

Brown in the 21st Century: A Focus on Court-Ordered Desegregation Today

Brown v. Board of Education (1954) has been highly regarded as a landmark decision that set forth the promise of equality in education for all students. Today, almost sixty years later, the promise of equality still remains a promise as students of color continue to lag behind in educational attainment. *Brown* had an ambitious agenda that aimed to desegregate as an intermediate step to equalizing educational opportunities. While racial integration has several benefits for students to adjust to cultural values through exchanges in conversations, discussions, and views, the question remains whether desegregation is still worth pursuing today. Court decisions in the 1990s, most notably, *Board of Education v. Dowell* (1990), suggests that court-ordered desegregation plans were only intended to be provisional until schools have made satisfactory efforts to comply with *Brown*. As a result of these policies, there has been an ongoing administrative push for the end of court-ordered desegregation. This study will seek to answer whether these policies are moving in the direction of *Brown* by testing the relationship between court-ordered desegregation plans and educational attainment to see if they are statistically significant and whether desegregation is still relevant in terms of improving educational attainment.

Background

In 1954, the Supreme Court handed down the landmark decision, *Brown v. Board of Education* that overturned decades of legally sanctioned racial segregation in public schools under *Plessy v. Ferguson*. The court found that separate could not mean equal and the doctrine of separate but equal had “no place”¹ in public education. The court concluded separate educational

¹ *Brown v. Board of Educ.*, 347 U.S. 483 (1954)

facilities deprived the plaintiffs of equal protection. Furthermore, the court found that racial segregation produces a “detrimental effect on colored children”² and segregation by law has a “tendency to [retard] the educational and mental development of Negro children.”³ In *Brown*, Chief Justice Earl Warren wrote, “To separate [blacks] from others of similar age and qualifications solely because of their race generates a feeling of inferiority as to their status in the community that may affect their hearts and minds in a way unlikely ever to be undone.”⁴ As a remedy to equalizing educational opportunities for all children, *Brown* sought to desegregate public schools and open doors for children of all color to attend the same schools.

During the first fifteen years after *Brown*, schools remained segregated and there was virtually no indication of progress until the 1970s when local school districts faced immense legal pressure to desegregate (Hanushek, Kain and Rivkin 2002). In 1960, six years after *Brown*, schools in the South were still heavily segregated with only 0.15 percent of black school children attending schools with white school children, and in 1964, this percent only increased slightly to 1.2 percent (Klarman 1994). Significant progress in desegregation did not occur until 1968 when the proportion of black school children that attended schools with white children rose to 32 percent (Klarman 1994). Two developments in the mid-1960s and 1970s shaped and gave rise to school desegregation efforts – The Civil Rights Act of 1964, when Title VI of the act threatened to cut school funding for districts that were still segregated, and *Green v. New Kent County* (1968), when the court struck down a “free-choice” desegregation plan that gave more freedom to local school districts to choose their desegregation methods. The 1970s and 1980s were the peak of desegregation efforts. However in the 1990s, there was a decline in desegregation efforts as noted in the decisions of *Dowell*, *Pitts*, and *Jenkins* as many schools were declared unitary.

² Ibid.

³ Ibid.

⁴ Ibid.

Once a school was declared unitary, the district was no longer operating what was considered to be an “illegal, racially dual school system” and its court mandated segregation plan was dismissed (Lutz, 2011, p.131). In other words, the unitary status is a legal acknowledgement that districts have complied with *Brown*. The United States Commission on Civil Rights (2007) found that 40 percent of Southern school districts that were once under court ordered desegregation have received unitary status, but an overwhelming sixty percent of those schools have not achieved unitary status and still have a racially dual system (Reardon, Grewal, Kalogrides, Greenberg 2011).

With a proportion of school districts that were once on court-ordered desegregation released, it is reasonable to suggest that there is a gradual progress towards meeting the goals of *Brown* and racial integration. However, recent data has shown that 72 percent of blacks and 76 percent of Hispanics still attend predominantly minority schools indicating that racial integration has not been fully met (Frankenberg, Lee, and Orfield 2003). Furthermore, recent data has also shows that black students continue to lag behind with the lowest graduation rates and highest dropout rates among any racial group. According to the NCES Common Core of Data (which collects data from all high schools in the United States), black students overall had a 66.1% graduation rate and 5.5% dropout rate compared to their white counterparts with a 83.0% graduation rate and 2.3% dropout rate (2013). Thus, it appears that the goals of *Brown* are far from achieved; while there has been some progress on the physical desegregation of schools. *Brown* set forth a more ambitious agenda in terms of achievement that the United States has largely failed to make much progress on.

In this study, I will examine the educational achievements of school districts in relation to their desegregation efforts (whether or not they were released from court-ordered desegregation).

Although prior research has examined desegregation efforts and educational achievements, I will extend this work by comparing districts that have been dismissed from court-ordered desegregation to those that have not been dismissed. Much of the existing research has been focused on racial integration outcomes rather than the effect court-ordered desegregation plans have on the educational attainment of black students. This study will look at *Brown* in terms of equalizing educational opportunities through efforts of desegregation, which was seen as an intermediate step to achieving educational attainment of black children. In the spirit of *Brown*, the goal to improve educational outcomes for black children has been extended to children of all color. The analysis will focus on answering two related questions: (1) whether desegregation still worth pursuing today when it comes to educational achievements, as measured by test scores, and (2) whether racial integration in schools is significant when it comes to educational achievements.

Legal Reasoning Between Plessy and Brown

In 1896, the court established in *Plessy v. Ferguson* that equality under the law could be met through separate institutions, thus, the birth of the “separate but equal” doctrine. Under *Plessy*, the court reaffirmed the legality of Jim Crow and decades of segregation and racial discrimination. *Brown* came before the court in 1952 as several black students sought admission to racially segregated public schools. In *Plessy*, the court established that segregated educational facilities did not violate the Fourteenth Amendment as long as they were equal. In *Brown*, the plaintiff’s contention was that separate but equal institutions deprived them of equal protection under the Fourteenth Amendment. Proponents argued the amendment removed “all legal distinctions among ‘all persons born or naturalized in the United States,’” whereas the opponents

argued for a more limited view of the amendment – the view the court recognized in *Plessy v. Ferguson*.⁵ However, this was slowly changing as there was a social push towards ending legal segregation in public schools.

When *Brown v. Board of Education* reached the courts in 1952, 28 out of the 48 states had already ended *de jure* segregation⁶, 4 states had optional segregation preferences, and only 17 states had required segregation in schools (Rosenberg, 1991). For a majority of these states, *Brown* simply reaffirmed their desegregation policies and pushed the nation towards racial equality. Even though there was no *de jure* segregation, schools still remained heavily segregated. *Brown* came before the courts at a climate when segregation was still socially acceptable and still practiced in many areas of the country. Despite this climate, there was also an ongoing push for desegregation as a result of changing public opinion regarding racial segregation. By this time, race had become one of the most controversial issues in the country and the court's decision in *Brown* was a reflection of changes in national attitudes about race (Balkin, 2004).

