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The Association of Neighborhood Schools Assignment Plan with Economic, Racial and Academic Outcomes in One North Carolina District

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Keywords

Diversity, school attendance zones, student achievement, educational opportunity gap

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Abstract

When unified status was granted to numerous school districts, school boards developed redistricting plans to implement neighborhood schools. Social justice advocates decried these plans as they reversed over 40 years of progress, as many of these efforts resulted in resegregating schools homogenously grouped by race and wealth. Using piecewise and Difference in Difference regression with publicly facing data, this study assessed the association between neighborhood school attendance plans, school racial and economic balance, and student reading achievement. The results indicate that in one North Carolina school district over 15 years, (a) schools became more racially segregated, and (b) the achievement of students attending racial homogenous schools had lower academic performance. Policy and societal implications are discussed.

Keywords: Diversity, school attendance zones, student achievement, educational opportunity gap

Introduction

After the Brown Decision in 1954, schools in the United States were subject to federal scrutiny, and when deemed necessary, school systems were required to desegregate. Unfortunately, segregated schools dominated the American educational environment despite the Brown ruling. As such, federal efforts were required to force desegregation with the use of court orders, and it was only in the Civil Rights Act of 1964 that school desegregation began in earnest. The 1968 ruling in *Green v. School Board of New Kent County* made it clear that racial segregation in schools must be eliminated. As a result, 483 school districts in the U.S. were under federally mandated orders to reduce or eliminate school attendance practices that were racially motivated or resulted in highly segregated schools. Despite these rulings, school districts did resist, and the *Swann v. Charlotte-Mecklenburg Board of Education* case in 1971 permitted

school systems to use busing to address the court's expectations. Busing was one of many tools used to address the requirement, and approaches such as magnet schools and school choice options was used and continued to diversify urban and inner-city schools.

The mandatory federal efforts resulted in more diverse schools and reduced, to some degree, the homogenous nature of schools (André-Bechely, 2005; Owens, 2020; Pride & May, 1999). When unitary status (Brown, 1989; Hunter & Donahoo, 2004) was granted to school districts, this allowed districts to alter school attendance areas, also known as redistricting, including implementing neighborhood school attendance policy (NSAP) models (Epple & Romano, (2003). As unitary status was granted to many school districts in the late 1980s, school boards were allowed to pursue school attendance policies free of federal scrutiny (Ayscue et al., 2018; Mickelson, 2001, 2002; Orfield & Jarvie, 2020). In many instances, this resulted in a neighborhood school attendance policy (NSAP), which proponents argued would allow students to attend schools closest to their homes and improve outcomes (Ravitch, 2010). Given the relatively homogenous racial and economic housing patterns in many areas, schools became less diverse and, ultimately, resegregated (Bischoff & Tach, 2020; Goldring et al., 2006).

Given the potential impacts of the NSAP model, this study was interested in the association between one North Carolina school district's implementation of an NSAP attendance model, student demographics, and academic performance pre- and post-policy implementation. At the same time, North Carolina state tests were re-normed in reading and math in 2008 by changing the scores needed to be considered grade-level proficient (GLP). This standard-setting revision disproportionately affected Black students, widening the achievement gap to nearly twice its previous range. Given the simultaneous nature of these policies, this study attempts to separate the effects of state re-norming from the NSAP policy by examining these actions in the above-described medium-sized North Carolina school district.

Research Questions

1) Were there measurable differences in the racial and economic demographics of the affected school's pre- and post-neighborhood attendance policy?

2) Accounting for the state standard setting, was there an association between the neighborhood school attendance policy's implementation and the affected school's grade-level achievement?

School Attendance Practices

School systems develop attendance zones to meet various competing and often conflicting interests from school system demographics, costs associated with student transportation, and political and parental pressures. The resulting attendance zones address diverse and often competing interests and reflect local beliefs and attitudes toward school composition, climate, and social outcomes (Epple & Romano, 2003; Goldring et al., 2006). Despite federal intervention and legal precedent, local school systems have pursued legally defensible ways to circumvent desegregation requirements and create exclusionary policies that often result in highly segregated schools (Erickson, 2016; Highsmith & Erickson, 2015). Several approaches were used to create a more balanced school system when school systems earnestly confronted racial and economic segregation.

In 1971, in the *Swann* case, busing was determined to be a variable and legally supportable method for school systems to comply with federal mandates. While effectively reducing school imbalances, this approach resulted in long student travel times, parents' difficulty attending school functions, and fractured school climates (Delmont, 2016). In addition to busing, school districts created magnet schools to attract out-of-district –namely, White upper-class students – to more urban, Black schools. These magnet schools offered programs and educational services not offered in other schools in hopes of having out-of-district parents opt for these schools. In a recent research summary, Wang and colleagues (2018) found modest achievement advantages for some students, particularly lower-income students, compared to peers not attending magnet schools. Arguably, desegregation in schools effectively reduced skewed racial and economic enrollment diversity.

