Exploring Educational Inequities: School Boundary Zones and Academic Achievement among Economically Disadvantaged Black Elementary Students in an Urban Midwestern District: A Companion Dissertation

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Jessica J Reid
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Exploring Educational Inequities: School Boundary Zones and Academic Achievement among Economically Disadvantaged Black Elementary Students in an Urban Midwestern District: A Companion Dissertation

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Submitted in Partial Fulfillment of the Requirements for the Doctor of Educational Leadership degree.

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Abstract

This study examined the impact of school boundary zones on academic outcomes for elementary students who are black and economically disadvantaged (ED) in a Midwestern urban school district. Despite various equity initiatives, significant achievement gaps persisted, with black and ED students lagging behind their peers. The district, encompassing 22,000 students across 40 schools, faces pressure to redraw boundary zones established over 30 years ago to improve school diversity and increase student outcomes. This study used retrospective data from 5th grade ILEARN scores from Spring 2022 and 2023, the research assessed the influence of race, socioeconomic status, and school attended on academic performance. Regression analysis, ANOVA, and chi-square tests were utilized to identify significant predictors of academic achievement and to compare mean scores and school demographics, including educator experience. Results indicated that race, socioeconomic status, and school attended significantly impact academic outcomes, with notable disparities across schools. These findings suggest that black and ED students' academic performance is affected by the school they attend, highlighting the need for policy adjustments. The study aimed to provide district administrators and policymakers with data-driven insights to inform decisions about redrawing school boundary zones. By focusing on the relationship between school factors and academic outcomes, this research underscores the importance of creating equitable educational environments for black and ED students. This study is part of a companion dissertation that analyzed high school SAT outcomes. The combined findings aim to guide policies that enhance educational equity and improve student success at all levels.

Acknowledgments

I would like to thank my husband and children for their constant support and encouragement to pursue my doctorate degree. Without their support and grace, I would not have been able to achieve this milestone. I would also like to thank my longtime childhood friend, Devan, for all of her guidance during the data analysis and dissertation process. I definitely would not be able to accomplish this without her. My dissertation committee: Dr. Tori Colson, Dr. Sarah Wannemuehler, and Dr. Devan Parrott, have been so helpful as I navigated this research process. Finally, I need to thank my dear friend and colleague, Darla, for taking this journey together and completing the first companion dissertation at USI, both of us first generation college students, pushing each other through the last three years.

Dedication

This dissertation is dedicated to very special people in my life. Firstly, my husband, Mario, and children, Ellison and Genevieve, whose support and encouragement have been indispensable throughout this journey. Their confidence and patience have been crucial to my success. This achievement is as much theirs as it is mine. Secondly, my dear friend, Karen, who has always been one of my biggest supporters and encouragers, calling me "Dr. Reid" from the moment I started the program. I was blessed to have Karen as a mentor and encourager from my first day of teaching. Karen was gone from this world way too soon, and I wish I could share this accomplishment with her in person, as I know she would be beaming with pride and excitement.

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CHAPTER 1. INTRODUCTION

Introduction to the Problem

Across the United States, students who are black and economically disadvantaged (ED) have lower academic outcomes when compared to their white peers who are within the same school district. The Black-White Achievement Gap and the affluent-poor achievement gap have widened for students within the same school district. On average, the Black-White gap widened by 6% from 2009 to 2019, and these gaps have been accelerated in districts where there is increasing racial and economic segregation (Matheny et al., 2023). In the current study, as well as across the nation, students are typically assigned schools based on their geographical location. This urban, Midwestern school district is facing increasing stakeholder pressure to redraw long-standing district boundary zones which were originally created to increase school diversity. Stakeholders voice concerns about the time students spend on buses and the distance between home and school. Center-city neighborhoods are the most likely to be impacted by boundary zone changes. Many students in these neighborhoods are black and ED. Before making changes to school boundary zones, it is important to understand the school factors that contribute to increased outcomes for these students.

Background and Context

The urban school district in this study has 22,000 K-12 students in 40 schools. With an annual budget of $274 million, it has 3,900 staff members, including 1,700 educators. Thirty percent of its educators have less than 5 years of teaching experience, whereas 25% have over 20 years of teaching experience. 54% of students are from low-income families, 16.5% are students with disabilities, and 3.5% are English Language Learners. The three largest subgroups are

White, 67.4%, Black 14.7%, and Multiracial 9.8%. The most recent public data for the Midwestern, urban district is from the 2018-19 school year. Due to COVID, schools across the state were shut down for different lengths of time, and state accountability grades were not calculated for the 2019-20 school year. State accountability grades have yet to be re-calculated for any school year post-COVID. During the 2018-19, this district was rated a “C” based on proficiency, growth, and college and career readiness. In grades 3-8, the district was behind the state average in English Language Arts, Math, and Reading. While 84.9% of students earn a diploma, the strength of that diploma was below the state average. This is related to the type of diploma earned by students. 24.4% of students earned the General diploma, compared to 9.0% of the state. 45.2% of students earned the Core-40 diploma, which is an indicator of college readiness, and 30.4% earned an Academic or Technical Honors diploma.

The district has multiple school configurations, including schools with students in grades K-5, K-6, K-8, 6-8, 7-8, and 9-12. In addition to traditional schools, there is a virtual school and various magnet programs, including a career and technical school and an Early College program. Pre-K programs are offered at multiple sites, prioritizing schools in high poverty neighborhoods. An alternative school exists, serving students in grades 6-12. Schools are organized into six zones for support by the district office. Three of the four elementary zones are designated as the School Support Network. Schools in this network are high poverty schools that have been designated by the state as Comprehensive or Targeted Support and Improvement schools, meaning they have subgroups that are chronically underperforming. In most cases, these schools are also Title I schools. In addition to more district support, schools in these zones get priority

staffing of new teachers, more in-building instructional and behavioral coaches, smaller class sizes, and yearly retention stipends for teachers.

There have been several strategic initiatives to increase equity in the district. In high schools, one such initiative is the work with Equal Opportunity Schools to increase the number of underrepresented students, specifically students of color and low income, in the most rigorous coursework. Schools have expanded dual credit and Advanced Placement (AP) offerings and have intentionally recruited underrepresented students into these classes. Under this partnership, overall AP enrollment has increased 144%. Underrepresented student enrollment in AP has increased 296% during this same time. In addition to this, the Advancement Via Individual Determination (AVID) program has recently been added at three of the five high schools to help close the college opportunity gap by equipping teachers with strategies of support and rigor for students. All elementary schools have High Ability programming. In addition, 16 of the 22 elementary schools and six of the 18 secondary schools have 21st Century Community Centers Learning Programs based on the needs of their students and families. These programs are targeted to provide academic enrichment opportunities during non-school hours. There are over 575 students that attend these programs each week.

In recent years, three new schools have been built outside of the city limits, on the far northern side of the county, to accommodate the growth and development of suburbs. Despite the new school locations being on the far north side and within the same high school attendance boundary, the school district has not redrawn the school boundary zones. The same school boundary zones have existed in the district for over 30 years, and families as well as community members have been vocal about the hardships the location of these new schools have placed on

families. Simultaneously, there is a nationwide bus driver shortage that also impacts these schools (Lierberman, 2022). The district is no longer able to offer bussing to all students; however, because of the location of the new schools and lack of sidewalk access and public transportation, all students unable to provide their own transportation to the new schools require a bus which, in turn, amplifies the strain on buses for all others. Given the vocal community, as well as the transportation issues, the district is considering redrawing school boundary zones to be more aligned with neighborhood schools. Redrawing school boundary zones would have the potential benefit of students attending school closer to home, and thereby make the school more accessible to families. There is a large amount of research on academic outcomes for students who are black and ED and the schools they attend **(**Condron et al., 2012; Liou, 2019; Owens, 2018; Taylor & Frankenberg, 2021). Given the current circumstances and pressing decision, it is important to investigate whether students who are black and ED are performing better than their similar peers at different schools within the district.

Purpose of the Study

The purpose of this research is to examine the impacts of school boundary zones on academic outcomes for elementary school students who are black and ED in an urban school district in the Midwest. As part of a companion study, this researcher will focus on elementary outcomes, while another researcher will focus on high school outcomes for students in the same district. Changing school boundary zones for this Midwestern urban school district has the potential to have the greatest impact for students who are black and ED; however, it has the potential to impact all students, whether directly by assigning students to new schools, or indirectly by changing the composition of the school they attend.

Research Aims

The first aim of this study is to examine the relationship between race, socioeconomic status, and school factors on academic outcomes. The second aim of this study is to examine the differences between the schools that may contribute to the differences in academic outcomes. This study will be used to inform school district administrators and school boards who are working on school assignment policies. In a school district that has not changed their school boundary zones in over 30 years, it is necessary to examine how black, ED students are performing when compared to their similar peers who reside in different school boundary zones. These findings could inform decisions for this particular school district, as well as guide policies that create conditions for schools that contribute to statistically significant differences for students who are black and ED.

Research Questions

1. How do race, socioeconomic status and school attended impact ILEARN scores among 5th grade students?
2. How do race and socioeconomic status moderate the relationship between school attended and ILEARN scores among 5th grade students?
3. What differences exist in mean 5th grade ILEARN scores between elementary schools for students who are black and economically disadvantaged?
4. What differences exist in school factors of racial composition, socioeconomic composition, and educator experience?

Hypotheses

Hypothesis 1: Race, socioeconomic status, and school attended will be significant predictors of 5th grade ILEARN scores.

Hypothesis 2: Race and socioeconomic status will moderate the relationship between school and test scores.

Hypothesis 3: There will be statistically significant differences in 5th grade ILEARN scores between schools for students who are black and economically disadvantaged.

Hypothesis 4: There will be statistically significant differences in racial composition, socioeconomic composition, and years of educator experience between elementary schools.

Research Methods

This study examined the impacts of school boundary zones on academic outcomes for elementary school students who were black and ED in a Midwestern urban school district. To investigate the first hypothesis, a regression model was used to determine which factors best predict academic achievement. Specifically, this tested the direct effects of race, socioeconomic status, and school attended on academic outcomes for students. Then, an Analysis of Variance (ANOVA) was conducted to compare mean ILEARN scores for students who were black and ED who live in the school boundary zone for each elementary school to determine if there are statistically significant differences among the means. Next, the racial and socioeconomic compositions was compared using chi-square. Chi-square was used because the compositions within buildings are percentages as opposed to means. Finally, an additional ANOVA was conducted to determine if there are statistically significant differences in years of educator experience between each elementary school.

This study used retrospective data of ILEARN scores for Spring 2022 and 2023. The data was disaggregated to only include students who meet the criteria for inclusion in the study. The study used two years of ILEARN scores for students in 5th grade who are Black, Multi-Racial, or White and were enrolled in their school assigned by the school boundary zone for at least 162 days of that school year.

Companion Dissertation

A companion dissertation is a collaborative inquiry among two researchers who share mutual research interests. Undertaking a companion dissertation, where one researcher focuses on elementary students' outcomes while the other examines outcomes for high school students within the same district, offers a unique and comprehensive perspective on the K-12 span of the local educational system. Schools in this district are organized into high school feeder patterns. The elementary schools have attendance boundaries that are mostly based on the surrounding neighborhood. The high school attendance boundaries are formed by assigning elementary schools to the high schools. The boundary zones were established over 30 years ago as a way to increase diversity at the high schools. This companion dissertation enables comparative analysis between the two educational levels, shedding light on potential disparities or consistencies in both school composition and educator experience that may impact student outcomes. This approach not only contributes to a more comprehensive understanding of the educational landscape within the district but also has the potential to inform school boundary zone policy and intervention strategies that bridge the gap between elementary and high school education, ultimately improving overall student outcomes and educational equity.

Definition of Terms

21st Century Community Learning Centers Program- Competitive, grant-funded program that provides afterschool and summer learning opportunities in every state. Programs are selected for funding based on their ability to meet the needs of families and students and alignment between the school and state educational priorities (IDOE, n.d.).

Advancement Via Individual Determination (AVID)- A K-12 program that fosters a safe and open culture, high expectations for teachers and students, and collaboration in all classrooms to close the opportunity gap by preparing all students for college and career readiness and success in a global society (AVID, n.d.).

Comprehensive Support and Improvement- Any public school identified as a Title I school with an overall federal rating in the lowest achieving 5% of schools or a high school with a 4-year graduation rate below 67% (IDOE, n.d.).

Economically Disadvantaged (ED)- students who qualify for free or reduced lunch according to United States Department of Agriculture income guidelines (IDOE, n.d.).

ILEARN- Indiana's Learning Evaluation and Assessment Readiness Network (ILEARN) is the summative accountability assessment for Indiana students in grades three through eight and high school biology. ILEARN measures student achievement and growth according to Indiana Academic Standards (IDOE, n.d.).

SAT- SAT is a standardized, multiple choice test from the College Board that encompasses math and evidence-based reading and writing. The SAT Total Score range is 400-1600 (College Board, n.d.).

School boundary zone- In this study, a school boundary zone is a school assigned by the district based on the geographic location of the home address.

School demographics- In this study, school demographics are statistical information that describes a school's population and organization.

Socioeconomic status- In this study, socioeconomic status (SES) for students refers to the social and economic circumstances that impact a student's or their family's financial and social well-being.

Targeted Support and Improvement- Any public school with one or more student groups performing in the lowest achieving 10% of their student group for two consecutive years with a "did not meet expectations" rating (IDOE, n.d.).

Title I- Title 1 is part of the Elementary and Secondary Education Act of providing financial assistance to local education agencies and schools with high percentages of students from low income families. These funds are to help ensure that all children meet challenging state academic standards (IDOE, n.d.)

CHAPTER 2. LITERATURE REVIEW

Introduction to the Literature Review

This review of relevant literature spans more than 70 years, most of which is within the last 15 years. Throughout this research, it is clear that the history of segregation in the United States continues to contribute to inequities today, specifically impacting students who are black and ED. This review of literature will show that landmark cases involving racial segregation in education did little to change practices in schools. There are persistent educational disparities which are evidenced in the Black-White Achievement Gap. Historical housing practices, as well as school policies about school assignment, have a direct and disproportionate impact on marginalized students, creating schools with higher levels of students who are ED and with lower teacher quality. The complex issue of educational equity will be investigated by integrating three distinct theoretical frameworks to form an interconnected conceptual framework.

