

FACTORS AFFECTING GRADES: AN EXAMINATION OF NORTH CAROLINA SCHOOL  
PERFORMANCE GRADES

by

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## ABSTRACT

FELICIA R. DANGERFIELD-PERSKY. Factors affecting grades: An examination of North Carolina school performance grades. (Under the direction of DR. CHANCE W. LEWIS)

This quantitative study explores the potential school-level and school district-level factors associated with North Carolina school performance grades in K-5 elementary schools. The desire was to examine if any of the school- or school district-level factors were associated with the outcome variable of North Carolina school performance grades. This study used the data from the North Carolina school report cards and Civil Rights Data Collection from the 2015 – 2016 school year. The sample had 1096 schools and 92 school districts. A hierarchical linear model was created with the overall school performance grade as the outcome variable and the sixteen school level predictors and thirteen school district predictors. Results indicated that twelve out of sixteen school-level variables were statistically significant. One out of thirteen school district-level variables were statistically significant and two additional variables approached significance. Recommendations for improving student achievement were provided for United States policy makers, university education programs, North Carolina policy makers, local governments, school districts, and schools. These recommendations are presented as opportunities to ensure equitable educational practices and outcomes for all students.

## DEDICATION

To all of the people who have gone before me and are cheering me on from above, this is for you. Thank You.

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I am at the end of this journey only by the grace of God. I am standing because of the people who prayed for me, supported me, and held up my arms when I could not see my way. I am forever grateful to you. May God bless you all exceedingly abundantly, above all that I can ask or think (Ephesians 3:20).

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## CHAPTER 1: INTRODUCTION

North Carolina was one of twelve states to receive one of the Race to the Top grants worth approximately 400 million dollars to improve student achievement and college and career readiness over four years (United States Department of Education, 2016). According to the United States Department of Education (2016), the criteria of the grant requires states to make the following improvements:

- Adopt standards and assessments that prepare students to succeed in college and the workplace and to compete in the global economy;
- Build data systems that measure student growth and success, and inform teachers and principals about how they can improve instruction;
- Recruit, develop, reward, and retain effective teachers and principals especially where they are needed most; and
- Turn around the lowest-achieving schools (“Program Description,” para. 1).

North Carolina opted to implement the Common Core State Standards, along with 44 other states and the District of Columbia, which met the first requirement of the Race to the Top Grant (United States Department of Education, n.d.). These standards were adopted in 2010 but were not implemented until the 2012 – 2013 school year (Common Core States State Standards Initiative, 2020). The goal of the Common Core State Standards was to provide national curriculum documents and teaching standards for all students while increasing academic rigor (United States Department of Education, n.d.). North Carolina gave school districts autonomy to design their implementation strategies for Common Core. Although, the purpose of Common Core was to increase fidelity to improve student achievement with the English/Language Arts and Mathematics

standards, many inconsistencies existed during this process. These inconsistencies came from the various ways school districts interpreted the standards and curriculum documents.

With the development of the new curriculum and assessments, the Race to the Top grant expected their recipients to develop an accountability tool to measure the effectiveness of schools. In order for North Carolina to meet the second obligation of the Race to the Top grant, the state developed a report card which was based on A – F grading system in 2013 (N.C.G.S. § 115C-83.11, 2013; Public Schools First, 2019). This grading system assessed how well the students learned the new standards and sought to provide parents, students, educators, and communities with transparent information about each school’s progress (Owusu-Edusi et al., 2007; Public Schools First, 2019). The North Carolina General Assembly passed a law that allows the state board of education to determine students’ growth and academic performance (N.C.G.S. § 115C-83.11, 2013). School performance grades are calculated by 80% proficiency and 20% growth (N.C.G.S. § 115C-83.11, 2013; Public Schools First NC, 2019). Proficiency means earning a minimum score of three out of five, which indicates grade-level ability, on the End of Grade or End of Course tests. Student growth is based on the Education Value-Added Assessment System (EVAAS). Student growth compares each student’s actual score to the expected score based on the student’s previous test scores (NC Department of Public Instruction, 2014).

### **Statement of the Problem**

North Carolina revised its criteria at the beginning of the 2015-2016 school year (North Carolina Public Schools, n.d.). This revision requires NC school report cards to

include the letter grade of each school and for these report cards to be released to the public in September of each year (North Carolina Department of Public Instruction, 2014). Even with the implementation of the new curriculum and money awarded from the United States Department of Education, approximately 20% of schools in North Carolina continue to be designated as low performing. These low-performing schools do not show the majority of their students meeting the state's proficiency standards. North Carolina schools are now identified as low-performing if they receive a grade of D or F and if they do not exceed growth using the EVAAS model (North Carolina Public Schools, n.d.). A school that meets the proficiency expectations but does not meet the growth expectations can receive a passing school performance grade of A, B, or C. However, a school that only meets or exceeds the growth expectation will always receive a grade of D or F because growth is not weighted enough to override the proficiency component in the calculation. The imbalance in the grade calculation places more emphasis on passing the yearly assessment given on one specific day than students showing improvement throughout the school year (Public Schools First, 2019).

Currently, approximately 560 schools, which is 20% of all schools in North Carolina, earned a grade of D or F and are considered low performing (North Carolina Public Schools, 2018a). The grading system A – F causes parents and other community stakeholders to support or isolate communities based on this grade. As it is used currently, school performance grades are not used by the state board of education or North Carolina public schools to assess the needs of schools earning failing grades to provide additional support and resources (Public Schools First, 2019). This one data point is a significant factor determining the status of any school and its ability to attract and

retain high-quality teachers and school leaders (Public Schools First, 2019). Furthermore, schools labeled low-performing experience more difficulty with hiring and maintaining their teacher workforce (Clodfelter et al., 2004).

North Carolina saw the negative impact of using one data point during the 2019 – 2020 school year. The global pandemic of the coronavirus (COVID-19) caused schools in North Carolina to shut down or transition to using a virtual educational model in March 2020 (Hui, 2020). Because the parameters set for all schools in North Carolina, none of the schools administered the End of Grade or End of Course tests which led to schools not having any school performance data for that school year (Hui, 2020). Because of that, schools do not have recent data. Even with the changes of the current 2020-2021 school year, North Carolina has scheduled the administration of their state standardized test to obtain the data needed to calculate the most current school performance grade.

### **Purpose of the Study**

Since the implementation of school performance grades in North Carolina is relatively recent, it is vital to understand how the underlying school factors impact schools. These grades increase the awareness of successful schools compared to failing schools. Schools with a grade of A – C are considered extraordinary. Schools with a D or F are failing and eventually low-performing if the grade is maintained (North Carolina Public Schools, 2018a). These grades affect the schools and neighborhoods because high-performing schools become overcrowded, while communities surrounding low-performing schools are ostracized without investigating the underlying factors. These grades place visible identifiers on low-performing schools without discussing challenges or providing viable solutions to these students and families. School performance grades

separate the teaching workforce. Many teachers avoid or flee low-performing schools because the perception exists that teachers have to do more work in low-performing schools while receiving the same benefits (Clodfelter et al., 2004). The same holds for school administrators. School administrators also receive the same compensation across the state of North Carolina regardless of their school type (N.C.G.S. § 115C-285, 2013). However, principals who lead low-performing schools face more scrutiny and may be replaced if they do not improve these schools within a specific timeframe. These added factors create unstable work and learning environments for both staff and students.

The purpose of this hierarchical linear modeling quantitative study is to examine the measurable school-level and district-level factors of K-5 elementary schools in North Carolina based on their school performance grades. Factors included Title 1 status, the percentage of beginning teachers, the percentage of veteran teachers, the rate at which teacher turnover occurs after one year, and the principal turnover rate. With 20% of all schools in North Carolina classified as low-performing, the academic needs of many of these students are not met. These students are matriculating through the K-12 educational system without having the ability to read or do math fluently as measured on the End of Grade, End of Course, or North Carolina Final Exams. Hence, students in high school are not prepared for high school and beyond, meaning they are not college and career ready.

Using public data collected by the North Carolina Department of Public Instruction (NCDPI), and the Office of Civil Rights for the 2015 – 2016 school year, I used hierarchical linear modeling and logistic regression to examine the nested effects of school- and district-level characteristics on North Carolina school performance grades. Overall school performance grades, Title I status, overall reading score, overall

mathematics score, EVAAS growth status, performance composite percent college and career ready, performance composite percent grade-level proficient, one year teacher turnover rate, principal turnover rate, number of teachers at each school, student attendance, teacher attendance, Read to Achieve Student Retention, the number of beginning and veteran principals, per-pupil funding, the number of teachers who hold an advanced degree, and the percentage of beginning, veteran, and nationally board-certified teachers were obtained from the North Carolina Department of Public Instruction. The data accessed from the Office of Civil Rights Data Collection included the percentage of teachers absent for more than ten days, the percentage of students who are White, the percentage of students with disabilities, and the Title I classification.