Overview of Brown v. Board of Education

The court first heard *Brown v. Board of Education* in 1952, but due to the complexity behind the arguments and the language of the decision, the final decision was published in 1954. The court produced an unanimous decision (9-0) and the justices knew the potential impact this decision would hold in affecting social change and the significance of the unanimous decision would help the public to accept the decision (Ulmer, 1971). In *Brown*, the court had to re-

⁵ *Brown v. Board of Educ.*, 347 U.S. 483 (1954)

⁶ In many Northern and Western states, there were no state laws that enforced segregation, but it was a part of the Jim Crow culture. In many of these areas, there were still *de facto* segregation in terms of housing, schools, and communities.

interpret the meaning of the Fourteenth Amendment and review the precedent set by *Plessy*. The court found that even if segregated public schools had the same tangible factors, they would still deprive the plaintiffs of their equal protection by perpetuating inferior treatment toward black students. In similar cases dealing with inequality on the graduate school level (e.g., *Gaines v. Canada*, *Sipuelv v. Oklahoma*, *Sweatt v. Painter*, and *McLaurin v. Oklahoma State Regents*), the court discovered a clear indication of inequality when they found “specific benefits enjoyed by white students [that] were denied to Negro students of the same educational qualifications.”⁷ Not only did the court find inequality in schools, the court also found that segregation sanctioned by law harms the educational achievements of black students.⁸ *Brown* found inequalities in educational resources between these groups had separated the races and produced educational achievements within one group and not the other, thus depriving black students of equal protection under the Fourteenth Amendment.

In *Brown*, the courts established that racial segregation in public schools was unconstitutional, but the court did not provide any remedy on desegregating school districts. Thus, districts were in some sense mandated to protect children equally but to do so without guidance in terms of process or outcomes. One year later, the court wrote *Brown v. Board of Education II* (1955) to give guidance and help to the lower courts and public schools in their process of desegregation to comply with the principles written in the original *Brown* decision. The implementation plan in *Brown II* acknowledged the various problems school districts may have adjusting to “public and private needs”⁹ when it comes to desegregation, but nonetheless, pushed for a gradual shift towards racial integration. In this decision, the court gave school authorities the responsibility to desegregate their schools and gave the lower courts the power to

⁷ Ibid.

⁸ Ibid.

⁹ *Brown v. Board of Education II*, 349 U.S. 294 (1955)

decide whether the actions of the school are in compliance and making a “prompt and reasonable start toward full compliance [in an] effective manner [with] all deliberate speed.”¹⁰

Supreme Court Decisions Post- Brown

The 1970s and 1980s were the height of desegregation efforts due to policies that both punished and incentivized schools to stop discriminatory practices. Decisions made by the Department of Health, Education, and Welfare provided the first guidelines on desegregation; Congress had enacted the Civil Rights Act (CRA) of 1964 to restrict segregated schools from receiving federal aid and “enabled the U.S. Department of Justice to join suits against districts that failed to comply with the *Brown* order” (Guryan, 2004, p. 921); and the Elementary and Secondary Education Act (ESEA), which emphasized on providing equal opportunities in education and increased funding for public schools that complied with *Brown*. Together, these two policies pushed for desegregation in public schools; the CRA by threatening districts with federal legal action and the ESEA by incentivizing compliance.

Post *Brown*, the court decided in several cases (*Green* and *Swann*) to strengthen and clarify the decision made in *Brown*. In particular, the court sought to detail implementation efforts by placing responsibility in the hands of school districts as well as outlining some acceptable criteria for desegregation. In *Green v. New Kent County* (1968), the court held that the once accepted “freedom of choice” plans created by each district to comply with *Brown II* was now inadequate plan for court-ordered desegregation and required schools to create new realistic plans that involved the “dismantling of well-entrenched dual [segregated] systems.”¹¹ This decision held school districts responsible for creating plans to achieve racial integration and

¹⁰ Ibid.

¹¹ *Green v. New Kent County*. 391 U.S. 430. (1968)

reinforced the *Brown II* decision. Three years later, the court upheld the use of bussing to achieve racial integration in public schools in *Swann v. Charlotte-Mecklenburg* (1971).¹² The decision in *Swann* defined a desegregated school as a racially balanced school with racial compositions similar to those of the school district (Rossell and Armor, 2002). The decisions showed the court's continued support to advance the desegregation and achievement goals of *Brown*.

Desegregation efforts slowly diminished during the 1990s as a result of decisions in *Board of Education of Oklahoma City v. Dowell* and *Freeman v. Pitts* that appeared to have weakened the progress of racial integration and the legacy of *Brown*. Both cases centered on the control of decision making in districts that were under court-ordered desegregation. In *Board of Education of Oklahoma City v. Dowell* (1991), the court ruled that federal supervision of schools under court-ordered desegregation was provisional and control may be returned to local decision makers once school districts have shown good faith compliance to desegregate.¹³ The following year, the court reviewed *Freeman v. Pitts* (1992) and concluded that districts courts can continue supervision over schools that failed to follow court-ordered plans towards desegregation and allowed courts to remove schools from supervision gradually through an incremental approach.¹⁴ As a result of these decisions, more than 200 medium to large school districts were dismissed from court-supervised desegregation from 1991 to 2000 (Reardon, Grewal, Kalogrides, and Greenberg, 2011). These schools were dismissed essentially on administrative changes rather than progress made towards desegregation. In the absence or dismissal of court-ordered desegregation, many districts throughout the nation have stopped enforcing desegregation policies. Further, the termination or "dismissal" of desegregation plans have produced a

¹² *Swann v. Charlotte-Mecklenburg* 402 U.S. 1. (1971)

¹³ *Board of Education of Oklahoma City v. Dowell*. 498 U.S. 237. (1991)

¹⁴ *Freeman v. Pitts* 503 U.S. 467.(1992)

moderate increase in racial segregation (Lutz 2011). The court decisions of the 1990s signaled a shift away from desegregation and commitment to achieving the goals of *Brown*.

Previous Empirical Research

The existing literature on post-*Brown* desegregation and improvements in educational attainment of black students has grown considerably. The court's intention was to desegregate public schools to resolve low educational attainment among blacks by giving them equal access in public institutions. Many saw *Brown* as a landmark decision that would dramatically increase black educational attainment rates and improve the life outcomes of black children. The success of *Brown* has often been measured in two outcomes, desegregation results and educational attainment. The effect to which desegregation has been a success has raised questions whether *Brown* was really a successful decision. Scholars in the field have looked at desegregated districts (successful and unsuccessful) to study whether it has improved the educational attainment of blacks. There has been a lack of consensus in the literature about whether desegregation has been an effective means of improving educational attainment.