School Assignment and Student Achievement

The extant literature establishes that the effects of desegregation were widespread and multifaceted, as Black students benefited greatly from these efforts (Logan, 2008; Rearden, 2014). Taking this further, it has been found that several outcomes for Black students improved

during the desegregation years, including a significant increase in student achievement and college attendance and graduation rates, improved health, and reduced incarceration rates, with no negative impact on White students (Johnson, 2011). These results are similar to those cited in related research showing that integration has a significant and positive benefit to all children, especially students historically marginalized by school practices (Ayscue et al., 2017; Mickelson, 2016; Reardon et al., 2019; Tegeler et al., 2010). Reardon and colleagues' (2019) work is most poignant in explaining the effects of segregation, as they found achievement gaps grow continuously from third to eighth grade, compounded by the fact that racially and economically segregated schools are generally less effective than more balanced counterparts. Having higher poverty, racially segregated schools employ less qualified and less effective teachers, and as evidenced by Reardon et al. (2019), students demonstrate lower achievement over time attributable to the structural differences created by local school district policies.

Student Accountability and Achievement Standards

Student accountability systems developed in earnest in the early 1990s, and with this, discussions about test bias, achievement gaps, and the disproportionate effects of these policies on students of color and other marginalized groups developed (Arkes & Tetlock, 2004; Greenwald et al., 2009; Pearman, 2021). Psychometricians attempt to develop unbiased tests that do not misrepresent student performance; however, their effectiveness has been debated (Green, 1973; Schellenberg, 2004). Putting aside the inherent technical issues with standardized assessments (Karantonis & Sireci, 2006), policymakers can cloud student performance with their set standards. In 2008, North Carolina reset the cut scores (i.e., the scores needed in order to be considered on-grade level) to determine on-grade level performance, which disproportionately and adversely affected students of color and low-income students. Immediately, racially diverse schools that were once seen as effective became schools with the majority of students not meeting grade level expectations – all a function of state policy (Yeh, 2020). This standard-setting occurred while the subject district implemented the NSAP model, possibly exasperating negative consequences for all students, particularly students of color and low-income students.

Local Context

The school district is located in southeastern North Carolina and in 2004 served approximately 22,000 students in 37 schools, and in 2018, the district served approximately 26,000 students in 43 schools. The school district has a history of running under federal desegregation mandates and court orders to balance the system racially. In 1995, local community members filed a complaint that the district had failed to address the racial imbalances adequately and was resegregating the schools. Once the order was lifted in 1997, the district attempted to maintain desegregation efforts. However, in 2006, this changed, and the new attendance zones were implemented in the 2007-08 school year. The policy created neighborhood school attendance zones at the elementary and middle school levels with minimal adjustments for the high schools. The policy was intended to keep students closer to home and give communities a sense of control over local schools (Prensky, April 19, 2022). As a result, schools located in Black communities became racially homogenous.

Relevant Theoretical Frameworks

It has been posited that the context in which a child develops significantly influences a broad range of developmental outcomes. Of these socio-ecological theories, the most relevant here is Bronfenbrenner's social-ecological theory of development (1977). This theory argues that there are several layers that, in totality, shape an individual. The system's elements are the microsystem, mesosystem, exosystem, and macrosystem factors influencing a child's academic achievement. The mesosystem is central to this study as it addresses the influence of the school environment on the child. Adding to this is the compound disadvantage theory (Jencks & Mayer, 1990; Wodtke et al., 2016), which suggests that experiencing a deficiency in the social systems as defined by Bronfenbrenner such as attending a lower-performing school and living in disadvantaged neighborhoods can adversely affect student academic outcomes.

Neighborhood schools' results increase the likelihood that the influences above will exist in a child’s academic preparation. Diversity is a critical component supporting the complete development of a child on several layers. Relevant here is that research shows that racially diverse schools enhance learning by developing improved critical thinking and problem-solving

skills (Wells et al., 2016), which are arguably central to reading comprehension (VanTassel-Baska et al., 2009).

Methods

To assess the effects of the neighborhood school attendance policy on the racial demographics and achievement of schools, two approaches were utilized. First, a weighted linear piecewise regression was used to assess if there were differences in the racial and economic trends for the affected schools after the implementation of neighborhood schools. Piecewise regression fits two regression curves based on a split or knot in the data, which for the current analyses was 2008, the year the redistricting plan was implemented. The dependent variable is an aggregate mean score; therefore, analytical weights were used to address any potential bias. (STATA, 2022). The second research question was investigated using the effects of the attendance policy on reading achievement performance levels. The outcome variable was the grade level proficiency score (GLP), defined as the percentage of students passing the state reading accountability tests for a school serving K-8 students (NCDPI State Tests, 2022).

The GLP is determined by having the number of all students passing a particular test divided by the number of all students who took the assessment. Difference in Differences (DID) regression (Donald & Lang, 2007) was used to assess the association between NSAP and Black student reading achievement. The DID model included the number of students tested at each school to control student enrollment over time, and robust standard errors were utilized by clustering the errors at the school level. Both the piecewise and Difference Differences models have a robust history in policy analysis (see Angrist & Pischke, 2009; Murnane & Willett, 2010, for more detail), as both allow for investigations with breakpoints or shifts in outcomes due to well-defined policy actions. In this case, the shifts are defined by year as the policy implementation was clearly defined across the school years, pre- and post-policy changes.