Review of the Research Literature

Educational Equity

Educational equity is the concept of fairness in education. Instead of equality, where everyone gets the same thing, equity recognizes that students have different needs, circumstances, and backgrounds, and therefore require varying levels of intentional support to achieve their educational goals (Western Governors University, 2021). Educational equity is a foundational part of the educational system, emphasizing fair access, resources, and opportunities for all students. A pivotal moment in educational equity emerged with the landmark case of *Brown v. Board of Education* in 1954 (Reardon & Owens, 2014). This case

marked a significant shift in the legal landscape of education, challenging the verbiage of "separate but equal" and setting the stage for students from historically marginalized communities. The unanimous Supreme Court decision declared racial segregation in public schools unconstitutional, stating that, "separate educational facilities are inherently unequal" (Reardon & Owens, 2014; Weckstein & Wermiel, 2008). This ruling challenged the long-standing practice of segregation that had perpetuated disparities in educational opportunities for African American students. It marked a significant step towards dismantling institutionalized racism within the education system and laid the groundwork for desegregation efforts across the nation. It also set a precedent for legal challenges against discriminatory practices in education (Casey, 2004; Reardon & Owens, 2014). Despite the intent of *Brown v. Board of Education*, racial integration has been slow and inconsistent across the United States, and significant challenges persist in achieving true educational equity. Decades after the ruling, many schools have experienced resegregation, with African American students still facing disproportionate access to quality education due to factors like funding disparities, residential segregation, and systemic biases (Frankenberg et al., 2003; Ogbu, 1994).

In the mid-1960s, The U.S. Department of Education commissioned a team of researchers to investigate and analyze educational inequality and its contribution factors in American Schools. The *Coleman Report*, officially titled "Equality of Educational Opportunity," became foundational research that would shape many aspects of education for years to come (Downey & Condron, 2016; Rivkin, 2016). The primary goal of the research was to assess the disparities in educational opportunities and student achievement across different racial and socioeconomic groups. The study collected and analyzed approximately 600,000 student

assessments and surveys from across 4,000 American schools. The researchers examined several aspects of education, including school resources, teacher quality, and curriculum, as well as socioeconomic status, and the impact on academic achievement. The basis of the research was to explore the relationship between educational inputs and student outcomes (Downey & Condron, 2016; Jacobs, 2016). Through this extensive research, there were many realizations for the United States government and policy makers.

The findings from *The Coleman Report* provided a comprehensive picture, across the United States, of educational inequities. The study found that African American students were by far the most segregated minority group across the United States; however, white students are the most segregated, meaning almost 80% of all white students in 1st through 12th grade attend schools that are 90-100% white (Coleman et al., 1966; Dickinson, 2016). The report also found that school resources, such as funding and facilities, had less influence on student achievement than initially assumed. Instead, the quality of peer relationships and the socioeconomic background of peers were identified as more significant factors. There was a substantial impact of family background and socioeconomic status on a student's educational achievement, meaning that factors outside the school environment significantly influence academic success. The report also called attention to the large discrepancies in educational opportunities and resources between schools attended by students of different racial and socioeconomic backgrounds, and emphasized the urgency of addressing these issues to achieve educational equity (Downey & Condron, 2016; Jacobs, 2016). The impacts of school segregation can be seen in educational outcomes like the Black-White Achievement Gap.

Achievement Gap

The Black-White Achievement Gap is the long-standing differences in academic performance between different groups of students. These gaps are observed across all indicators of academic achievement such as standardized test scores, high school graduation rates, enrollment in advanced coursework, college readiness, and educational attainment (Condron et al., 2013; Matheny et al., 2023; Reardon, 2016). Data from the National Assessment of Educational Progress (NAEP), a congressionally mandated measure of student achievement that has been administered by the National Center for Educational Statistics since 1969, indicated stark gaps in academic achievement between Black and Latino students and their white counterparts. A gap is similarly witnessed between students, regardless of race, who come from low-income backgrounds and their peers who come from middle-class or affluent backgrounds (Darling-Hammond, 2010; Howard, 2010; Reardon, 2016). As early as kindergarten, the Black–White gap is roughly 0.40 of a standard deviation (SD) in literacy skills and disparities ranging from 0.60 – 0.75 SDs in math skills. As children matriculate through school, the Black–White Achievement Gap remains steady or slightly increases by 0.10 SD per year. By grade 5, racial gaps have been shown to reach 1.00 SD in math and 0.75 SD in reading (Henry et al., 2020). There are several contributing factors to the achievement gap, such as resource allocation, teacher quality, family and community support, and socioeconomic status, just to name a few.

Resource allocation by the school district can be in the form of facilities, teacher quality, time, materials, and per pupil spending. Some research indicates that test score gaps are smaller when the funding gap is smaller between high- and low- income districts (Card & Payne, 2002). There is strong data to support that achievement gaps are related to differences in students' exposure to poor schoolmates. The larger the difference in poverty rates in white and black

students' schools, the larger the achievement gap, on average (Reardon, 2016). Many researchers have investigated the influence of socioeconomic status on achievement. Family income is the gateway to many essential factors, like food, shelter, clothing, access to healthcare, extracurriculars, and technology (Owens, 2018).

The National Assessment of Educational Progress (NAEP) published a report in 2015 about school composition and the Black-White Achievement Gap. The study refers to "black student density" within each school, meaning the proportion of school's enrollment who are black. The study found that even after accounting for socioeconomic status, student, teacher, and school characteristics, the Black-White Achievement Gap was greater in the schools with the highest black density (Bohrnstedt et al., 2015; Reardon, 2011).

The achievement gap is also seen beyond K-12 school. For example, black students and Hispanic students do not participate in Advanced Placement/International Baccalaureate programs to the same degree that their same-school white counterparts participate. Research has also identified postsecondary achievement gaps, like college GPA, in which Black and Hispanic students perform lower than white students (Culpepper & Davenport, 2009; Kettler & Hurst, 2017). Efforts to narrow the achievement gap involve equitable resource allocation, culturally responsive teaching practices, targeted support, policy reforms, and community engagement to address systemic barriers. Understanding and addressing the achievement gap is crucial for ensuring educational equity and creating equal opportunities for all students to succeed academically.

School Assignment

There are many policies and practices in education that can unintentionally harm students, and it is the duty of the public school system to examine their policies and ensure all students have equitable access, opportunities, and outcomes. School district policies and practices have historically been created and adjusted over time in response to federal, state, and local legislation (Frankenberg et al., 2018; Joyner & Marsh, 2011). One such public school policy that seems equitable on paper yet problematic in practice is school attendance zone boundaries. These policies create and uphold highly segregated spaces, both racially and income based, and have deep roots in American history of gerrymandering and racist housing practices (DeRoche, 2020; Richards & Stroub, 2015; Saiger, 2010). School attendance zones, or catchment areas, have a long history that is intertwined with many laws and political shifts. In 1896, the Supreme Court ruled in the historic *Plessy v. Ferguson* case to uphold the Louisiana Jim Crow state laws that allowed for equal but separate accommodations for the white and colored races (Monarrez & Chien, 2021; Taylor et al., 2019). Since the 1930s, attorneys from the National Association for the Advancement of Colored People (NAACP) strategized to bring local lawsuits to court, arguing that separate was not equal and that every child, regardless of race, deserved a first-class education. These lawsuits were combined into the landmark *Brown v. Board of Education of Topeka* Supreme Court case that outlawed segregation in schools in 1954. After the ruling of *Brown v. Board of Education of Topeka*, which banned segregated school laws, school segregation took de facto form creating a disconnect between law and common practice. The Civil Rights Movement also prioritized desegregating public schools across the United States; however, the vast majority of segregated schools were not integrated until many years later. Due to the focused attention, school segregation declined during the late 1960s and

early 1970s as the government became strict on schools' plans to combat segregation. Over the past few decades, schools have increasingly become segregated once again, which has been compounded by school district attendance zones (Saporito, 2017; Siegel-Hawley et al., 2017).

Housing Practices and School Boundary Zones

Another major contributing factor to school segregation is historically racist housing access and practices. Much of the school segregation problems are lingering effects of Home Owners' Loan Corporation (HOLC) assigning risk assessment letters to neighborhoods, ultimately leading to redlining. Redlining excluded many marginalized groups from loan qualification and kept the same people from attending schools in more affluent neighborhoods (Lukes & Cleveland 2021). Redlining also created the impetus for families "buying into school districts" to get a "good" school, which are often highly segregated. Most affluent neighborhoods have housing bans, like rentals and apartment complexes, that also ensure most students attending the same school have a similar socioeconomic background. Racist housing practices, such as redlining, also excluded people of color from federally subsidized mortgages, promoting the suburban sprawl, where white families were in an exclusive group to qualify for home loans and move out of the city and into the suburbs with premier education (Dougherty, 2012; Rodrigue, 2016).

Gerrymandering, meaning to manipulate boundaries in favor of one party, is another common historical practice that promotes inequities in outcomes for students. Historical evidence suggests that gerrymandering is segregative in nature, employed to intensify segregation and undermine integration efforts. One large study focused on gerrymandering by analyzing data of 15,290 attendance zones in 663 districts across the United States. The analysis

showed that the districts with the most integration were those under court orders to desegregate. Once districts were no longer under orders of desegregation, districts slowly resegregated over many years. Desegregation orders continue to be effective in increasing integration in the handful of school districts that remain under court order. Results indicate that districts that have been released from desegregation orders tend to be more segregatively gerrymandered than districts still subject to oversight (Richards, 2014). One school district in Wichita, Kansas was "voluntarily" forced to desegregate by the Office of Civil Rights stating that no one school would be more than 60% one race. Wichita School District mainly accomplished this by bussing black students to schools outside of their regular attendance zone. In 2008, Wichita Public Schools ended its desegregation busing program and the magnet schools became united in a district-wide system for school choice and racial integration. The district still collected and reported demographic data reflecting race and ethnicity of each school's student body, but no longer used that information to achieve racial balance in the schools. Currently, about a quarter of Wichita's schools would be classified as single race; over a third of the district's magnet schools qualify as single race and another fourth are approaching this designation. Additionally, schools with the largest percentage of either Latino or Black students also have the lowest academic outcomes and are the most in need of facility improvements and modernizations: once again separate but not equal (Rife, 2019).

The gerrymandered nature of school zones means that, in many cases, some children assigned to a poorly performing school actually live closer to a higher performing school (Schwalbach, 2021). Research shows that typical school attendance zones are relatively compact and resemble a square-like shape, unless they have been gerrymandered to continue segregation.

Small, compact zones typically draw children from local residential areas as neighborhood schools, and since local areas are often racially homogeneous, this creates high levels of racial segregation in schools, structured by existing residential segregation (Saporito & Van Riper, 2016). Creating neighborhood schools has unintended consequences. Although neighborhood schools were created with logical thinking, the consequences that continue to exist in the public school system are deeply embedded (Erickson & Highsmith, 2018). “The average U.S. zip code associated with the highest quality (A+) public elementary school has a 4-fold ($486,104) higher median home price than the average neighborhood associated with the lowest quality (D or less) public elementary schools ($122,061)” (Schwalbach, 2019). Racially and socioeconomically isolated schools are strongly related to a variety of factors that limit educational opportunities and outcomes. These factors include less experienced and less qualified teachers, high levels of teacher turnover, less successful peer groups, and inadequate facilities and learning materials.

There are countless studies that show that schools that are more diverse and have students of lower income have much poorer outcomes. For example, there are still remnants of redlining that is still evident in student outcomes for English and Math, which are statistically significant, when compared to neighborhoods that were outside of the redlining (Frankenberg et al., 2017; Lukes & Cleveland, 2021). One way that families have chosen to manipulate school boundary zones within urban areas is through school succession.

School Succession

School secession is a political process forming small, new school systems that tend to serve a higher-proportion white and more affluent residential population than the large districts from which they splinter. The practice of school secession started in the Southern states and

under the guise of communities wanting local control (Taylor et al., 2019). These practices widen the gaps between outcomes for students, “good” and “bad” schools, and integrating schools.

Since 1995, dozens of districts across the country have successfully seceded. School secessions generally serve to worsen racial/ethnic and socioeconomic inequities: seceding districts were smaller, whiter, and more affluent on average than the districts from which they seceded. Secessions were also associated with significant increases in segregation after adjusting for prior segregation trends (Richards, 2020). Most districts that experience secession are considered urban school districts. There many negative, degrading words and mindsets associated with “urban” and “urban schools” meaning highly segregated schools mainly with Black and Latinx students. The “urban” label is often combined with the “perceived shortcomings of students and parents” from minority backgrounds. The history of racial inequalities in access to suburban housing, and the ensuing patterns of white suburban concentration and minority urban concentration produce significant segregation between urban public school districts and suburban school districts. Within-district segregation between Black and White students and between Hispanic and White students remains at high levels in many inner-city public school districts nationwide (Billingham, 2019). Given the perceptions about school quality, it is no surprise that more experienced teachers seek out suburban schools.

Teacher Quality

One of the main resources each school and student has is the teacher. On average, brand new teachers are less effective than seasoned teachers, and teachers with three or less years of experience are more likely to be teaching in high poverty schools (Rice, 2010). Schools that have

larger percentages of black students are more likely to hire and retain less experienced teachers (Aud et al., 2010; Mickelson 2001). Across the United States, the highest percentage of students qualifying for free and reduced lunches have the highest percentage of teachers with less than three years of experience (Ingersoll & Tran, 2023; Rice, 2010). Similarly, schools with higher non-white populations and higher poverty rates have indicated a disproportionately large number of teachers with fewer than 5 years of experience and lower teacher effectiveness than more experienced staff (Sass et al., 2012). A recent study from North Carolina found that white students are most often with teachers who have strong credentials and more years of experience which is opposite for black students (Clotfelter et al., 2023).

Conceptual Framework

As with all aspects of education, educational equity is complex and interconnected. There are three theories, Value-Added Theory, Cultural Capital Theory, and Social Capital Theory, that are interconnected to construct a conceptual framework for this study.

First, the Value-Added Theory in this study pertains to the teacher and amount of teacher experience in the classroom. Value Added applies to educational equity because the gain in academic achievement for students is a result of the skill of the teacher. With more experienced and qualified teachers, student achievement can drastically improve (Kodel et al., 2014; Opper, 2019; Sass et at., 2012). The second theory, Cultural Capital Theory, is referring to the cultural similarities, like similar race and ethnicity, within each school as an asset for students' learning. Schools that are predominantly black can have a myriad of cultural benefits for students, like similar linguistic patterns, familiarity of cultural customs and patterns, as well as a deeper learning through materials and experiences within their own culture; however, race is only one

single characteristic of an identity (Dumais, 2002; Lareau & Weininger, 2003; Reay, 2004). The third theory, Social Capital Theory, using both internal social capital within the school and external within the community, can have a major impact on student achievement during K-12 and beyond. Internally, students interact with peers and adults who are both similar and different from themselves, providing immeasurable opportunities for learning. Social capital can be seen as internal resources that come embedded within relationships and the school structure. Externally, students have access to community resources and partners from their schools, as well as higher education, and members of the public from all backgrounds (Coleman, 1988; Leana & Pil, 2006).