Physical Desegregation and Integration

Some scholars in the field have suggested *Brown* has not been as successful in racial integrating public schools, but the data by Cascio, Gordon, Lewis, and Reber (2008) seem to indicate districts have made sufficient progress on desegregation since *Brown*. Cascio, Gordon, Lewis, and Reber (2008) studied the causes and consequences of desegregation and found that (1) by 1968, most southern school districts had desegregated to some degree, (2) most of the desegregation occurred in the 1970s, (3) nearly half of schools that were never under court-ordered desegregation had desegregated to some degree by 1976, and (4) not all Southern

schools desegregated in the same time and manner. Looking at the causes of desegregation, Cascio, Gordon, Lewis, and Reber (2008) compared the results of desegregation in large districts with smaller districts and found that larger districts were less resistant to desegregation policies and complied with them at an earlier time in comparison with smaller districts, but larger districts were slower in their elimination of all-black schools. Similarly, Guryan (2004) found that larger districts experienced larger declines in racial segregation. Although, Guryan (2004) found that large districts had been more racially integrated, he also found that these districts were more likely to experience black and white migration, which could affect desegregation efforts and results. Nonetheless, Cascio, Gordon, Lewis, and Reber (2008) seem to suggest smaller districts were slower in their implementation of desegregation policies in 1964, but by 1966, smaller districts caught up with desegregation policies. The percentage of black students in the South who attended schools with all black students dropped from 99% to 5% from 1964 to 1970, respectively; and by 1976, districts that had held onto strong racial segregation views had complied as much other districts (Cascio, Gordon, Lewis, and Reber, 2008). These results suggest that *Brown* has made considerable progress by eliminating all-black schools and districts (small and large) had been racially integrated to some degree. However, most of this progress did not happen right after *Brown*, but almost fifteen years after in the 1970s.

One widely used indicator of racial integration and desegregation efforts has been the dissimilarity index. Using the dissimilarity index, which ranges from 0 to 1 with 0 indicating perfect racial balance and 1 indicating total segregation, the dissimilarity index measures how well individual schools represent the racial composition of the entire school district (Reber, 2005). Reber (2005) found that the nationwide average dissimilarity index in 1968 was 0.71 with the average nonwhite school with approximately 28 percent white even though the average white

racial composition of the district was about 70 percent. Thus, on average, district racial balances were not replicated in schools; they were still largely segregated. While Reber found that the dissimilarity index dropped through the 1970s, there were important regional differences in the rate of integration. In Northern districts with desegregation plans, the average dissimilarity index was .70 in 1968 and the index had dropped to .44 in 1980 (Rossel and Armor, 2002). For the Northern districts without desegregation plans, the dissimilarity index fell from 0.62 to 0.47 during the same period (Rossell and Armor, 2002). The Northern states experienced a slower, less rapid drop in the dissimilarity index, dropping 36 points in twelve years, compared to the South. The average dissimilarity score dropped 40 points in four years from 0.81 in 1968 to 0.41 in 1972 for Southern districts with desegregation plans (Rossell and Armor, 2002). Reber (2005) had found that integration rose to 43 percent in the 1970s indicating schools had become more racial integrated. Thus, school districts in the 1970s and 1980s experienced an increase racial integration regardless of whether they were on court-ordered desegregation plans as demonstrated in the dissimilarity index scores. The dissimilarity index scores showed that Southern districts had cut their scores by half and had drastic improvements in terms of desegregation. Similarly, Northern districts had also experienced drops in their dissimilarity index, but to a lesser degree than the South. The existing research has indicated that *Brown* has been successful in terms of desegregation efforts in the 1970s and 1980s, and Cascio, Gordon, Lewis, and Reber (2008) seems to suggest that, nationwide, districts did fairly well in terms of desegregation and eliminating all black schools.

Racial Composition on Performance

There is some evidence that suggests that physical desegregation had a positive performance impact and may have even improved educational attainment for black students, but

that relationship diminishes over time (Reardon, Grewal, Kalogrides, and Greenberg, 2011) This is particularly true for districts released from court-ordered desegregated where the effects of desegregation fade as districts are left without supervision from the courts.

The research by Rossell and Armor (2002) suggests that districts have racially integrated a great deal compared to the 1960s. Though, the progress made in the 1970s and the 1980s seemed to have slowed down or reversed in the 1990s (Lee, 2002; Reardon, Grewal, Kalogrides, and Greenberg, 2011). Lee (2002) found that the pattern for educational achievements reversed from the mid-1980s to the 1990s with whites making significant improvement and fewer gains for blacks. The narrower achievement gap between the blacks and whites in the mid to late 1980s was stalled in the 1990s and some districts even returned back to the achievement levels in the late 1970s and 1980s (Lee 2002). Consequently, the policies of the 1990s, stalled educational achievements of blacks and reversed the progress made since *Brown*.

Scholars have argued that the racial composition of a school heavily affects the educational attainment of black students. Hanushek, Kain, and Rivkin (2002) argued that the cause of low academic performance stemmed from the effects of racial composition; they found lower academic performance in schools with higher proportions of minorities. According to Hanushek, Kain, and Rivkin (2002), higher proportions of black students reduced the academic achievements of other black students. The racial peer effect has a strong effect on educational performance of black students, but it has less influence on the academic achievements of whites and Hispanics (Hanushek, Kain, and Rivkin, 2002). In other words, racial peer composition has more influence on black students than it does for white and Hispanic students. The research done by Hanushek, Kain, and Rivkin (2002) suggests decreased segregation between blacks and whites would lead to improvements in educational outcomes of black students without impacting

the educational attainment of other races. It also suggests that racial composition indirectly affects school quality such that when racial concentration increases, a school's disadvantages are likely to increase as well (Hanushek, Kain, and Rivkin, 2002). The research has shown that desegregation efforts made considerable progress in the 1970s and continued through the 1980s in terms of physical desegregation. Successful desegregation efforts were also accompanied by improvements in academic performance as shown in National Assessment of Educational Progress (NAEP) results, dropout rates, and SAT scores.

Lee (2002) found that desegregation helped close the black-white gap in NAEP reading and mathematics scores. Lee (2002) found that in the first half of the 1970s and the 1980s, results showed that black students made significant educational achievements. From the 1970s to 1999, the black-white gap in test scores fell by 20% to 40% indicating a decrease in the inequality gap between two groups. From the 1970s to the mid-1980s, white student achievement was flat while black students made significant gains. Thus, Lee's findings appear to indicate a correlation in black student achievement during the peak of desegregation efforts. However, Lee was only able to show a correlation in the timing of score improvement and desegregation efforts but was not able to causally link them.

On the other hand, Hanushek, Kain, and Rivkin (2002) looked at the effects of desegregation efforts on academic achievements in Texas (where most schools experienced court-ordered desegregation and demographic changes from immigration, suburbanization, and population growth), and found that overall achievements of black students have remained low despite successful efforts of racial integration. In the state of Texas, there has been a 50% increase of black students in classrooms with white students since 1968 indicating successful efforts of racial integration. However, the data from NAEP mathematic scores showed that black

7th graders scored a statewide average of 0.7 standard deviations below the test scores of their white counterparts, with only 29% of black students scoring in the top half of state distribution. (Hanushek, Kain, and Rivkin, 2002). Based on the logic of *Brown*, successful desegregation should have led to improved educational outcomes for black students, but Hanushek, Kain, and Rivkin (2002) indicate that the relationship between desegregation efforts and attainment is more complicated.

Even though the research by Hanushek, Kain, and Rivkin (2002) showed that black students lagged behind their white counterparts, the research by Guryan (2004) showed that desegregation improved educational achievements of black students in terms of dropout rates. Guryan (2004) found that black high school dropout rates declined in districts with higher levels of racial integration. Looking the at desegregation and dropout rates of black and white children from the 1970s to the early 1980s, the dropout rate for blacks in desegregated schools had dropped two to three percentage points from 14.3% to 10.5% -- a 3.8% decrease in districts with racial integration policies. Guryan (2004) found that desegregation policies had no significant effect on white children; their dropout rates stayed virtually the same during the 1970s. Guryan's research shows no changes in dropout rates for schools that did not have desegregation policies indicating desegregation was helpful in lowering dropout rates among black students.