Data Source

All data for this study were acquired from the North Carolina Department of Public Instruction's (NCDPI) data and reports webpages accumulated at the school level (NCDPI, 2022). Data from the NCDPI web portal included historical data on the number and percent of economically disadvantaged students (EDS), defined as those qualifying to participate in the

federal school lunch program, race, and sex distributions. The dependent variables were the longitudinal elementary and middle school race, economic distributions, and reading academic outcomes covering the 2004-2018 school years. The data was selected for several reasons. The time span was selected to demonstrate the immediate and short-term effects of the policy changes from the state and local levels and to avoid the compounding effects of COVID-19. Second, the data were publicly available and contained information on subgroup performance. The disaggregated data permitted analysis of these various subgroups regarding race, wealth, and achievement.

Results

Economically Disadvantaged

Economically disadvantaged students (EDS) qualify for the federal lunch program and receive free or reduced meal rates. To report this, a range variable was created to show the increase in variability of the economic composition between schools of the district pre- and post-policy implementation. In other words, the range variable shows the ranges or spread in EDS distribution across the district schools pre- and post-NSAP implementation. As seen in Table 1, the yearly mean and range steadily increased from 2004 to 2007, with a significant jump for the 2007 school year (an alternative school was created to inflate the range). The district steadily served more EDS, and concomitantly the range increased by about 13.6 percent from 2004 to 2007 and increased by approximately 14.9 percent from 2008 to 2018. The district EDS prior to redistricting had a mean of 45.49 and a range of 80.74, as compared to the post-period data, where the district EDS mean was 55.37 and a range of 90.35.

Table 1

Descriptive Statistics for Economically Disadvantaged Students by Year in Percent

Year	Variables	n (schools)	Mean	SD	Range Min	Range Max
2004	EDS	37	47.96	.219	13.03	88.37
	Range		75.35			
2005	EDS	34	47.76	.229	8.42	91.52
	Range		83.1			

2006	EDS	35	46.6	.235	4.71	84.67
	Range		79.95			
2007	EDS	37	48.03	.256	2.85	98.94
	Range		96.08			
2008	EDS	39	47.05	.261	3.7	100
	Range		96.29			
2009	EDS	39	48.62	.263	6.48	100
	Range		93.52			
2010	EDS	40	49.97	.257	6.56	100
	Range		93.44			
2011	EDS	41	53.39	.262	5.89	100
	Range		94.14			
2012	EDS	40	52.16	.247	5.91	95.45
	Range		89.55			
2013	EDS	41	56.54	.262	8.04	98.4
	Range		90.33			
2014	EDS	41	56.23	.264	10.05	100
	Range		89.94			
2015	EDS	42	60.11	.306	10.05	100
	Range		89.49			
2016	EDS	42	59.74	.297	12.0	100
	Range		88.0			
2017	EDS	42	63.96	.297	18.64	100
	Range		81.36			
2018	EDS	43	59.69	.312	12.26	100
	Range		87.74			

While the district served more EDS, the overall minimum percentage of EDS served steadily increased from a low of 3.7 percent in 2007 to 18.64 in 2017 and then declined to 12.26 in 2018. During the same time, the differences in the range between the schools declined from a high of 96.08 in 2007 to 87.74 in 2018.

Racial Demographics

Racial diversity changed dramatically over the 15 years, with significant increases in Hispanic students accounting for the largest growth (Table 2). Initially, Black and White students accounted for approximately 95.73% of the students in the district. Throughout the study, this dropped to 79.39% in 2018, accounted for by adding new racial categories and the growth in Hispanic students accounting for this change.

Table 2

Descriptive Statistics on School Level Race and Sex by Year in Percent, Mean (SD)