The goal of this study was to look at overall school performance grades in K-5 elementary schools and the associated school- and district-level factors. This chapter will include a description of the variables and the hierarchical linear models that were used to determine the relationship between school level and district level factors.

### **Theoretical Framework**

This research study was influenced by evaluating Robert Merton's theory of Manifest and Latent Functions—a strand of structuralism (Merton, 1949). Manifest Functions focus on the intended outcome for any situations while Latent Functions refer to the unintended outcomes (Merton, 1949). In this study, the Manifest Function refers to the school performance grades received by each school. The Latent Function pertains to the other challenges schools face that are not measured including teacher shortages, teacher turnovers, student demographics, and other factors that impact the success of schools.



Structuralism is the interdependence of society and institutions to ensure that order is maintained (Ballantine & Hammack, 2012). Schools are one of many significant institutions used to develop and sustain human behavior. The knowledge gained through these institutions teaches people how to operate within their given boundaries based on the roles each person plays and their overall purpose. Merton (1949) relaxed the idea of structuralism through the theoretical framework of Manifest and Latent functions. Manifest functions focus on the concept of achieving the intended outcome; however, Latent Functions identify and understand that there are unwanted or unintended outcomes of social practices (Merton, 1949). This study addressed the manifest function of each elementary school's performance grade and compared schools with passing and failing school performance grades. The Latent Functions targeted in this study focused on school-level and district-level factors to determine their level of influence on school performance grades. This is important because school performance grades are based on the percentage of students who pass the reading and mathematics End of Grade test from third through fifth grades only. The other factors that were used shed light on other factors that influenced the success of K – 5 elementary schools.

### **Methods**

Multilevel modeling was used to analyze the school characteristics (Level 1) nested in school districts (Level 2) in North Carolina. This procedure allowed for the separation of variables within and between schools. The disaggregation of data accounted for the hierarchical structure of data. Multilevel modeling controlled for Type I error through robust estimation of standard errors in nested (non-independent) samples (Raudenbush & Bryk, 2002). This analysis was conducted using HLM 7 software using

restricted maximum likelihood estimation. Through this analysis, this dissertation illustrates what school- and district-level factors are related to school performance grades in public North Carolina elementary schools.

### **Research Questions**

This study investigated the following research questions:

1. To what extent does school performance vary within and between districts in North Carolina?
2. What school-level characteristics are predictive of these differences?
3. What district-level characteristics are predictive of these differences?

### **Significance of the Study**

The study examined North Carolina's school performance grades more in depth. School performance grades began during the 2013 – 2014 school year. The 2015 – 2016 school year was used to integrate additional factors, as the accountability model for school districts, schools, and teachers only uses one data point. This model categorizes schools based on their performance on the End of Grade or End of Course tests at the close of the school year without looking at additional factors contributing to the school's success or failure according to their grade.

The research questions guiding this study combined all of the individual variables that researchers study about a school's performance. The current research discusses teacher, school, and district factors separately. The teacher's responsibility of delivering instructional content and classroom management has a direct relationship on student achievement because of the day-to-day interactions. As teachers are more closely involved with the students, the decisions of the principal, district-level administrators,

and policymakers at the local, state, and federal level all impact student achievement. The aims of this study were three-fold:

- A) to incorporate school-level factors, including teachers, and district-level factors and their impact and effect on student achievement;
- B) to detect if the individual elements are important to schools' academic performance and maintain their importance when they are combined;
- C) to determine the challenges of low performing schools, identifying ways to assist in the preparation of all students in college and career readiness.

### **Dissertation Overview**

The underlying purpose of the dissertation was to examine factors related to North Carolina school performance grades in public K-5 elementary institutions using the school- and school district-level factors through a secondary quantitative analysis. This study explored the teacher and principal characteristics, per-pupil funding, and student demographics across North Carolina. This research is vital to school performance. The grades only use one measurement with two similar data points without regard to the other contributing factors that affect student academic outcomes. This study used data from the North Carolina School Report Cards from the 2015-2016 school year and from the Civil Rights Data Collection from the same school year. These datasets allowed me to explore the identified outcome variable and factors that were used in Level 1 and Level 2 of the model.

This dissertation will be presented in five chapters. Chapter 1 included a brief overview of the research study, problem statement, purpose, research questions and proposed methodology. In Chapter 2, a review of the existing research on federal

educational policies, North Carolina policies, and school district implementations will be discussed. Additionally, this study addressed principals' and teachers' preparation, certification, and responsibilities. Moreover, this research identified connections surrounding problems and gaps. The theoretical framework was presented and explained more thoroughly and with how it correlates with this study. Chapter 3 focused on the methodology this research used and described the chosen data sets. It included the definition of the variables, research methods, data procedures, and analysis methods. Chapter 4 clarified the results from the research study and presented the analysis. The analysis reviewed each research question. Lastly, in Chapter 5, the findings illustrated concrete answers to each research question. The provided recommendations and directions for future research are based on the results of this study.

### **Definition of Key Terminology**

The following terms are significant to the study:

Advanced Degree (Teachers): Teachers who have a degree higher than their bachelor's degree (North Carolina School Report Cards, n.d.)

Advanced Degree (Principals): Principals who have a degree beyond their master's degree (North Carolina School Report Cards, n.d.)

Beginning Principals: Principals with fewer than three years of principal experience (North Carolina School Report Cards, n.d.)

Beginning Teachers: Teachers with fewer than three years of teaching experience (North Carolina School Report Cards, n.d.)

College and Career Readiness: When a student graduates from high school and is prepared to succeed in any college or career opportunities without remediation (Conley, 2012)

Common Core State Standards: A set of college and career ready English Language Arts and Mathematics standards for Kindergarten through 12<sup>th</sup> grade developed by educational leaders from different states to provide uniformity (Common Core State Standards Initiative, 2019)

Does not Meet Growth: When a school's average amount of growth is less than the average amount of growth made by students within the same grade and subject across the state for a given year (North Carolina School Report Cards, n.d.)

Exceeds Growth: When a school's average amount of growth is greater than the average amount of growth made by students within the same grade and subject across the state for a given year (North Carolina School Report Cards, n.d.)

EVAAS: Accountability model used in North Carolina to determine the teachers and schools' effectiveness for the students assigned to them (NCDPI, n.d.)

Fully Licensed Teachers: Teachers who have met all education and testing requirements in North Carolina (North Carolina School Report Cards, n.d.)

Low performing schools: Schools where less than half of the student population demonstrates proficiency or growth on the End of Grade tests (North Carolina Public Schools, 2018)

Meets Growth: When a school's average amount of growth is consistent with the average amount of growth made by students within the same grade and subject across the state for a given year (North Carolina School Report Cards, n.d.)

**National Board Certification:** A voluntary advanced teaching credential that goes beyond state licensure and are identified as accomplished teachers by National Board for Professional Teaching Standards (North Carolina School Report Cards, n.d.)

**One Year Teacher Turnover Rate:** The percent of teachers who leave a school after one year (North Carolina School Report Cards, n.d.)

**Percentage of English Language Learners:** The institutional percentage of students who are identified as English Language Learners or have limited English proficiency (Civil Right Data Collection, n.d.)

**Percentage of White Students:** The institutional percentage of White students enrolled (Civil Right Data Collection, n.d.)

**Proficiency:** When a student score a 3, 4, or 5 on End of Grade or End of Course test (NCDPI, n.d)

**Per Pupil Funding:** The amount of money spent on an individual student in a school regardless of the sources of the funding (North Carolina School Report Cards, n.d.)

**Principal Turnover Rate:** Percentage of principals who do not return to the same school after one year (North Carolina School Report Cards, n.d.)

**Read to Achieve Student Proficiency:** Percentage of students who read at or above grade level in 3<sup>rd</sup> grade (NC School Report Cards, n.d.)

**School Performance Grades:** The grade from A – F that measures how well a school is doing based on 80 percent of the school’s achievement scores and 20 percent of the students’ growth (North Carolina School Report Cards, n.d.)

Student Growth: The amount of academic progress students gain or lose during the course of one academic year (NCDPI, n.d.)

Student Attendance: The percentage of students who attend school daily (North Carolina School Report Cards, n.d.)

Students with Disabilities: The institutional percentage of students who are served under the Individuals with Disabilities Education Act (IDEA) (United States Department of Education, n.d.)

Teacher Attendance: The percent of teachers who are absent more than 10 times during one school year (Civil Right Data Collection, n.d.)

Title I: Schools who receive funding to meet the educational needs of low-achieving students in high-poverty schools (United States Department of Education, 2004).

Veteran Principals: Principals who have more than 10 years of principal experience (North Carolina School Report Cards, n.d.)

Veteran Teachers: Teachers who have more than 10 years of teaching experience (North Carolina School Report Cards, n.d.)