The studies have revealed relatively consistent results in terms of physical desegregation. Most districts, whether under court-ordered desegregation or not, are more racially integrated today than they were pre-*Brown*. Most of the studies have indicated a positive correlation between racial integration and improvements in educational achievements of black students. However, the literature is more mixed when it comes to achievement results. Black students have made more educational achievements than pre-*Brown*, but they are still lagging behind white

students as illustrated by Hanushek, Kain, and Rivkin (2002) where black students in Texas score 0.7 deviations less than their white counterparts. On the hand, Lee (2002) found that racial integration has narrowed the gap between the achievements of white and black students and Guryan (2004) found that racial integration produced a decline in dropout rates of black students. Whether desegregation produced successful educational achievements depends on how educational achievements are measured. Some scholars have found *Brown* to be a success in improving educational achievements of black students, but some have considered *Brown* a failure in its failure to equalize the educational achievements of all students.

Other Causes of Performance Differences

Unlike Hanushek, Kain, and Rivkin (2002), Rivkin (2000) sees the achievements of black students in relation to their non-black classmates primarily due to the quality of the school rather than its racial composition. Rivkin (2000) looked at the impact of desegregation on academic achievements and earnings and found that black students performed better at higher quality schools, regardless of the racial composition of the school, which suggests school quality is a better predictor of labor market successes of blacks than school racial composition.

Card and Rothstein (2007) argued that, rather than segregated schools, segregated neighborhoods caused a gap in educational achievement between blacks and whites. Card and Rothstein's (2007) primary findings were (1) that there was a 45 point SAT gap between blacks and white who lived in segregated and integrated cities and (2) neighborhood segregation had a more "consistent negative impact" on test scores compared to the impact of just school segregation (that was simply less than those of the neighborhood effect). Based on Card and Rothstein's research, the academic achievement gap between black students and white students will vary depending on how segregated the city is. Nonetheless, the research Hanushek, Kain,

Rivkin (2002), Rivkin (2000), and Card and Rothstein (2007) all seem to indicate “segregation matters” in terms of black education achievements whether it be the direct or intervening variable (Card and Rothstein 2007, p. 2180).

Summary of the Literature

Since the 1990s, an increasing number of school districts have been released from court-ordered supervision as a result of new policies supporting the end of court-ordered desegregation. The lack of enforcement on desegregation policies has caused a backward trend in racial integration as set out in the goals of *Brown*. The policies of the 1990s supporting the end of court-ordered supervision has pushed for more than 200 districts to be dismissed from court-ordered desegregation from 1991 to 2009 (Reardon, Grewal, Kalogrides, and Greenberg 2011). Reardon, Grewal, Kalogrides, and Greenberg (2011) found court-ordered desegregation was an effective means of reducing racial segregation in schools, but they also found that when schools stop actively enforcing their desegregation politics, schools observed a gradual, but steady and significant return to racial isolation for all students. This effect is particularly noticeable at the elementary school level in the South where racial integration levels were low to begin with.

The new legislation and new case law in regards to desegregation policies in the 1990's seems to suggest the end of desegregation and that the goals of *Brown* have been met. Even though the research by Cascio, Gordon, Lewis and Reber (2008) found that most schools have desegregated to a certain degree, and Guryan (2004) and Lee (2002) found that black students have made improvements in educational achievements as a result of desegregation, there still remains a gap in educational achievements as illustrated in the research by Hanushek, Kain and Rivkin (2002). If anything, the existing literature seems to suggest the mission of *Brown* is far

from over and the court decisions made in the 1990s signal a backward trend from racial integration.

While the court has determined that court-ordered desegregation was only temporary, the goal of *Brown* and racial equality and improvements in the educational achievements of black children has not been completed. Zirkel and Cantor (2004) reported that several scholars (“Compelling Need,” 1999; Fischer, et. al., 1996; Guinier & Torres, 2002; Orfield & Eaton, 1996) argued that even though the research shows that racial integration efforts have made significant progress since *Brown*, most schools in the United States are still segregated by race. As a result of *Brown*, the focus in education has shifted from providing equal facilities to all students to racially integrating students. However, racial integration has created a system where a proportion of black students are taught in poorly funded schools with fewer facilities and resources (Fischer, et. al., 1996 and Glickstein, 1996)

As suggested by Zirkel and Cantor (2004), perhaps only now, 50 years later, *Brown* is “only beginning to reach its true fruition” (p.11). Even though the goal of *Brown* was only to equalize educational opportunities for black students, today, the spirit of *Brown* was intended to equalize educational opportunities of all students, especially those of color. Students of color have made significant progress with two to three times the percentage of college graduates are of color, four to seven times the percentage of law school graduates are of color, and two to four times the medical school graduates are of color than they did in the 1960s (Bowen and Bok, 1998). Even though, there has been progress since *Brown*, the problem of race in schools still exists today. Students of color are more likely to find themselves in schools with lower average academic performances and in poorly funded institutions. The problem of race in education has not been resolved despite the decisions from the 1990s that largely ended desegregation efforts.

These decisions indicate a commitment away from education for students of color and hamper any further progress on racial integration and equalizing educational achievements and access.

Data and Methodology

While many studies have focused on either desegregation or educational attainment, this paper will focus on the relationship between legal desegregation and educational attainment to investigate whether desegregation still impacts educational attainment. The decisions from the 1990s seem to suggest racial composition and desegregation are no longer as important in affecting educational achievements today as it was in the pre-Civil Rights era. These policies have released hundreds of schools from court-ordered desegregation. To test the significance of desegregation, this analysis will focus on whether desegregated school districts (schools that have been released from court-ordered desegregation) have a higher educational achievement rates than school districts that have not been released by court-ordered desegregation. To determine whether desegregation has an effect on educational attainment, this paper will compare schools that have been dismissed from court-ordered desegregation to those that have not been dismissed.

Hypotheses

This paper focuses on the measure of desegregation efforts, whether school districts that have been dismissed, not dismissed, or have never been under court-ordered desegregation, differ in regards to educational achievements. Given the goal of *Brown* was to desegregate schools to equalize educational opportunities, I expect to find a relationship between desegregation and educational outcomes. Under this assumption, I expect to find that school districts dismissed from court-ordered desegregation to have higher educational attainment than those that have not

been dismissed or those that have never gone under court-ordered desegregation because previous research has found that integrated schools improve the performance of minority students (Lee, 2002 and Guryan, 2004).

To measure the relationship:

H_0 : There is no relationship between measures of desegregation and measures of educational attainment.

H_a : There is a relationship between measures of desegregation and measures of educational attainment.