Year	Native American		Asian		Hispanic		Black		White		Two or More		Pacific Islander	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
2004	.14(.001)	.22(.002)	.52(.004)	.53(.005)	1.3(.013)	1.5(.017)	16.49(.09)	16.58(.09)	30.13(.09)	32.53(.1)				
2005	.18(.002)	.22(.003)	.61(.004)	.61(.005)	1.7(.016)	2.01(.024)	16.26(.09)	16.51(.09)	29.41(.09)	32.51(.1)				
2006	.14(.002)	.19(.002)	.64(.006)	.7(.005)	2.2(.022)	2.5(.029)	16.26(.09)	16.18(.1)	29.37(.1)	31.82(.1)				
2007	.19(.002)	.23(.002)	.63(.005)	.69(.005)	2.8(.03)	3(.033)	15.93(.1)	16.36(.1)	28.05(.13)	30.96(.12)				
2008	.17(.002)	.22(.003)	.62(.005)	.71(.006)	3.1(.03)	3.4(.04)	15.91(.11)	16.85(.13)	28.05(.13)	30.96(.12)				
2009	.27(.004)	.27(.004)	.69(.006)	.71(.006)	3.2(.03)	3.5(.04)	16.38(.12)	16.09(.11)	28.34(.12)	30.45(.12)				
2010	.19(.003)	.25(.004)	.8(.007)	.7(.005)	3.4(.04)	3.4(.04)	16.25(.12)	16.44(.12)	27.97(.12)	30.49(.12)				
2011	.23(.003)	.22(.004)	.78(.007)	.63(.005)	4.3(.04)	4.5(.04)	13.37(.12)	13.94(.13)	27.73(.13)	30.47(.12)	1.8(.01)	1.9(.02)	.06(.001)	.03(.001)
2012	.16(.002)	.19(.003)	.8(.007)	.67(.005)	4.6(.04)	4.7(.04)	12.55(.11)	13.35(13)	28.35(.12)	30.84(.12)	1.8(.01)	1.9(.01)	.04(.001)	.07(.001)
2013	.2(.003)	.18(.002)	.76(.008)	.67(.006)	5.2(.04)	5.3(.05)	12.36(.12)	13.35(.12)	27.95(.13)	30.3(.12)	1.7(.01)	2(.02)	.03(.001)	.07(.001)
2014	.16(.003)	.17(.002)	.76(.007)	.74(.006)	5.5(.05)	5.4(.05)	12.98(.12)	13.66(.13)	27.37(.13)	29.17(.13)	2.0(.01)	1.8(.01)	.03(.001)	.07(.001)
2015	.16(.003)	.16(.002)	.68(.006)	.75(.006)	6.2(.05)	6.1(.05)	12.26(.12)	13.31(.14)	27.52(.12)	28.92(.13)	1.8(.01)	1.9(.01)	.03(.001)	.08(.001)
2016	.1(.001)	.12(.002)	.68(.007)	.78(.006)	6.5(.05)	.63(.05)	12.59(.12)	12.93(.13)	27.09(.12)	28.98(.12)	1.8(.01)	1.8(.01)	.09(.001)	.06(.001)
2017	.1(.001)	.13(.001)	.68(.006)	.78(.006)	6.8(.05)	6.9(.05)	11.58(.11)	13.61(.14)	26.39(.13)	29.69(.12)	1.9(.01)	2.1(.01)	.04(.01)	.05(.01)
2018	.1(.001)	.13(.002)	.94(.008)	.97(.01)	7.0(.05)	7.1(.05)	11.37(.1)	13.09(.14)	26.02(.13)	28.91(.12)	2.1(.01)	2.2(.01)	.03(.01)	.05(.01)
Pre/Post Neighborhood School Redistricting														
2004-07	.16(.002)	.22(.002)	.6(.005)	.64(.005)	2(.02)	2.3(.02)	16.2(.09)	16.4(.09)	29.4(.1)	32.1(.01)				
2008-18	.17(.002)	.19(.002)	.71(.007)	.71(.006)	4.25(.05)	4.0(.05)	14.17(.11)	14.82(.13)	27.98(.12)	30.47(.12)	1.86(.01)	1.95(.02)	.04(.002)	.06(.001)

State

Standard Setting

As seen in Table 3, the effects of the re-norming at the state level were large and differentially affected students in the state and at the district being studied. For the years prior to re-norming, the grade-level proficiency gap between Black and White students in reading was 11.45 percent, compared to 24.58 after re-norming. For the district being studied, the grade-level proficiency gap was 14.84 and 32.5, respectively, a much more significant increase in the gap after re-norming.

Table 3

Descriptive Statistics for Grade Level Proficiency (GLP) in Reading at State and District Levels

Level	Re-norming	Race	Mean	SD
State				
	Pre	Black	78.499	11.306
		White	89.945	8.293
	Post	Black	47.452	18.211
		White	72.033	17.08
District	Pre	Black	76.247	14.07
		White	92.331	4.684
	Post	Black	43.697	17.899
		White	76.202	15.465

Before the re-norming, the difference between the state and district GLP for Black students was approximately 2.3% but rose slightly to 3.76%. Without changes in norming, the expectation would be that this Black/White gap would remain similar; however, the White students in the district improved their comparative advantage to the remainder of the state while the Black students did worse.

Regression Results

For research question 1, piecewise regressions were run to determine if, at the time of the implementation of the NSAP policy, the observed shifts in the percentage of economically disadvantaged and Black enrollment were changed significantly at the affected schools. Affected schools are institutions that saw double-digit increases in the percentage of Black students served. As seen in Table 4, the shift in EDS in the affected schools was associated with a minor shift in the percentage of EDS in the schools. The knot or shift in the regression was established to coincide with the implementation of the school attendance zone policy. The reason being if there was no break or shift in the distribution of economically disadvantaged students at this time, then the hypothesized effect of redistribution of EDS as a result of the neighborhood school policy did not occur.