## **CHAPTER 2: LITERATURE REVIEW**

This research explores school-level and school district-level factors pertaining to overall school performance grades. This study is necessary as the calculation of the North Carolina school performance grades only uses one data point: End of Grade or End of Course testing. This one data point looks at the number of students in each school who pass each test out of the total number of students. Additionally, this grade considers how students perform compared to how they were expected to perform based on their standardized testing history.

This chapter will review relevant research related to educational policies passed by the United States, North Carolina, and each local school district. The prior research will provide a historical perspective on state and federal legislation and how these policies affect school-level personnel, including principals and teachers. A critique of the literature will identify gaps, conflicting perspectives, and reasons for why this research is imperative. The theoretical framework will be described in more detail and how it will be utilized in this research. This chapter supplies an outline for the design and of the methodology for this dissertation.

### **United States Educational Reform Policies**

North Carolina school performance grades assess how well each school performs based on student achievement data using the End of Grade or End of Course test (North Carolina Public Schools, 2015). North Carolina revamped its accountability standards more closely with the Common Core State Standards by the 2014-2015 year (Hess & McShane, 2014). The new accountability model was an agreement embedded in the adoption agreement for Common Core (Hess & McShane, 2014). The design of



accountability was to fix the flaws of No Child Left Behind (Hess & McShane, 2014). National educational policies influence each state's ability to educate its students. States are required to interpret and implement federal educational policies and adjust their state's policies. Understanding national education policies and how often they shift because of the political party that is in control in the Senate, the House of Representatives, and as the President determines the direction of the states and not effective teaching practices (Darling-Hammond, 2010).

Before this time, states controlled their educational systems. The federal government gathered and evaluated data from schools; they were not involved in establishing programs or providing funding for public schools (Vinovskis, 2019). The Supreme Court case of *Brown v. Board of Education of 1954* overturned *Plessy v. Ferguson* declared that separate but equal for children in public schools was unconstitutional. The court's ruling was the reason why the federal government became involved in educational policies ten years later (Pelsue, 2017). The federal government was minimally involved in education until 1965 with President Lyndon B. Johnson (Jeffrey, 1978; Pelsue, 2017; Vinovskis, 2009). From that point until now, the federal government tries to create, revise, and enforce educational policies to improve the academic outcomes of all students.

President Lyndon B. Johnson passed the Elementary and Secondary Education Act (ESEA) of 1965 as a foundational policy to attack the "War on Poverty" (Jeffrey, 1978, p. 3). The revelation of extreme economic disparities made the development and passing of ESEA vital. ESEA was the first time the federal government allocated money for education, focusing on educating the poor (Jeffrey, 1978). Poverty was the catalyst for

change as the president and Congress believed this policy would eliminate poverty in ten years (Vinovskis, 2009). President Johnson believed providing education would reverse poverty and give citizens skills and opportunities to earn wages and change their future (Jeffrey, 1978).

In addition to eradicating poverty, another goal of ESEA was for all students to have equal opportunities through multiple programs such as Title I funding, Title V, and Head Start (Vinovskis, 2009). Title I is a federal funding program designed for disadvantaged school-aged children (Vinovskis, 2009). The purpose of Title V funding was to strengthen state education agencies so they can provide direction and guidance to local school districts (Vinovskis, 2009). The creation of Head Start programs provided early childhood opportunities for children in poverty (Vinovskis, 2009). Other components of ESEA included Title II, Title III, and IV. Title II focused on literacy by establishing grants to ensure students had access to library books (Jeffrey, 1978). “Title III set up supplementary education centers to furnish educational programs and services unavailable in local schools” (Jeffrey, 1978, p. 77). The purpose of Title IV was to support “regional centers of research” (p. 77) and provided funding for departments of education at the state level (Jeffrey, 1978).

Title I received the most funding compared to the other parts of ESEA. The primary goal of Title I was to provide funding to schools with high concentrations of students living in poverty and special education (Jeffrey, 1978). In order to give opportunities to low-income students, the money was designed to increase and enhance educational programs (Jeffrey, 1978). The school districts decided which programs to create and implement as long as they met the criteria set by the federal government

(Jeffrey, 1978). Even though money was allocated to schools and state educational agencies, the funding did not provide schools with direction for its effectiveness (Vinovskis, 2009). ESEA is a prime example of how providing extra funding without oversight does not equate to equitable academic outcome changes for students. Even though the goals of ESEA were ambitious, this policy did not meet their goal by the anticipated deadline, and it has still not met these goals presently.

Following President Johnson's tenure, President Carter expressed his concern for the federal government's increased involvement in education, so he along with Congress authorized the establishment of the Department of Education (Vinovskis, 2009). President Reagan did not agree with the role of the Department of Education; he spearheaded the reduction of funding and several programs that the Department of Education oversaw (Vinovskis, 2009). Because of the controversy between the Democrats and Republicans about the federal government's role in education, the Secretary of Education, Bell, commissioned an independent entity to create a report of the state of education in the 1980s (Vinovskis, 2009). The report *A Nation at Risk: The Imperative for Educational Reform* was released in 1983 (Vinovskis, 2009). While Bell's intended outcome was to demonstrate the relevance of the Department of Education, the construction of the independent counsel and their analysis of public education revealed the challenges faced by schools and school districts. The rationale behind this report was to assess the problems of public education and provide recommendations. It divided people into two groups: those who believed the report only presented the negative outlook and those who believed its authenticity (Vinovskis, 2009).

*A Nation at Risk: The Imperative for Education Reform* identified 13 indicators for risk. These indicators included deficiencies in literacy, both reading and technological, international and college entrance testing, and academic preparedness in reading, mathematics, and science concerning college or career preparedness following high school (National Commission on Excellence in Education, 1983). As a result of these risks, the National Commission on Excellence in Education concluded that the high school and college graduates of the 1980s were less prepared than those who graduated more than 25 years earlier (1983). The findings for *A Nation at Risk* criticized the underwhelming expectations and opportunities schools had for their students. These findings addressed content, expectations, time, and teaching (National Commission on Excellence in Education, 1983). Specific results included that all students do not have access to rigorous courses, and the majority of students who had access did not enroll in these classes. Students spent more time in classes that prepared them for living instead of classes that developed their critical thinking skills. Additional findings stated that students spent less time in school than their peers in other countries, teacher preparation program candidates were not the most qualified candidates, and these programs focused on pedagogy more than the content (National Commission on Excellence in Education, 1983). This conclusion took into consideration that a fewer number of students graduated from both high school and college previously (National Commission on Excellence in Education, 1983); however, it did not consider underlying institutional or societal factors such as poverty and access to equal opportunities.

*A Nation at Risk* did not assess the state of education in the 1980s without providing recommendations for improvement. These recommendations addressed each of

the significant categories specified in the findings. The proposals for the content areas defined general objectives that each subject area should teach to increase academic preparedness (National Commission on Excellence in Education, 1983). A discussion was surrounding grades and college admissions in the recommendations section for standards and expectations. These suggestions included increasing college admissions standards, using grades as a gauge for students' understanding of the content, and having appropriate instructional resources for proper teaching of the curriculum (National Commission on Excellence in Education, 1983). Time recommendations proposed extending the school day and the school year in conjunction with implementing attendance policies (National Commission on Excellence in Education, 1983). Teacher recommendations focused on the recruitment and retention of quality teacher candidates in preparation programs and teachers in schools (National Commission on Excellence in Education, 1983). The final recommendation advocated for leadership and financial support (National Commission on Excellence in Education, 1983). These recommendations encouraged principals and superintendents to lead their schools and school districts respectively. These proposals urged leaders to use their finances effectively to educate students and follow national reform suggestions and meet the needs of the different student populations they serve (National Commission on Excellence in Education, 1983).

Several recommendations were implemented with positive responses from school districts and are still significant across the United States. These recommendations included increased graduation rate requirements, standardized testing in the form of competency exams, and teacher merit pay (Vinovskis, 2009). Educational rankings were

also developed based on the college admissions standardized test and the percentage of college-bound students (Vinovski, 2009). The data collected from college entrance exams is one of the first versions of college and career readiness. Even though all states do not use all of these recommendations, their influence is prevalent across the United States. Some of these recommendations sought to improve student academic achievement and reduce the gaps between the advantaged and disadvantaged students. However, the expected outcomes were not met by the anticipated end in 1990 (Vinovskis, 2009). Many of the expected results are still not resolved today. The academic proficiency gap between advantaged and disadvantaged students is still the current challenge throughout the United States. With all of the changes needed to reverse the course of education, *A Nation at Risk* fueled ongoing educational reforms (Vinovskis, 2009).

