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School Integration and College Outcomes: Does Attending a Racially Diverse
High School Positively Influence College Attendance and College Prestige?

Leila J. Nielsen

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree for

Master of Science

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ABSTRACT

School Integration and College Outcomes: Does Attending a Racially Diverse High School Positively Influence College Attendance and College Prestige?

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Master of Science

Early studies of school integration are limited to examining the impact of court-ordered integration on student outcomes. As districts are released from their court orders, the context within which integration operates has changed. As such, this study tests whether voluntary integration is a useful intervention for equalizing students' access to post-secondary education. I utilize data from the graduating class of 1997 from Jefferson County Public School District in Kentucky. Results indicate that students' GPA is the largest and most influential predictor of both college attendance and prestige. Furthermore, results indicate that school diversity influences GPA differentially depending on students' race and economic background. Implications concerning the future of race-based integration policies are discussed.

Keywords: school integration, diversity, college outcomes

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TABLE OF CONTENTS

Abstract.....	ii
Acknowledgements.....	iii
Table of Contents.....	iv
List of Tables.....	v
Introduction.....	1
Background.....	3
History of School Desegregation.....	3
General Outcomes Associated with Integration.....	5
Integration and College Outcomes.....	8
Research Questions.....	12
Context of the Study.....	13
Method.....	17
Data and Sample.....	17
Measures.....	18
Outcome measures.....	18
School-level measures.....	20
Student-level measures.....	21
Analytic Approach.....	23
Descriptive analysis.....	23
Multilevel model analyses.....	24
Results.....	25
Descriptive Analysis.....	25
Analyses Predicting College Type.....	26
Analyses Predicting College Prestige.....	28
Cumulative Grade Point Average.....	28
Discussion.....	30
Limitations.....	32
Conclusion.....	33
References.....	35
Appendix A: Description of Variables for Full and Restricted Samples.....	51
Appendix B: HLM Equations.....	53

LIST OF TABLES

1. College Type by Student Race, SES, and GPA 42

2. Hierarchical Multinomial Logistic Regression Using School Diversity to Predict College Type 43

3. Hierarchical Multinomial Logistic Regression Using School Poverty to Predict College Type 44

4. Hierarchical Linear Regression Using School Diversity to Predict College Prestige 45

5. Hierarchical Linear Regression Using School Poverty to Predict College Prestige 46

6. Hierarchical Linear Regression Using School Diversity to Predict Student Cumulative GPA 47

7. Hierarchical Linear Regression Using School Poverty to Predict Student Cumulative GPA 48

8. Hierarchical Linear Regression Using School Diversity and Student-level Interactions to Predict Student Cumulative GPA 49

9. Hierarchical Linear Regression Using School Poverty and Student-level Interactions to Predict Student Cumulative GPA 50

INTRODUCTION

The United States has a long history with racial integration. Following the landmark court case *Brown v. Board of Education*, the Supreme Court ruled that separate schooling was inherently unequal and that minority children were not receiving the same educational opportunities as white children (Harris and Russo 1994). In the years that followed, many districts were ordered to integrate their schools in order to provide equal educational experiences to students of all races. However, several school districts fought such orders and some of these districts are still under court-ordered mandates to this day (McNeal 2009). As a result of this history, sociological research focused on how attending these newly integrated schools influenced various student outcomes.

Early research found that one of the most crucial ways in which students were influenced by attending integrated schools was the access they gained to important social institutions. For example, during the height of court-mandated school desegregation, African American students in desegregated schools experienced higher academic achievement in school than those in segregated schools (Crain and Mahard 1983). Additionally, studies of the same time period found that students who experienced more integrated schools were more likely to major in more technical fields in college (Braddock 1987) and work in higher status occupations (Wells and Crain 1994), greatly increasing their chances for mobility, and thus life opportunities. They also found that one of the most important benefits of attending integrated schools was the access that students gained to post-secondary education. The previous studies mentioned also found that students who attended desegregated schools were much more likely to complete more years of education and earn higher degrees (Braddock and McPartland 1987; Wells and Crain 1994).

Attending college also allowed students access to high status employment and social networks (Wells and Crain 1994).

However, these foundational studies examined integration during its initial implementation as districts integrated because of court orders. However, voluntarily integrated districts are rarely examined in the desegregation literature, and this contextual difference may have a significant impact on how we understand the effects of attending racially diverse schools. Furthermore, in recent years, the federal government has abandoned efforts to desegregate schools and recent court decisions have made it difficult for school districts to continue their voluntary integration plans (Orfield and Lee 2007). Because the goal of integrating schools is to provide minority students with the access to equal educational institutions (Wells and Crain 1994), many are concerned that this goal will not be met (Orfield, Frankenberg, and Garces 2008). If students no longer have access to integrated schools, they may also lose access to the benefits of attending them.

This study tests whether voluntary integration is a useful intervention for equalizing students' access to post-secondary education. Specifically, it examines whether school diversity has an impact on college attendance and college prestige, both of which have been found to influence student life opportunities and upward mobility (Brand and Halaby 2006). In addition, this study analyzes whether the influence of school diversity works through certain pathways, such as students' grade point averages, to impact college attendance and prestige. Diversity may operate through alternative pathways given the context of voluntary integration, which early studies were not able to consider. Within this new context, diversity may be indirectly related to later life outcomes in ways early studies of desegregation did not find.

I utilize data from seniors of the graduating class of 1997 from Jefferson County Public School District (JCPS) in Kentucky to address these issues. At this time, students in Jefferson County experienced high levels of voluntary integration that persisted throughout their JCPS experience, making it an ideal place to study the effects of racially diverse schools. This study finds that students' GPA is the largest and most influential predictor of both college attendance and prestige. Furthermore, results indicate that school diversity influences GPA differentially depending on students' race and economic background. Because of this, this study illustrates how racially diverse schools ultimately impact long-term student outcomes. Given the specific context of JCPS, this study is important because it demonstrates the ability of voluntary integration to influence factors related to later life chances. Implications concerning the future of race-based integration policies are discussed.

BACKGROUND

History of School Desegregation

In the 1954 court case *Brown v. Board of Education*, the Supreme Court ruled that school segregation was unconstitutional and that minority children were not receiving the same educational opportunities as white children, violating their constitutional rights under the 14th Amendment (Harris and Russo 1994). With the passage of this landmark court ruling, racial segregation in schools was ordered to stop. However, most districts, especially in the South, ignored these rulings and continued to keep their schools segregated. It wasn't until a decade later, with the passage of the Civil Rights Act of 1964, that real desegregation efforts began to take place. The federal government outlined several criteria that must be met to successfully desegregate schools, and it threatened to withhold federal funding from any district that did not comply. As such, schools around the country began implementing desegregation plans in order

to comply with the court-ordered mandates they were placed under. In order to meet federal stipulations, school districts developed innovative strategies to desegregate their schools. Most notable was the strategy schools in Charlotte-Mecklenburg employed. These schools utilized district-wide busing plans in order to integrate. Busing was likely the single most important mechanism for creating meaningful racial integration in schools by allowing minority students to spend significant periods of time in integrated academic settings (Cascio et al. 2008; Farley, Richards, and Wurdock 1980).

More districts around the country began making attempts to comply with court orders to desegregate. As they successfully provided federal courts evidence of meeting their criteria for desegregation, districts were granted unitary status, indicating a release from court ordered desegregation. Once schools achieved unitary status, many reverted back to assigning students to schools based on their neighborhoods, resulting in the re-segregation of many districts (Orfield et al. 2008). However, some districts maintained their desegregation efforts after being granted unitary status, choosing instead to remain voluntarily integrated. They continued implementing race-based student assignment policies, including busing students, to maintain racially diverse schools (*Parents Involved in Community Schools v. Seattle School District No. 1* 2007; Kurlaender and Yun 2001). These actions mark a distinct shift from court ordered to voluntary integration.

However, in 2007, the Supreme Court decided another landmark court case. In response to opposition to two district's use of race-based student assignment policies, *Parents Involved in Community Schools v. Seattle School District No. 1 (PICS)* was heard before the Supreme Court. The court ruled that once a district was released from its court ordered mandate, student

assignment to schools based on race was unconstitutional. This ruling left many wondering what the future of integration would be.