Overall, the model is highly significant and accounted for a large portion of the variance percentage of Black students attending the affected schools. As seen in Figure 1 and reported in Table 4, the tested differences between the intercepts revealed that changes in the percentage of EDS in the affected schools were not significant at the time of the implementation of the policy. Graphically, the slopes appear quite different. However, the slopes could not be reliably compared due to the nonsignificant estimated slope value for the pre-policy period. The slope test results were included as a matter of consistency of the analysis and not for interpretation. The lack of difference in intercepts may support the hypothesis that any change in academic achievement at the affected schools may be dependent upon other demographic changes in these schools.

Table 4

Piecewise Regression Results for Economically Disadvantaged Students in Affected Schools

Variable	Coefficient	Std. Error*	*t*	*p*
Economically Disadvantaged Students				
Pre-Intercept NBS	.859	.024	35.18	<.001
Post-Intercept NBS	.867	.016	51.88	<.001
Pre-Slope NBS	.041	.028	1.48	.236
Post-Slope NBS	.014	.002	6.88	.006
Model Statistics				
$F(3,3) = 1427.56$, $p < .001$, $R^2 = .721$				
Test for Equivalence of Estimates	Coefficient	Std. Error	*t*	*p*
Intercepts	-.008	.033	-.24	.823
Slopes	.028	.026	1.04	.374

*Note: Clustered standard errors

Figure 1

Trend Plot for Percent Economically Disadvantaged Students

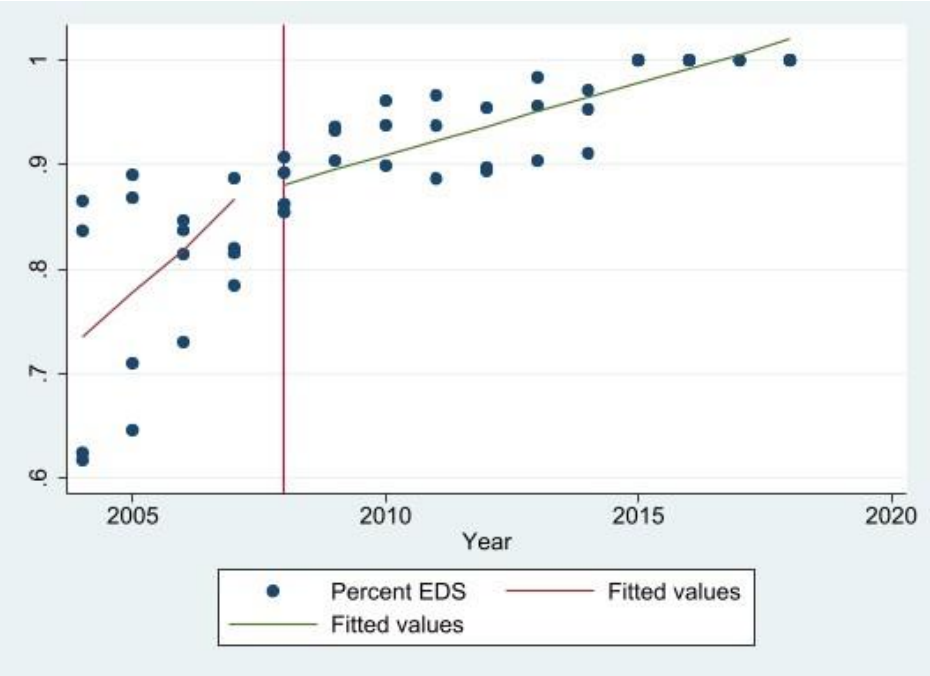


Table 5 shows the results of the change in Black student enrollment at the affected schools over the 15 years of the study. The model is significant and accounts for a large portion of the variance in the differences in Black student attendance in these schools. The estimated coefficients for the intercepts and slopes are significant, as is the test of their differences. The difference in intercepts shows that the shift was significant and occurred while the NSAP policy was implemented. In contrast to the results for EDS, the significant estimates for both intercepts and slopes imply that the estimated 16.8 difference was nontrivial and did occur at the time when the NSAP was implemented. As discussed previously, The decline in the percentage of Black students served is commensurate with those seen district-wide. The implication of the current analysis shows that at the time of the policy change, the affected schools did experience some shifts in student demographics, namely, concentrating higher percentages of Black students in these schools.