Sample

This sample used in this paper comes from a list of all medium to large school districts (with a population of more than 200 students) ever under court-ordered desegregation from Reardon, Grewal, Kalogrides, and Greenberg (2012). School districts that were ordered to desegregate under the Department of Health, Education, and Welfare (HEW) and those districts that desegregated voluntarily are not included in this list provided by Reardon, Grewal, Kalogrides, and Greenberg.¹⁵ Some of the districts included in this list by Reardon, Grewal, Kalogrides, and Greenberg were districts that were never under court-ordered desegregation. Out of the 1071 school districts in the list of by Reardon, Grewak, Kalogrides, and Greenberg, I selected 202 districts, 100 of which are districts dismissed from court-ordered desegregation, 55 are districts not dismissed from court-ordered desegregation, and 47 are districts that were never under court-ordered desegregation. In this sample, I selected only 202 districts to keep the

¹⁵ Schools were either ordered to desegregate by the courts or the Department of Health, Education, and Welfare (HEW). Schools that desegregated under HEW were a result of threats made to cut federal funding to school districts, but there was no legal compliance bounding them to desegregate.

For more information regarding the list of school districts ever under court-ordered desegregation, see Reardon, Grewal, Kalogrides, and Greenberg's research page at <http://cepa.stanford.edu/data/district-court-order-data>

sample relatively small, but large enough to produce statistically reliable results. These districts were selected at random using a random generator to select approximately twenty percent of the entire sample of 1071 school districts.

Dependent Variables – Academic Performance

Since desegregation efforts and court-ordered desegregation plans are measured and enforced by school districts, the basic units in this analysis are school districts. Choosing a dependent variable to measure educational achievements in public schools across the nation has been rather difficult for various reasons. First, each state utilizes different standardized testing methods and the results from each state's standardized tests cannot be compared across state lines. Second, administrators tend to skew graduation rates and dropout rates by using various formulas (4 year or 5 year methods) to calculate the best possible rates – highest graduation rates and the lowest dropout rates. Although, the No Child Left Behind Act (2001) requires schools to publish adequate yearly progress reports to the public, the information published by each state varies and some states choose to only disclose the status of their progress rather than a detailed report with educational scores and indicators. As a result of the limited available data on educational achievements nationally, this paper uses educational data from the Bush Institute's on Education Reform to compare the educational achievements of school districts nationally.

The methodology used by the Bush Institute on Education Reform – the Global Report Card -- has been peer-reviewed by scholars in the field and is composed of calculations of student achievements at the local, state, national, and international levels. This analysis will only use data from the national level to measure educational achievements in two different content areas (reading and mathematics). The Bush Institute utilizes the National Longitudinal School-Level State Assessment Score Database and National Assessment of Educational Progress

(NAEP) scores to measure educational achievements of students. The dependent variables were made from mapping all testing data on a standard normal curve using the standard mean and standard deviation, and calculating the average district quality in a state and evaluated on a national level (The Bush Institute, 2011). The data assumes two things (1) by using the standard normal curve, the distribution of student achievements at each of its respective levels are normal and (2) the standard deviations between states are relatively similar.¹⁶ Thus, the dependent variables for this research are national reading scores from 2007, 2008, and 2009 and national math scores from 2007, 2008, and 2009 (see Table 1 for summary of descriptive statistics for all dependent variables). Each score represents the performance of the average student in the district in comparison with the average student in the nation in their respective areas. Only national scores have been used in this study because this study is an attempt to measure desegregation nationally. The state level data only compares the average student of a school district to their respective state. Thus, state level data is not applicable to this study.

Independent Variable - Desegregation

This research utilizes two measures of desegregation. First, each school district in the sample is assigned a variable depending on their desegregation status; either “1” for dismissed, “2” for not dismissed, and “3” for never under court-ordered desegregation plans. These variables represent the unitary status of the school as a reflection of whether they have successfully complied with *Brown II*. By using this measure, the tests will show whether the legal measure of desegregation is a significant predictor of national reading or mathematics scores. To compare school districts of different unitary status, dummy variables were created to compare districts that were dismissed and were not dismissed to those that were never under

¹⁶ To learn more about the methodology used by the Bush Institute on Education Reform, visit the Bush Institute’s Global Report Card Technical Appendix at <http://globalreportcard.org/docs/AboutTheIndex/Global-Report-Card-Technical-Appendix-9-28-11>

court-ordered desegregation. Since the unitary status of each school district is a mutually exclusive category, dummy variables were created to prevent any categorical effect that may skew the results.

Second, this research also utilizes the racial composition of schools as a measure of integration. Since this analysis heavily focuses on desegregation efforts, racial composition factors will heavily influence the analysis. The first variable used is percentage minority to include all minorities¹⁷ in a school district, and the second variable used is percentage of black students in 2010. I am interested to see whether these variables have any significance on educational achievements and desegregation, separate from the measure of legal desegregation status. It is important to note that these two measures of integration are significantly correlated with each other, as indicated by a significant Pearson's Correlation Coefficient of .737 **.

Control Variables

Since the analysis measures educational achievements in school districts, there are several factors that could influence and skew the measure of desegregation on educational achievements. The first factor, size of school district, that has been already controlled for in the data set with the elimination of small school districts with fewer than 200 students that may affect the results of the statistical findings due to its size. In addition, other school characteristics controlled for in the data set are total enrollment of students, charter school status, and geographic region of the school (South, Midwest, Northeast, and West). Another important discrepancy to note between school districts is the amount of funding each school district receives. School funding has an indirect effect on educational achievements because the amount of funding a school receives can heavily affect school quality and resources, such as advanced

¹⁷ Minorities in this measure includes Hispanic/Latino, Asian or Pacific Islanders, Black or African Americans, and other races.

classes offered, and educational programs. Factors relating to school funding have been controlled for through spending per student, teacher per student ratio, and whether they are charter schools have been accounted for by controlling for these variables. Another factor related to school funding is poverty within the school district that can affect educational achievements can be measured and controlled through the percentage of students who receive free or reduced lunch in a school district.

Evaluation of Research Design

Most of the existing research in the field focuses on educational achievements by comparing desegregation rates through racial composition on educational achievements. However, these studies have often measured desegregation rates rather than the measure of court-ordered desegregation plans. Much of the existing research has only been able to compare with indirect measures of educational achievements, such as graduation and dropout rates, on a local level and those on the national level have only been only to compare educational achievements based on racial composition. This paper will compare school districts of the same unitary status to those of different unitary status, e.g. school districts that have been dismissed from court-ordered desegregation to those that have not been dismissed. This approach differs from much of the existing research in the field by measuring the effectiveness of desegregation plans on educational attainment as well as comparing districts across the nation. However, this research comes with several limitations as a result of the available data. The data will measure the educational achievements of the average student of a particular school district to the average student in the nation, therefore, this data cannot be used to compare each individual student of the district. Thus, the results can only be applied to the average student in the district. Further limitations are after the results section.

Results

Descriptive Results

Simply looking at the average national reading scores and average national mathematics scores of school districts that have been dismissed, not dismissed, or never on court-ordered desegregation, the 2009 data appears to show that districts dismissed from court-ordered desegregation perform slightly better than those that have not been dismissed or have never been on court-ordered desegregation (see Appendix 1 and 2 for a chart of national reading and mathematics scores). School districts that have not been dismissed and those that have never been on court-ordered desegregation have similar average test scores on both reading and math (see Table 1). Even though these test results showed slight differences between districts based on their desegregation status, these differences proved to be statistically insignificant after running an analysis of variance (ANOVA) on each of these dependent variables as shown in Table 2. In no year, for either subject area, did the results of the ANOVA test show any statistical significance. These results imply that the status of a school district, whether it went through desegregation plans, has no statistical impact on the educational achievements of the average student in that school district when compared to the average student at the national level.