General Outcomes Associated with Integration

The original goal of racial integration was to provide minority students with access to equal educational institutions (Wells and Crain 1994) so they may experience quality educational environments that may enhance their later opportunities. Access to equal, racially diverse, educational institutions may impact one's contact with people of other racial backgrounds, possible job opportunities, chances of living in racially integrated neighborhoods, and even the type of college they may choose to attend.

Early research examining such outcomes emphasized the short-term benefits students experienced from attending integrated schools. One such benefit was exposure to other racial groups besides their own. In a study analyzing 200 graduates of desegregated high schools from the 1970's and 1980's, almost all reported that they felt better prepared to function in an increasingly multicultural world (Holme, Wells, and Revilla 2005). These same graduates added that they felt more comfortable in integrated settings, believing that they had gained a better understanding of other races from their experiences in high school (Holme et al. 2005).

Interviewing students of diverse schools during the 1980's, Wells and colleagues (2008) found that experiencing diversity prepared these students to work in diverse workplaces and be more accepting of co-workers of different races. Similarly, conducting a meta-analysis of studies of desegregation through 2000, Pettigrew and Tropp (2006) found that interracial contact lessened prejudice. These findings suggest that a major purpose of desegregation during this time was to decrease prejudice and help students deal with racism. This was crucial for those experiencing court-ordered desegregation, as these efforts were often met with great hostility and opposition

from students and members of the larger community. However, examining integration in another setting, specifically voluntary integration, may offer different types of outcomes especially as overt and hostile behavior toward integration has decreased over time.

In addition to the outcomes associated with enhanced positive feelings toward those of other races, early integration research focused on additional short-term effects, particularly students' academic performance. However, these studies produced mixed results. Crain and Mahard (1983) analyzed several studies interested in the effects of desegregation. They found that many studies reported positive achievement gains while others found that desegregation produced little or no achievement effects at all. These results echoed earlier analyses which concluded that desegregation produced inconclusive results (St. John 1975). While these studies produced mixed findings, it is vital to consider the context within which they took place. Studies of the 1970's and 1980's are limited to looking at integration at its earliest stages, and this may contribute to the varying results regarding student achievement.

While early research questioned the extent to which desegregation efforts may impact the achievement of minority students, more recent studies indicate that early desegregation efforts did help to reduce the black-white achievement gap (Grissmer, Flanagan, and Williamson 1998; Gamoran, Lopez, and Fiel 2012). Gamoran and colleagues (2012) argue that school desegregation has been one of the most prominent large-scale interventions used to combat achievement inequality among different races. This achievement gap narrowed during the 1970's and 1980's, with researchers associating this narrowing to the implementation of desegregation policies. This was true especially in the South, as black students experienced significant achievement gains, and these gains were associated with the timing of desegregation (Grissmer et al. 1998). Conversely, the widening of the achievement gap during the late eighties and

nineties is associated with the re-segregation of many schools throughout the country (Orfield and Lee 2007). These trends are crucial as researchers consider the role integration may play in today's schools.

As researchers continued to investigate the impact of integration, they turned their attention to more long-term outcomes. Researchers demonstrated how experiencing racial integration within schools was related to students' future educational and occupational expectations. For example, Dawkins and Braddock (1994) found that black students from the 1970's and 1980's who attended racially segregated schools were more likely to hold professional expectations that were lower in status and income compared to students who attended desegregated schools. Some argue that these lower expectations resulted from insufficient information and lack of access to informed social networks within segregated schools, and desegregation policies may help to alleviate such disparities by helping minority students gain access to better information (Hoelter 1982). African American students from desegregated schools also expressed educational aspirations that were more closely aligned with their actual level of educational attainment than students of segregated schools (Falk 1978). In addition, Reber (2010) analyzed data from 1960 to 1975 and found that school desegregation efforts resulted in increased educational attainment for black students.

While the studies on long-term effects of integration produce mostly positive results, the majority utilize fairly old cohorts of students, primarily from the 1970's and 1980's. This is important to note because during this time, most students were experiencing new, court-ordered integration policies that had often not been in place for very long. It is reasonable to suggest that these findings may differ if examined within a different context. Thus, research is needed that uses more recent cohorts who have experienced stable, voluntary integration policies to more

fully examine long-term effects outcomes that impact students' life opportunities. Building on past research, students in voluntarily integrated schools may have a fundamentally different experience than students who experienced the early stages of court-ordered integration.

Integration and College Outcomes

Perhaps one of the most influential long-term effects with regard to students' future opportunities are outcomes associated with attending college. In addition to educational aspirations and expectations, studies of integration have also examined factors related to students' college preparation. For example, Massey and Fischer (2006), using newer data from the 1990's, find that black and Latino students are much less likely to complete advanced placement courses in high school and have lower GPAs during high school if they attended racially segregated schools. For high school students in Charlotte-Mecklenburg schools, those who attended racially balanced schools were more likely to have the opportunity to pursue college prep tracks (Southworth and Mickelson 2007). Similarly, research also indicates that minority students are less likely to be psychologically prepared for college and subsequently perform poorer during their first three semesters at college than students who do not experience segregation in their early years (Massey and Fischer 2006).

Early research also shows that students who experience high school racial integration are more likely to attend college (Braddock 1980; Braddock 1987; Kaufman and Rosenbaum 1992). One early study found that black students who attended racially integrated high schools were more likely to choose more technical, science-based majors in college. Conversely, high school graduates of segregated schools were more likely to major in the social sciences or the arts in college (Braddock 1987). This is important because students' college majors may significantly influence the career paths later in life. Further, reviewing foundational works on integration and

college attendance, Tegeler and colleagues (2010) find that students who attended desegregated schools were increasingly more likely to graduate from college and that graduating from college impacts later stages of students' lives. For example, "college completion is strongly linked to employment in white collar and professional jobs that offer high wages and benefits" (Tegeler et al. 2010:3; Wells and Crain 1994). Therefore, attending racially diverse schools enhanced the likelihood of attending college which, in turn, may have a significant impact on students' upward mobility.

Importance of College Attendance

Recent research indicates that attending college is vital to many student outcomes associated with later life success. In fact, Gerber and Cheung (2008) argue that today, a student's level of educational attainment is the single most influential factor in shaping labor market opportunities. These opportunities may include occupational attainment, opportunity for promotion, and earnings, and will significantly impact students' long-term life situations. For example, one study found that the lifetime earnings of those with a college education were 1.8 times of those who only graduated from high school (Day and Newburger 2002). In addition to earnings, those with higher educational attainment hold jobs with greater responsibility and social status (Halaby 2003; Hout 1984), and also experience greater psychological well-being and health (Ross and Mirowsky 1999).

Not only does attending college significantly impact students' life outcomes, but so does the type of college students attend. While it is important to know whether a student attends college or not, it is perhaps more important to know where one goes to college. For example, significant effects have been found for students who attend prestigious post-secondary institutions. Those who attend elite colleges are more likely to graduate from college (Brand and

Halaby 2006), attain bachelor degrees (Long 2008), and are also more likely to hold more prestigious occupations (Grodsky and Jackson 2009; Brand and Halaby 2006). Further, attendance at an elite private college increases the probability of attending a graduate school at a major research institution (Eide, Brewer, and Ehrenberg 1998). Future employers also use the type of college, especially a prestigious one, as a sign of a successful hire (Ishida, Spilerman, and Su 1997). Astin and Oseguera (2004) state “the most sought-after employers and most graduate and professional schools favor the graduates of prestigious institutions in their recruitment practices” (323). As the research shows, the type of college students attend greatly influences the opportunities available to them after graduation and significantly impact later life success.

Racial and Socioeconomic Differences in College Attendance

However, not all students experience the same access to post-secondary educational institutions and the opportunities that come from attending them. Increased educational attainment is heavily dependent on students’ academic achievement. Grodsky and Jackson (2009) state, “historically, secondary school academic achievement and track placement have been among the most robust predictors of whether students attend college at all, the type of college (2-year or 4-year) students attend, and, for those pursuing a baccalaureate degree, the prestige of the institutional four-year college” (p. 2350). Similarly, students’ high school GPAs significantly influence their aspirations to attend college (Hossler and Stage 2002). However, while academic achievement is a strong predictor of college attendance, research also indicates that racial and socioeconomic achievement disparities exist among students.