Following President Reagan's tenure, education became a focal point for the next president; nevertheless, his leadership tactics changed. President George Bush voiced his support for school choice and Head Start, but he did not speak to overall challenges faced by public school students that were pointed out by *A Nation at Risk* (Vinovskis, 2009). Initially, educational goals for the nation were not his priority. Despite President Bush's original position, he changed his approach when his ratings among the American people were not as high as he anticipated (Vinovskis, 2009). Consequently, the president and the National Governors Association met, which led to the development of six national education goals at the Charlottesville Education Summit (Vinovskis, 2009). These goals were presented during the State of the Union Address by President Bush in 1990 (Vinovskis, 2009). The six goals of the Charlottesville Education Summit were:

- All children in America will start school ready to learn.

- The high school graduation rate will increase to at least 90 percent.
- American students will leave grades 4, 8, and 12 having demonstrated competency in challenging subject matter, including English, mathematics, science, history, and geography. Every school in America will ensure that all students learn to use their minds well so that they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.
- United States students will be the first in the world in science and mathematics achievement.
- Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise their rights and responsibilities of citizenship.
- Every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning. (as cited in Stedman & Riddle, 1992, pp. 6-7)

Similar to *A Nation at Risk*, the National Education Goals were aligned to the previous report's recommendations. The national education goals gave federal and state agencies more time to increase high school graduation rates and demonstrate proficiency in academic content areas. The target to meet these six goals was the year 2000, except a concrete plan was not outlined by the governors and Congress (Vinovskis, 2009). The national education goals did not generate any movement under President Bush's leadership because Congress remained in strife about setting these goals and providing resources to fulfill them (Vinovskis, 2009). This battle presented false hope to states and local educational agencies who desired to improve students' outcomes.

Furthermore, President Bush sought to establish a new initiative in 1991 called America's 2000 plan (Vinovskis, 2009). The major components of this plan were not only to mobilize grassroots efforts for local citizens so they could improve their local schools, but also emphasize curriculum standards and national testing (Vinovskis, 2009). Despite the proposal of these ideas, Congress did not pass this policy (Vinovskis, 2009). Therefore, the Department of Education executed parts of the plan that did not require legislative approval (Vinovskis, 2009). The Democrats used some of this policy to create another version (Vinovskis, 2009). The conflict between the political parties stalled educational reform policies, and the previous reform remained.

Educational policies are up for debate when a new president takes office who is not a member of the same controlling political party in Congress. President Bush served only one term, making it difficult for any educational policy revisions to occur. President Clinton was elected for the next eight years, and he intended to institute a new educational reform policy and reauthorize ESEA (Vinovskis, 2009). Goals 2000 was Clinton's educational reform policy. The foundation of Goals 2000 used components of Bush's America's 2000 Plan and the National Education Goals (Vinovskis, 2000). It is no coincidence that President Clinton pushed to pass Goals 2000: Educate America Act given that he was one of the governors who developed the National Education Goals (Vinovskis, 2000). Educational reform was not a priority of the previous administration.

Under President Clinton's tenure, several education bills passed. These bills included: "Goals 2000: Educate America Act; Improving America's Schools Act; National Service Trust Act; Student Loan Reform Act; and the Schools-to-Work Opportunities Act" (Vinovskis, 2009, p. 87). The intended outcome for Goals 2000 was



to shift educational reform policy from bridging the gap between advantaged to disadvantaged students to making improvements for all students (Vinovskis, 2009). Goals 2000 became the framework for educational reform instead of focusing on specific areas of need (Vinovskis, 2009). Under Goals 2000, each state was responsible for developing curriculum standards, corresponding state assessments, and a plan to assist failing schools (Vinovskis, 2009). Ninety percent of the states participated in the Goals 2000 requirements; not all participants submitted their plans for review (Vinovskis, 2009). Many states and school districts that did not provide their information were not penalized, which allowed them to continue educating their students without accountability (Vinovskis, 2009). This lack of accountability made it challenging to compare education data among the states (Vinovskis, 2009). The assessments were not reviewed for alignment to the curriculum, but the policy checked the box, indicating that the tests were created (Vinovskis, 2009). Goals 2000 sought to provide rigorous curriculum standards and assessments for all students within each state, which is the foundation of Common Core State Standards that tried to develop curriculum standards for all states.

President Clinton focused on passing Goals 2000 before reauthorizing the 1965 Elementary and Secondary Education Act [ESEA] (Vinovskis, 2009). Legislation renamed ESEA as the Improving America's Schools Act (IASA) in 1994 (Vinovskis, 2009). Under IASA, the accountability for each state increased through the implementation of reading and math standardized tests; however, testing was not slated to begin until the 2000-2001 school year (Vinovskis, 2009). Standardized tests determine how well teachers understood and taught the curriculum standards to their students. The lapse in time between implementing the curriculum standards and the standardized test

students took delayed any changes states needed to make to their curriculum or instructional changes because feedback did not exist. Additionally, state assessments were required according to the IASA but not enforced, as many states did not comply or lost funding (Vinovskis, 2009). The period between the reauthorization of IASA in 1994 and the official implementation of standardized testing complicated accountability for curriculum standards. One challenge at the time was President Clinton was not guaranteed reelection. If he had not been reelected and the new president did not agree with the existing policies, another reform would have been possible. The passing of both education policies made it difficult for anyone to distinguish the effects of each bill had on schools and student outcomes (Vinovskis, 2009).

Succeeding President Clinton, educational policies were in flux again because of the uncertainty of the identity and party affiliation of the next president. President George W. Bush became president for two terms. President G.W. Bush's gubernatorial achievements were high in Texas; he used his experience to overhaul the national educational system (Vinovskis, 2009). President G.W. Bush formed teams and appointed advisors to ensure his educational policies were developed and revised to get the approval of Congress (Vinovskis, 2009). Approximately one year after being elected, No Child Left Behind was established (Vinovskis, 2009). Unlike President Clinton, No Child Left Behind was the critical component of the reauthorization of ESEA (Vinovskis, 2009). The key provisions of No Child Left Behind included: annual statewide testing in reading and mathematics for grades 3-8, mandating academic improvement for all students and increased requirements for all schools who failed to meet the requirements, highly qualified status for teachers at Title I schools, funding for reading programs for students

in kindergarten through third grade, and additional funding to assist with reading proficiency for students from ages 3-5 in low-income neighborhoods (Vinovskis, 2009). All mandates began during the 2005-2006 school year (Vinovskis, 2009).

With the mandates of No Child Left Behind, states found it challenging to meet the demands based on their student populations, such as with special education and English Language Learners (Vinovskis, 2009). Many states found No Child Left Behind inflexible as they tried to meet students' academic needs and meet the goal for all students to demonstrate proficiency by the given timeframe. An increase in the percentage of special education students who qualified to take an alternative test was one modification made by No Child Left Behind (Vinovskis, 2009). Even though the population of English Language Learners had steadily increased, these students' provisions were not addressed directly (Vinovskis, 2009). Additional modifications were made out of necessity because of natural disasters. No Child Left Behind was scheduled for reauthorization in 2007; however, the conflicts between Congress prevented this from happening (Vinovskis, 2009).

The Obama administration enacted the Every Student Succeeds Act in 2015 to provide clarity to No Child Left Behind (U.S. Department of Education, n.d.). According to the U.S. Department of Education (n.d.), Every Student Succeeds Act had the following components:

- Advanced equity by upholding critical protections for America's disadvantaged and high-need students.

- Required—for the first time—that all students in America be taught to high academic standards that will prepare them to succeed in college and careers.
- Ensured the vital information is provided to educators, families, students, and communities through stateside assessments that measure students' progress toward those high standards.
- Helped to support and grow local innovations—including evidence-based and place-based interventions developed by local leaders and educators—consistent with our Investing in Innovation and Promise Neighborhoods.
- Sustained and expanded this administration's historic investments in increasing access to high-quality preschool.
- Maintained an expectation that there will be accountability and action to affect positive change in our lowest-performing schools, where groups of students are not making progress, and where graduation rates are low over extended periods of time. (ESSA Highlights, para. 1).

One of the significant differences President Obama made with ESSA was increased flexibility for states to meet the needs of their students (U.S. Department of Education, n.d.). This administration's concern focused on equity and quality instruction (U.S. Department of Education, n.d.).

Under the Trump administration, the education policies set in place for students from the Obama administration were rescinded. The Secretary of Education reversed the policy recommendations for transgender students and students of colors regarding bathroom policies and discrimination regarding discipline (Turner, 2020). The

justification for this reversal was to put the responsibility of education policy back in the hands of state and local governments so that the federal government relinquishes control (Turner, 2020). One of DeVos' primary goals was to expand charter schools and school choice for families (Turner, 2020). It was under this administration that schools faced challenges with the coronavirus. Because of the uncertainty of the virus, schools transitioned to a virtual teaching and learning model, and the federal government waived state standardized testing requirements (Turner, 2020). This means no student took any end of year standardized test in Spring 2020. Even though the coronavirus infection rates have fluctuated, the federal government pushed for all students to return to school face-to-face during the 2020-2021 school year (Turner, 2020).