Table 1: Comparing Average Test Scores Among Status of Desegregation

	<i>National Reading Scores (2009)</i>		<i>National Math Scores (2009)</i>	
	Mean	Std. Deviation	Mean	Std. Deviation
Dismissed	0.4325	0.127401	0.41576	0.145231
Not Dismissed	0.4121	0.120288	0.40182	0.139948
Never Under Court-Ordered	0.4183	0.116252	0.40667	0.139687

Table 2: Analysis of Variance between Schools Dismissed, Not Dismissed, and Never Under Court-Ordered Desegregation in National and State Stores

	F	Sig.
<u>National Scores</u>		
<i>Reading Scores 2009</i>	0.543	0.582
<i>Reading Scores 2008</i>	0.518	0.597
<i>Reading Scores 2007</i>	0.462	0.631
<i>Math Scores 2009</i>	0.459	0.633
<i>Math Scores 2008</i>	0.452	0.637
<i>Math Scores 2007</i>	0.445	0.642

Table 3: Descriptive Statistics of Dependent Variables

	Minimum	Maximum	Mean	Std. Deviation
<i>National Reading Scores</i>				
<i>2007</i>	0.15	0.77	0.42228	0.123839
<i>2008</i>	0.15	0.76	0.42312	0.12344
<i>2009</i>	0.15	0.76	0.42366	0.122704
<i>National Mathematic Scores</i>				
<i>2007</i>	0.13	0.81	0.40776	0.139443
<i>2008</i>	0.12	0.81	0.40731	0.139258
<i>2009</i>	0.11	0.81	0.40667	0.139687

Basic Regression Model

In the most basic regression model, dummy variables (dismissed and not dismissed) were used to compare school districts in terms of educational attainment using national reading and mathematics scores from 2009. The results from this model indicated no statistical significance

difference between school districts dismissed and those not dismissed or never on court ordered desegregation (see Table 4). The model continued to show no statistical difference even when two factors, percentage of students receiving free or reduced lunch and the percentage of minorities in a school district, were factored in. However, in the regression models using national reading and mathematics scores from 2009 as the dependent variable, two variables, percent minorities and percentage of students receiving free or reduced lunch in a district, had a statistically significant relationship to academic performance. These two factors proved to be statistically significant at the $p < .01$ level for both subject areas (see Table 4). The data reveals that as the percentage of minorities and percentage of students receive free or reduced lunch increases, the academic performance of the school decreases. In this basic model, for every one percent increase in students who receive free or reduced lunch, the average student in a district's comparative performance to the national average decreases by approximately 0.6 percent in the average reading and mathematics scores, controlling for all other variables. For every one percent increase in minorities, the average student in a district's comparative performance to the national average decreases by 0.3 and 0.2 percent, respectively, in the average reading and mathematics scores, controlling for all other variables. The data indicates that percent poverty (as measured by percent free and reduced lunch) has more of a larger statistical impact on test scores than the percentage of minority.¹⁸ To further test these results, the same regression model was applied to national reading scores from 2007 and 2008 as well as national mathematics scores from 2007 and 2008. The results from these regression models had similar findings.

Complex Model

¹⁸ To test if there was an interactive effect between poverty and percent minority, I created an interactive term. After testing the correlation between these two variables, the data shows that in terms of educational achievements, these variables matter independently but not together. In other words, they are correlated but there is no interactive effect between them.

To further investigate the relationship between the status of court-ordered desegregation and educational achievements, other variables (percentage of black enrollment, student to teacher ratio, total revenue spending per student, charter school, and the region of the school district) were added to the model. In this complex model, the results were still similar to those in the basic model. It appears that none of the regression models from 2007, 2008, and 2009 for either national reading or mathematics scores showed any statistical significance between the status of desegregation plans and educational achievements.¹⁹

Table 4: Descriptive Statistics of Basic Model Comparing Dismissed and Not Dismissed Districts

	Std. Coefficient	Std. Error	t
<u>National Reading Scores (2009)</u>			
Dismissed	-0.004	0.012	-0.072
Not Dismissed	-0.038	0.014	-0.746
% Free/Reduced Lunch	-.604***	0.031	-11.291
% Minority	-.297***	0.024	-5.552
<u>National Math Scores (2009)</u>			
Dismissed	0.04	0.016	0.689
Not Dismissed	0.016	0.018	0.277
% Free/Reduced Lunch	-.639 ***	0.04	-10.388
% Minority	-.181 **	0.031	-2.939

Note:

* Statistically significant at the $p < .05$ level.

** Statistically significant at the $p < .01$ level.

*** Statistically significant at the $p < .001$ level.

¹⁹ See Appendix 3 for National Reading and Mathematics Scores from 2007 or Appendix 4 for National Reading and Mathematics Scores from 2008

When testing the national reading scores in this model, the only factors that were significant were the percentage of students receiving free or reduced lunch and percentage of minorities. The results were similar to the national reading scores in the basic model, and the results from this model holds true for reading scores from 2007 and 2008. One explanation for the statistical significant of the percentage of minorities on educational achievements may be that this group of students includes students who are English-as-a second-language students. Students studying English as their second language may be less proficient at English than their native speaking counterparts. As a result, school districts with larger proportions of minorities would naturally have a disadvantage in reading scores given their English skill set.

When testing for national mathematics scores in 2009, the percentage of students who receive free or reduced lunch was still statistically significant, as was the percentage of black student enrollment (see Table 5). The same results hold true for 2007 and 2008 mathematics scores as well. In the 2009 model, for every one percent increase in students who receive free or reduced lunch, the average student in a district's comparative performance to the national average decreases by 0.6 percent in mathematic scores, controlling for all other variables. The results indicate that schools with higher proportions of students who receive free or reduced lunch have lower educational attainment, in terms of national mathematic scores. The percentage of students who receive free or reduced lunch represents the poverty of the school district and studies have widely found that poverty heavily affects educational performance. Poverty restricts the school district's ability to provide the proper educational resources for success.

Compared to the significance of students who receive free or reduced lunch, the significance of the percentage of black²⁰ student enrollment is less significant. For every one

²⁰ In the regression models, both percentage minority and percentage black were included. However, in this regression the percentage of minority proved to be statistically insignificant and percentage of black proved to be

percent increase in students who are black, the average student in a district's comparative performance to the national average decreases by 0.15 percent in the average mathematics scores, controlling for all other variables in the 2009 model. These results proved to be consistent over the span of three years (from 2007 to 2009) for mathematics scores.

Given that the regressions were conducted on the same school districts and variables, these results seem to indicate that reading and math requires different skill sets and the performance on those skillsets may across race. More detailed tests and data would be necessary to tease out the precise performance differences between racial groups. achievements of black students and to relate the analysis and results back to *Brown*.