Table 5

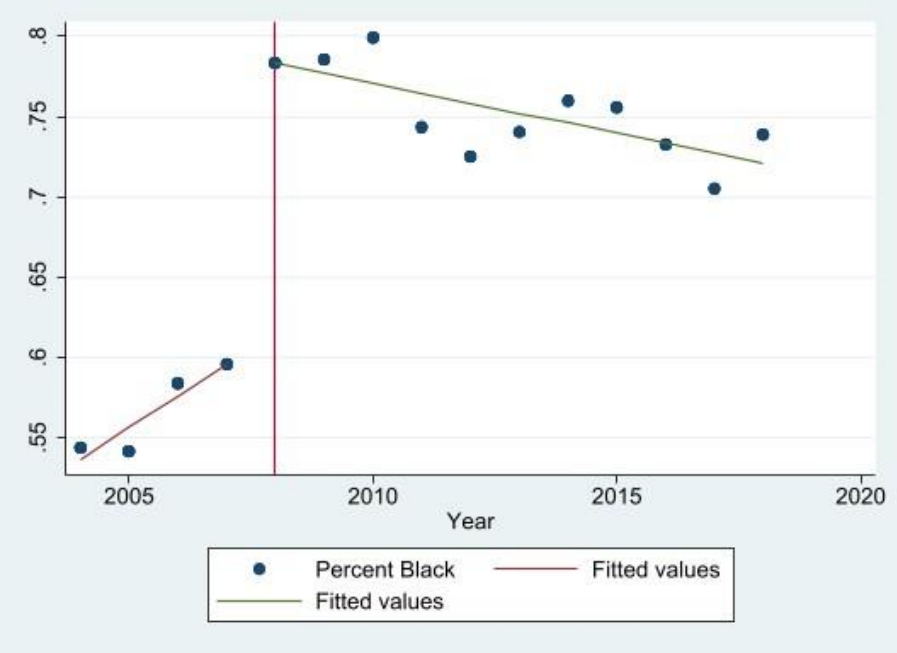
Piecewise Regression Results in the School-Level Percentage of Black Students in Affected Schools[*]

Variable	Coefficient	Std. Error	*t*	*p*
Black-to-White Students				
Pre-Intercept NBS	.616	<.001	1202.06	<.001
Post-Intercept NBS	.784	<.001	1498.73	<.001
Pre-Slope NBS	.199	<.001	134.89	<.001
Post-Slope NBS	-.006	<.001	-72.91	<.001
Model Statistics				
$F(3,3) = 9999$ $p < .001$ $R^2 = .97$				
Test for Equivalence of Estimates	Coefficient	Std. Error	*t*	*p*
Intercepts	-.168	<.001	-164.53	<.001
Slopes	.026	<.001	244.34	<.001

*Note: These schools experienced increases in Black students as pre and post-NSAP implementation.

Figure 2

Trends of the Percent of Black Students in Affected Schools Pre- and Post-Attendance Policy



Given the above, the underlying question is, given the distribution of Black students in the district, was this shift associated with student achievement outcomes in the affected schools?

Research question 2 seeks to discover if the shift in the percentage of Black students served was predicted to have consequences for Black student Reading performance in the affected schools. A Difference in Differences (DID) regression was conducted to determine if there was a difference in the percentage of Black students performing at or above grade level for the affected schools in the district pre- and post-NSAP. The affected schools were defined as schools that showed a significant increase in the Black student population pre- and post-NSAP. Difference in Differences analysis provides the researcher a method to examine both time and group effects on the affected schools (treatment group). Using these groups provided a way to account for unobserved time differences experienced over the period in question.

The sample is constrained to only Black students was an attempt to analyze the effects of the attendance policy given the implication of the differential effects as previously discussed

concerning the state re-norming. That is, as seen above, the re-norming differentially affected White and Black students. By including only Black students, a similar effect was experienced by students because of their race. Group stability was determined by examining the percentage of Black students in the two groups. If the percentage of students remained relatively constant over the time of the study, the effect of racially homogenous school assignments was stable. As shown in Table 6, the percentage of Black students in affected and controlled schools was considered stable.

Table 6

Percentage of Black Students Enrolled at the Control and Affected Schools

Year	Control			Affected		
	N	M	SD	N	M	SD
2004	30	.302	.171	4	.543	.102
2005	30	.299	.171	4	.541	.107
2006	31	.291	.17	4	.584	.079
2007	31	.287	.175	4	.596	.105
2008	34	.274	.192	4	.782	.104
2009	36	.286	.187	3	.786	.109
2010	37	.289	.188	3	.799	.148
2011	38	.235	.198	3	.743	.171
2012	37	.221	.191	3	.729	.184
2013	37	.218	.188	3	.740	.156
2014	38	.227	.207	3	.759	.164
2015	39	.217	.202	3	.756	.174
2016	39	.219	.204	3	.737	.180
2017	39	.217	.204	3	.705	.162
2018	40	.207	.197	3	.738	.167

Note: N= number of schools in the district. Both the treatment and control schools saw a steady decline in the percentage of Black students due to increased enrollment of other students of color.

The results of the difference in difference analysis are shown in Table 7. It was found that the schools serving increased numbers of Black students were predicted to have nearly 8.5% fewer students considered proficient in the state Reading test than those schools that did not experience a shift in Black enrollment due to the neighborhood school's attendance policy.