Combining all three of these theories to construct a conceptual framework for this study is essential when determining how each independent variable impacts the outcomes for students. Together, this conceptual framework can look at the whole child and the system that surrounds each one. Separately, each theory will account for the individual characteristics that may independently have greater impacts on student outcomes.

Summary

This chapter included an extensive review of literature surrounding educational equity and the deep and complex history that contributes to inequitable outcomes for students. Although there have been landmark legal cases and long-standing nationwide research, schools are still segregated in many ways, either on behalf of the school system or individual families (Frankenberg et al., 2003; Ogbu, 1994; Reardon & Owens, 2014; Saporito, 2017; Siegel-Hawley et al., 2017; Weckstein & Wermiel, 2008). Research indicates that across the country, white students continue to attend primarily white schools and affluent schools with different

opportunities and access to teachers with more experience, while black students continue to experience a lack of opportunities and inexperienced teachers by enlarge (Coleman et al., 1966; Dickinson, 2016). Black students continue to underachieve as shown in the persistent Black-White Achievement Gap that exists across all indicators of academic achievement from standardized test scores to overall educational attainment, with gaps growing even wider for students who are black and low-income (Darling-Hammond, 2010; Condron et al., 2013; Howard, 2010; Matheny et al., 2023; Reardon, 2016).

Compounding the central issue of inequities is historically racist housing practices that have existed throughout the United States and continue to persist. The gerrymandering of school boundary zones, as well as school secession in the suburbs has widespread impacts on students who are black and ED (Lukes & Cleveland 2021; Richards, 2014; Rife, 2019; Saporito & Van Riper, 2016). The next chapter outlines the methods for this research study.

CHAPTER 3. METHODOLOGY

Purpose and Introduction

The purpose of this research was to conduct a comprehensive investigation into the multifaceted ramifications of altering school boundary zones on the academic outcomes of elementary school students belonging to two distinct yet intersecting demographics: Those who identify as black and those who are ED. This study was conducted in an urban school district situated in the Midwest region of the United States. Although the adjustment of school boundary zones inevitably brings consequences that extend to all students, whether through direct or indirect influence, this research placed a particular emphasis on students falling within the black and ED intersecting category. This deliberate focus was rooted in the understanding that the implications of boundary zone changes are most profound and consequential for this specific subgroup, with potential risks and benefits disproportionately affecting their educational journeys.

Throughout the United States, a persistent educational inequity prevails, disproportionately affecting black and ED students, resulting in consistently lower academic achievements when compared to their White peers within the same school districts. This glaring discrepancy is manifested in both the Black-White Achievement Gap and the affluent-poor achievement gap, both of which have seen a troubling widening trend among students within identical school districts (Matheny et al., 2023). Importantly, this exacerbation of gaps is particularly pronounced in districts marked by escalating racial and economic segregation (Matheny et al., 2023).

The norm, not only in the current study but also across the nation, is the assignment of students to schools based primarily on their geographical location. This practice perpetuates and reinforces the pervasive racial and economic segregation seen in the broader urban landscape. The urban, Midwest school district in this study was emblematic of this issue, grappling with mounting pressure from various stakeholders who advocate for a reevaluation of long-standing district boundary zones. These stakeholders expressed concerns about the extended commute times for students and the increased geographical distances between their homes and schools. The changes to boundary zones could the most significant impact on center-city neighborhoods, which house the majority of students who are black and ED.

In this context, it becomes imperative to dissect the connectedness of race, socioeconomic status, and various school-related factors in shaping educational outcomes for all students. This research was driven by the aim to identify distinctions in school-related factors where students who are black and ED outperform in comparison to their similarly situated peers, thus offering valuable insights into potential strategies for reducing these disparities. By conducting a thorough, multidimensional analysis, this research provides essential knowledge that can guide policy development aimed at enhancing educational opportunities for all students within this particular school district and contribute to a broader national conversation on addressing educational inequity. Therefore, the specific aims of this study will answer the following questions:

1. How do race, socioeconomic status and school attended impact ILEARN scores among 5th grade students?

2. How do race and socioeconomic status moderate the relationship between school attended and ILEARN scores among 5th grade students?
3. What differences exist in mean 5th grade ILEARN scores between elementary schools for students who are black and economically disadvantaged?
4. What differences exist in school factors of racial composition, socioeconomic composition, and educator experience?

Methodology and Research Design

This quantitative cross-sectional research study used retrospective data of ILEARN scores for Spring 2022 and 2023. The data was obtained from the Office of Accountability for the school district. The data was disaggregated to only include students who meet the criteria for inclusion in the study. The study used two years of ILEARN scores for students in 5th grade who are Black, Multi-Racial, and White. The data set also included socioeconomic status of the student, school assigned by the district, and number of days enrolled for the school year. Students who were not enrolled for at least 162 days of the school year for each ILEARN score were excluded in that year's data set to align with the state accountability practices and ensure that the grade level learning is a representation of the current school. The teacher data, also using pseudonyms, included the school name and number of years of teaching experience.

The first aim of this study examined the relationships between race, socioeconomic status, and school on academic outcomes by using a regression model to test the direct effect of the independent variables on the dependent variable. The independent variables (IVs) were: student race, student socioeconomic status, and school. The dependent variable (DV) was each student's ILEARN test score. The first hypothesis for this aim (H1) was that all three IVs would

be significant predictors of the dependent variable. The second hypothesis (H2) for Aim 1 was that race and socioeconomic status would moderate the relationship between school and test scores. A regression model was used to test the impact of race, socioeconomic status, school, and the interaction terms of raceXschool and socioeconomic statusXschool. The DV was each student's ILEARN test scores. This test showed if specific combinations of school paired with socioeconomic status or race were more significant in predicting test scores than either variable alone. A significant interaction term would indicate that the impact of school varies based on the race and socioeconomic categories.

The second aim of this study examined the differences between the schools that may contribute to the differences in ILEARN scores for students who are black and ED. An analysis of variance (ANOVA) was used to compare the mean ILEARN scores across each school to determine if there were statistically significant differences in performance for students who are black and ED. The hypothesis was that there will be statistically significant differences of mean ILEARN scores between schools for this subgroup of students. If there were statistically significant differences in mean ILEARN scores between schools, Tukey's post hoc test was used to compare scores between all possible pairings for each school. This allowed for identification of specific schools with differences in mean ILEARN scores for students who are black and ED.

Finally, the researcher compared the school factors of racial composition, socioeconomic composition, and educator experience using a Chi-Square Analysis. The hypothesis was that schools in the district have statistically significant differences in ED percentages, the percentage of minority students, and the percentage of teachers with 0-2 years of educator experience.

Research Site, Target Population, Sampling Method, and Related Procedures

The participants for this study were included based on the following criteria: all students in grade 5 who were Black, Multiracial, or White and received a valid ILEARN score for Spring 2022 or 2023, and were enrolled in their district school for 162 days of the assessment school year. There were approximately 1600 5th grade students in the 22 elementary schools each year.

School level data for the 22 elementary schools included the racial composition of each school for White, Black, Multiracial and Other, as well as the percentage of students who were ED, and the average number of years of educator experience. All participant and school level data were obtained from the school district's Office of Accountability. The data was provided in Excel spreadsheets with pseudonyms for each student and teacher to protect individual identity.

Instrumentation

This study used Indiana's ILEARN (Indiana Learning Evaluation Assessment Readiness Network) data as the proficiency measurement for student outcomes. ILEARN is Indiana's educational assessment program designed to measure the academic progress and proficiency of students in the state of Indiana, USA. It is a standardized test that evaluates students' knowledge and skills in various subjects, with a primary focus on English/language arts and mathematics. ILEARN is administered to students in grades 3-8, as well as in high school, to gauge their readiness for college and career. ILEARN combines both formative and summative assessments. Formative assessments are conducted throughout the school year to help teachers identify areas where students may need additional support. Summative assessments are conducted at the end of the academic year to measure overall proficiency. ILEARN scores are used as part of Indiana's

accountability system for schools and districts. The results can influence school ratings and funding allocations (IDOE, n.d.).

Data Collection

This study used retrospective ILEARN scores and student information from Spring 2022 and 2023. The data was obtained from the Office of Accountability for the school district. The following steps were used to obtain the data for this study:

Step 1: The researcher requested a Student Data Excel spreadsheet from the school district's Office of Accountability, containing the following data for school years 2021-2022 and 2022-2023: all students in grade 5, ILEARN score for both math and reading, free and reduced lunch eligibility status, name of school of residence, name of school attending, ethnicity, and days of enrollment. Before the file was shared with the researcher, all student names will be replaced using pseudonym numbers to protect their individual identity.

Step 2: Using the Student Data Excel spreadsheet, the researcher removed students who did not attended their district school for 162 days for each school year, students who were attending a school outside their assigned district, and students who did not have a valid ILEARN result for the school year.

Step 3: The researcher requested a School Level Excel spreadsheet from the district's Office of Accountability. School level data included all 22 elementary schools with the percentage of students receiving free and reduced lunch, and the percentage of students who were White, Black, Multi-racial, and Other. Before the file was shared with the

researcher, all school names were replaced using pseudonym letters to protect their individual identity.

Step 4: The researcher requested an Educator Experience Excel spreadsheet from the school district's Human Resources Office that included the number of years of teaching experience for each teacher and administrator. Before the file is shared with the researcher, all employee names were replaced using pseudonym numbers, and school names were replaced with the same pseudonym letters used in the School Level Excel spreadsheet to protect their individual identity.

Step 5: The researcher stored all data on their password-protected computer that was used solely by them.

Step 6: Statistical tests, using SPSS version 29.0.1, were run as detailed in the next section.

Data Cleaning

Prior to data analysis, the data was cleaned to check for inaccuracies, duplicates, and any missing data. To check for inaccuracies, the researcher ensured all academic achievement scores were within the limits of the assessment score range. The researcher looked for missing data by locating empty cells on the spreadsheet. If there was missing data, that specific student was removed from the study. If there was more than one student with the exact same data, the researcher requested a verification from the Office of Accountability that the identical data sets were not duplicates. If there were duplicates, they were removed to ensure only one unique set of data remained for each student included in the study. If the data was the same, but referred to different students, the data was included in the study.

Data Analysis Procedures

Data was analyzed using SPSS version 29.0.1. Descriptive statistics including means/medians, standard deviations, counts and percentages were calculated. Alpha was set at 0.05 for all statistical analyses. The sections below describes specific statistical procedures that tested each hypothesis.

1. How do race, socioeconomic status and school attended impact ILEARN scores among 5th grade students?

   The first question examined the relationships between race, socioeconomic status, and school on academic outcomes by using a regression model to test the direct effect of the independent variables on the dependent variable. The independent variables (IVs) were: student race, student socioeconomic status, and school. The dependent variable (DV) was each student's ILEARN test score. The first hypothesis for this aim (H1) was that all three IVs would be significant predictors of the dependent variable.

2. How do race and socioeconomic status moderate the relationship between school attended and ILEARN scores among 5th grade students?

The second question determined to what extent race and socioeconomic status moderated the relationship between school and test scores. A regression model was used to test the impact of race, socioeconomic status, school, and the interaction terms of raceXschool and socioeconomic statusXschool. The DV was each student's ILEARN test scores. This test showed if specific combinations of school paired with socioeconomic status or race were more significant in predicting test scores than either variable alone. A significant interaction term would have indicated that the impact of school varied based on the race and/or socioeconomic categories.

3. What differences exist in mean 5th grade ILEARN scores between elementary schools for students who are black and economically disadvantaged?

An analysis of variance (ANOVA) was used to compare the mean ILEARN scores across each school to determine if there were statistically significant differences in performance for students who were black and ED. The hypothesis is that there would be statistically significant differences of mean ILEARN scores between schools for this subgroup of students. If there were statistically significant differences in mean ILEARN scores between schools, Tukey's post hoc test would compare scores between all possible pairings for each school. This allowed identification of specific schools with differences in mean ILEARN scores for students who were black and ED.

4. What differences exist in school factors of racial composition, socioeconomic composition, and educator experience?

The final question was answered by comparing the school factors of racial composition, socioeconomic composition, and educator experience. The hypothesis was that schools in the district have statistically significant differences in ED percentages, the percentage of minority students, and the mean years of educator experience. Chi-Square Analysis was used to compare the proportion of each school's ED students as well as each school's proportion of minority students and ANOVA was used to compare the mean years of educator experience for each school.

Assumptions, Limitations, Scope, Delimitations

It was assumed that students who were black and ED within this school district were similar. It was also assumed that each ILEARN score represented each student's level of

academic knowledge in that subject area. The third assumption was that families accurately reported their home address and free and reduced lunch eligibility to the school district.

The first limitation was the criteria of 162 days of enrollment because several students who were ED also have higher mobility rates between schools. While 162 days enrolled is a requirement for Accountability for the Indiana Department of Education, adding this in the criteria could have excluded students from this specific population being studied. While enrollment is reflected in the study, this study did not take student attendance into account. Student attendance varies greatly across schools and for each student which may greatly impact academic outcomes. Another limitation was that while this is a medium size school district, it was still only one district in one area of the United States, so results cannot and should not be generalized to other districts.

The scope of this research included 5th grade students who were black and ED, had a valid ILEARN score during Spring 2022 or 2023; attended their school within their boundary zone, and were enrolled for at least 162 days. This study aimed to determine if there were differences in academic outcomes for a subgroup of students during the years 2022 and 2023. If there were differences, the study further examined specific school level demographics and educator experience as possible predictors of better outcomes.

In this study, only one medium sized urban school district was examined, which excludes all other districts across the country. This study also only focused on one subgroup of students, excluding all other subgroups and critical mass. Possible weaknesses included the small sample sizes at some of the 22 schools, using only one grade level so patterns and trends were not able to be established, and not accounting for differences in poverty levels. This study also did not include any home life or environmental factors that may also contribute to academic outcomes for students.

