 16 districts in Madison-Dane County, Wisconsin between 1998 and 2001. Although it covers a small sample size of students, the study found that school level socioeconomic status (or the percentage of students who qualified for FRPL) was the strongest predictor of academic performance among low-income students. Among middle-class students (who did not qualify for FRPL), achievement scores tended to decline slightly as the percentage of low-income students at the school level increased, although this decline occurred at approximately half the rate of low-income students.</p>
<p>“Effect of School Population Socioeconomic Status on Individual Academic Achievement”</p> <p>1997</p>	<p>Stephen J. Caldas and Carl Bankston III, <i>Journal of Educational Research</i></p>	<p>This study examines the impact of school SES on Grade 10 student performance on the Louisiana Graduate Exit Examination, controlling for factors including student’s own socioeconomic status (measured by qualification for FRPL and parent’s educational background and occupation), race (black or white), participation in extracurricular activities or work, and student “interests” or behaviors (as measured by self-reported number of hours per week spent doing homework, reading, watching television, or participating in school activities).</p> <p>Ultimately the study found that while student’s own socioeconomic status was the strongest predictor of academic achievement, the impact of school socioeconomic status was nearly as strong, independent of school racial composition and other school-level factors. The combination of individual and school level poverty and low family social status had a strong negative impact on student achievement. The study concludes that a diverse school environment would benefit the academic performance of students from disadvantaged backgrounds, but may hurt the academic performance of students from more advantaged backgrounds who currently benefit from the double advantage of high individual and high school-level SES.</p>
CASE STUDIES OF SOCIOECONOMIC SCHOOL INTEGRATION MODELS		
<p>“Economic Integration of Schools: Evaluating the Wake County Experiment.”</p> <p>2011</p>	<p>Anthony Ciolli, <i>University of Massachusetts Law Review</i></p>	<p>This study of the academic achievement of Wake County Public Schools’ students following the implementation of its socioeconomic integration plan in 2000 finds that while the district observed improved test scores and a reduction in the achievement gap for minority students, this trend was likely a result of state-wide improvement in minority student test scores, rather than the socioeconomic integration plan itself. Essentially, the district’s dramatic test score improvements for minority students did not differ significantly from state averages for each minority subgroup over the time period examined.</p>
<p>“Capitol Region Education Council (CREC) Student Achievement Overview.”</p> <p>2012</p>	<p>Sarah Ellsworth, Capital Region Education Council</p>	<p>This report reviews student achievement results from inter-district magnet schools in Hartford, Connecticut. Magnet programs enroll a racially and economically diverse population of students across the Hartford area and surrounding suburbs. Between 2006 and 2011, students in the magnet programs achieved state standardized exam scores higher than the state average across all subgroups, and schools reported a progressively narrower achievement gap for Black and Hispanic students compared to the state average.</p>

TITLE AND YEAR	AUTHOR, PUBLISHING ORGANIZATION	SUMMARY
<p>“Can Class-Based Substitute for Race-Based Student Assignment Plans? Evidence from Wake County, North Carolina.”</p> <p>2015</p>	<p>M. Monique McMillian, Sarah Fuller, Zoelene Hill, Kate Duch, and William A. Darity, Jr.,</p> <p><i>Urban Education</i></p>	<p>This study examines student performance in five large school districts in North Carolina, including Wake County Public Schools, between 1995 and 2005. Each of the five districts moved away from race-conscious school assignment policies in the late 1990s or early 2000s. Researchers found that Wake County Public Schools—the only district to implement a socioeconomic integration plan in 2000—observed greater integration as well as greater progress on achievement gap reductions compared to the other four districts. However, WCPS also observed a higher level of racial segregation in its schools compared to the level of racial segregation observed under its race-conscious school assignment policy.</p>

PROJECT EVALUATION FORM

Hanover Research is committed to providing a work product that meets or exceeds client expectations. In keeping with that goal, we would like to hear your opinions regarding our reports. Feedback is critically important and serves as the strongest mechanism by which we tailor our research to your organization. When you have had a chance to evaluate this report, please take a moment to fill out the following questionnaire.

<http://www.hanoverresearch.com/evaluation/index.php>

CAVEAT

The publisher and authors have used their best efforts in preparing this brief. The publisher and authors make no representations or warranties with respect to the accuracy or completeness of the contents of this brief and specifically disclaim any implied warranties of fitness for a particular purpose. There are no warranties that extend beyond the descriptions contained in this paragraph. No warranty may be created or extended by representatives of Hanover Research or its marketing materials. The accuracy and completeness of the information provided herein and the opinions stated herein are not guaranteed or warranted to produce any particular results, and the advice and strategies contained herein may not be suitable for every client. Neither the publisher nor the authors shall be liable for any loss of profit or any other commercial damages, including but not limited to special, incidental, consequential, or other damages. Moreover, Hanover Research is not engaged in rendering legal, accounting, or other professional services. Clients requiring such services are advised to consult an appropriate professional.



4401 Wilson Boulevard, Suite 400

Arlington, VA 22203

P 202.559.0500 F 866.808.6585

www.hanoverresearch.com