Table 7

Difference in Difference Regression Results on the School-Level Reading Grade Level Proficiency for Black Students

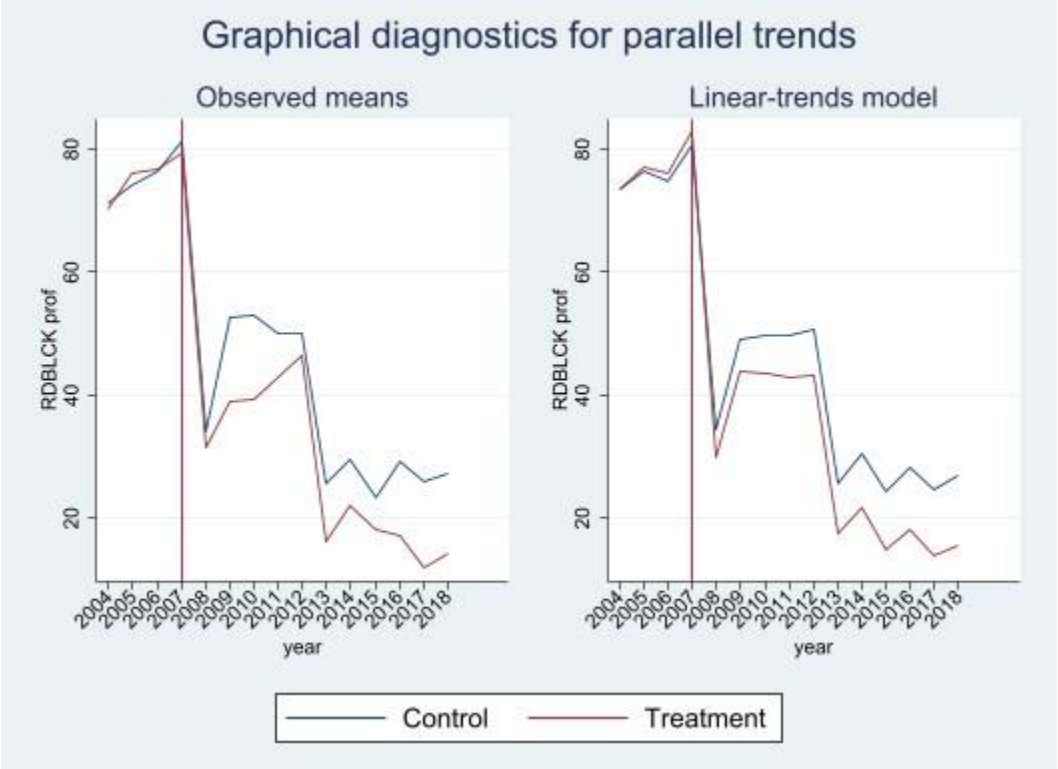
Variable	Coefficient	Robust Std. Error	*t*	*P*
Neighborhood Schools	-8.478	3.43	-2.47	.018

Note: ATET estimate adjusted for covariates, panel effects, and time effects; Parallel lines test, $F(1,38) = .2$, $p = 0.645$, Granger, $F(3.38) = .68$, $p = .569$.

A parallel lines test was conducted to assess the assumptions of Differences in Difference analysis. The test revealed that the assumption of parallel lines was not to be rejected. A Granger Causality (1969) test was conducted to support the validity of the results of the analysis. It showed that the null hypothesis of no anticipation of treatment was to be accepted. Finally, parallel trend diagnosis was conducted, and as shown in Figure 3, the lines follow similar trends for both the treatment and control groups. The results of these post-estimation analyses show that these assumptions were not violated, and the Average Treatment Effect on the Treated (ATET) estimates is acceptable. Although the state re-norming did impact Black students across the state, the above analysis suggests that it is reasonable to associate the additional decline in overall Black student grade level achievement with the implementation of the neighborhood school attendance policy.

Figure 3

Parallel Trends Graph



Discussion

It has been established that desegregation efforts from the 1960s through the 1980s significantly improved the educational and social outcomes of students of color (Johnson, 2019). However, since the early 1980s, the courts and others have relaxed and arguably reversed the work done to provide highly diverse and resource-equal educational learning opportunities for the same children. Once unitary status was granted to schools in the 1986-87 school year, an increasing number of districts were released from mandatory desegregation orders, eventually leading to local and state efforts to create schools that were once again segregated in terms of race and economics (Frankenberg et al., 2019). In fact, between 1990 and 2011, nearly half of the 483 school systems that were under federal desegregation orders were released. More damaging was the 2007 Supreme Court ruling in *Parents Involved v. Seattle School District*,

which removed race as a factor that schools needed to consider when developing and implementing student assignment plans (see Barnum, December 8, 2016, for more detail). As of 2019, over 40% of Black students across the United States attend schools that serve a population of at least 90% of students of color. As seen in this study, once the revised student attendance policy was implemented, several effects were significant and consequential, as schools that once were somewhat diverse started serving much higher populations of Black students.

Educational policy has adversely impacted students of color in North Carolina (Clotfelter et al., 2021). As shown herein, the two distinct events disproportionately forced downward pressures onto Black student reading performance: (a) the state re-norming and (b) NSAP. The state policy decision exacerbated the existing achievement gap on a state-wide scale and immediately inflated the achievement gap, nearly doubling the gap (Bankston III & Caldas, 1996; Reardon et al., 2019; Reardon, 2016). This alone illustrates the artificial and dubious notion of an achievement gap and the consequences for Black students and the schools serving these students. The standardized testing system has been criticized for bias; its results are used to sort, classify, and support policy development (Meaghan & Casas, 2004). In the subject school district, Black students and the schools which serve them endured the additional negative effect of school attendance zone policy guided as neighborhood schools (see Johnson, 2011, for more detail).