CHAPTER 4. FINDINGS

Introduction

Chapter 4 examines the data collected and presents findings from that research. Four main research questions will guide the narrative for Chapter 4: (1) How do race, socioeconomic status and school attended impact ILEARN scores among 5th grade students? (2) How do race and socioeconomic status moderate the relationship between school attended and ILEARN scores among 5th grade students? (3) What differences exist in mean 5th grade ILEARN scores between elementary schools for students who are black and economically disadvantaged? (4) What differences exist in school factors of racial composition, socioeconomic composition, and educator experience?

Descriptive Statistics

To understand the data from the statistical methods, the researcher first needed to holistically contextualize all 22 schools, as well as the sample included in the methods. In total, there were 22 elementary schools represented in the study sample. The total population of 5th grade students across the 22 elementary schools was 3,065, with 412 (13.4%) of those students identifying as black. After removing students who were not enrolled in the testing school for 162 or more days, there were 2,957 students remaining in the total sample, with 387 (13.1%) of those students identifying as black. The final criteria for inclusion of the study was only students who attend their assigned school. Once this criteria was applied, there were 2,065 students in the sample, with 239 (11.6%) of those students identifying as black. Out of the 239 black students, 198 (82.85%) of them were also ED. Table 1 illustrates the data reductions that were made from the total population to the sample based on criteria for inclusion in the study.

Table 1

Population Reductions Based on Study Criteria

Criteria	All Students	Black Students	Percentage
	n	*n*	*%*
Original Population	3,065	412	13.4%
162+ Days Enrolled	2,957	387	13.1%
162+ Day Enrolled at Assigned School	2,065	239	11.6%

This study focused on the 2,065 5th grade students who met the inclusion criteria for the study and represented four racial groups: Black, Multiracial, White, and Other. This study also included students from two socioeconomic groups, ED and not ED. Table 2 details the sample represented across all schools, with White students making up the majority at 70.3% of the total sample of the study. Black students make up 11.6% of the total student sample. The race that was the least represented was Multiracial students at 8.2%, with only 169 total students in the study sample. Other students, meaning students who were in a racial group that is not represented, were 8.2% of the sample of this research study.

Table 2

Sample Enrollment by Race

Race	*n*	%
Black	239	11.6%
Multiracial	169	8.2%
Other	205	9.9%
White	1,452	70.3%
Total	2,065	100.0%

Table 2 details the demographic data at each of the 22 elementary schools across the district with the race and ED percentage. This study had specific criteria for inclusion in the

outcome data; however, Table 3 represents all students at all 22 elementary schools for the 2022-2023 school year. While every race and socioeconomic status were represented in each school, there were large variances across the 22 schools. Of the 22 schools represented in this study, the range for ED was 71.5%, with the lowest percentage of 20.6% and the highest percentage of 92.1%. The range of percentage of White students was 70.2%, with the lowest percentage of 21.1% and the highest percentage of 91.3%. The range of Black students was 47%, with the lowest percentage of 1% and the highest percentage of 48%. The range for Other students was 28.4%, with the lowest percentage of 2.7% and the highest percentage of 31.1%. Finally, the range for Multiracial students was 16.9%, with the lowest percentage of 4.4% and the highest percentage of 21.3%.

Table 3

School Demographic Data

Location	Total Enrollment	Mean IEARN Score	ED	White	Black	Other	Multiracial
	n	*M*	%	%	%	%	%
School A	399	11,870.0	83.2	25.6	48.0	16.8	9.6
School B	503	11,901.2	92.1	55.1	19.8	7.9	17.1
School C	452	12,062.4	45.0	91.3	1.0	2.7	5.0
School D	315	11,970.7	61.7	77.8	6.8	5.1	10.3
School E	338	11,886.7	88.1	48.9	21.3	8.5	21.3
School F	336	11,859.3	84.8	36.8	31.6	14.4	17.2
School G	490	11,817.7	87.6	54.3	24.1	9.8	11.7
School H	439	11,918.5	84.2	49.8	20.6	14.9	14.7
School I	427	11,797.3	89.9	22.0	40.0	23.0	14.9
School J	347	11,928.7	72.7	50.8	20.1	13.3	15.9
School K	750	11,982.3	61.6	54.9	16.4	12.7	15.9
School L	847	12,032.2	50.5	82.1	4.6	5.1	8.2
School M	250	11,897.6	89.5	28.0	42.4	13.8	15.8
School N	408	11,844.0	84.8	21.1	34.7	31.1	13.1
School O	942	12,112.6	20.6	83.7	3.2	7.4	5.8
School P	536	12,059.3	26.6	86.4	2.8	3.7	7.0
School Q	530	12,070.6	21.1	89.2	2.1	4.4	4.4
School R	509	11,978.5	67.7	43.9	26.6	15.6	13.8
School S	335	12,007.0	61.2	78.8	6.7	6.1	8.4
School T	442	11,919.7	69.8	74.0	10.5	5.5	10.1
School U	530	11,991.8	65.3	72.3	8.0	11.0	8.7
School V	561	12,061.1	25.1	91.0	1.9	3.1	5.4

Table 4 represents the mean ILEARN scores for the total sample of students who met the criteria for the study by race. An independent t-test was used to determine if there were statistically significant differences of mean ILEARN scores between racial groups. The results showed that there were significant differences between racial groups for 5th grade ILEARN scores. There were significant differences, $p < .001$, in ILEARN scores of black students between all other racial groups of White, Other, and Multiracial. There were also significant

differences in 5th grade ILEARN scores between Multiracial students and White students, $p < .001$, as well as Other students and White students, $p < .001$.

Table 4

Sample Mean ILEARN Scores by Race

Race	*n*	*M*	*SD*
Black	239	11,866.04	138.38
Multiracial	169	11,941.66	146.66
Other	205	11,927.02	173.63
White	1,452	12,024.22	156.27
Total	2,065	11,989.51	165.21

Table 5 represents the mean ILEARN scores for the total sample of students who met the criteria for inclusion in the study by socioeconomic status. An independent t-test was used to determine if there were statistically significant differences of mean ILEARN scores between students who are and are not ED. The results showed that there were significant differences between socioeconomic groups for ILEARN scores, $p < .001$. The results from this test also showed a large effect size, Cohen's $d = .955$, meaning that socioeconomic status has a large influence on variance in IEARN scores.

Table 5

Sample Mean ILEARN Scores by Socioeconomic Status

ED	*n*	*M*	*SD*
Yes	1,018	11,917.30	151.62
No	1,047	12,059.71	146.48

Detailed Analysis

Research Question 1

How do race, socioeconomic status and school attended impact ILEARN scores among 5th grade students?

Regression modeling was used to test the direct effect of the independent variables on the dependent variable. The independent variables (IVs) were: student race, student socioeconomic status, and school. The dependent variable (DV) was each student's ILEARN test score. The first hypothesis for this aim (H1) was that all three IVs would be significant predictors of the dependent variable. In the regression model, School O, black, and not ED were used as the reference categories. Thirty-three percent of the variance in the dependent variable was explained by the independent variables, ($R^2 = .332$). The equation to predict ILEARN scores was represented by $\hat{y} = b + m_n x_n$ where b represented the y-intercept, n represented each independent variable, slope, *m*, was the Unstandardized Beta for each independent variable of the ILEARN score, and x represented that value for each independent variable.

Due to the large number of schools, Table 6 shows the data needed for predicting the ILEARN score based on race, socioeconomic status, and school using the equation $\hat{y}$ = 12,065.62 + SES + Race + School. For the x variables, the researcher uses 1 for yes, and 0 for no. For example, if a student was ED, $x_1 = 1$. The Standardized Beta column also shows how much the x variables impacts the ILEARN score. For example, to calculate a white, ED student's predicted ILEARN score at School A, the equation was $\hat{y}$ = 12,065.62 + (-71.62) + 65.23 + (-172.43). The predicted ILEARN score for this student was $\hat{y}$ = 11,886.8.

Table 6

Race, Socioeconomic Status, and School Impact on ILEARN Scores

Category	Variable	Unstandardized Beta	Standardized Beta	Sig. *p*
School O (Constant)	Constant	1,2065.62	0	<.001
ED	x_1	-71.62	-.217	<.001
Multiracial	x_2	34.64	.057	.013
Other	x_3	36.18	.067	.006
White	x_4	65.23	.180	<.001
School A	x_5	-172.43	-.178	<.001
School B	x_6	-150.48	-.164	<.001
School C	x_7	-40.02	-.056	.011
School D	x_8	-107.92	-.107	<.001
School E	x_9	-158.86	-.165	<.001
School F	x_{10}	-179.05	-.181	<.001
School G	x_{11}	-232.97	-.275	<.001
School H	x_{12}	-132.20	-.133	<.001
School I	x_{13}	-232.97	-.217	<.001
School J	x_{14}	-134.55	-.144	<.001
School K	x_{15}	-94.72	-.145	<.001
School L	x_{16}	-62.72	-.120	<.001
School M	x_{17}	-139.45	-.078	<.001
School N	x_{18}	-193.77	-.151	<.001
School P	x_{19}	-54.39	-.077	<.001
School Q	x_{20}	-47.70	-.066	.003
School R	x_{21}	-78.26	-.106	<.001
School S	x_{22}	-71.94	-.073	<.001
School T	x_{23}	-150.24	-.173	<.001
School U	x_{24}	-92.19	-.115	<.001
School V	x_{25}	-54.69	-.093	<.001

Prior to analyzing the data, there was a concern that race and socioeconomic status may have been highly correlated. The researcher checked for this multicollinearity by calculating the VIF for each school, which were all well below 10. Since the VIFs were all well below 10, there was no assumption violation. The researcher reviewed the data for outliers using Cook's

Distance and leverage values. There were six statistical outliers; however, these were not removed from the sample because they were not significantly influencing the model and, after confirming accuracy, believed to be realistic data points.

Research Question 2

How do race and socioeconomic status moderate the relationship between school attended and ILEARN scores among 5th grade students?

The second question was to determine to what extent race and socioeconomic status moderate the relationship between school and test scores. The researcher used a linear regression with one school, School O, to test the impact of race, socioeconomic status, school, and the interaction terms of BlackXschool and EDXschool. This tested whether school paired with socioeconomic status or race were more significant in predicting test scores than either variable alone. Together, neither interaction term had a significant impact on 5th grade ILEARN scores, (BlackXschool $p = .057$; EDXschool $p = .184$). Although neither interaction term was significant together, BlackXschool was impacting scores more than EDXschool. The researcher then removed the interaction term of EDXschool and another linear regression was analyzed. In this model, BlackXschool showed significant impact on 5th grade ILEARN outcomes, ($p = .047$). This significant interaction term indicated that the impact of school varies based on the race. In the current analysis, being black or ED impacted ILEARN outcomes; however, the combination of black and ED impacted ILEARN outcomes more at some schools than others. Table 7 shows the impact of school attended on ILEARN outcomes was different for black students who were ED at School O when compared to all other schools.

Table 7

Mean ILEARN Scores of Black Students at School O by Socioeconomic Status

ED	School O Yes	School O No
Yes	1,2044.36	1,1912.65
No	1,2046.96	1,2127.39

Research Question 3

What differences exist in mean 5th grade ILEARN scores between elementary schools for students who are black and economically disadvantaged?

Research question 3 was answered by using an ANOVA to determine if ILEARN scores differed between elementary schools for students who were black and ED. There were statistically significant differences between schools, $p = .003$, with a large effect size, $\eta^2 = .195$. Based on these findings, the researcher used Tukey's Post Hoc to calculate differences across all possible school pairings. When the data was analyzed, School O stood out as significant, $p < .05$, from nine other schools; however, this was not practical to interpret because the n = 2 for students who were both black and ED at School O. Two other schools, School I and School R, showed statistically significant differences between them, $p = .023$ with School I showing significantly lower mean test scores. Table 8 shows the mean ILEARN scores for students who were black and ED at School I and School R.

Table 8

Mean ILEARN Scores of Black and ED Students

School	*n*	Mean
School I	13	1,1749.23
School R	23	1,1921.43

Based on the small number of students who were black and ED at each school, the researcher conducted a second ANOVA test with students of all ethnicities who were ED (*n* = 1,018). There were statistically significant differences between some schools based on socioeconomic status, $p < .001$, with a large effect size $\eta^2 = .162$. Although this finding was significant and important, it did not directly align with the aims of this study.

Research Question 4

What differences exist in school factors of racial composition, socioeconomic composition, and educator experience?

Research question 4 was answered by comparing the school factors of racial composition, socioeconomic composition, and educator experience. A chi-square test was conducted to determine if there were statistically significant differences in percentages of minority students across the 22 elementary schools. For this test, the percentage of white students was compared to the percentage of students who identified as Black, Multiracial, or Other. There were statistically significant differences in racial composition across 17 schools, ($\chi^2 = 432.03$, $p < .001$). Table 9 shows the racial composition of each school. Given that there were differences between 17 schools, 17 separate chi-square tests were conducted to compare each elementary school's non-white percentage to the non-white percentage of the other elementary schools combined.

Table 9

Racial Composition of Elementary Schools

Location	White	Non-White	$\mathcal{X}^2$	*df*	*p*
	%	%			
School A	**31.1**	**68.9**	**46.20**	**1**	**<.001***
School B	60.9	39.1	3.05	1	.081
School C	**90.7**	**9.3**	**24.86**	**1**	**<.001***
School D	77.2	22.8	1.33	1	.249
School E	**50.8**	**49.2**	**11.86**	**1**	**<.001***
School F	**33.9**	**66.1**	**38.59**	**1**	**<.001***
School G	61.0	39.0	3.57	1	.059
School H	**49.2**	**50.8**	**13.03**	**1**	**<.001***
School I	**22.0**	**78.0**	**57.30**	**1**	**<.001***
School J	**50.7**	**49.3**	**12.70**	**1**	**<.001***
School K	**59.6**	**40.4**	**8.36**	**1**	**.004***
School L	**86.3**	**13.7**	**32.41**	**1**	**<.001***
School M	**38.9**	**61.1**	**8.59**	**1**	**.003***
School N	**17.1**	**82.9**	**48.23**	**1**	**<.001***
School O	**86.1**	**13.9**	**26.86**	**1**	**<.001***
School P	**89.2**	**10.8**	**21.69**	**1**	**<.001***
School Q	**90.3**	**9.7**	**22.80**	**1**	**<.001***
School R	**46.4**	**53.6**	**31.93**	**1**	**<.001***
School S	68.3	31.7	0.116	1	.733
School T	73.1	26.9	0.296	1	.586
School U	**80.2**	**19.8**	**4.47**	**1**	**.034***
School V	**89.9**	**10.1**	**35.75**	**1**	**<.001***
Total Sample	**70.3**	**29.7**	**432.03**	**21**	**<.001***

***p* < .05**

Next, a chi-square test was performed to see if there were statistically significant differences in percentages of students who are ED across the 22 elementary schools. Overall, there were significant differences, ($\mathcal{X}^2 = 563.08$, $p < .001$). Given that there were differences between 18 elementary schools, 18 separate chi-square tests were conducted to compare each elementary school's percentage of ED students to the percentage of ED students in the remaining sample (the remaining sample was the other 21 elementary schools). The percentage of ED

students ranged from 13.3% (School Q) to 94.4% (School M). Table 10 shows that schools were significantly different from the rest of the district. Schools D, K, S and U were not significantly different from the district. The percentage of ED students at School K is closest to the district overall.