These achievement gaps manifest themselves when children enter school and subsequently widen over time. Fryer and Leavitt (2006) find significant differences in black and white academic performance as early as third grade. Furthermore, Lee (2004) argues that racial

achievement gaps are perpetuated because of unequal school environments. In addition to race, research also indicates that socioeconomic gaps exist, as well. One study found that low-income students in public high schools perform much worse in math and science as the proportion of middle and high income students increases (Crosnoe 2009). However, Condrón (2009) contends that school factors affect the racial achievement gap, while non-school factors affect socioeconomic differences. These findings are important as access to college is dependent on one's academic achievement. Due to documented racial and socioeconomic achievement gaps, students from different backgrounds may face unequal access to post-secondary education.

Indeed, the literature does show differences among black and white students' college attendance rates. Sixty-six percent of white high school graduates enrolled in some type of post-secondary education compared to 58% of black high school graduates (Snyder, Tan, and Hoffman 2006). Not only do these groups differ in overall college attendance, they also differ in the types of colleges they attend. Black and Latino students are more likely to begin their post-secondary educational careers at community colleges compared to their white counterparts (Grotsky and Jackson 2009). Results are mixed as to whether racial differences exist regarding attendance at prestigious institutions. Some studies argue that minority students attend less prestigious colleges (Karen 2002), while others find these minority students more likely to attend prestigious colleges than similarly situated white students (Grotsky 2007). In addition, similar results emerge for socioeconomically disadvantaged students. Low-income students are more likely to attend less selective institutions, even after accounting for their academic ability and achievement (Hearn 1991). And once they are in college, socioeconomically disadvantaged students are more likely to participate in vocational majors rather than art or science majors (Goyette and Mullen 2006). Clear differences exist between black and white students' college

outcomes, and because these outcomes are highly predictive of later life success, interventions must be explored to remedy such disparities. This study improves upon past literature and tests the impact of *voluntary* school racial integration as a viable intervention to reduce achievement inequalities and, ultimately, influence college outcomes.

RESEARCH QUESTIONS

Attending college affords students many opportunities that may enhance the quality of their life. Students who graduate from college hold higher status jobs (Halaby 2003; Hout 1994) and enjoy higher earnings than those who do not (Day and Newburger 2002). Additionally, attending a prestigious college adds to these opportunities. But, as past research demonstrates, not all students experience the same access to post-secondary institutions. This is especially evident in the differences in college attendance by race. Past research also shows that students benefit from attending racially integrated schools, and among those benefits are positive college outcomes. However, these studies analyze integration in its early stages, examining court-ordered integration and the context surrounding it. In this study, I test the influence of voluntary integration on college outcomes for black and white students. By doing so, I seek to understand how schools that remain voluntarily integrated may ameliorate the racial differences in college attendance outcomes related to later life success. This relationship has yet to be studied in the literature.

I use data from one southern school district that has maintained integrated schools over several decades. The district's commitment to racially diverse schools allows me to investigate the long-term outcomes associated with integration. Specifically, I ask: How does school-based racial diversity influence enrollment in a two-year/vocational or four-year college, rather than no college? And, of those who attend a four-year college, is school racial diversity associated with

enrollment in more prestigious four-year colleges? Given that this study is ultimately interested in outcomes related to college attendance, I also consider whether the impact of school diversity works through alternate pathways to influence college outcomes. Because the literature demonstrates that student grade point average is one of the strongest predictors of college attendance (Roderick, Nagaoka and Coca 2009), I test whether school diversity significantly influences GPA.

CONTEXT OF THE STUDY

In order to examine the relationship between school integration and outcomes related to post-secondary education, I use Jefferson County Public School District as a case study. In Jefferson County, Kentucky, public schools have maintained remarkably low levels of segregation for the past three decades. In fact, it is one of the most successfully integrated districts in the nation (*PICS 2007*; Kurlaender and Yun 2001). Through promoting and maintaining this level of integration the district faced severe opposition initially, but its efforts were later voluntarily upheld by residents of the county and viewed with pride as a landmark achievement for the school system.

The journey of integrating the Jefferson County school system began in 1956, in the aftermath of *Brown v. Board of Education* (1954). The Louisville Board of Education created a student assignment plan and an open transfer policy to aid integration, but the schools remained highly segregated for the next 16 years. In 1973, parents and civil rights groups claimed unconstitutional segregation and sued the Louisville Board of Education and Jefferson County Public Schools in federal court. The Louisville school district population was approximately half black and half white, but the racial composition of the schools failed to reflect this diversity.

Forty of 46 elementary schools and 14 of 19 middle and high schools were racially isolated, with over 80% of students of only one race (*PICS 2007*). Jefferson County Public Schools at that time was a suburban district with a predominantly white and affluent student population. To remedy this issue of segregation, the District judge ordered the merger of the financially struggling Louisville district with the Jefferson County school district, making it one of the largest school systems in the country. The judge also ordered the newly merged school districts to remedy *de jure* racial segregation by means of busing.

The implementation of busing produced strong opposition from residents of Jefferson County. In 1975, the newly expanded district, Jefferson County Public Schools (JCPS), faced the challenge of integrating a population of roughly 80% white students and 20% black students. To achieve this goal, the district adopted a complicated district-wide busing system, which reassigned 23,000 students based on their race and the first letter of their last names. White students were to be bused for 2 of their 12 years in the school district, while black students were to be bused for 10 of their years. Twenty-five anti-busing groups later arose in an attempt to thwart the proposed plan by conducting meetings, holding protests and organizing boycotts. Private schools opened across the community to serve the onslaught of white families refusing to attend integrated schools, while districts in neighboring states and counties denied entrance to students from Jefferson County after a flood of calls from concerned parents. As the school year began, the protests turned violent as protestors beat gas station owners for filling school buses, vandalized schools and buses, and the Ku Klux Klan increased activity. A few days after school started, dozens of people were hurt and nearly 200 people were arrested after two anti-busing protests turned violent. However, the violence subsided after a few weeks and the protests gradually diminished over the next few years.

These negative reactions continued to subside as the district adhered to its desegregation policies. As a result, by 1978 the district was mostly released from its court order. Interestingly, JCPS chose to continue its efforts toward integration, and members of the community supported this decision. For example, in the years following the district's release from its court order, PTA membership significantly increased. As one PTA leader said, "If people see something positive, they want to get on board." The community support from students and parents helped perpetuate the district's commitment to integration.

In the following years, the district continually revised its integration efforts and in 1991, the district implemented an integration plan that required schools to achieve a level of 15-50% black students. However, attacks against Jefferson County's integration plan began again in 1999, when six parents sued to remove the upper limit of 50% black from Central High, a historically black high school that served as a magnet school at the time. The district court held that race targets at magnet schools were unconstitutional and dissolved the district's original desegregation ruling in 2000. However, JCPS continued to uphold the 15%-50% guideline in their non-magnet schools, an action typifying their mindset toward a fully integrated school system (*PICS* 2007). Since the district's original desegregation order, racial integration has been at the forefront of district policies and educational priorities. As such, the district has conscientiously adopted policies intended to curtail the trend toward re-segregation—a trend that has been widespread in the South as a result of courts releasing districts from their court desegregation orders (Orfield et al. 2008).

Jefferson County is an ideal district to study precisely because of its determination to maintain racially diverse schools. It is extremely unique as it is one of the few districts left in the nation that maintains voluntarily integrated schools, making it possible for researchers to

examine the possible long-term outcomes of attending diverse schools. This is significant, as previous studies of integration have examined schools within the context of court-ordered desegregation. The support for voluntary integration found in JCPS may offer new insights into how integration may impact students.

The students used in the analyses for this study come from the graduates of the 1997 senior class. I use students from this time period for two major reasons: first, it was the time of the most diversity in Jefferson County. It is important to note that all schools in JCPS are racially integrated; however, they vary in their level of diversity. For example, during the time of this study, Jefferson County enrolled about 70% white students and 28% black students, and the level of racial diversity for each high school (as determined by the percentage of minority students in the school) ranged from about 21% to 55%. Because of this, the level of racial diversity in each school varies enough to be used in statistical analyses. In addition, students of this time period likely spent their entire academic careers in voluntarily integrated schools. No other study has analyzed such a population.

Second, 1997 was a time in JCPS before any major court cases interfered with policies that kept schools within the district racially integrated. Contrary to past studies, this district is unique in that it allows me to study schools that are voluntarily integrated as opposed to schools that integrated because of court orders. This is especially interesting as many schools grapple with the implications of recent court rulings restricting the use of race in racial integration efforts of districts no longer under court orders.