The results of this model correspond to Hanushek, Kain, and Rivkin's (2002) findings that schools with higher percentages of minorities tend to have lower academic performance. Hanushek, Kain, and Rivkin (2002) found a correlation between educational success of black students and the percentage of black students enrolled in the school. The effect that black students have on black students is the racial peer effect, which has been found in higher proportions of black students reduced the educational outcomes of other black students. In terms of national mathematics scores in 2007-2009, this study provides significant evidence at the $p < 0.05$ level that the percentage of black enrollment has an effect on average educational achievements. Unfortunately, this analysis cannot confirm the racial peer effect because of its focus on desegregation efforts and educational achievement; it does not break out achievement by racial group. This would deem further investigation in another study.

In all the regression models testing the effect the percentage of students receiving free or reduced lunch has on educational achievement, the data continually showed a statistically

significant in this model. This differed from the model for national reading scores where the percentage minority was statistically significant and the percentage black was statistically insignificant.

significant relationship between poverty and achievement. The percentage of students who receive free or reduced lunch is a reflection of the poverty levels of the corresponding school district. Although in both models, one of the indicators of racial composition were statistically significant, poverty proved to be statistically significant at the $p < .001$ level in both models. The link between poverty and educational achievements is undeniable, and there is room for future investigation about the specific relationships between racial composition, poverty, and educational achievements. These schools lag on educational achievements as a result of a lack of resources needed to foster a successful educational environment. If there is anything to take away from these findings, it is that poverty is a highly significant indicator of educational attainment.

Table 5: Significance of Various Factors and Educational Achievements

	<i>National Reading Scores (2009)</i>		<i>National Math Scores (2009)</i>	
	Std. Coefficient	Std. Error	Std. Coefficient	Std. Error
Racial Composition				
% Minority	-.294 ***	0.028	-0.1	0.037
% Black Enrollment	-0.011	0.028	-.151 *	0.037
Poverty				
% Free/Reduced Lunch	-.595 ***	0.033	-.589 ***	0.043
Funding				
Student Per Teacher Ratio	0.019	0.002	0.005	0.003
Total Revenue Spending Per Student	0.074	0	0.047	0
School Characteristics				
Total Enrollment	-0.008	0	-0.009	0
Charter School	-0.012	0.032	-0.003	0.04
Region	0.208	0.02	0.179	0.026

Note:

* Statistically significant at the $p < .05$ level.

** Statistically significant at the $p < .01$ level.

*** Statistically significant at the $p < .001$ level.

After running several regression models to test for the relationship between desegregation status and educational achievements, none of the regression models showed any significance between the two. These results show that there is no statistical difference between schools that have gone under court-ordered desegregation (dismissed or not) and those that have not ever been under court ordered desegregation. These findings show that desegregation does not “matter” statistically in terms of educational achievement. In terms of racial composition, the

results show that the whether it is the overall percentage of minorities or the percentage of black enrollment, racial composition does matter when it comes to educational attainment. But, the results also indicate that the relationship between race and academic achievement is complicated by subject area and various measures of minority status. Interestingly, the regression findings indicate that none of the control variables, including school funding, the presence of charter schools, or size, are statistically related to performance as measured in this model. Finally, the results show that poverty, in terms of the percentage of people who receive free or reduced lunch, does matter for academic achievement in both math and reading. The findings show that while school funding is not statistically significant with educational attainment, poverty as shown in the percentage of free or reduced lunch is. This has some implications as it suggests money through school funds are not significant whereas family income is significant.

Discussion

Perhaps today, the issue with race and educational achievements is not necessarily desegregation as it was in the time of *Brown*, but the results of this study indicate that race still matters. As the results show, racial composition (whether it be the overall percentage of minority or black enrollment)²¹ is significant in either national reading or mathematic scores. These results show that, in a sense, legal measures of desegregation are different than measures of integration. In terms of the legal status of schools, there is no relationship to average performance. However, the racial composition of schools does appear to matter for student performance.

²¹ Nonetheless, it is important to note that in the percentage of minorities is dependent on the percentage of black student enrollment. However for the purposes of this paper, percentage of black student enrollment is variable of its own to study the effects of desegregation on the education

Integration and racial composition still matters if the goal is to still improve the educational achievements for students of color. To the extent that minorities are lagging behind in education, it appears that the achievement goals of *Brown* is far from complete; while there has been considerable progress on the physical desegregation of schools. *Brown* has been highly considered one of the landmark decisions in this nation because it set forth the promise of equality in education for all students, it set forth a more ambitious agenda in terms of achievement for colored students, and that goal has still not been accomplished to its desired degree. As discussed, racial integration has several benefits for students to be better global citizens and adjust to different cultural values through exchanges in conversations, discussions, and views.

These decisions set forth by the court in the 1990s have suggested that the mission of legal desegregation in *Brown* has been completed, and even the data in this study shows that desegregation has achieved what it was theoretically set out to do, which was to equalize educational outcomes. However, the social mission in *Brown* is far from complete as schools with higher percentages of minorities and black students have lower test scores compared to the national average. The goal of desegregation has been successful to a certain degree as more schools are racially integrated compared to the levels of integration in the 1960s, but unsuccessful today because minorities have a tendency to attend predominantly minority schools. More often than not, minority schools are usually poor schools, and they are the schools with lower educational achievements and the students of these schools perform academically worse than those of their peers. Although *Brown* has made significant progress since 1954, it has essentially created a system of separate but unequal for minorities who attend minority schools.

Due to the lack of available resource for this study, these findings hold several limitations. First, this data relies on measure of educational achievement that compares an average student in a school district to the average student in the nation. While ideal measures of performance might include individual state test scores, graduation rates, dropout rates, and Average Yearly Progress (AYP) for each individual school, the only available data to compare schools across the nation was National Academic Educational Progress (NAEP) testing which only provided data for urban districts and states. Because the educational tests for each state vary, and there is no test for all students in the nation, it is difficult to measure educational achievements for students across the nation in any meaningfully comparable way. This responsibility is largely held by the states and there is no federal regulation, with the exception of the No Child Left Behind Act that allows the U.S. Department of Education to regulate yearly progress according to standardized testing results. As a nation, if our goal is to improve educational attainment for all students (especially minorities), there has to be some sort of system that allows researchers to compare educational results on a national scale.

Further, data for this study is only at the district level, which does not allow for disaggregation of effects or causes to the school level. Performance, poverty, and racial composition could vary substantially within a district. This data does not allow for an investigation at the school level.

Conclusion

The findings of this study show mixed results for whether racial composition is still relevant in the field of education. It is relevant in the sense that the percentage of minorities and the percentage of black enrollment influences educational attainment, but it isn't irrelevant in

terms of legal measures of desegregation efforts to racially integrate students. Prior to *Brown*, racial segregation provided whites with the resources and quality education to succeed and provided the blacks with the same educational facilities, but without the same resources and quality in education. As shown in this study, desegregation plans are no longer relevant in terms of educational attainment, but race remains highly relevant in affecting educational attainment. Perhaps, the court decisions in the 1990s saw that desegregation plans were no longer as relevant today as they were in the time of *Brown*, but even so, the issue of race in education should not be neglected. As suggested by the literature, school districts that have been released from court-ordered supervision have seen a steady and gradual return to racial isolation reversing all the progress *Brown* has made thus far. To further the legacy of *Brown* in its goals of equalizing educational opportunities for all students, new policies should address the educational problems of today in terms of improving the educational attainment of minorities. New educational reforms are needed to for minorities, as a group, who have not attained the educational achievements set forth in *Brown*.