Table 10

Socioeconomic Composition of Elementary Schools

Location	ED	Not ED	χ^2	*df*	*p*
	%	%			
School A	**75.4**	**24.6**	**17.15**	**1**	**<.001***
School B	**85.5**	**14.5**	**37.45**	**1**	**<.001***
School C	**35.6**	**64.4**	**9.40**	**1**	**.002***
School D	59.6	40.4	2.51	1	.113
School E	**85.7**	**14.3**	**34.48**	**1**	**<.001***
School F	**84.7**	**15.3**	**30.53**	**1**	**<.001***
School G	**85.4**	**14.6**	**44.44**	**1**	**<.001***
School H	**78.0**	**22.0**	**19.97**	**1**	**<.001***
School I	**92.0**	**8.0**	**37.38**	**1**	**<.001***
School J	**65.7**	**34.3**	**7.43**	**1**	**.006***
School K	51.1	48.9	0.189	1	.664
School L	**42.7**	**57.3**	**4.55**	**1**	**.033***
School M	**94.4**	**5.6**	**14.81**	**1**	**<.001***
School N	**77.1**	**22.9**	**11.04**	**1**	**<.001***
School O	**17.8**	**82.2**	**88.75**	**1**	**<.001***
School P	**17.5**	**82.5**	**51.54**	**1**	**<.001***
School Q	**13.3**	**86.7**	**62.06**	**1**	**<.001***
School R	**68.2**	**31.8**	**16.56**	**1**	**<.001***
School S	53.3	46.7	0.40	1	.526
School T	**69.2**	**30.8**	**12.89**	**1**	**<.001***
School U	56.0	44.0	1.73	1	.188
School V	**15.2**	**84.8**	**90.78**	**1**	**<.001***
Total Sample	**49.3**	**50.7**	**563.08**	**21**	**<.001***

***p < .05**

To compare teacher experience, the researcher looked within each school to determine the amount and percentages of new and experienced teachers. School I, had the highest percentage of new teachers, representing 39.3% of their teaching staff. Schools M and N also had high percentages of new teachers within their schools, representing 38.1% and 37.5% respectively. Table 11 shows the number and percentage of new and experienced teachers within each school.

Table 11

Percentage of New Teachers Within Each School

Location	Experienced Teachers		New Teachers	
	n	*%*	*n*	*%*
School A	18	85.7	3	14.3
School B	30	81.1	7	18.9
School C	24	92.3	2	7.7
School D	12	80.0	3	20.0
School E	16	76.2	5	23.8
School F	14	77.8	4	22.2
School G	20	74.1	7	25.9
School H	19	86.4	3	13.6
School I	17	60.7	11	39.3
School J	17	81.0	4	19.0
School K	29	76.3	9	23.7
School L	34	89.5	4	10.5
School M	13	61.9	8	38.1
School N	20	62.5	12	37.5
School O	33	76.7	10	23.3
School P	30	100.0	0	0.0
School Q	26	92.9	2	7.1
School R	28	96.6	1	3.4
School S	19	86.4	3	13.6
School T	17	68.0	8	32.0
School U	29	93.5	2	6.5
School V	26	92.9	2	7.1
Total Sample	491		110	

Next, two different statistical tests were used to determine if there were statistically significant differences in educator experience. First, an ANOVA was conducted to compare mean years of educator experience by school. Means ranged from 5.18 to 18.33 years, and the mean for all 22 elementary schools combined was 11.86 years. There were statistically significant differences between the 22 elementary schools with a large effect size, $p < .001$, $\eta^2 = .146$. Means by school are reported in Table 12.

Table 12

Teaching Experience by School

Location	*n*	*M*	*SD*
School A	21	9.14	6.57
School B	37	9.91	7.88
School C	26	18.33	11.82
School D	15	12.33	11.20
School E	21	6.83	5.94
School F	18	15.39	14.96
School G	27	7.56	7.63
School H	22	9.16	7.71
School I	28	5.18	4.18
School J	21	11.55	9.02
School K	38	9.71	9.64
School L	38	16.04	9.58
School M	21	6.33	6.17
School N	32	7.02	7.54
School O	43	12.17	8.91
School P	30	17.5	8.63
School Q	28	16.14	12.31
School R	29	15.10	10.01
School S	22	12.23	9.94
School T	25	10.76	11.75
School U	31	14.92	10.88
School V	28	15.00	9.04
Total Sample	601	11.86	9.94

Due to the significant differences between some schools, the researcher then used Tukey Post Hoc test to determine which pairs of schools had differences. While several schools were significantly different based on mean years of educator experience, School I was different from eight other schools. Table 13 shows the schools that were significantly different from each other for mean years of educator experience.

Table 13

Significant Differences in Educator Experience by School

Location 1	Location 2	Mean Difference	*p*
School C			
	School E	11.49	.006
	School I	13.15	<.001
	School K	8.62	.048
	School G	10.77	.006
	School M	11.99	.003
	School N	11.31	.001
School E			
	School C	-11.49	.006
	School L	-9.21	.048
	School P	-10.67	.012
School F			
	School I	10.21	.049
School G			
	School C	-10.77	.006
	School P	-9.94	.012
School I			
	School C	-13.15	<.001
	School F	-10.21	.049
	School L	-10.86	.049
	School P	-12.32	<.001
	School Q	-10.96	.003
	School R	-9.92	.012
	School U	-9.74	.013
	School V	-9.82	.017

School K			
	School C	-8.62	.048
School L			
	School E	9.21	.048
	School I	10.86	<.001
	School M	9.71	.025
	School N	9.02	.012
School M			
	School C	-11.99	.003
	School L	-9.71	.025
	School P	-11.67	.006
	School Q	-9.81	.046
School N			
	School C	-11.31	.001
	School L	-9.02	.012
	School P	-10.48	.002
	School Q	-9.13	.029
School P			
	School E	10.67	.012
	School I	12.32	<.001
	School G	9.92	.012
	School M	11.67	.006
	School N	10.48	.002
School Q			
	School I	10.96	.003
	School M	9.81	.046
	School N	9.13	.029
School R			
	School I	9.92	.012
School U			
	School I	9.74	.013
School V			
	School I	9.82	.017

The researcher performed a chi-square test to determine whether there were differences in the percentages of new teachers with 0-2 years of experience between the 22 elementary schools. There was statistically significant difference between schools, (χ^2=50.86, p <.001). School P

was the only school without any new teachers. School N had 10.9% of all new teachers in the district. Table 14 shows how the number and percentage of experienced (more than 2 years) and new (0-2 years) teachers is distributed across all 22 elementary schools.

Table 14

Percentage of New Teachers Across All Elementary Schools

Location	Experienced Teachers		New Teachers	
	n	*%*	*n*	*%*
School A	18	3.7	3	2.7
School B	30	6.1	7	6.4
School C	24	4.9	2	1.8
School D	12	2.4	3	2.7
School E	16	3.3	5	4.5
School F	14	2.9	4	3.6
School G	20	4.1	7	6.4
School H	19	3.9	3	2.7
School I	17	3.5	11	10.0
School J	17	3.5	4	3.6
School K	29	5.9	9	8.2
School L	34	6.9	4	3.6
School M	13	2.6	8	7.3
School N	20	4.1	12	10.9
School O	33	6.7	10	9.1
School P	30	6.1	0	0.0
School Q	26	5.3	2	1.8
School R	28	5.7	1	0.9
School S	19	3.9	3	2.7
School T	17	3.5	8	7.3
School U	29	5.9	2	1.8
School V	26	5.3	2	1.8
Total Sample	491	100.0	110	100.0

Schools were ranked from 1-22 from lowest to highest percentage of each school factor based on the conceptual framework: percentage of students who are ED, percentage of students

who are non-white, and percentage of new teachers within the building. If a school had the same percentage for a factor, both schools were given the smaller number and the next number was skipped so as to keep all scores as pure as possible. After each school was ranked in each individual category, the ranking for each category was summed to create a total for each school. Finally, each total score was ranked from 1-22 to determine if the overall rankings parallel the academic outcomes by school that were reported in Table 3. Table 15 shows each school ranking in each area as well as the overall ranking. Further analysis will be discussed in chapter 5.

Table 15

Rankings Based on School Factors

School	ED		Non-White		New Teachers		Total	Overall Ranking
	%	*Rank #*	*%*	*Rank #*	*%*	*Rank #*		
School A	83.2	14	74.4	20	14.3	10	44	**15**
School B	92.1	22	44.9	11	18.9	11	44	**15**
School C	45.0	5	8.7	1	7.7	6	12	**4**
School D	61.7	9	22.2	8	20.0	13	30	**9**
School E	88.1	19	51.1	16	23.8	17	52	**19**
School F	84.8	16	63.2	18	22.2	14	48	**17**
School G	87.6	18	45.7	13	25.9	18	49	**18**
School H	84.2	15	50.2	15	13.6	8	38	**12**
School I	89.9	21	78.0	21	39.3	22	64	**22**
School J	72.7	13	49.2	14	19.0	12	39	**13**
School K	61.6	8	45.1	12	23.7	16	36	**11**
School L	50.5	6	17.9	6	10.5	7	19	**5**
School M	89.5	20	72.0	19	38.1	21	60	**21**
School N	84.8	17	78.9	22	37.5	20	59	**20**
School O	20.6	1	16.3	5	23.3	15	21	**6**
School P	26.6	4	13.6	4	0.0	1	9	**1**
School Q	21.1	2	10.8	3	7.1	4	9	**1**
School R	67.7	11	56.1	17	3.4	2	30	**9**
School S	61.2	7	21.2	7	13.6	9	23	**7**
School T	69.8	12	26.0	9	32.0	19	40	**14**
School U	65.3	10	27.7	10	6.5	3	23	**8**
School V	25.1	3	9.0	2	7.1	5	10	**3**

Summary

Overall, race, socioeconomic status and school each showed potential to contribute to significant differences across 5th grade ILEARN scores. Students who were both black and ED showed the highest risk with a large effect size in two schools, School I and School R, although the sample size was small. Several schools also varied significantly by race, socioeconomic status, and teacher experience.

CHAPTER 5. CONCLUSIONS

Introduction

The previous chapters provided an in-depth historical context about school boundary zone assignments, as well as evidence related to how boundary zone assignments impact academic outcomes for a subgroup of students in a midwestern urban school district. Chapter 5 will synthesize the findings of this study by recapping the purpose and aims of the study, expanding on the results of each of the four research questions, and discussing the implications for policy and practice, limitations, as well as future research.

The purpose of this study was to investigate the effects of school boundary zones on academic achievements among elementary students who are black and ED within an urban school district in the Midwest. A companion study concentrated on high school outcomes within the same district. Altering school boundary zones in this Midwestern urban area could significantly affect students who are black and ED, potentially influencing all students either through direct school reassignments or indirectly by altering school composition. The first aim of this study was to examine the relationship between race, socioeconomic status, and school factors on academic outcomes. The second aim of this study was to examine the differences between the schools that may contribute to the differences in academic outcomes. The researcher used a conceptual framework, consisting of three interconnected theories that align clearly with the purpose and aims of the study: Value Added Theory, Cultural Capital Theory, and Social Capital Theory. These three theories were chosen to coincide with the independent variables of school and teacher experience (Value Added Theory), race/ethnicity (Cultural Capital Theory), and socioeconomic status (Social Capital Theory). Together, this conceptual framework looked

at the whole child and the system that surrounds each one. Separately, each theory accounted for the individual characteristics that may independently have greater impacts on student outcomes.

Discussion of Results

Prior to conducting any statistical analysis, there were clear data that stood out to the researcher. When narrowing data from the population to the sample, there were 892 5th grade students who did not attend their district school, which was 30.2% of the total population. Once applying all of the criteria for inclusion in the study of 162+ days enrolled and attending the assigned school, only 58% of black students remained from the original population to the sample; however, 88.4% of all other ethnicities combined remained in the sample. Given this data, the researcher then used inferential statistics to answer each research question.

The results of this study were disappointing; however, they mostly aligned with current research. Overall, there were differences in school factors of teacher experience, school racial composition, and SES composition between schools. The findings of differences aligned with the research that schools with higher ED percentages have more inexperienced teachers, higher percentages of non-white students, and lower levels of academic achievement. Current research recognizes the substantial impact of family background and socioeconomic status on a student's educational achievement, meaning that factors outside the school environment significantly influence academic success (Downey & Condron, 2016; Jacobs, 2016). Also, the larger the difference in poverty rates in white and black students' schools, the larger the achievement gap, on average (Reardon, 2016). While there were bright spots in the data and areas where black and ED students were performing closer to their peers, it was not enough to overcome systemic inequities and produce better academic outcomes.

Discussion of the Results in Relation to the Literature and Conceptual Framework

Research Question 1

How do race, socioeconomic status and school attended impact ILEARN scores among 5th grade students?

The purpose of this question was to determine how each independent variable impacted academic outcomes for students at each school. The results showed that all three independent variables of race, SES, and school attended had a statistically significant impact on ILEARN scores and 33% of the variance in the dependent variable is explained by the independent variables. Predicted outcomes of ILEARN scores varied based on each unique student's race, socioeconomic status, and school attended, with some variables impacting the scores more than others. The only positive impact on ILEARN scores out of all the independent variables are the three other races: White, Multiracial, and Other. When compared to the constant, every school and being ED had a negative impact on ILEARN outcomes. Each school has a different negative impact on ILEARN scores when compared to the constant, ranging from -40.02 to -232.97. In a practical application, students are at different levels of a disadvantage simply by their enrollment at particular schools.