Overall, all of these federal educational policies are created by lawmakers (Vinovskis, 2009), but these creators do not necessarily have any experience in education. The expectation for these policies is states and school districts execute these laws even if they are not clearly defined. The term limits of Congresspeople and the President vary; sometimes these officials are not in office to see the outcome of the policies (Vinovskis, 2009). The changes make it challenging for new politicians as they strive to create new educational policies (Vinovskis, 2009).

### **North Carolina Educational Policies**

North Carolina was one of the first states to pilot an educational model for incentives and has been one of the leading models for other states implementing accountability programs (Kennedy Manzo, 2001; Ladd & Zelli, 2002). In 1992, the North Carolina State Board of Education approved the Performance-Based Accountability Program (North Carolina State Board of Education, n.d.). North Carolina developed and

legalized “the School-Based Management and Accountability Program,” commonly referred to as the ABCs in 1996-97 (North Carolina Public Schools, 2012). The purpose of the ABCs model was “to hold schools *Accountable* for *Basic* skills of reading, math and writing, while giving local districts and schools more operational *Control*” (Ladd & Zelli, 2002, p. 495). This model used the calculated overall growth scores based on the End of Grade Reading and Mathematics exams between kindergarten and 8th grades, and the 4th-grade Writing test (North Carolina Public Schools, 2012). Financial incentives were associated with the ABCs model (Ladd & Zelli, 2002). Teachers and teacher assistants who worked at schools that achieved exemplary growth received \$1000 and \$500 bonuses respectively (North Carolina Public Schools, 2012). Starting with the 1997-98 school year, North Carolina identified low performing schools using the criteria of less than 50% of the student population demonstrating proficiency on their end of year state testing and not meeting their growth expectations (North Carolina Public Schools, 2012; Public Schools Forum of North Carolina, 2018).

Additionally, the state deployed assistance teams to schools identified as low performing following the inaugural year (North Carolina Public Schools, 2012). Between 1998 – 2005, school districts were required to create and submit a school improvement plan for their low-performing schools (Public Schools Forum of North Carolina, 2018). This plan was required even though all schools did not receive an assistance team (Public Schools Forum of North Carolina, 2018). The ABCs accountability model was expanded to include high schools by only focusing on the overall growth scores of five End of Course exams (North Carolina Public Schools, 2012). The addition of the student growth measurement was used to meet the legislative requirement stated by Senate Bill 1139

(North Carolina Public Schools, 2012). The ABCs model was refined to meet the needs of North Carolina's public schools. This accountability model made significant adjustments to comply with the federal education legislation of No Child Left Behind in 2002 (North Carolina Public Schools, 2012). According to North Carolina's General Statute 115C-105.35, schools only used the end of school year test data to determine if schools were closing the student achievement gap (North Carolina Public Schools, 2012). This data was disaggregated further to include Adequate Yearly Progress (AYP) (North Carolina Public Schools, 2012). The growth measurements were revised and implemented during the 2005 – 2006 school year.

Based on schools' performances using the current accountability model, schools were targeted for further assistance if they were not demonstrating proficiency. Furthermore, high schools whose proficiency scores were under 60% for two consecutive years participated in North Carolina's High School Turnaround Initiative program (Public Schools Forum of North Carolina, 2018). While middle schools were added to the turnaround program the following year, low performing elementary schools did not join the initiative until 2010 (Public Schools Forum of North Carolina, 2018). During the 2010-11 school year, Annual Measurable Objectives (AMO) replaced AYP (North Carolina Public Schools, 2012). The Race to the Top grant was also received to target the lowest-performing schools in the state (Public Schools Forum of North Carolina, 2018).

In 2012, North Carolina transitioned from the ABCs accountability model to the READY model simultaneously with Common Core State Standards (Common Core State Standards Initiative, 2012; Public Schools Forum of North Carolina, 2018). The accountability model and the curriculum standards were both new to North Carolina

teachers. The purposes of the READY model are “diagnosing student learning to ensure students are on track academically and providing school accountability” (North Carolina Public Schools, 2010, para. 2). This model focuses on measuring college and career readiness of students across the state using five indicators (North Carolina Public Schools, 2010). These indicators include: “student performance (end of grade/end of course assessments, measures of college and career readiness, student academic growth, the five-year cohort graduation rate, and the rigor of students’ high school mathematics course selections” (North Carolina Public Schools, 2010, p. 2).

The READY model uses the Educational Value-Added Assessment System (EVAAS) to determine school growth based on the students’ outcome on the End of Grade or End of Course scores (Public Schools Forum of North Carolina, 2018). The goal of the EVAAS model is to determine teachers’ and schools’ effectiveness for teaching the students assigned to them (North Carolina Public Schools, n.d.). The EVAAS model classifies schools and teachers using three labels: exceeded growth, met growth, or does not meet growth (Public Schools Forum of North Carolina, 2018). Under the EVAAS model, the label “exceeds growth” means that students performed better than they were expected based on their prior standardized testing scores (North Carolina Public Schools, 2013). The label “meets growth” means that students performed as they were expected based on their prior standardized testing scores (North Carolina Public Schools, 2013). The label “does not meet growth” means that students performed worse than expected based on their prior standardized test scores (North Carolina Public Schools, 2013).

Furthermore, the North Carolina legislation (G.S. § 115C-83.15) decided to include a grade of A-F on the schools’ report cards beginning in the 2015-16 school year



(North Carolina Public Schools, 2015). Grades are solely based on the End of Grade or End of Course composite scores for reading and mathematics. The calculation for the North Carolina school performance grade is 80% of the school's proficiency and 20% of the school's growth (North Carolina Public Schools, 2015). The EVAAS model determines school growth (North Carolina Public Schools, 2015). Proficiency is defined as a student earning a 3, 4, or 5 on a scale of 1-5 on the End of Grade or Course tests (North Carolina Public Schools, 2015). A score of 3 means the student is on grade level, and a score of 4 or 5 means the student is college or career ready (North Carolina Public Schools, 2015). Students who score a 4 or 5 demonstrate mastery in that grade and subject. The school's proficiency is determined by the percentage of all of the students who received a score of a 3, 4, or 5 on the reading and mathematics end of grade test out of the total number of students who took the test. The school's growth is "determined by comparing the amount of growth made" by the students in the school "to the average amount of growth made in that grade or subject" across the state (North Carolina Public Schools, 2013). The grading scale for school performance grades is based on a 15-point scale for each letter grade except for earning a F, which is below 40 only during its inaugural year (North Carolina Public Schools, 2015). Starting with the 2014 – 2015 school year, the grading scale was reduced to a 10-point scale increasing the range for earning a F (North Carolina Public Schools, 2015). Recently, the North Carolina General Assembly passed House Bill 362 to restore the school performance grading scale to a 15-point scale (Hui, 2019).

In addition to the passing of the school performance grades legislature, the North Carolina General Assembly implemented the Read to Achieve Program (N.C.G.S. §

115C-83, 2012). This program aims to identify the reading status of all elementary students and determine the appropriate interventions for each student (N.C.G.S. § 115C-83). According to the North Carolina General Assembly (2012), all students will demonstrate reading proficiency by the end of 3rd grade (N.C.G.S. § 115C-83). The belief is that students who prove they can read at or above grade level are college and career ready in the future (N.C.G.S. § 115C-83, 2012). Screening for all students occurs in Kindergarten, and they are assessed multiple times yearly to track their reading progress (N.C.G.S. § 115C-83, 2012). The 3rd grade End of Grade test is the primary measure to determine reading proficiency (N.C.G.S. § 115C-83, 2012). This specific program coincides with school performance grades. Third grade is the first-year state standardized testing is used, and it is the first year the student's performance determines the effectiveness of the school's academic performance. School performance grades calculate the school's grade based on 3rd-8th grade reading and mathematics scores. The challenge with the Read to Achieve program and the school performance grade lies with students who attend schools with low reading proficiency scores. The students who attend these schools do not meet the Read to Achieve benchmark and not passing the End of Grade test, resulting in failing test scores. Since the inception of this policy, the state's average 3rd-grade reading proficiency percentage on the End of Grade testing has dropped from 60.2 in the 2013-14 school year to 55.9 (Hui, 2019). North Carolina believes it must do a better job providing school districts with guidance to implement their reading summer camps (Hui, 2019), which is only a small part of this legislation. Once again, this is another example of state legislation that has not translated into

positive student achievement outcomes as the policies are created but the government is not required to provide the resources (Welner & Carter, 2013).