Jefferson County is also unique given the infrastructure it provides students interested in pursuing post-secondary education. JCPS provides students many opportunities to participate in college preparatory courses. In addition, several colleges and universities, including many

Historically Black Colleges and Universities (HBCUs), surround the district. The enhanced focus on college attendance and availability of many post-secondary educational options may influence JCPS students' college attendance.

METHOD

Data and Sample

In order to investigate the relationship between school diversity and students' post-secondary educational intentions, I use data from Jefferson County Public School District in Kentucky. I use data primarily from students of the 1997 graduating class in JCPS. These data come from two different sources: the first is 2000 census data, the closest year to 1997 available. It includes socio-geographic information for each student detailing their residential neighborhoods during their time as high school students. This information comes from the census' Geographic Information Systems (GIS). Using this information allows me to account for neighborhood-level characteristics, including the neighborhood diversity students may experience as opposed to the diversity they may experience in their high schools. The second source of data comes from JCPS administrative records. It includes cohort data for the 1997 senior graduating class. These data provide information including the address of each student, the names of the high schools each student attended, and other background indicators. The data available from the district records allow for a school-level indicator of racial diversity to be created. Finally, the district also provides exit survey data on graduating seniors which include whether each student planned to attend college or not, and if so, what college they planned to attend.

The sample for this study is restricted to high school graduates of the class of 1997 in JCPS. Of the 4,987 high school graduates, 379 were dropped from analysis due to missing exit

survey data. Additionally, in 1997 JCPS was primarily a district with only black and white student populations. Students of an ‘other’ race constitute about 3% of all students in the district. Because this study is primarily interested in the effects of school integration of black and white students, the 136 students of an ‘other’ race were also dropped from analyses. Thus, the full analytic sample is comprised of 4,472 students.

Among the 1997 Jefferson County graduates, 1,709 (38%) planned to attend no college, 821 (18%) planned to attend a two-year college or vocational/technical school, and 1,942 (43%) planned to attend a four-year college. A restricted sample comprised of only those students planning to attend a four-year college is also utilized to examine the influence of school diversity on college prestige. I look at prestige for four-year colleges because prestige indicators are only available for four-year colleges (Barron’s Profiles of American Colleges 1997). However, this is an important group of students to investigate because research indicates that attaining a bachelor’s degree provides significant advantages for future economic success (Torche 2011). Further, research also indicates that attending an elite college increases the probability of graduating from college, getting an advanced degree, and also increases the socioeconomic status of one’s first job (Brand and Halaby 2006). This restricted sample began with the 1,942 students; however, two were dropped because prestige scores were not available for the colleges they committed to attend.¹ Therefore, the restricted sample is comprised of 1,940 students intending to enroll in a four-year college.

Measures

Outcome measures. I test the influence of school racial diversity on college-based outcomes related to students’ later life success. The first outcome variable is a measure of type of

¹ Prestige scores are calculated using the Barron’s Profiles, which only categorize four-year colleges. Additionally, two four-year colleges were dropped because they were not found in the Barron’s Profiles.

college students plan to attend for graduating seniors of the 1997 class in JCPS. The school district provided information about the post-secondary plans of each graduating senior. Students' guidance counselors administer the Annual Senior Transition Survey during the spring term of their senior year, where students reported their post-graduation intentions, including the names of each college students planned to attend. During this time most students had already been accepted to colleges; therefore, their reported intentions should accurately reflect actual attendance. Additionally, the numbers of students planning to attend no college, two-year or vocational schools, and four-year colleges reported in the exit survey are very similar to official JCPS statistics on college enrollments (JCPS Facts 2011).² From this information, students were grouped by college type: four-year college, two-year college or vocational/technical school, or no intention of participating in post-secondary education.

The second outcome variable I use is a measure of college prestige for students intending to enroll in a four-year college (n=1,940). In order to measure college prestige, I use the 1997 Barron's Profiles of American Colleges. The 1997 profiles correspond with the time period when students in this study would enroll in college. The Barron's ratings measure institutional admissions selectivity and account for factors such as SAT/ACT scores, high school grades, GPAs, class rank, and admission rates of each college. Using factors such as SAT/ACT scores are commonly used measures of institutional prestige (Hearn 1991; Davies and Guppy 1997; Karen 2002; Moller et al. 2011). The use of additional factors beyond SAT/ACT scores strengthens the use of the Barron's Profiles in measuring institutional prestige (An 2010). The Barron's Profiles of American Colleges classifies each institution into one of seven categories: most competitive (coded '6'), highly competitive (coded '5'), very competitive (coded '4'),

² I use Exit Survey data, rather than JCPS enrollment statistics, because the survey data provide more detailed information including where each student planned to attend.

competitive (coded '3'), less competitive (coded '2'), non-competitive (coded '1'), and special.³ The mean level of college prestige is 3.01. (See Appendix A.)

The final outcome variable used to test the influence of racially diverse schools is a measure of students' twelfth grade cumulative grade point average. This is a continuous measure and ranges from 0.75 to 4.0 with a mean of 2.6 in the full sample, and 1.11 to 4.0 with a mean of 3.03 for the restricted sample (only students who attend four-year colleges). Cumulative GPA is also used as a control variable in some multivariate analyses.

School-level measures. In this study, I utilize two school-level measures: a measure of school diversity and a measure of school poverty. I use the level of school diversity students experienced in their high schools as the key explanatory variable to predict college outcomes and cumulative GPA. To do this, I match each student to the high school they attended during their senior year in JCPS. I then calculate the percentage of minority students in each high school, which is a four year average to account for the average experience with diversity a student would have encountered during their four years in high school. The school diversity measure ranges from 0.21 to 0.55 for both the full and restricted samples, and has a mean of 0.32 in the full sample and a mean of 0.33 in the restricted sample. School diversity is grand mean-centered in all analyses. It is important to remember that all of the high schools in Jefferson County are integrated schools. However, the degree to which each school is diverse is dependent on the demographic make-up of the school district. During the time of this study, JCPS enrolled about 70% white students and 28% black students. Each school in JCPS stays within 10% of the district average for percent of minority students, with the exception of one high school that is racially balanced. As a result, no school is overwhelmingly more white than the district average;

³'Special' colleges are colleges that are geared toward special talents or interests. In JCPS, only fifteen students went to one of nine 'special' schools. Because of this, I researched the selectivity factors of each of these colleges and assigned them one of the six remaining prestige categories.

schools are at least as diverse as the district, and many are more racially balanced than the district as a whole, without becoming schools characterized by high concentrations of minority students. This results in a range of diversity among the high schools. Because of Jefferson County's rigorous attempts to achieve integration, no high school in the district is racially segregated.

School poverty is measured similarly to school diversity. I match each student to the high school they attended during their senior year, and then calculate the percentage of students on free and reduced lunch in each high school. This is also a four year average. The school poverty measure ranges from 0.1 to 0.66 for both the full and restricted samples. Its mean in the full sample is 0.33 and its mean in the restricted sample is 0.34. School poverty is also grand mean-centered in all analyses.

Student-level measures. In order to account for the effects of student background, I also include several student-level measures: students' gender, whether they participated in school choice, the number of years students spent in high school they graduated from, as well as students' race and poverty status. Students' gender is dichotomously coded '1' for female and '0' for male, with males acting as the reference group. Whether a student participates in school choice is also dichotomous and is coded '1' for students who participate in school choice and '0' for students who do not participate, with students who do not acting as the reference group. The number of years students spent in the high school they graduated from is a continuous measure ranging from 1 to 4 for both samples. See Appendix A for a detailed description of these variables.

The literature indicates that students' race and socioeconomic status are highly correlated (Southworth and Mickelson 2007). In this study, preliminary models suggested an interaction

effect between race (whether the student was black or white) and economic status (whether the student participated in the free and reduced lunch program or not) that should be accounted for in the final models. Because of this, I created a combined measure to differentiate between advantaged and disadvantaged black students and advantaged and disadvantaged white students. Therefore, I include a set of dummy variables that account for both students' race and class simultaneously. These dichotomous measures are coded '0' and '1' and include categories for black economically advantaged students, white economically advantaged students, black economically disadvantaged students, and white economically disadvantaged students. White economically advantaged students serve as the reference group in each of the analyses. In the full sample, 54% of students are white and advantaged, 18% are white and disadvantaged, 8% are black and advantaged, and 20% are black and disadvantaged. In the restricted sample of only students attending a four-year college, 65% are white and advantaged, 10% are white and disadvantaged, 10% are black and advantaged, and 16% are black and disadvantaged.