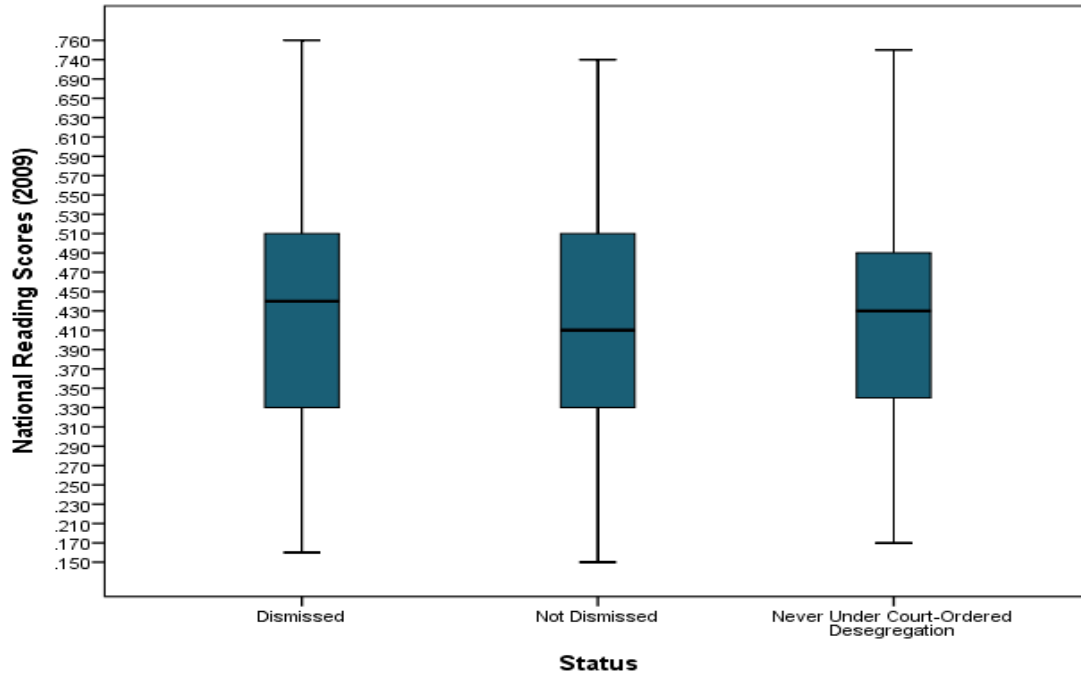
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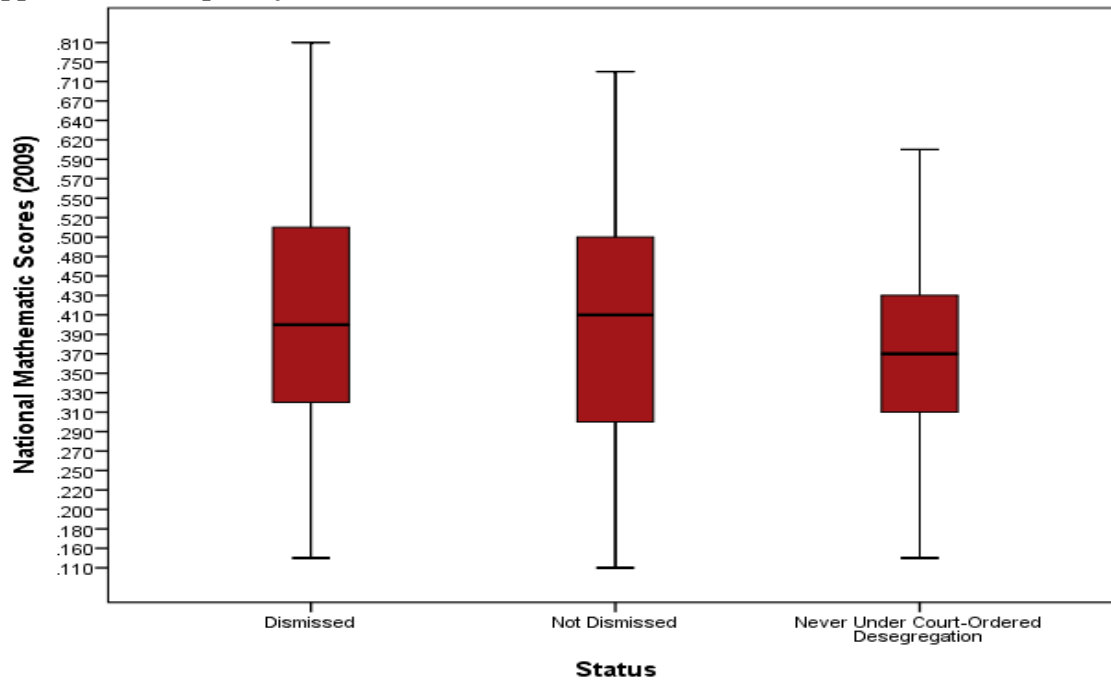
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Appendix

Appendix 1: Boxplot of National Reading Scores in 2009



Appendix 2: Boxplot of National Mathematic Scores in 2009



Appendix 3: Significance of Various Factors and Educational Achievements in 2007

	<i>National Reading Scores (2007)</i>		<i>National Math Scores (2007)</i>	
	Std. Coefficient	Std. Error	Std. Coefficient	Std. Error
Racial Composition				
% Minority	-0.269 ***	0.028	-0.104	0.037
% Black Enrollment	-0.03	0.028	-0.152	.036 *
Poverty				
% Free/Reduced Lunch	-0.605 ***	0.033	-0.594	.042 ***
Funding				
Student Per Teacher Ratio	0.058	0.002	0.031	0.003
Total Revenue Spending Per Student	0.061	0	0.037	0
School Characteristics				
Total Enrollment	0.013	0	0.01	0
Charter School	0.005	0.029	-0.002	0.037
Region	-0.016	0.006	-0.02	0.007

Note:

* Statistically significant at the $p < .05$ level.

** Statistically significant at the $p < .01$ level.

*** Statistically significant at the $p < .001$ level.

Appendix 4: Significance of Various Factors and Educational Achievements in 2008

	<i>National Reading Scores (2008)</i>		<i>National Math Scores (2008)</i>	
	Std. Coefficient	Std. Error	Std. Coefficient	Std. Error
Racial Composition				
% Minority	-.281 ***	0.028	-0.096	0.037
% Black Enrollment	-0.026	0.028	-0.152	.036 *
Poverty				
% Free/Reduced Lunch	-.597 ***	0.033	-0.601	.042 ***
Funding				
Student Per Teacher Ratio	0.051	0.002	0.031	0.003
Total Revenue Spending Per Student	0.052	0	0.032	0
School Characteristics				
Total Enrollment	0.009	0	0.008	0
Charter School	0.005	0.029	-0.005	0.037
Region	-0.014	0.006	-0.011	0.007

Note:

* Statistically significant at the $p < .05$ level.

** Statistically significant at the $p < .01$ level.

*** Statistically significant at the $p < .001$ level.