North Carolina schools were impacted greatly by the coronavirus pandemic. Governor Cooper closed schools beginning March 23, 2020 through May 15, 2020 after previously closing schools for two weeks (Martin, 2020). Schools transitioned to using a virtual learning model or did not fully participate in school because of the internet concerns. Once the 2019-2020 school year ended, Governor Cooper announced that all schools would reopen under Plan B where students where attend school on a modified schedule, wearing a mask and maintain social distance (WBTV Web Staff & Miller, 2020). He also allowed school districts to decide if Plan C would be best for their students which allowed them to continue virtual learning (WBTV Web Staff & Miller, 2020). Elementary students returned to school on Plan A after Governor Cooper informed school districts that K-5 schools could in October 2020. (North Carolina, 2020). The families still had the option of offering a virtual school option for families. Following this, each school district made a decision that was in their best interest. Many schools who were once in person under Plan B for middle and high school and Plan A for elementary schools returned to a virtual learning model because of the rising number of coronavirus cases for the Christmas season. Since then, several school districts have returned to Plan A for elementary schools and Plan B for middle and high schools. These decisions were made by local school boards.

As of February 2021, Governor Cooper informs North Carolina schools that it is safe to reopen (Duncan, 2021). Approximately 90 school districts are currently using some form of in-person instruction (Duncan, 2021). Currently, Senate Bill 37 is

controversial for North Carolina as it seeks to allow exceptional children five days of in-person instruction (WBTV Web Staff & Associated Press, 2021). This would make these students and school all fall under Plan A (WBTV Web Staff & Associated Press, 2021). This is a problem because middle and high schools are still operating under Plan B (WBTV Web Staff & Associated Press, 2021). Additionally, some schools have more exceptional children than others meaning the increase in student numbers would prevent social distancing. This is policy is another example of how the implementation process has not been thought about even though policymakers back the policy.

### **Community Factors**

Educational reform is not the only policy that affects schools and student academic achievement. “Health, housing, nutrition, safety, and enriching experiences” (p. 3) also affect learning (Welner & Carter, 2013). The communities in which each school district and school serves influence educational outcomes. “Educational disparities and intergenerational economic inequalities are highly correlated with skin color, ethnicity, linguistic, and social class” (Welner & Carter, 2013, p. 1). It is school funding that dictates school district boundary lines and which students attend schools together. Financial disparities exist between and within school districts as they are primarily based on “local property taxes and state grant-in-aid” (Darling-Hammond, 2013, p. 78). Schools surrounded with high value properties receive more money than those schools in lower value neighborhoods (Darling-Hammond, 2013; Ladson-Billings, 2013). School districts are affected by the funding disparities. When the amount of tax money is decreased, the amount of money available for and the quality of education decreases (Anyon, 2005). Resources are not distributed equally among schools. Schools with more instructional

needs cannot sustain themselves with equal funding (Darling-Hammond, 2013). Differences in funding are not based on the highest needs or the services of the students within the school districts (Darling-Hammond, 2013). These schools need “language supports, more extensive special education services, remedial education, constant training and supervision of new teachers because of rapid turnover, social work and counseling for students from severely troubled families, health emergencies, frequent moves and school transfers in mid-year” (Darling-Hammond, 2010, pp. 21-22). Low-income schools tend to have less access to quality resources including teachers, instructional materials, technology, and often have older buildings (Orfield, 2013).

In addition to the funding a school receives, housing policies and discrimination shapes where families live, what schools they attend and the demographics of the school community (Orfield, 2013). Housing discrimination prevents families of color from moving into certain neighborhoods and having access to high performing schools regardless of their income (Orfield, 2013). Zoning specifications prevent the building multiunit housing complexes in desirable neighborhoods or single-family homes in lower income communities because of lot size (Orfield, 2013). These multiunit complexes were originally federally funded; now subsidized housing is available through the private sector with the challenge still being these homes are still located in lower income neighborhoods (Orfield, 2013). Because of the policies used to perpetuate subsidized housing, it intensified the clustering of schools with higher concentrations of students of color from low-income families (Orfield, 2013). Lower income neighborhoods are exposed to increased unemployment or underemployment, less rigorous schools, higher crime rates, lack of transportation, and fewer college educated residents which propels a

cycle of concentrated and generational poverty (Orfield, 2013). These socioeconomic challenges affect student achievement (Knoester & Au, 2017).

Schools measure concentrated poverty based on the percentage of students who receive free and reduced lunch (U.S Department of Education National Center for Educational Statistics, 2020). A school is considered high poverty when at least 75% of the students receive free and reduced lunch (U.S. Department of Education National Center for Educational Statistics, 2020). This concentration of poverty, along with the social issues, cause the property values to remain low which leads to less available money for their schools (Orfield, 2013). According to Weimer and Wolkoff (2001), the addition to free and reduced lunch percentages decreases the standardized test score in ELA by approximately 15%. Segregated neighborhoods work in conjunction with school challenges causing students to remain isolated (Orfield, 2013). Isolated schools in separated neighborhoods have historically affected Black families and still affect Black students currently (Rothstein, 2013b). These isolated schools are hard to change because they lack community partnerships and support to aid in students having meaningful in and out of school experiences (Orfield, 2013). These community factors are dictated by local government officials and other institutions who are aware of the areas experiencing success or not.

In addition to housing, school enrollment affects student achievement.

“Enrollments at elementary or secondary schools are restricted to students living in a geographically defined area, usually a small neighborhood near the school” (Huang & Dall’erba, 2020). It is these school enrollment boundaries in addition to the boundaries set by residential areas that impact school quality (Weimer & Wolkoff, 2001). People pay

for quality schools based on location of their home (Owusu-Edusei et al., 2007). Owusu-Edusei et al., (2007) even found that housing values increased when they are located to schools in close proximity. School demographics such as enrollment and racial composition of schools, as well as real estate agents who track the movement of neighborhoods, help facilitate the potential changes within a school (Orfield, 2013). School quality is measured through student test scores (Knoester & Au, 2017). As schools increase in quality through the measurement of their standardized test scores, housing values also tend to increase in the area zoned for those schools which leads to an increase in property taxes (Weimer & Wolkoff, 2001). School improvement through test scores becomes an attractive factor for potential home buyers. Even though the discussion of poverty is traditionally situated in an urban context, rural poverty is also included in this discussion as students face similar education and economic challenges (Chandler, 2014).

Although housing policies affect the people who are able to reside in neighborhoods, people's perceptions regulate the population of each community. When White families and middle-class families of color move out of urban areas and move towards the suburbs causing many inner-city neighborhoods to become desolate, it is defined as White flight (Orfield, 2013; Welner & Carter, 2013). This phenomenon is a major cause of the segregation with cities and reduces the property value of many homes in urban areas as they are not desired by potential buyers. Once this happens and housing values decrease, movement begins to shift back towards the inner-city. Orfield (2013) defines gentrification as "the movement of White and middle-class non-White families into poorer neighborhoods in central cities" (p. 57). The purpose of gentrification is for

well-established families and other entities to invest in these neighborhoods to attract “higher income residents as well as commercial developers” (Orfield, 2013, p. 57). Even though this increases the property values in neighborhood schools, many people may choose not to send their students to those schools because school reform does not change as quickly as the neighborhood (Orfield, 2013). According to Heing et al. (2001), one of the four conditions necessary for effective school reform at the local level requires a “long-term commitment” (p. 289) from all local stakeholders in order for changes to occur within these schools. This long-term commitment for school reform usually takes 5-10 years.

These community factors affect school demographics. Segregated housing equates to segregated schools (Orfield, 2013). Schools with the “weakest social webbing are likely to be concentrated in neighborhoods with the weakest social capital” (Payne, 2008, p. 38). The clustering of students in poverty affects their academic achievements (Darling-Hammond, 2013; Orfield, 2013). According to Jensen (2009), there are four primary risk factors afflicting families living in poverty including:

- Emotional and social challenges
- Acute and chronic stressors
- Cognitive lags
- Health and safety issues (“The Effects of Poverty,” p. 7)

These neighborhoods have higher groups of students who are non-native English speakers, students with disabilities, or students with chronic health challenges (Orfield, 2013). Students living in poverty also experience higher levels of absenteeism because of health challenges or lack of transportation (Jensen, 2009; Rothstein, 2013b). Even



without these diverse student groups, these schools traditionally have lower test scores and higher dropout rates to which chronic absenteeism contributes (Jensen, 2009; Orfield, 2013).