While examining the relationship between school diversity and college outcomes is fundamentally concerned with the impact of schools on post-secondary education, neighborhoods have also been found to influence various student outcomes (Crane 1991; Zimmerman and Messner 2010). To account for this, I control for three characteristics of students' neighborhoods: the economic deprivation of their neighborhoods, the ethnic diversity of their neighborhoods, and the residential stability of their neighborhoods. To calculate the ethnic diversity of students' neighborhoods, I use the ethnic fragmentation index (Meyer and McIntosh 1992; Vigdor 2002; Phillips et al. 2009). For each student's neighborhood, I subtract from one the sum of the squared proportions of non-Hispanic/ Latino whites, African Americans, Asians, Native Americans, and others (Meyer and McIntosh 1992). I then normalize the measure

by dividing the product by the highest possible score. Normalizing the score allows the measure to theoretically range from 0 to 1. Neighborhoods with high scores indicate that they are more racially heterogeneous and low scores indicate neighborhoods more racially homogenous. The actual range of this measure in both the full and restricted samples is 0 to 0.85. This means that the neighborhood of at least one student was completely segregated, but no students lived in neighborhoods that were completely diverse. The mean level of ethnic diversity in the full sample is 0.26 and the mean in the restricted sample is 0.25.

Residential stability is measured as a proportion of residents who have lived at the same residence (either owned or rented/house or apartment) for at least five years. It ranges from 0.04 to 0.91 in the full sample and 0.1 to 0.91 in the restricted sample. The mean level of residential stability is 0.54 for both the full and restricted samples. Economic deprivation is measured as a mean composite of the proportion of residents over sixteen years of age who were unemployed and the proportion of individuals with incomes below the poverty level ($\alpha = .81$). This measure ranges from 0.09 to 0.82 in both samples. It has a mean of 0.26 in the full sample and a mean of 0.23 in the restricted sample. Simultaneously accounting for school and neighborhood factors strengthens the study of school diversity effects.

Analytic Approach

Descriptive analysis. The first analysis I conduct is a cross tabulation which I use to describe the demographic breakdown of students by college type. Specifically, I break down college type by white and black students with similar GPAs and from similar social class backgrounds. Preliminary analyses indicated that the post-secondary educational choices of Jefferson County students may differ from national trends during the time of the study.

Analyzing college type by race, economic status, and GPA allows for a better understanding of

the post-secondary educational choices of JCPS students and if they do, in fact, differ from national trends.

Multilevel model analyses. To understand the relationship between school diversity and outcomes related to participation in post-secondary education, I utilize three sets of analyses. I use Hierarchical Linear Modeling in all three sets of analyses as the Jefferson County data are hierarchical in nature, with students nested within schools. Most statistical analyses assume that observations are completely independent; however, observations of students who attend the same schools are not independent of one another. Multilevel models adjust for this shared variance by simultaneously estimating student and school-level effects, accounting for the non-independence of the observations (Bryk and Raudenbush 1992; Ma and Klinger 2000). I use a two-level HLM structure while estimating all three sets of models.⁴ In addition, I estimate all three analyses twice. Due to insufficient degrees of freedom in the school-level portion of the models as well as multicollinearity issues, the influence of school diversity and school poverty were not estimated in the same model simultaneously. Therefore, two separate models were computed for all three types of analyses: one including school diversity and another including school poverty.

In the first set of analyses, I use a multilevel multinomial logistic regression model to test the relationship between school diversity and college type. Because of the categorical nature of the outcome variable in this model, multinomial logistic regression is appropriate. As such, this model estimates findings for attending a two-year college or vocational/technical school and attending a four-year college, with attending no college as the reference group. I control for all

⁴ Due to an insufficient number of H.S. students nested within each neighborhood, 3-level HLM models with students cross-classified by neighborhoods and schools were not executable. The number of students living in each neighborhood ranges from 1 to 38. Software limitations also did not allow me to estimate a 3-level HLM with the multinomial outcome measure for college type.

student- and school-level characteristics (see Appendix B for a detailed description of model equations).

In the second set of analyses, I use multilevel modeling to examine the relationship between school diversity and college prestige. College prestige is treated as a normally-distributed, continuous variable.⁵ Again, in this model, I control for all student- and school-level indicators.

The third, and final, sets of analyses also utilize multilevel modeling. Because this study is fundamentally interested in the impact school diversity has on post-secondary educational outcomes, I anticipate that cumulative GPA will be an important contributor and significant predictor of these outcomes (Roderick et al. 2009). As such, I also examine the influence of school diversity on GPA. I control for all student- and school-level characteristics, as well.

RESULTS

Descriptive Analysis

Table 1 illustrates the results of the cross tabulation describing college type by students' race, class, and cumulative GPA. These results indicate that when comparing white and black students from similar economic backgrounds and with similar GPAs, white students intend to enroll in any type of college less often than similarly situated black students. Perhaps most interesting are the results that emerge for students attending four-year colleges. Black students from similar economic backgrounds and with similar GPAs are more likely than their white counterparts to intend to enroll in four-year colleges. Specifically, among black disadvantaged students, 12.9% attend four-year colleges with GPAs ranging 0-1.99, 39.2% with GPAs 2.0-2.69, 63.5% with GPAs 2.7-3.29, and 80.3% with GPAs 3.3-4.0. Of black advantaged students, 15.3%

⁵ Originally, college prestige is an ordinal measure with six ordered categories. However, the literature indicates that treating ordinal variables with five or more categories as continuous is acceptable and not likely to impact results. (Hutchinson and Olmos 1998; Dolan 1994; Babakus, Ferguson, and Joreskog 1987)

attend four-year colleges with GPAs ranging 0-1.99, 58.5% with GPAs 2.0-2.69, 71.4% with GPAs 2.7-3.29, and 91.8% with GPAs 3.3-4.0.

These results are interesting because they highlight that in Jefferson County, black students of similar economic backgrounds and with similar academic achievement are more likely to intend to enroll in four-year colleges than similar white students. This suggests a departure from national trends which show white students enrolling in some kind of post-secondary institution at higher rates than black students (Snyder et al. 2006). As the following analyses will indicate, the uniqueness of JCPS contributes to interesting trends for black students intending to enroll in college.

[Table 1 about here]

Analyses Predicting College Type

The first outcome I analyze to test the effect of school diversity on outcomes associated with later life success is college type: whether the student intended to enroll in a two-year college/vocational school, a four-year college, or no college at all. In the model predicting attending a two-year college/vocational school relative to no college, school diversity is not statistically significant. However, the effects of gender, cumulative GPA, and being a white, economically disadvantaged student are statistically significant. For females, the odds of attending a two-year college/vocational school compared to no college are 79% higher than males ($p < .001$). A one point increase in cumulative GPA is associated with an 81% increase in the odds of attending a two-year college/vocational school rather than no college ($p < .001$). For white, economically disadvantaged students, the odds of attending a two-year/vocational college are 41% lower than white economically advantaged students ($p < .001$). Black, economically disadvantaged as well as black, economically advantaged students were just as likely as white,

economically advantaged students to report intentions of attending a two-year college/vocational school relative to no college.

In the model predicting attending a four-year college relative to no college, school diversity is also not statistically significant. However, the effects of school choice, number of years a student spent in the high school they graduated from, cumulative GPA, economic deprivation, neighborhood ethnic diversity, and black and white economically disadvantaged, as well as black advantaged students are all significant. For students who exercised school choice, the odds of attending a four-year college compared to no college are 44% higher than students who did not exercise choice ($p < .001$). A one year increase in the number of years a student spent in the high school they graduated from is associated with a 19% increase in the odds of attending a four-year college rather than no college ($p < .01$). A one point increase in cumulative GPA is associated with an 8.55 increase in the odds of attending a four-year college ($p < .001$). A one unit increase in the economic deprivation of a student's neighborhood is associated with a 91% decrease in the odds of attending a four-year college ($p < .001$). Similarly, a one unit increase in the ethnic diversity of a student's neighborhood is associated with a 46% decrease in the odds of attending a four-year college ($p < .05$). For black, economically disadvantaged students, the odds of attending a four-year college are 143% higher than white, economically advantaged students ($p < .001$). Similarly, for black, economically advantaged students, the odds of attending a four-year college are 180% times higher than white, economically advantaged students ($p < .001$). Finally, for white, economically disadvantaged students, the odds of attending a four-year college are 60% lower than their white, economically advantaged counterparts ($p < .001$).