These results were in alignment with current and historical research. *The Coleman Report* illustrated the substantial impact of family background and socioeconomic status on a student's educational achievement, meaning that factors outside the school environment significantly influenced academic success (Downey & Condron, 2016; Jacobs, 2016). The Black-White Achievement Gap is also apparent in this study which aligns with national research. Previous research indicated stark gaps in academic achievement between Black and Latino students and

their white counterparts. Gaps also existed between students, regardless of race, who come from low-income backgrounds and their peers who come from middle-class or affluent backgrounds (Darling-Hammond, 2010; Howard, 2010; Reardon, 2016). This indicates that schools have yet to make progress to close the achievement gap for students who are non-white and/or are ED.

Research Question 2

How do race and socioeconomic status moderate the relationship between school attended and ILEARN scores among 5th grade students?

The purpose of question two was to determine if there were differences by the combination of black and school or ED and school. In the analysis, being black or ED impacted ILEARN outcomes; however, the combination of black and ED impacted ILEARN outcomes more at some schools than others, because both variables had a negative impact on ILEARN scores.

These findings are supported by research, which explains that the biggest factors contributing to gaps in academic performance for students was being of a minority race and students who come from low-income backgrounds (Darling-Hammond, 2010; Howard, 2010; Reardon, 2016). These results are also supported by research which states that black students continue to underachieve as shown in the persistent Black-White Achievement Gap that exists across all indicators of academic achievement from standardized test scores to overall educational attainment, with gaps growing even wider for students who are black and low-income (Darling-Hammond, 2010; Condron et al., 2013; Howard, 2010; Matheny et al., 2023; Reardon, 2016). This indicates that schools have much work to do to equitably support students, especially students who are black and/or ED.

Research Question 3

What differences exist in mean 5th grade ILEARN scores between elementary schools for students who are black and economically disadvantaged?

This question sought to investigate whether there were differences in academic outcomes for students who were black and ED between schools. Results indicated that School I and School R had statistically significant differences between them, with School I showing significantly lower mean test scores. The results from this test indicated that this very specific subgroup of students was performing statistically differently at these two schools and further investigation outside of this study is needed to understand the phenomenon. From looking at the independent variables, there are clear differences between these schools. Based on the Value-Added Theory, School R had a very small percentage of new teachers while School I had over one third of their teaching staff that was considered new. From the Cultural Capital Theory, School R had just over half of their student population that was non-white, while School I had only one quarter of their student population that was non-white. Finally, the Social Capital Theory is demonstrated through the stark differences in the amount of the student population that was ED at each school. School R had approximately two-thirds of the student population that was ED while nearly 90% of School I's student population was ED.

The research supports these findings, acknowledging that student achievement can drastically improve in schools with more experienced and qualified teachers (Kodel et al., 2014; Opper, 2019; Sass et at., 2012). Research also suggests diversifying schools for both cultural and social capital (Coleman, 1988; Leana & Pil, 2006). The results from this study suggest that schools that are more segregated have much different outcomes, both positive and negative. This

indicates that this urban school district should look to balance diversity of race and SES across the entire district.

Research Question 4

What differences exist in school factors of racial composition, socioeconomic composition, and educator experience?

Question four sought to determine what differences exist in school factors of racial composition, SES, and educator experience. Some schools in this study were quite different from others. The racial composition for 17 of the 22 elementary schools ranged from 9% non-white (School C) to 79% non-white (School N). The percentage of ED students ranged from 13.3% (School Q) to 94.4% (School M). Interpreting these results showed that there were definite differences between the SES composition for 18 of the 22 elementary schools. There were also differences in teacher experience that were statistically significant differences between schools. School P was the only school without any new teachers. School N has 10.9% of all new teachers in the district. Within each school, the amount and percentages of new and experienced teachers varied. School I had the highest percentage of new teachers, representing 39.3% of their teaching staff. Schools M and N also have high percentages of new teachers within their schools, representing 38.1% and 37.5% respectively.

Current research is supported by these results, stating that, on average, new teachers are less effective than seasoned teachers, and are more likely to be teaching in high poverty schools (Aud, Fox, and KewalRamani 2010; Mickelson 2001; Rice, 2010). These results also ring true for schools that have the highest percentages of ED students having the highest percentages of teachers with less than three years of experience (Ingersoll & Tran, 2023; Rice, 2010). These

findings and research suggest that this urban school district is, unfortunately, on par with the majority of the country and immediate action should be taken to improve outcomes for students who are black and/or ED.

Discussion of School Rankings

To be able to contextualize data from all 22 schools, Table 15 in Chapter 4 showed the school rankings from 1-22 using the lowest to highest percentages of each school factor based on the conceptual framework: percentage of students who were ED, percentage of students who were non-white, and percentage of new teachers within the building. Individual category rankings were summed to create a total for each school. Finally, each total score was ranked from 1-22 to determine if the overall rankings parallel the academic outcomes by school that were reported in Table 3 in Chapter 4. Based on these rankings, some conclusions were made that aligns with current research.

School I stood out in every area throughout the study, which was not surprising that they were ranked last or nearly last in each category and last overall. Interpretation of these results means that School I had the highest percentage of new teachers, second highest percentage of ED students, second highest percentage of non-white students, and the lowest academic outcomes. School R also stood out in rankings, while they were ranked 10th in ILEARN outcomes and 11th in percentage of ED, they were ranked 17th in non-white. The data would have predicted that their ILEARN ranking should have been closer to their non-white ranking; however, it was in line with the ED ranking. Finally, School M stood out as a bright spot. They were ranked 16th in ILEARN scores, 20th in percentage of ED students, 19th in percentage of non-white students, and 21st in overall school ranking. The model would have predicted School M to have academic

outcomes that were lower than they were. This calls for a closer look at what is taking place at Schools R and M to try and determine what other factors are attributing to overall student success.

Implications for Policy and Practice

The findings in this study suggest several implications for policy and practice both in the Midwestern urban school district and across the country. First, the impact of race, socioeconomic status and school show to be significant predictors in outcome scores for each student, and there were several schools in this study that were significantly different in school composition of the same variables. This school district should work to balance the composition of schools across all schools by ways of race, socioeconomic status, and teacher experience. Each of these variables contribute to the outcomes for students, so reconfiguring across the district in a more-balanced approach will be key to stability and equitable practices. Across the country, districts need to take a similar approach to balancing racial, socioeconomic, and teacher experience factors when determining school boundary zones for students. They should also put policies in place for the amount or percentage of new and experienced teachers in each building and look at flexible staffing practices that would allow for all students to have access to veteran and high-quality teachers. Research about school composition and the Black-White Achievement Gap refers to "black student density" within each school, meaning the proportion of school's enrollment who are black. Research suggests that after accounting for socioeconomic status, student, teacher, and school characteristics, the Black-White Achievement Gap was greater in the schools with the highest black density (Bohrnstedt et al., 2015; Reardon, 2011).

Second, the most powerful information in this study was shown to be the impact of race on outcomes, which is also different based on the school each student attends. Students who are black and at particular schools are at a much greater disadvantage than students who are different races or at different schools. This district automatically creates an inequitable learning experience for students based on the school they are assigned to which is then multiplied by their race and socioeconomic status. Simply by attending School I instead of School C, a student is predicted to have an ILEARN score that is 5.8x lower, before accounting for socioeconomic status. School C had less than half of the student population that were ED, while School I had almost 90%.

While this was evident in this school district, previous research also supports these findings, “The average U.S. zip code associated with the highest quality (A+) public elementary school has a 4-fold ($486,104) higher median home price than the average neighborhood associated with the lowest quality (D or less) public elementary schools ($122,061)” (Schwalbach, 2019). School C also has only 9% of the student population that is non-white while School I had 78%. School C is also located in a suburban area, while School I is located in an urban area of the district. Research calls out this difference with the use of negative and degrading words and mindsets associated with “urban” and “urban schools” meaning highly segregated schools mainly with Black and Latinx students. The “urban” label is often combined with the “perceived shortcomings of students and parents” from minority backgrounds. The history of racial inequalities in access to suburban housing, and the ensuing patterns of white suburban concentration and minority urban concentration produce significant segregation between urban public school districts and suburban school districts. Within-district segregation

between Black and White students and between Hispanic and White students remains at high levels in many inner-city public school districts nationwide (Billingham, 2019).

There is a need for the district to investigate what it would take to produce better outcomes for students at School I. Some of the answers may lie in this study with a need to balance their racial, SES, and teacher experience with other schools in the district. The more positive data with School R should ignite further investigation for the school district as to why this is happening.

Finally, school districts need to create policies that are focused on outcome data for students. Each school district has open access to all of their data, so it should be of utmost priority for each district to evaluate their own practices to determine who their system is working for and who it is not yet working for. District boundary zones influence more than just the school a child attends, and districts must consider what their school boundary zones are implying about their priorities and (in)equitable mindsets. Resource distribution is another important factor of how each district must invest in and deploy resources appropriately to support more balanced school boundary zones. Although resource distribution should be easier if schools are more balanced, it takes focus and continuous monitoring to ensure the structure is working for all students and not harming specific groups of students. These research findings are consistent with current research across the country when comparing between districts; however, this study went a step further with investigating inequities within this one particular district which also show concerning disparities between schools that influence outcomes for marginalized students.

Limitations

The first limitation of this study was the requirement for inclusion of 162 or more days attending their assigned school. The sample being studied was a more transient group of students, so there were several that were excluded from the beginning because of their lack of enrollment in their assigned school for 162 or more days. This was an important criterion for the study to ensure learning was representative of the school attended; however, it added to the limitations of the amount of student data that could be studied, leaving very small *n* at some schools. Secondly, student attendance rates were unknown and not considered for this study. Although a student was enrolled in their district school for 162 or more days, there was no attendance criteria to ensure the student was at school and learning. In the same vein, this study did not look at the specific spaces where students are learning, meaning outside of the general education classroom. This data could give a much deeper insight about within school segregation, as well as the rigor and expectations for groups of students. Another limitation of this study is that it only focused on one school urban Midwestern district; however, results appear to be consistent with previous research across the nation.

Recommendations for Future Research

The implications for future research are endless; however, there are some logical next steps that should be taken into consideration for immediate research. First, a study using geospatial technology should be conducted with a proposal of how to redistrict the current school district from this study that focuses on balancing the composition of each school for race and SES. Additional research needs to pay special attention to formulas for balancing the composition of schools, as well as resource dedication. From there, the district then needs to

consider how to change its policies and practices around hiring teachers, placement of teachers, and teacher retention, ensuring all students have access to highly qualified teachers that produce strong outcomes with students.

Second, this study should be replicated with a wider dataset to include more students. This study focuses on 5th grade ILEARN scores; however, investigating each grade level would be beneficial to see if there are differences at individual grade levels and drawing conclusions for what they might mean. It would also be important to study a cohort of students throughout their matriculation to see how academic outcomes differ over several years and once students combine with other schools at the secondary level.

Third, other factors need to be considered as a tangent to this research. There are a myriad of factors that influence outcomes and the factors from this study are only a few. Studying areas like family engagement, student engagement, special populations, behavior, and discipline are just some of the other areas that would be beneficial to add to this research.

Finally, because there were not significant positive results, especially with students who are black and ED, this district must prioritize culturally competent training, practices, mindsets, and policies. It is clear that if there are steps being taken to close the Black-White Achievement Gap they are not paying off. Additionally, students who are ED are also falling behind, regardless of the school they attend.

Conclusion

As a result of this research, many factors play a role in outcomes for students. This study showed three individual factors that influence student ILEARN outcomes: race, SES, and school attended. This research supports prior research about outcomes for students from different racial

and socioeconomic groups. This research also suggests redistricting within this urban Midwestern school district. Since redistricting can take years to plan and achieve, special attention should be given to additional research on balancing racial and socioeconomic composition of schools. Another key area for focus is contributing factors for student outcomes that may not have been lifted in this study but should be taken into consideration before redistricting.

This study was driven by the passion for equitable practices for all students. Changing school boundary zones for this Midwestern urban school district has the potential to have the greatest impact for students who are Black and ED; however, it will impact all students, whether directly by assigning students to new schools, or indirectly by changing the composition of the school they attend and must be done with careful consideration.

CHAPTER 6. COMPARATIVE ANALYSIS OF TWO COMPANION DISSERTATIONS

Introduction

This chapter will include a comparison of two companion dissertations, each dissertation focused on the academic outcomes for students who are black and ED, using standardized test scores. The first companion dissertation focused on 5th-grade students and the state accountability assessment, ILEARN. The second companion dissertation focused on 11th-grade students and the graduation requirement exam, SAT. The purpose of each companion dissertation was to determine if performance for a specific subgroup of students was better, the same, or worse across schools and factors that may be contributing to the outcomes. Additionally, policies, including school assignment, redistricting, and resource allocation, are governed by a single school board with one superintendent. Results from each companion dissertation will be used to provide a holistic view of student performance and contributing factors to making strategic decisions.

Students in this district are assigned to schools based on their residence. There are five traditional high schools that 22 elementary schools feed into, known as feeder patterns. All schools in both dissertations are within the same school district. This urban school district spans 236 square miles, covering the city and the entire county. Students reside in the inner city and suburbs, and schools are located in both areas. Generally, elementary school boundary zones include students in the neighborhoods closest to the school. Figure 1 shows the 22 elementary school boundary zones, each with a different color. High schools, however, have boundary zones that were created over 30 years ago to integrate schools racially. Figure 2 shows the five high school boundary zones; notice that each extends south to the river. Because of population

migration to the northern part of the district, two new schools were built. This was a relocation of one high school that was more centrally located. The other new school was an elementary school that fed into the newly built high school.

Figure 1

Elementary School Boundary Zones

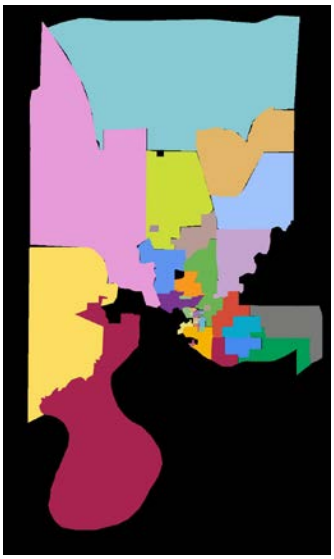
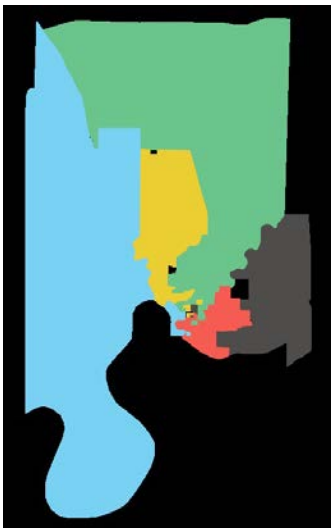


Figure 2

High School Boundary Zones



Comparative Data from Companion Dissertations

Research Question 1

How do race, socioeconomic status and school attended impact standardized test scores among 5th and 11th grade students?