One group of students that represents a large part of in high poverty schools are the non-native English speakers. English learners struggle to understand and comprehend subject matter content, meaning they are less likely to participate (Darling-Hammond, 2013). English learners who engage in conversation would strengthen their vocabulary and comprehension, but it is difficult to meet the needs of these students when their teachers do not receive proper training or adequate professional development (Berry, 2013; Darling-Hammond, 2013; Gandara, 2013). It is imperative for teachers to assist non-native English speakers adjust to their new environments in order for them to be successful, but all teachers do not believe they have the knowledge to do so because money and time is not invested in this area (Gandara, 2013; Payne, 2008). Other teachers do not cultivate a positive learning environment for non-native English-speaking students by lowering their academic expectations of them because the students embrace their cultural identity (Carter, 2013). Students learning English are at a disadvantage as they are placed in regular education classrooms and are expected to learn a new language and the curriculum at the same time (Gandara, 2013). Even if students are proficient in the curriculum in their native language, it is hard to determine the students' level of understanding because of the language barrier (Gandara, 2013). The struggle with learning a new language causes gaps or even stunts the students' acquisition of content knowledge (Gandara, 2013). It becomes difficult to assess what students know because you cannot separate the language from the content knowledge. This is especially difficult

for students in North Carolina as students new to the country, as in less than one year, are only exempt from taking the EOG reading test that year. They are still required to take the EOG mathematics tests which is written in English. Students do not perform well on mathematics standardized tests because it is written in context so students must understand English to solve the problems (Gandara, 2013). Because of these factors, language barriers become academic deficits for some English learners over time (Gandara, 2013). Schools located in lower-income neighborhoods are normally considered transient as students constantly transfer to different school within a school district because parents' challenges with finding or maintaining a job where the salary covers their household's needs (Rothstein, 2013b).

Another group of students largely represented in high-poverty school are students with disabilities. Students with disabilities are two times more likely to live in poverty (Levine et al., 2004; Rabren et al., 2014). Because more students with disabilities live in poverty, this also means they have less access to resources needed to meet their needs (Levine et al., 2004). One of the major resources these students lack is qualified special education teachers as more of a shortage exists in high-poverty schools (Billingsley, 2004; Mason-Williams, 2015). The shortage of special education teachers, especially in low-income schools, means some students may not have a case manager or an overseer of their needs (Levine et al., 2004). Special education teachers are responsible for intense on-the-job training as they are required to assist with assessing and identifying students regardless of their licensure route (Mason-Williams, 2015). One role of special education teachers is to ensure that students with disabilities have an equal chance to learn the curriculum and achieve academic success (Mason-Williams, 2015). These roles and

responsibilities can be overwhelming tasks in addition to supporting students and teachers in the classroom (Mason-Williams, 2015). Special education teachers help decide the necessary accommodations needed for their students to meet their goals (Mason-Williams, 2015). The shortage of special education teachers means many students who need services may not receive them because it is not feasible while being compliant (Billingsley, 2004; Mason-Williams, 2015).

Furthermore, teachers are impacted by the community factors. The number of instructional positions allotted by schools in North Carolina are based on each school's enrollment during the first month of school (North Carolina Department of Public Instruction, 2020). Schools that have lower enrollment than predicted by the state tend to be the schools located in lower-income neighborhoods because people flee these areas (Orfield, 2013; Welner & Carter, 2013). This impacts how many teachers are assigned because the state will remove positions from school with low enrollment and reallocate them to schools exceeding their student enrollment predictions (North Carolina Department of Public Instruction, 2020).

Funding also affects teacher recruitment and retention as well as quality instruction for students (Darling-Hammond, 2013). Teacher turnover is higher at low-income schools as they are more likely to hire teachers with less experience in the classroom or teachers who are not certified (Berry, 2013; Darling-Hammond, 2013; Peske & Haycock, 2006). Teachers leave low-income schools because they are compensated the same as teachers at schools that do not require them to invest more time (Darling-Hammond, 2013). Teachers may be required to increase their class sizes to offset vacancies within their building in addition to learning a new curriculum (Darling-

Hammond, 2013). Because teachers are less familiar with their content area or how to deliver their content effectively, students are more likely to receive diluted and fragmented instruction (Darling-Hammond, 2013; Payne, 2008; Peske & Haycock, 2006). The outcome for diluting the curriculum means that students are less prepared for the required standardized testing and more importantly they are not prepared for the next course (Darling-Hammond, 2013; Payne, 2008). Also, these students do not have access to rigorous courses or other academic programs because the schools struggle to attract and keep the desired teachers (Darling-Hammond, 2013). All of these instructional challenges cause a decline or subpar student achievement (Darling-Hammond, 2013). Schools with high levels of teacher turnover, transient students, and changes in academic programs causes schools to experience constant instability (Payne, 2008).

### **School District Responsibilities**

Even though the federal and state governments create policies, it is the local school districts' responsibility to implement the laws. School district leaders are responsible for hiring qualified principals to lead their schools. It is their job to find suitable candidates that can balance between meeting the school's needs and carrying out the district's vision and goals (Dolph, 2017). School districts that keep the school's culture and individual needs in mind when choosing a principal have a better chance of improving or maintaining student achievement (Dolph, 2017). Leaders of school districts make decisions from the perspective of improving student achievement (Decman et al., 2018). School districts must determine the benefits of retaining their principals and moving them to different schools. Schools with consistent principals provide students and teachers with stability while making the principals more effective (Bloom & Owens,

2011). Many school district leaders face the challenge of meeting the needs of their schools while navigating resistance of change from local stakeholders (Decman et al., 2018). The challenge schools district face is the lack of criteria used to determine the qualities a principal must possess to be successful at a specific school (Palmer, 2018). Because the needs of each school are different, school districts should choose principals whose leadership style fits those needs (Dolph, 2017). Assessing those underlying variables increases the likelihood of matching principals with schools where the principal will stay and have a lasting impact on the stakeholders. Retaining effective principals is a challenge school districts face in hard to staff schools (Snodgrass Rangel, 2018). The definition of principal turnover is when a "principal changes to other schools, districts, or positions as well as exits from the school system altogether" (Snodgrass Rangel, 2018, p. 87). Leaders of school districts move principals who they believe can change the school culture and support the district's vision while keeping the focus on student achievement (Decman et al., 2018). However, schools that experience constant principal turnover find it hard to build relationships and trust among the staff because some of the staff members outlast the principal (Payne, 2008). Once principals are in their roles, schools' districts feel the need to have less oversight over high performing schools. School districts trust that the leaders of each school can hire teachers capable of teaching their students. The districts believe in their principals' increases for schools as their students' academic performance increases (Bloom & Owens, 2011).

Sometimes school districts move principals from successful schools to low performing schools without assessing the principal's skillset. North Carolina even offers principals recruitment supplement bonuses for accepting positions at low-income schools

who have exceeded growth (North Carolina Department of Public Instruction, 2020b). These principals can receive an annual supplement of \$30,000 paid in monthly installments as long as they remain at one of the 40 low performing schools in the state (North Carolina Department of Public Instruction, 2020b). Moving principals is a problem because some district leaders believe the principal will excel at the new school, similar to the old school, without understanding the variables affecting each school (Dolph, 2017). The history of the school and its development is crucial for understanding the underlying problems and needed to develop a plan for success (Duke, 2014). Principals must differentiate between systemic and localized issues. Systemic challenges cannot be changed and will cause a principal to invest time and resources into these challenges that are futile (Duke, 2014). Placing principals in schools where principals are ill-equipped can harm the school, ultimately affecting the students' performance (Dolph, 2017).

Training principals to run different types of schools is essential for both schools and principals to experience success. Principals can be trained to be effective (Bloom & Owens, 2011). The need between what principals learn theoretically, the information they need to know, and how it is practically applied to different types of schools to improve their overall achievement is a challenge that is not addressed during their coursework (Bai & Martin, 2015). Schools are divided into the developmental levels of the students. An elementary principal must be prepared to handle the students as they learn what are their passions and abilities outside of their family (In et al., 2015). The socialization of elementary students in groups settings outside of their families is taught in conjunction with necessary academic skills. Middle school principals must understand how to meet

the needs of children as they are transitioning from childhood to adolescence (In et al., 2015). These principals must balance the wavering needs of their students as they work toward independence while discovering who they are becoming (In et al., 2015). High school principals supervise students as they transition into adulthood and prepare for their careers (In et al., 2015). Even though principals are leading their schools, the needs of their students are vastly different. Training for principals must include experiences in addition to administrative coursework (Dolph, 2017). In addition to the students' developmental needs, principals must understand their students' experiences based on their home lives. All of these experiences collide in a school, requiring principals to lead and provide the students with opportunities for academic and social growth.

Principals are trained to run schools in school administrator graduate programs. Principal preparation programs through colleges and universities are reprimanded for not preparing their students, even though the definition of preparation is ambiguous (Vaughn & Oliveras-Ortiz, 2015). Part of the problem is the discrepancy between theory and practice. In theory, principals are taught to be instructional leaders (Johnson, 2008); however, the principal's reality is determined by the state and local educational laws (Vaughn & Oliveras-Ortiz, 2015). Principals are taught the necessary skills to lead a school but not necessarily how to lead and implement change that results in increased test scores and academic gains (Duke, 2014). A challenge with principal preparation programs is the disconnect between the content taught and the school experiences (Duke, 2014). Several professors teaching these courses have not served as principals, and they cannot provide their students with real experiences because they do not have them (Duke, 2014; Johnson, 2008).