Estimating these models using school poverty rather than school diversity yields somewhat similar findings: school poverty is not statistically significant when predicting attending a two-year college/vocational school; however it is significant in predicting attending a four-year college. A one standard deviation increase from the district average of poverty is associated with a 99% decrease in the odds of attending a four-year college compared to no college ($p < .05$). The same control variables are significant, and in the same direction, in the school poverty model as in the school diversity model.

[Table 2 and Table 3 about here]

Analyses Predicting College Prestige

In addition to college attendance, college prestige also influences students' life opportunities. Among those students who attend four-year colleges, I examine whether school diversity predicts the prestige associated with these colleges. In this model predicting college prestige, only two covariates, gender and cumulative GPA, yield statistically significant results. For females, the prestige of their four-year college is expected to be 0.109 units lower than males ($p < .01$). A one point increase in cumulative GPA is associated with a 0.321 unit increase in college prestige. This relationship is significant at the $p < .001$ level. All other covariates, including school diversity, were not significantly related to college prestige. Estimating this model using school poverty rather than school diversity yields similar results.

[Table 4 and Table 5 about here]

Cumulative Grade Point Average

As expected, the results presented above demonstrate that cumulative GPA is the largest predictor of college attendance and college prestige. Therefore, I further investigate factors that may influence GPA. In the model predicting students' cumulative GPA, school diversity is not

significant. However, the number of years a student spent in the high school they graduated from, gender, the economic deprivation of the neighborhood, black, economically disadvantaged students, black, economically advantaged students, and white, economically disadvantaged students are significant in this model. A one year increase in the number of years a student spent in their high school is associated with a 0.137 increase in GPA ($p < .001$). Females' cumulative GPA is expected to be 0.285 points higher than that of males ($p < .001$). A one unit increase in the economic deprivation of a student's neighborhood is associated with a 0.612 point decrease in their cumulative GPA. Black, economically disadvantaged students are expected to have cumulative GPAs that are 0.393 points lower than white, economically advantaged students ($p < .001$). This finding is similar for black, economically advantaged students and white, economically disadvantaged students. Advantaged black students are expected to have cumulative GPAs 0.31 points lower than advantaged white students ($p < .001$). In addition, disadvantaged white students are expected to have GPAs 0.145 points lower than advantaged white students ($p < .001$). Estimating this modeling using school poverty rather than school diversity yields very similar findings.

[Tables 6 through 9 about here]

The previous model indicates that school diversity does not directly impact cumulative GPA; however, significant results emerge when cross-level interactions between school diversity and students' race and economic status are accounted for. These cross-level interactions test for indirect association between school diversity and cumulative GPA, and whether school diversity moderates the influence of students' race and economic status. In this model predicting cumulative GPA, all three student race and economic background measures and the measure of school diversity are statistically significant. Holding all else constant, a one standard deviation

increase in the diversity of schools attended by black, economically disadvantaged students is associated with a 1.401 point increase in GPA relative to white economically advantaged students (regardless of the diversity of the schools they attend) ($p < .001$). Similarly, a one standard deviation increase in the diversity of schools attended by black, economically advantaged students is associated with a 0.758 point increase in GPA relative to white, economically advantaged students ($p < .05$). And finally, a one standard deviation increase in the diversity of schools attended by white, economically disadvantaged students is associated with a 1.068 point increase in GPA relative to white, economically advantaged students ($p < .001$). Thus, these results indicate that school diversity does have an indirect effect on GPA as it moderates the influence of students' race and economic status when predicting students' cumulative GPA. Estimating this model with school poverty instead of school diversity yields similar findings. However, in the school poverty model, the interaction between black, economically advantaged students and school diversity is no longer statistically significant.

DISCUSSION

This study demonstrates an interesting relationship between voluntary school integration and college outcomes among JCPS students. As the results of this study indicate, school racial diversity is not directly related to college outcomes, specifically college attendance and prestige. However, what does emerge as highly predictive of these outcomes is students' academic performance in high school, as measured by GPA. The finding that GPA is a strong predictor of college outcomes is supported in the literature (Roderick et al. 2009). This prompted further investigation into what factors influence GPA. While school diversity did not directly impact GPA, it did moderate the influence of students' race and economic status so that increased diversity in the schools attended by black advantaged and disadvantaged, as well as white

disadvantaged students, was associated with a significant increase in their GPAs, relative to advantaged white students. This relationship is especially interesting when coupled with the results of the initial descriptive analyses: both advantaged and disadvantaged black students with similar GPAs in Jefferson County are more likely to attend four-year colleges than their white, advantaged and disadvantaged counterparts.

Because school diversity indirectly influences student GPA, and GPA is the strongest predictor of college outcomes, this study demonstrates that diversity works through an interesting pathway that researchers should pay attention to. It suggests implications for interventions targeted at improving student GPAs, as this is the strongest predictor of post-secondary outcomes. Further, this study indicates that school integration may be an effective intervention for improving the GPAs of students, thus enhancing their access to post-secondary education. Past research focusing on students who experienced court-ordered desegregation found that it helped to narrow the black-white achievement gap (Grissmer et al. 1998), and as schools begin to re-segregate this gap widens (Orfield and Lee 2007). This study builds on this past research by showing that school racial integration is still a viable mechanism for improving student achievement, and that by voluntarily integrating schools the achievement gap may narrow again.

In order to do this and improve student achievement, this study suggests researchers employ a more in depth analysis of the pathways diversity may take to influence students. While past research on integration has focused heavily on short-term outcomes (Pettigrew and Tropp 2006; McGothlin and Killen 2005; Grissmer et al. 1998), this study finds that in JCPS, school diversity does influence more long-term outcomes by working through short-term mechanisms. Working through students' race and economic status, diversity positively impacts GPA, and

GPA impacts college attendance and prestige. This more nuanced relationship between diversity and college outcomes is a contribution to the literature. Because of this pathway diversity works through, students may experience increased access to post-secondary education. This is important as college attendance in general, and attendance at a prestigious university especially, is associated with several positive outcomes for students.

This study also raises important issues about the context in which integration takes place. Most studies of the effects of integration have focused on districts and time periods when integration was fairly new and/or court-ordered. However, in Jefferson County during the time of this study, the district had been voluntarily integrating its schools for several decades, which demonstrates that the surrounding context is crucial to the success of integration. Particularly, this means that students from the 1997 senior class had attended voluntarily integrated schools throughout their entire elementary and secondary school careers. Although it is becoming difficult to find integrated schools today (Orfield et al. 2008), more studies are needed that examine the effects of continued attendance at racially diverse schools, as they are ideal for studying the long-term influence of integration. In addition, because JCPS' environment included many surrounding colleges and universities, it is important to consider the infrastructure and context of a district when studying racial integration.

Limitations

While this study does provide interesting insights into the relationship between diversity and the long-term outcomes of college attendance and college prestige, it is limited in a few ways. First, because Exit Survey data only provides students' intentions, we do not know what happens to JCPS students once they begin college. For example, we do not know how many graduate, drop out, etc. This should be the focus of further research. Second, using students from

Jefferson County means that I cannot generalize these findings to other school districts, as JCPS is one of the last remaining school districts to study integration. However, given the positive results of this study, it suggests that integration is a worthwhile endeavor. Finally, Jefferson County does not have any non-diverse schools that I can compare to diverse ones. Because I am measuring integration in terms of degrees of diversity, the results are sensitive to this variance. However, if I were able to compare integrated schools to segregated schools, we could expect the results to be even stronger. One could argue that the results of this study offer conservative estimations of the influence of school integration.

CONCLUSION

Understanding the outcomes associated with attending a racially diverse school is important, especially given the relatively recent developments in restricting the use of race when implementing integration policies. The Supreme Court's ruling in the *PICS* (2007) case made the use of race-based assignment policies unconstitutional. This has proved difficult for a district like Jefferson County that has historically been committed to maintaining racially diverse schools, but is now having to defend its integration policies. This is especially important as research indicates a re-segregation trend, especially among districts in the South (Orfield et al. 2008). School districts in the position to racially integrate their schools now face difficult barriers that may prevent their students from experiencing the long-term outcomes associated with racially diverse schools.