Race, socioeconomic status, and school attended impacted standardized test scores for 5th and 11th grade students. In both studies, a regression model was used to determine the impact of race, socioeconomic status, and each school attended on test scores. An equation to predict standardized test scores was created, using the highest performing school, Black race, and not ED. The high school equation used School D, while the elementary school equation used School O, which is a feeder of High School D.

All non-Black races had positive impacts on test scores for elementary and high school students. Being ED had a negative impact on test scores for elementary and high school students. The independent variables with the largest impact on high school SAT scores were White (positive), ED (negative), and High School A (negative). The independent variables with the largest impact on elementary school ILEARN scores were Elementary School G (negative), Elementary School I (negative), and Elementary School N (negative). Elementary School I and N are feeder schools of High School A. Of the student races in the study, White had the largest positive impact on test scores for both grade levels. Being ED had a negative impact on test scores at both grade levels.

Research Question 2

How do race and socioeconomic status moderate the relationship between school attended and test scores among 5th and 11th grade students?

Results from each companion study were different. Race, but not socioeconomic status, did moderate the relationship between school attended and test scores among 5th-grade students. This means that the impact of the school is different based on race in elementary schools. However, race and socioeconomic status did not moderate the relationship between school attended and test scores for 11th-grade students.

Research Question 3

What differences exist in mean standardized test scores between schools for students who are black and economically disadvantaged (ED)?

Results from each companion dissertation were different. There were statistically significant differences between certain elementary schools. Namely, there are differences between Elementary Schools I and R, as well as School O with nine other schools. The results for School O were not included in the companion study, however, because there were only two black and ED students at the school. Students at Elementary School I performed significantly lower than School R. Elementary School I is a feeder school for High School A. In contrast to elementary schools, there was not a significant difference in test scores between schools for students who were black and ED.

Research Question 4

What differences exist in school factors of racial composition, socioeconomic composition, and educator experience?

Both studies showed significant differences in racial composition between schools. Seventeen elementary schools showed significant differences, as well as all five high schools. Similarly, both studies showed significant differences in socioeconomic composition between

schools. Eighteen elementary schools had significant differences in socioeconomic composition, as well as four high schools. When comparing educator experience, only elementary schools had significant differences. There were significant differences in mean years of experience between elementary schools. Elementary School I was different from eight other schools. The percentage of new and experienced teachers was also significant between elementary schools. Elementary School I, had the highest percentage of new teachers, representing 39.3% of their teaching staff. Elementary Schools M and N also have high percentages of new teachers within their schools, representing 38.1% and 37.5%, respectively.

Discussion

Based on the results of questions 1-4, we examined two high school feeder patterns, the highest and lowest performing, to draw conclusions about what may be happening longitudinally. Figure 3 shows High School A and its elementary school feeders. High School A had the most negative impact on SAT scores of any high school, and was the lowest-performing high school in the district. Elementary Schools F, I, J, and N are the feeder schools for High School A. Schools F, I, and N are ranked in the bottom five elementary schools for performance. All feeder schools for High School A are in the bottom 50% of elementary schools for academic performance. Figure 4 shows High School D and its elementary school feeders. High School D, the highest-performing high school in the district, had the most positive impact on SAT scores of any high school. Its feeder schools were Elementary Schools E, G, O, P, Q, and U. Fifty percent of High School D's feeder schools are ranked in the top five for academic performance out of the 22 elementary schools. Two are in the bottom 50%.

The racial and socioeconomic compositions of High School A and its feeder schools differed significantly from the district. The racial composition of High School D and feeders E, O, P, Q, and U differ significantly from the district. The socioeconomic composition of the high school and feeders E, G, O, P, and Q differed from the district. While the high school had no differences in educator experience, some of its feeders did. A Tukey's post hoc test revealed differences for elementary schools feeding into High Schools A and D. School pairings with differences include: Schools I and Q, Schools I and F, Schools Q and N, Schools E and P, Schools G and P.

High School A impacted SAT scores most negatively, and Elementary School I impacted ILEARN scores most negatively. Elementary School I is a feeder of High School A. High School A contained the largest percentage of black and ED students. Elementary School I contained the third-highest percentage of black students and the second-highest percentage of ED students. High School D was the highest-performing high school and contained the highest-performing elementary school feeder, Elementary School O. High School D had the lowest percentage of ED students and the second lowest percentage of black students. Elementary School O had the lowest percentage of ED students and the fifth lowest percentage of black students.

Figure 3

High School A Feeder Pattern Statistics

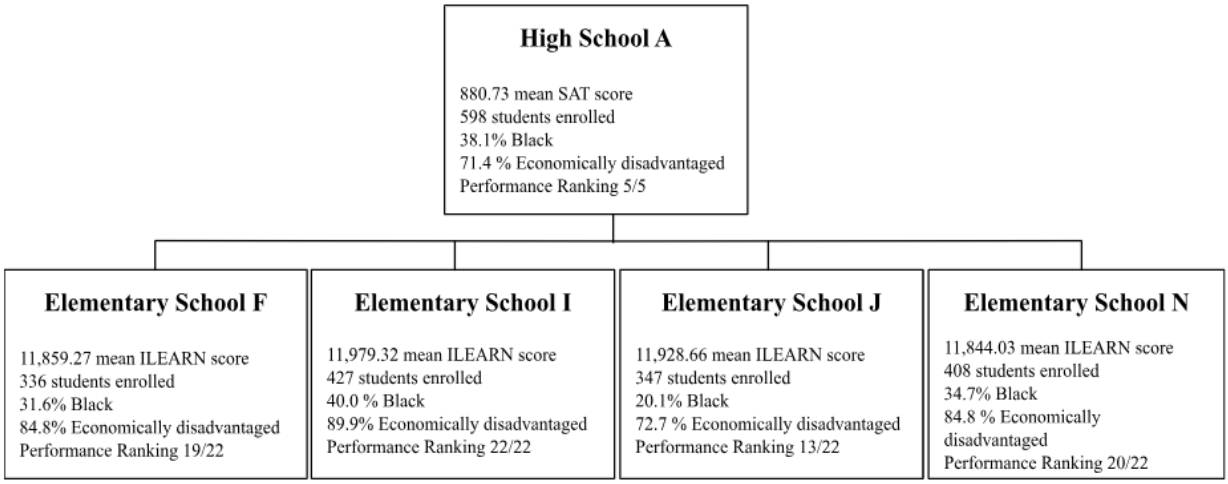
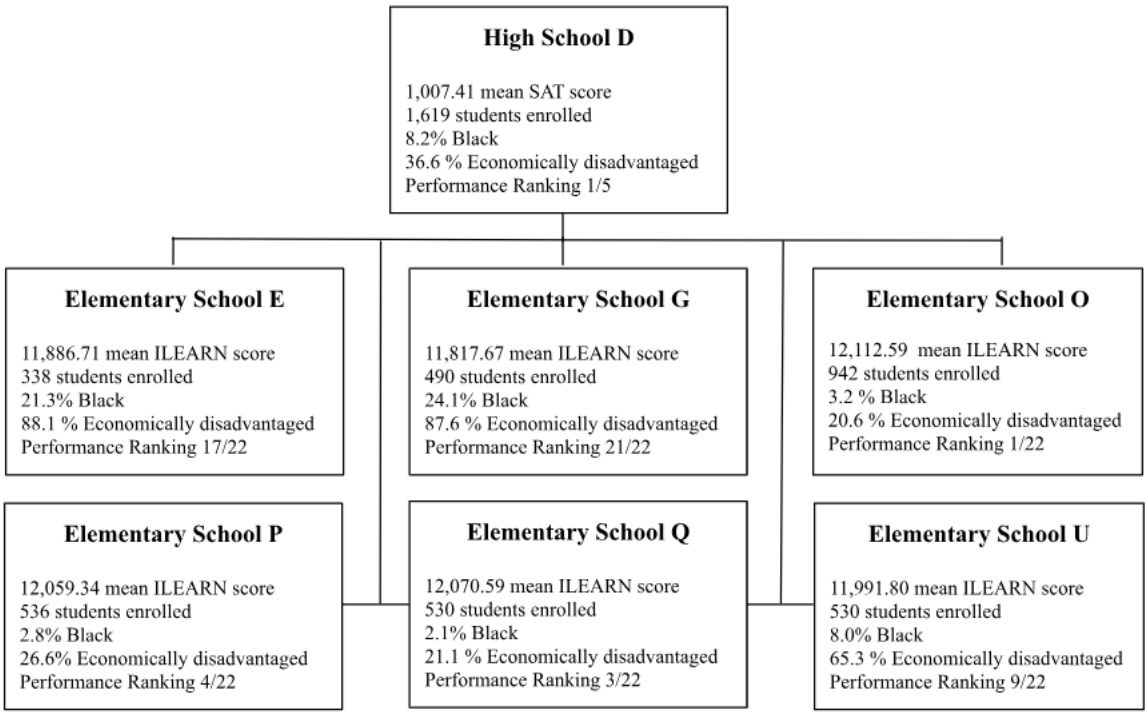


Figure 4

High School D Feeder Pattern Statistics



Schools were ranked according to the school-level factors identified through a literature review and according to the conceptual framework. The three school-level factors were socioeconomic composition, racial composition, and educator experience. Schools were ranked in each category from lowest to highest percentage. Then, those rankings were summed to get a total by school. For elementary schools, the total was then divided by the number of feeder schools per high school to get a mean. The ranking for high school matched the ranking for the mean feeder school score. This was expected based on school assignment boundaries and utilization of a high school feeder pattern. While the composition of high schools matched the collective composition of their feeder schools, there were several elementary schools that were

very different within the same feeder pattern. Table 16 shows the school rankings with elementary school feeder patterns.

Table 16

Feeder School Patterns with Rankings Based on School Factors

High School	Elementary School Feeders	ED *Rank #*	Non-White *Rank #*	New Teachers *Rank #*	Total	Overall Ranking	Feeder School Mean *M*	Feeder School Ranking *Rank #*
School A		5	5	4	14	**5**	52.5	**5**
	School F	16	18	14	48	17		
	School I	21	21	22	64	22		
	School J	13	14	12	39	13		
	School N	17	22	20	59	20		
School B		3	2	2	7	**3**	36.5	**3**
	School B	22	11	11	44	15		
	School L	6	6	7	19	5		
	School M	20	19	21	60	21		
	School S	7	7	9	23	7		
School C		4	4	5	13	**4**	37.0	**4**
	School A	14	20	10	44	15		
	School H	15	15	8	38	12		
	School K	8	12	16	36	11		
	School R	11	17	2	30	9		
School D		1	3	2	6	**2**	27.2	**2**
	School E	19	16	17	52	19		
	School G	18	13	18	49	18		
	School O	1	5	15	21	6		
	School P	4	4	1	9	1		
	School Q	2	3	4	9	1		
	School U	10	10	3	23	8		
School E		2	1	1	4	**1**	23.0	**1**
	School C	5	1	6	12	4		
	School D	9	8	13	30	9		
	School T	12	9	19	40	14		
	School V	3	2	5	10	3		

Based on the conceptual framework, these school factors should have predicted student academic outcomes. High School E should have been the highest performing since they were ranked number one; however, High School E was the third highest performing out of the five high schools. High School D was the highest-performing. This could be because rank order neglects the magnitude of differences in individual factors or because other within-school factors not included in the study make the difference. A natural break occurs in total scores between the two lowest-performing high schools (A and C) and the three highest-performing high schools (B, D, and E). There were statistically significant differences in racial and socioeconomic compositions of the high schools; however, there were not significant differences in educator experience.

From an elementary perspective, High School D would have been presumed to be the highest performing based on the elementary feeder schools. Three of the six elementary schools were in the top five rankings for all categories except one, while one school was in the middle, and two schools were near the bottom. Given that there was no weight based on the size of school, all rankings and scores were calculated evenly, although the elementary Schools O, P, and Q are much larger than elementary schools E, G, and U.

Headlines from Both Studies

1. Students who were white had higher standardized test scores than other races at both grade levels.
2. Students who were black had lower standardized test scores than other races at both grade levels.
3. Students who were ED underperformed their non-ED peers at both grade levels.

4. Black-White and socioeconomic achievement gaps existed at both grade levels.
5. The factors analyzed through the conceptual framework predicted student performance differences, especially between High School A and its elementary school feeders compared to High Schools D and E and their elementary school feeders.
6. The schools with the highest test scores had the lowest percentage of ED students at both grade levels.
7. Students who were black and ED did not perform significantly better in almost any school, which suggests the independent variables measured were not enough to overcome the systemic inequities.

Implications of the Results for Practice

The most evident implication from these studies is the need for targeted support for students who are black as well as students who are ED, regardless of school or grade level. White students consistently outperformed all other races, while black students performed the lowest. The same is true for students who are not ED. Students who are not ED outperformed those who were, regardless of school or grade level. These studies did not include supports that were available for students; however, it is evident that any and all supports provided were not enough to overcome the academic disparities.

A second implication from these studies is the need to balance school student composition, both racially and economically at all grade levels. Academic performance for all students was highest at schools with the lowest percentage of ED students. The same is true for black students in schools where there were lower concentrations of black students. Students, regardless of race or economic status had better academic outcomes when they attended a school

with lower concentrations of black and ED students. This may be due to the greater needs of students who are black and/or ED and the amount of need concentrated within a given school.

A third implication is to redistribute teaching staff so that new teachers are proportionate across all schools. This would ensure that students with the most need do not have the least experienced teachers. This could be accomplished through hiring practices and policies. The trend from these studies was that schools with a higher percentage of new teachers had larger concentrations of black and ED students. This was most evident in elementary schools where there is the greater variance in student body compositions.

Implications of the Results for Future Research

Further research is needed to examine possible effective interventions with students who are black and/or ED, regardless of grade level or school composition. Additional research is also needed to determine how Cultural Capital Theory impacts academic outcomes on students, beyond just racial composition of schools. This would include cultural competence, cultural pedagogy, and diversity of teaching staff. Additionally, more investigation is needed into Social Capital Theory, specifically neighborhood composition and social networks for students and families that are beyond the school walls. By the design of rebalancing schools, access to social capital should improve within schools due to the more proportional distribution of all students; however, further research is needed to determine how students leverage social capital. Finally, continued research is needed related to the Value-Added Theory. In the current studies, Value-Added was only focused on teacher experience. In future research, value added should also investigate the quality of instruction that is happening in the classroom by new and experienced teachers.