The implementation of the NSAP was communicated to create schools closer to parents and children to enhance parental involvement and student performance (Prensky, April 20, 2022); however, in reality, this policy reflected a racial bias against Black children and parents (see Eldeman, 2011, for more detail). As demonstrated by the current study, NSAP created wider gaps economically and racially among the schools. The widening range outpaced the increase in EDS served in the district, illustrating that poorer students tended to cluster in certain schools after the policy was implemented. For several years after that, the district had schools that only served EDS and students of color, as the upper range was 100% EDS.

The answers to both research questions clearly show that the change in racial demographics in the school system was significantly associated with the time of the policy

change. Schools in the district became more segregated, placing increased burdens on the schools, staff, and students, consistent with what has been reported elsewhere when discussing the effects of the resegregation of schools (Reardon et al., 2019). Even accounting for the state actions, the local policy negatively impacted racially and economically segregated schools. The estimated 8.5% effect of the NSAP on select district schools placed them at a severe disadvantage, given the impending state school accountability system.

Since implementing this attendance policy and redistributing students by race, the State of North Carolina has adopted a report card system as part of its school accountability model. The model has faced fierce criticism (Wagner, 2019) as it disproportionality penalizes schools that serve economically disadvantaged students and schools with high concentrations of students of color (Nordstrom & Tillisky, 2021). The educational and social consequences are manifold, from creating staffing issues (Darling-Hammond, 2010; Jacob, 2007), schools being labeled as under-performing or failures, and influencing parents to seek alternative educational settings, all a result of school board policy and not due to poor teaching (see Bracey, 2004; Clotfelter et al. 2006, for more detail) or failed school leadership (Duke, 2015). Making matters worse, these outcomes result from a policy that relies on student outcome data heavily associated with wealth and race.

Educational policy in North Carolina recently expanded school choice and voucher programs to give parents choices (NC 115C-218, 2022; Public Schools First, 2022) in response to what many say is its failed schools and weak leadership. Research shows that these school choice options have increased racial and economic divisions while providing little to no meaningful achievement benefits (Clotfelter et al., 2021; Kaniuka & Gill, 2021; Ladd et al., 2017; Slungaard Mumma, 2022). More fully, Slungaard Mumma (2022) found that achievement differences were negligible and that using charter schools reduced the White population in North Carolina's Traditional Public Schools. It is posited that current educational policy that promotes charter schools and school vouchers to address "underperforming schools" where some of these schools became underperforming due to some governmental action is, in essence, de jure resegregation.

While the use of public-facing data does have advantages, aggregated data does have limitations. In the case of this study, stability was defined as the percentage of Black students enrolled in the schools. It is suggested that administrative data be used to buttress this study and either confirm its findings or reveal unobserved events that confounded the analysis. Using administrative data would allow an improved accounting of student assignments and movement between the schools. Administrative data is student-level data, and additional covariates could be incorporated into the analysis, such as student economic status, students with disabilities, and other data captured by the state. Given the limitations of the data source, the current analysis has merit; however, replication should be conducted to support policy actions.

Concluding Thoughts

The increased use of charter, private, school choice, vouchers, and district student assignment practices have resulted in significant reversals of the gains for students of color. These forces have resulted in what Boschma and Brownstein (2016) term "double segregation," meaning economic and racial isolation for the poorest and most disadvantaged students. However, there are efforts to ameliorate the effects of race and wealth in terms of educational outcomes, such as reimaging magnet schools (George & Darling-Hammond, 2021), examining local realities and context (Brittain et al., 2019), and implementation of intra-school practices (IntegrateNYC. n.d). Much of what desegregation has done is to take existing local structures and work within these boundaries, mainly ignoring the context in which schools function. It is suggested that an inter-district approach, as used in places like Boston, MA., Omaha, NE., and Hartford, CT., goes beyond the school system and focuses on the intricacies and complex connections that impact schools (Brittain et al., 2019), which are wholly consistent with Bronfenbrenner (1977). Government, policy leaders, community, developers, and stakeholders must be part of the approach to develop diverse, comprehensive, and effective schools. In short, the efforts to provide students with equitable diverse schools are complex and rife with externalities that schools must consider but, in many cases, have little control over (Bierbaum & Sunderman, 2021; Brittain et al., 2019).

However, as demonstrated herein, enacted policy has created an environment that allows

schools and students to suffer (Alexander & Massaro, 2020; McWilliams, 2019; Pearman, 2020). Furthermore, the analysis supports the contention that context matters, and public-school leaders must improve policy to serve all students better. When policy is enacted and pressures applied that are counter to what we know about equitable school practices, education becomes a Sisyphean endeavor through false narratives about schools, the educators that work in them, and the students who attend these schools by labeling them ultimately, and inaccurately as failures.

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