This study also offers insight into the ongoing discussion of the importance of race within society. The findings presented here suggest that race does still matter, especially with regard to educational policies. In 1997 in Jefferson County, black students experienced significant positive outcomes associated with achievement and college enrollment because they attended high

schools that were more racially diverse. This implies that diversity should still be considered a compelling interest in the U.S. as it improves the life opportunities of students who experience it. In addition, this study suggests that integration should be considered as a viable school-level intervention to help remedy the achievement disparities that exist among white and black students.

Jefferson County Public School District has utilized integration as a school-level intervention for many years. Its history demonstrates how students still benefit from experiencing racial diversity as it moved from court-ordered to voluntary integration. Their commitment to maintain voluntary integration has persisted over the last several decades. Because of this, JCPS defied national trends and during the time of this study, more black students were planning to attend college than white students. However, as decisions like the *PICS (2007)* case make it difficult for the district to continue its policies, integration efforts have come into question. Nevertheless, researchers must continue to examine the outcomes associated with the modern context of voluntarily integrated schools. As research continues, policy makers may recognize the benefits of racial diversity allowing unique districts like JCPS to continue their integration efforts.

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Table 1.
College Type by Student Race, SES, and GPA

	College Type		
	None	2-year/VocTech	4-year
Black disadvantaged students with GPA 0-1.99	67.4%	19.7%	12.9%
Black advantaged students with GPA 0-1.99	64.5%	20.2%	15.3%
White disadvantaged students with GPA 0-1.99	80.1%	15.6%	4.3%
White advantaged students with GPA 0-1.99	71.4%	17.6%	10.9%
Black disadvantaged students with GPA 2.0-2.69	40.5%	20.3%	39.2%
Black advantaged students with GPA 2.0-2.69	25.4%	16.1%	58.5%
White disadvantaged students with GPA 2.0-2.69	67.1%	21.4%	11.5%
White advantaged students with GPA 2.0-2.69	34.7%	28.8%	36.5%
Black disadvantaged students with GPA 2.7-3.29	22.3%	14.2%	63.5%
Black advantaged students with GPA 2.7-3.29	15.7%	12.9%	71.4%
White disadvantaged students with GPA 2.7-3.29	42.9%	19.8%	37.4%
White advantaged students with GPA 2.7-3.29	19.7%	19.6%	60.7%
Black disadvantaged students with GPA 3.3-4.0	9.8%	9.8%	80.3%
Black advantaged students with GPA 3.3-4.0	4.1%	4.1%	91.8%
White disadvantaged students with GPA 3.3-4.0	25.5%	20.0%	55.5%
White advantaged students with GPA 3.3-4.0	7.4%	8.7%	83.9%

Table 2.***Hierarchical Multinomial Logistic Regression Using School Diversity to Predict College Type***

	2-year/VocTech			4-year		
	Coefficient	SE	Odds Ratio	Coefficient	SE	Odds Ratio
School Diversity	-0.485	1.596	0.615	-1.408	2.952	0.245
Student Exercised School Choice	-0.02	0.105	0.98	0.367 ***	0.11	1.441
Number of years in high school	0.013	0.053	1.013	0.173 **	0.06	1.188
Female	0.58 ***	0.093	1.787	0.016	0.092	1.016
Cumulative GPA	0.593 ***	0.076	1.809	2.146 ***	0.082	8.55
Economic Deprivation	-0.655	0.525	0.519	-2.425 ***	0.538	0.088
Residential Stability	-0.35	0.373	0.704	-0.14	0.373	0.869
Ethnic Diversity	-0.373	0.275	0.689	-0.616 *	0.277	0.54
Black disadvantaged students	-0.134	0.147	0.874	0.889 ***	0.148	2.432
Black advantaged students	0.004	0.191	1.004	1.028 ***	0.18	2.796
White disadvantaged students	-0.536 ***	0.121	0.585	-0.912 ***	0.13	0.402
Constant	-1.791 ***	0.396	0.167	-5.722 ***	0.495	0.003
N	4,472			4,472		

Ref. category is No College

*** p < .001 ** p < .01 * p < .05

Table 3.***Hierarchical Multinomial Logistic Regression Using School Poverty to Predict College Type***

	2-year/VocTech			4-year		
	Coefficient	SE	Odds Ratio	Coefficient	SE	Odds Ratio
School Poverty	-1.18	1.03	0.307	-4.29 *	1.623	0.014
Student Exercised School Choice	-0.014	0.106	0.986	0.366 ***	0.11	1.442
Number of years in high school	0.012	0.053	1.012	0.175 **	0.06	1.191
Female	0.582 ***	0.093	1.789	0.016	0.092	1.016
Cumulative GPA	0.591 ***	0.076	1.807	2.15 ***	0.082	8.587
Economic Deprivation	-0.698	0.527	0.497	-2.385 ***	0.536	0.092
Residential Stability	-0.357	0.374	0.7	-0.13	0.373	0.878
Ethnic Diversity	-0.383	0.275	0.682	-0.605 *	0.277	0.546
Black disadvantaged students	-0.139	0.147	0.87	0.895 ***	0.148	2.447
Black advantaged students	0.002	0.191	1.002	1.032 ***	0.18	2.808
White disadvantaged students	-0.542 ***	0.121	0.582	-0.91 ***	0.13	0.404
Constant	-1.766 ***	0.394	0.171	-5.74 ***	0.469	0.003
N	4,472			4,472		

Ref. category is No College

*** p < .001 ** p < .01 * p < .05

Table 4.***Hierarchical Linear Regression Using School Diversity to Predict College Prestige***

	Unstandardized Coefficient	SE
School Diversity	-0.089	0.543
Student Exercied School Choice	0.082	0.048
Number of years in high school	-0.029	0.027
Female	-0.109 **	0.035
Cumulative GPA	0.321 ***	0.029
Economic Deprivation	-0.066	0.22
Residential Stability	-0.19	0.134
Ethnic Diversity	-0.154	0.108
Black disadvantaged students	0.039	0.06
Black advantaged students	0.024	0.062
White disadvantaged students	0.045	0.06
Constant	2.249 ***	0.17
N	1,933	

*** p < .001 ** p < .01 * p < .05

Table 5.***Hierarchical Linear Regression Using School Poverty to Predict College Prestige***

	Unstandardized Coefficient	SE
School Poverty	-0.622	0.347
Student Exercised School Choice	0.074	0.048
Number of years in high school	-0.032	0.027
Female	-0.11 **	0.035
Cumulative GPA	0.323 ***	0.03
Economic Deprivation	-0.037	0.22
Residential Stability	-0.19	0.134
Ethnic Diversity	-0.149	0.108
Black disadvantaged students	0.047	0.06
Black advantaged students	0.027	0.062
White disadvantaged students	0.051	0.06
Constant	2.236 ***	0.169

N 1,933

*** p < .001 ** p < .01 * p < .05

Table 6.***Hierarchical Linear Regression Using School Diversity to Predict Student Cumulative GPA***

	Unstandardized Coefficient	SE
School Diversity	0.165	0.328
Student Exercised School Choice	0.058	0.035
Number of years in high school	0.137 ***	0.017
Female	0.285 ***	0.021
Economic Deprivation	-0.612 ***	0.096
Residential Stability	-0.035	0.063
Ethnic Diversity	-0.05	0.052
Black disadvantaged students	-0.393 ***	0.039
Black advantaged students	-0.31 ***	0.047
White disadvantaged students	-0.145 ***	0.034
Constant	2.22 ***	0.096
N	4,472	

*** p < .001 ** p < .01 * p < .05

Table 7.***Hierarchical Linear Regression Using School Poverty to Predict Student Cumulative GPA***

	Unstandardized Coefficient	SE
School Poverty	0.074	0.225
Student Exercised School Choice	0.059	0.035
Number of years in high school	0.137 ***	0.016
Female	0.285 ***	0.021
Economic Deprivation	-0.612 ***	0.095
Residential Stability	-0.035	0.064
Ethnic Diversity	-0.049	0.052
Black disadvantaged students	-0.392 ***	0.039
Black advantaged students	-0.309 ***	0.047
White disadvantaged students	-0.146 ***	0.034
Constant	2.22 ***	0.095
N	4,472	

*** p < .001 ** p < .01 * p < .05

Table 8.