These studies examined academic outcomes for two different cohorts of students during the same years. A future study could examine the same cohort from 5th to 11th-grade to see if outcomes change based on school composition. The current school boundary assignment is a high school feeder pattern. Elementary schools that feed into high schools may have very different school compositions. Some students attend elementary schools that are predominantly white and affluent, while others attend elementary schools that are more racially diverse with high levels of poverty. Those students feed into the same high school. It would be interesting to examine how academic outcomes change over time as school compositions change.

Conclusion

This comparison of two companion dissertations allowed for an analysis of academic outcomes for students who are black and ED in an urban Midwestern school district. Through analysis of the five high school feeder patterns and the 22 elementary schools, students who are black and ED did not perform significantly better in almost any school, which suggests the independent variables measured were not enough to overcome the systemic inequities. Unfortunately, there were no elementary or high schools that were able to overcome the black-white or socioeconomic academic gap that are pervasive in the United States. While there were differences in some schools for academic outcomes of students who are black and ED, no high schools nor 20 of the elementary had statistically significant differences for these students. In two elementary schools that had statistically significant differences, where students performed better there were less concentrations of poverty, black students, and new teachers which aligns with research and the conceptual framework.

REFERENCES

Allegretto, S., García, E., & Weiss, E. (2022). Public education funding in the U.S. needs an overhaul. *Economic Policy Institute*.

AVID. (n.d.). *Our Approach.* https://www.avid.org/

Aud, S., Fox, M., & KewalRamani, A. (2010). Status and trends in the education of racial and ethnic groups (NCES 2010-015). *U.S. Department of Education: National Center for Education Statistics.*

Billingham, C. M. (2019). Within-district racial segregation and the elusiveness of white student return to urban public schools. *Urban Education*, *54*(2), 151–181. https://doi.org/10.1177/0042085915618713

Bohrnstedt, G., Kitmitto, S., Ogut, B., Sherman, D., and Chan, D. (2015). School Composition and the Black–White Achievement Gap. *U.S. Department of Education,* Washington, DC: National Center for Education Statistics. http://nces.ed.gov/pubsearch.

Card, D., & Payne, A.. (2002). School finance reform, the distribution of school spending, and the distribution of student test scores. *Journal of Public Economics, 83*(1), 49–82.

Casey, L. (2004). Still separate, still unequal: The continuing struggle for racial justice in American education: Review article. *Dissent (00123846)*, *51*(1), 117–125.

Chetty, R., Friedman, J. N., & Rockoff, J. E. (2015). Measuring the impacts of teachers I: Evaluating bias in teacher value-added estimates. *American Economic Review*, *1*(104:9), 2593–2632.

Clotfelter, C. T., Ladd, H. F., & Clifton, C. R. (2023). Racial differences in student access to high-quality teachers. *Education Finance and Policy*, *18*(4), 738–752. https://doi.org/10.1162/edfp_a_00402

Coleman, J. S. et al. (1966). Equality of educational opportunity. *U. S Department of Health and Welfare: Office of Education.*

Coleman, J. S. (1988). Social capital in the creation of human capital. *The American Journal of Sociology*, *94,* S95-S120.

College Board. (n.d.). *SAT.* https://satsuite.collegeboard.org/sat

Condron, D. J., Tope, D., Steidl, C. R., & Freeman, K. J. (2013). Racial segregation and the black/white achievement gap, 1992 to 2009. *Sociological Quarterly*, *54*(1), 130–157.

https://doi.org/10.1111/tsq.12010

Culpepper, S. A., & Davenport, E. C. (2009). Assessing differential prediction of college grades by race/ethnicity with a multilevel model. *Journal of Educational Measurement,* 46. https://doi:10.1111/j.1745-3984.2009.00079

Darling-Hammond, L. (2010). *The Flat World and Education: How America's commitment to equity will determine our future*. Teachers College Press.

DeRoche, T. (2020). Public-school attendance zones violate a civil rights law. *Education Next*. https://www.educationnext.org/public-school-attendance-zones-violate-civil-rights-law-equal-educational-opportunities-act-a-fine-line/

Dickinson, E. E. (2016). Coleman report set the standard for the study of public education. *Johns Hopkins Magazine. https://hub.jhu.edu/magazine/2016/winter/coleman-report-public-education/*

Dougherty, J. (2012). Shopping for schools: How public education and private housing shaped suburban connecticut. *Journal of Urban History, 38*(2), 205–224. https://doi.org/10.1177/0096144211427112

Downey, D. B., & Condron, D. J. (2016). Fifty years since the coleman report: Rethinking the relationship between schools and inequality. *Sociology of Education*, *89*(3), 207–220. https://doi.org/10.1177/0038040716651676

Dumais, S. A. (2002). Cultural capital, gender, and school success: The role of habitus. *Sociology of Education*, *75*, 44–68.

Erickson, A. T., & Highsmith, A. R. (2018). The neighborhood unit: Schools, segregation, and the shaping of the modern metropolitan landscape. *Teachers College Record*, *120*(3), 1–36. https://doi.org/10.1177/016146811812000308

Ferguson, R. F. (2003). Teachers' perceptions and expectations and the black-white test score gap. *Urban Education*, *38*(4), 460-507.

Frankenberg, E., Lee, C., & Orfield, G. (2003.). A multiracial society with segregated schools: Are we losing the dream? *The Civil Rights Project: Harvard University.*

Frankenberg, E., Siegel-Hawley, G., & Diem, S. (2017). Segregation by district boundary line: The fragmentation of Memphis area schools. *Educational Researcher, 46*(8), 449–463. https://doi.org/10.3102/0013189X17732752

Howard, T. C. (2010). Why race and culture matters in schools: Closing the achievement gap in America's classrooms. New York, NY: Teachers College Press.

Indiana Department of Education. (n.d.). *Free and Reduced Forms.* https://docs.google.com/document/d/1BaVF8x2QqmvvdC9q8dnvXL-_xGySzaNQ93wcn-IqT2s/edit

Indiana Department of Education. (n.d.). *ILEARN.* *https://www.in.gov/doe/students/assessment/ilearn/*

Indiana Department of Education. (n.d.). *Out-of-School Time Programs (OST).* https://www.in.gov/doe/grants/OST/

Indiana Department of Education. (n.d.). *School Improvement Plans.* https://www.in.gov/doe/students/office-of-school-support-and-transformation/school-improvement-plans/

Indiana Department of Education. (n.d.). *Title I.* https://www.in.gov/doe/grants/title-i/#Title_I__Part_A

Ingersoll, R.M., & Tran, H. (2023). Teacher shortages and turnover in rural schools in the US: An organizational analysis. *Educational Administration Quarterly, 59*(2), 396-431. https://doi.org/10.1177/0013161X231159922

Jacobs, L. A. (2016). Dealing fairly with winners and losers in school: Reframing how to think about equality of educational opportunity 50 years after the coleman report. *Theory and Research in Education, 14*(3), 313–332. https://doi.org/10.1177/1477878516680409

Joyner, A. M., & Marsh, B. (2011). Institutionalizing disparities in education: A Case study of segregation in wayne county, north carolina high schools. *InterActions: UCLA Journal of Education & Information Studies*, *7*(1), 1–23. https://doi.org/10.5070/d471000686

Kettler, T., & Hurst, L. T. (2017). Advanced academic participation: A longitudinal analysis of ethnicity gaps in suburban schools. *Journal for the Education of the Gifted*, *40*(1), 3–19. https://doi.org/10.1177/0162353216686217

Koedel, C., Mihaly, K., & Rockoff, J. E. (2014). Value-added modeling: A review. *Economics of Education Review, 47*, 180–195.

Lareau, A., & Weininger, E. (2003). Cultural capital in educational research: A critical assessment. *Theory and Society, 32*(5–6), 567–606.

Leana, C. R. & Pil, F. K. (2006). Social capital and organizational performance: Evidence from urban public schools. *Organization Science, 17*(3), 353-366.

Lieberman, M. (2022, November 11). Bus driver shortage still wreak havoc on schools and students. *Education Week.*

https://www.edweek.org/leadership/bus-driver-shortages-still-wreak-havoc-on-schools-and-students/2022/11

Liou, D. D., & Rotheram-Fuller, E. (2019). Where is the real reform? African American students and their school's expectations for academic performance. *Urban Education, 54*(3), 397–429. https://doi.org/10.1177/0042085915623340

Lukes, D., & Cleveland, C. (2021). *The Lingering Legacy of Redlining on School Funding, Diversity, and Performance*. https://doi.org/10.26300/QEER-8C25

Matheny, K. T., Thompson, M. E., Townley-Flores, C., & Reardon, S.F. (2023). Uneven progress: Recent trends in academic performance among U.S. school districts. *American Educational Research Journal, 60*(3), 447–485. https://doi.org/10.3102/00028312221134769

Monarrez, T., & Chien, C. (2021). Dividing lines: Racially unequal school boundaries in US public school systems. *Urban Institute.*

Ogbu, J. U. (1994). Racial stratification and education in the United States: Why inequality persists. *Teachers College Record*, *96*(2), 264-298. https://doi.org/10.1177/016146819409600207

Opper, I. M. (2019). Value added modeling 101: Using student test scores to help measure teaching effectiveness. *RAND Corporation*,

Owens, A. (2018). Income segregation between school districts and inequality in students' achievement. *Sociology of Education*, *91*(1), 1–27. https://doi.org/10.1177/0038040717741180

Reardon, S. F. (2011). The widening academic achievement gap between the rich and the poor: New evidence and possible explanations. *Whither opportunity? Rising inequality, schools, and children's life chances*, 91-116.

Reardon, S. F. (2016). School segregation and racial academic achievement gaps. *RSF: The Russell Sage Foundation Journal of the Social Sciences, 2*(5), 34–57. https://doi.org/10.7758/RSF.2016.2.5.03

Reardon, S. F., & Owens, A. (2014). 60 Years after brown: Trends and consequences of school segregation. *Annual Review of Sociology*, *40*(1), 199–218. https://doi.org/10.1146/annurev-soc-071913-043152

Reay, D. (2004). Education and cultural capital: The implications of changing trends in education policies. *Cultural Trends, 13*(2), 73.86. https://doi.org/10.1080/0954896042000267161

Rice, J. K. (2010). The Impact of Teacher Experience. *National Center for Analysis of Longitudinal Data in Education Research*.

Richards, M. P. (2014). The gerrymandering of school attendance zones and the segregation of public schools: A geospatial analysis. *American Educational Research Journal*, *51*(6), 1119–1157. https://doi.org/10.3102/0002831214553652

Richards, M. P. (2020). The racial/ethnic and socioeconomic dynamics of public school district secession, 1995–2015. *Teachers College Record*, *122*(5), 1–40. https://doi.org/10.1177/016146812012200503

Richards, M. P., & Stroub, K. J. (2015). An accident of geography? Assessing the gerrymandering of school attendance zones. *Teachers College Record*, *117*(7), 1–32. https://doi.org/10.1177/016146811511700701

Rife, A. (2019). Desegregation to re-segregation in the "air capitol of the world": The case of wichita USD 259. *Journal of Philosophy & History of Education*, *69*, 51–61.

Rivkin, S. (2016). Desegregation since the coleman report. *Education Next*, *16*(2), 28–37.

Rodrigue, Zoningb. P. (2016). *How exclusionary zoning limits poor families' access to good schools*. Retrieved September 17, 2022, from https://ggwash.org/view/61635/the-price-of-admission-how-exclusionary-zoning-limits-poor-families-access-

Saiger, A. J. (2010). The School District Boundary Problem. *The Urban Lawyer*, *42*(3), 495–548.

Saporito, S. (2017). Shaping income segregation in schools: The role of school attendance zone geography. *American Educational Research Journal*, *54*(6), 1345–1377. https://doi.org/10.3102/0002831217724116

Saporito, S., & Van Riper, D. (2016). Do irregularly shaped school attendance zones contribute to racial segregation or integration? *Social Currents*, *3*(1), 64–83. https://doi.org/10.1177/2329496515604637

Sass, T. R., Hannaway, J., Xu, Z., Figlio, D. N., & Feng, L. (2012). Value added of teachers in high-poverty schools and lower poverty schools. *Journal of Urban Economics, 72*(2-3), 104-122. https://doi.org/10.1016/j.jue.2012.04.004

Schwalbach, J. (n.d.). *Attendance Zone Boundaries: Barriers to Educational Opportunity*. The Heritage Foundation. Retrieved September 17, 2022, from https://www.heritage.org/education/commentary/attendance-zone-boundaries-barriers-educational-opportunity

Siegel-Hawley, G., Bridges, K., & Shields, T. J. (2017). Solidifying segregation or promoting diversity?: School closure and rezoning in an urban district. *Educational Administration Quarterly*, *53*(1), 107–141. https://doi.org/10.1177/0013161X16659346

Taylor, K., Frankenberg, E., & Siegel-Hawley, G. (2019). Racial segregation in the southern schools, school districts, and counties where districts have seceded. *AERA Open*, *5*(3), 233285841986015. https://doi.org/10.1177/2332858419860152

Taylor, K., & Frankenberg, E. (2021). Student assignment policies and racial and income segregation of schools, school attendance zones, and neighborhoods. *Educational Administration Quarterly*, *57*(5), 747–775. https://doi.org/10.1177/0013161X211024720

Weckstein, P., & Wermiel, S. J. (2008). The need for equal opportunity and a right to quality education. *Human Rights*, *35*(3), 13–15.

Welsh, R. O. (2019). Ebbs and flows: Revisiting the relationship between student mobility, segregation, and neighborhoods. *Peabody Journal of Education*, *94*(5), 493–520. https://doi.org/10.1080/0161956X.2019.1668210

Western Governors University. (2021). *An overview of equity in education.* https://www.wgu.edu/blog/overview-equity-education2107.html#close

Appendix

PERMISSION OF SURVEY INSTRUMENT

January 3, 2024

Tori Colson, Ed.D.
University of Southern Indiana
8600 University Blvd
Pott College of Science, Engineering, and Education
Education Center, 1103A
Evansville IN 47712

Dear Dr. Colson,

The [redacted] approves Jessica Reid's request to conduct research in our school corporation. This approval extends to data collection related to her proposed dissertation study. Our approval begins January 1, 2024 and will be in effect until this research is completed and a final defense has been scheduled.

Sincerely,

[redacted]
Superintendent

cc: Jessica Reid