Hierarchical Linear Regression Using School Diversity and Student-level Interactions to Predict Student Cumulative GPA

	Unstandardized Coefficient	SE
School Diversity	-0.679	0.373
Student Exercised School Choice	0.056	0.035
Number of years in high school	0.136 ***	0.016
Female	0.218 ***	0.02
Economic Deprivation	-0.587 ***	0.089
Residential Stability	-0.025	0.063
Ethnic Diversity	-0.037	0.052
Black disadvantaged students	-0.372 ***	0.032
Black advantaged students	-0.279 ***	0.048
White disadvantaged students	-0.108 ***	0.032
Black disadvantaged students X School Diversity	1.401 ***	0.288
Black advantaged students X School Diversity	0.758 *	0.369
White disadvantaged students X School Diversity	1.068 ***	0.289
Constant	2.177 ***	0.093
N	4,472	

*** p < .001 ** p < .01 * p < .05

Table 9.***Hierarchical Linear Regression Using School Poverty and Student-level Interactions to Predict Student Cumulative GPA***

	Unstandardized Coefficient	SE
School Poverty	-0.282	0.23
Student Exercised School Choice	0.057	0.035
Number of years in high school	0.137 ***	0.017
Female	0.283 ***	0.021
Economic Deprivation	-0.59 ***	0.093
Residential Stability	-0.026	0.064
Ethnic Diversity	-0.045	0.051
Black disadvantaged students	-0.384 ***	0.038
Black advantaged students	-0.296 ***	0.041
White disadvantaged students	-0.136 ***	0.032
Black disadvantaged students X School Diversity	0.613 **	0.231
Black advantaged students X School Diversity	0.121	0.435
White disadvantaged students X School Diversity	0.604 **	0.231
Constant	2.191 ***	0.093
N	4,472	

*** p < .001 ** p < .01 * p < .05

APPENDIX A: DESCRIPTION OF VARIABLES FOR FULL AND RESTRICTED SAMPLES

	Sample	Mean	SD	Min	Max
Outcome Variables					
<i>College Type</i>	Full	1.95	0.9	1	3
Student went to no college, vocational/technical school or 2 year college, or 4 year college					
<i>College Prestige</i>	Restricted	3.01	0.78	1	6
Based on 1997 Barron's Profiles of American Colleges, values include non competitive (1), less competitive (2), competitive (3), very competitive (4), highly competitive (5) most competitive (6)					
<i>Cumulative Grade Point Average</i>	Full	2.6	0.74	0.75	4
Continuous measure of student's cumulative GPA					
	Restricted	3.03	0.62	1.11	4
Key Explanatory Variables					
<i>School Diversity**</i>	Full	0.32	0.1	0.21	0.55
Percentage of minority students in each high school, a four year average					
	Restricted	0.33	0.1	0.21	0.55
Control Variables					
<i>Student Race and Poverty Interaction Terms</i>					
Student race X participation in free or reduced lunch program					
White advantaged (ref)	Full	0.54	-	0	1
	Restricted	0.65	-	0	1
White disadvantaged	Full	0.18	-	0	1
	Restricted	0.1	-	0	1
Black advantaged	Full	0.08	-	0	1
	Restricted	0.1	-	0	1
Black disadvantaged	Full	0.2	-	0	1
	Restricted	0.16	-	0	1

<i>Gender</i>					
Male=0 (ref)	Full	0.47	-	0	1
	Restricted	0.42	-	0	1
Female=1	Full	0.53	-	0	1
	Restricted	0.58	-	0	1
<i>School Poverty**</i>					
Percentage of students in each high school on free and reduced lunch program, a four year average	Full	0.33	0.15	0.1	0.66
	Restricted	0.34	0.14	0.1	0.66
<i>School Choice</i>					
Student did not participate in choice=0 (ref)	Full	0.43	-	0	1
	Restricted	0.32	-	0	1
Student participated in choice=1	Full	0.57	-	0	1
	Restricted	0.68	-	0	1
<i>Number of Years in High School</i>					
Number of years student spent in high school where they graduated from	Full	3.52	0.94	1	4
	Restricted	3.77	0.65	1	4
<i>Neighborhood Ethnic Diversity</i>					
Sum of the squared proportions of Whites, African Americans, Asians, Native-Americans, and others subtracted from 1. The measure is normalized by dividing by highest value, 0 indicating a completely homogenous neighborhood and 1 indicating a completely heterogeneous neighborhood.	Full	0.26	0.19	0	0.85
	Restricted	0.25	0.18	0	0.85
<i>Residential Stability</i>					
Proportion of residents who have lived in the same residence for at least five years	Full	0.54	0.14	0.04	0.91
	Restricted	0.54	0.14	0.1	0.91
<i>Economic Deprivation (2 item composite mean)</i>					
Proportion of residents over 16 who are unemployed & proportion of individuals with incomes below the poverty level ($\alpha = .81$)	Full	0.26	0.11	0.09	0.82
	Restricted	0.23	0.1	0.09	0.82

*Full sample $N=4,472$; Restricted sample includes only those students attending a 4-year college $N=1,940$

** Variables are grand-mean centered in analyses

APPENDIX B: HLM EQUATIONS

(1) Multilevel Multinomial Logistic Regression Model Predicting College Type:

Level 1:

$$\begin{aligned} \text{Prob (Rij=4-year college)} &= \varphi 1_{ij}, \\ \text{Prob (Rij=2-year/voctech)} &= \varphi 2_{ij}, \\ \text{Prob (Rij=No college)} &= \varphi 3_{ij} = 1 - \varphi 1_{ij} - \varphi 2_{ij} \end{aligned}$$

$$\log (\varphi 1_{ij} / \varphi 3_{ij}) = \eta_{mij} = \beta_{0j(1)} + \beta_{1j(1)} (\text{STUDENT BACKGROUND})_{1ij} + \beta_{2j(1)} (\text{STUDENT NEIGHBORHOOD CONTEXT})_{2ij} + r_{oj(1)}$$

$$\log (\varphi 1_{ij} / \varphi 2_{ij}) = \eta_{mij} = \beta_{0j(1)} + \beta_{1j(1)} (\text{STUDENT BACKGROUND})_{1ij} + \beta_{2j(1)} (\text{STUDENT NEIGHBORHOOD CONTEXT})_{2ij} + r_{oj(1)}$$

Level 2:

$$\beta_{0j(1)} = \gamma_{00(1)} + \gamma_{01(1)} (\text{SCHOOL CHARACTERISTICS})_{1j} + u_{0j(1)}$$

$$\beta_{0j(2)} = \gamma_{00(2)} + \gamma_{02(2)} (\text{SCHOOL CHARACTERISTICS})_{1j} + u_{0j(2)}$$

(2) Multilevel Linear Regression Model Predicting College Prestige

Level 1:

$$Y_{ij} = \beta_{0j} + \beta_{1j} (\text{STUDENT BACKGROUND})_{1ij} + \beta_{2j} (\text{STUDENT NEIGHBORHOOD CONTEXT})_{2ij} + r_{ij}$$

Level 2:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} (\text{SCHOOL CHARACTERISTICS})_{1j} + u_{0j}$$

(3) Multilevel Linear Regression Model Predicting Student GPA

Level 1:

$$Y_{ij} = \beta_{0j} + \beta_{1j} (\text{STUDENT BACKGROUND})_{1ij} + \beta_{2j} (\text{STUDENT NEIGHBORHOOD CONTEXT})_{2ij} + r_{ij}$$

Level 2:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} (\mathbf{SCHOOL CHARACTERISTICS})_{1j} + u_{0j}$$

(4) Multilevel Linear Regression Model Predicting Student GPA with Cross-Level Interactions

Level 1:

$$Y_{ij} = \beta_{0j} + \beta_{1j} (\mathbf{STUDENT BACKGROUND})_{1ij} + \beta_{2j} (\mathbf{STUDENT NEIGHBORHOOD CONTEXT})_{2ij} + \beta_{3j} (\mathbf{STUDENT RACE \& SES})_{3ij} r_{ij}$$

Level 2:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} (\mathbf{SCHOOL CHARACTERISTICS})_{1j} + u_{0j}$$

$$\beta_{3j} = \gamma_{30} + \gamma_{31} (\mathbf{SCHOOL CHARACTERISTICS})_{3j} + u_{3j}$$