Principals all receive the necessary skills needed to lead their schools; however, their training does not include specific strategies required to turn around low performing schools (Duke, 2014). Principals may need to borrow project management strategies used in business to align their goals and ensure that every initiative works towards improving the school (Duke, 2014). The principals of low-performing schools need to understand the overall academic concern and the contributing factors to the main problem (Duke, 2014). Based on an existing model, “The Theory for Action for leading turnaround school consists of five critical components:

1. Awareness of the problems that must be addressed and the obstacles that must be overcome in order to raise awareness.
2. Understanding why the problem and obstacles exist.
3. Planning that provides the focus and direction necessary to guide action and maximize impact.
4. Competence to lead staff members in addressing the problems and overcoming the obstacles.
5. Commitment to lead staff members in address problems and overcoming obstacles.” (Duke, 2014, p. 81)

Principals face consequences when they do not meet the goals determined by the accountability system (Vaughn & Oliveras-Ortiz, 2015). Once principals are moved to individual schools, the amount of time a principal may be assigned to a particular school will vary depending on their success. If a principal was moved from a high performing school to a low performing school, the principal might only be at the school for a maximum of three years if the school is not demonstrating the success expected by the



district or the state of North Carolina. According to N.C.G.S. § 115C-105.37B, a principal can be removed from their position of a low-performing school after three years under the transformation model for reform (2017). After three years, potentially replacing principals is contradictory to the research that states a principal must be in their role for a minimum of five years before improvements happen (Fullan, 2001). Principals who are at low performing schools are transferred to higher-performing schools to minimize the negative impact on the school and student outcomes (N.C.G.S. § 115C-105.39, 2017). A principal may choose to leave a school because of its unique variables. In any case, principals may be moved from a lack of patience exhibited by the school district or the principal (Dolph, 2017).

Principals who are mentored by principals who have worked in similar school types gives them someone with whom to discuss pitfalls. As beginning teacher support programs require mentoring for teachers in many school districts, principals would benefit from similar mentorship opportunities. Principal mentorship programs do not exist in the same capacity as they do for teachers (Bloom & Owens, 2011). Duke (2014) suggested that principals who lead similar schools form teams to support each other. Grouping principals of comparable schools is vital because of the academic and behavioral struggles of their student population. Principals who have turned a school around can help principals in relatable positions understand how to use their resources.

Additionally, principals have to present and defend their decisions to the superintendents of their school district. If their superiors have not been in similar positions, it may be difficult for the principal to convey these challenges. Having a mentor principal may assist with explaining problems and solutions to others who are

unfamiliar with turning around a low-performing school. Some principals need support in “communication, laws and policies, education curriculum and models and mutual support” (Bai & Martin, 2015, p. 1240).

### **School Level Factors**

At the school level, teachers have a direct connection between the principal and the students. It is the teacher who is responsible for the instruction of the curriculum and the standards (Draper, 1950). New teachers have difficulty implementing new instructional ideas while learning how to be the leader of their classrooms (Draper, 1950; Tricarico & Yendel-Hoppey, 2012). In most situations, beginning teachers have to figure out how theory and practice meld without the assistance of the university's personnel (Good & Bennett, 2005). Successful new teachers must find ways to engage with their colleagues, plan with their students' needs in mind, be open to feedback, learn and implement that state's standards and implement effective classroom management strategies (Tricarico & Yendel-Hoppey, 2012). Beginning teachers must learn how to balance the information they were taught in their teacher preparation program, if they took the traditional route, along with the reality of working in a school. Mentoring meetings between veteran teachers and new teachers help reduce teacher turnover (Good & Bennett, 2005).

Beginning teacher support programs and mentoring are vital components for new teachers' success. Mentoring programs have state guidelines to meet, but this program allowed the mentors and first-year teachers to drive their conversations and professional development based on the first-year teachers' needs (Good & Bennett, 2005). In North Carolina, each beginning teacher is assigned a teacher who meets the requirements.

According to § 115C-300.1, mentor teachers must have ratings of at least proficient on their teacher evaluations, but teachers with accomplished or distinguished ratings must be considered first. Some beginning teachers struggle with taking advice from their colleagues because of conflicting ideas and personalities (Tricarico & Yendel-Hoppey, 2012). These conflicts cause beginning teachers to feel isolated and not supported, which is additional stress as the teachers should focus more on the students' academic outcomes (Tricarico & Yendel-Hoppey, 2012). Some beginning teachers do not know how to use the schools' resources while maintaining their autonomy, which causes them to have difficulty meeting their instructional goals and student learning (Tricarico & Yendel-Hoppey, 2012).

Regardless of their certification route, classroom management strategies are vital in teaching lessons (Tricarico & Yendel-Hoppey, 2012). Novice teachers usually get hired at low-performing schools first (Peske & Haycock, 2006). These schools are avoided by teachers who already work within the district as they are aware of the perceptions, stigmas, and challenges (Clodfelter et al., 2004). After three years, support programs do not exist for teachers. Teachers are expected to further develop their practices through professional development and professional learning communities. Many times, these opportunities are made up of a group of peer teachers with few coaching opportunities. School districts leaders can help support school administrators by providing additional professional development opportunities and support for novice teachers and teachers in high needs schools (Minkos et al., 2017). Continual professional development for teachers is necessary as teacher preparation programs can only prepare teachers so much.

Teacher certification happens when people complete teacher education programs through accredited colleges or universities. Traditional licensure occurs when people enroll in and graduate from an undergraduate program in education. However, there is a decline in the number of students entering teacher education programs in North Carolina. Some programs in the UNC system have been eliminated because of the lack of enrollment (Hinchcliffe, 2018). As more teachers have entered the educational field as a second career, they have adopted non-traditional methods of licensure (Humphrey et al., 2008; Nielsen, 2016). Alternative licensure was an approach adopted by states to combat teacher turnover. Alternative licensure was developed to recruit new teacher candidates who already have completed a bachelor's degree but do not have the educational courses to become a licensed teacher (Tricarico & Yendel-Hoppey, 2012). Approximately 18% of teachers in the United States received their license through this route in 2015-2016 (National Center for Education Statistics, 2018). This route to licensure grants teachers temporary teaching licenses while they complete teacher preparation and content-related courses within a specified time (Schonfeld & Feinman, 2012). Alternative licensure allows aspiring teachers to teach in a content area related to their bachelor's degree while taking the necessary educational related courses to satisfy their teacher licensure requirements. While this method increases the pool of employable applicants, these teachers have not been exposed to theory and significant teaching components. These components included lesson planning, classroom management, the collective knowledge of operating within a school (Schonfeld & Feinman, 2012; Tricarico & Yendel-Hoppey, 2012).

Additionally, many of these inexperienced teachers are employed at some of the most challenging schools within a district (Tricarico & Yendel-Hoppey, 2012). Schools with a higher percentage of students of color are staffed with more teachers that received an alternative certification. More than one-fifth of teachers who used an alternative route were employed at a school where more than 75 percent of the students are of color (National Center for Education Statistics, 2018). Teachers who obtain their licensure through this route know their content well but may have difficulty explaining the information to their students at times (Humphrey et al., 2008). On the other hand, alternative licensure provides an opportunity for people to become teachers who want to transition careers or who had difficulty passing any entrance requirement (Humphrey et al., 2008). As with any certification, teachers must complete their certification requirements within a preset time frame to continue teaching (Humphrey et al., 2008). Teachers who use alternative certification methods do not know the state standards (Tricarico & Yendel-Hoppey, 2012). The teachers' unfamiliarity with their content area causes these teachers to spend more time understanding the standards and how they connect (Tricarico & Yendel-Hoppey, 2012). The teachers who are unfamiliar with standards and how to develop lessons struggle with how to deliver the information for students and appropriate ways to assess their mastery of these standards (Tricarico & Yendel-Hoppey, 2012). Teachers gain knowledge of their content and develop instructional strategies that work well for students over time because they learn from their challenges. Their experiences help them grow as a professional even though their former students may have suffered.

Once teachers obtain their full teaching license, they can pursue an additional level of teaching certification which is recognized nationally. An advanced level of certification that teachers can earn is National Board certification. National Board certification is a voluntary process where teachers collect evidence from their classrooms to demonstrate rigorous teaching practices (National Board, 2019). This advanced certification requires teachers to indicate their knowledge of their content area and pedagogy, the understanding of an individual student's strengths and weaknesses, show the teacher's interactions with his students, and expound on the effectiveness of the teacher's practices while being reflective (National Board, 2019). National Board Certification expects teachers to use critical analysis of their teaching practices (Petty et al., 2016). North Carolina has the most nationally board-certified teachers in the nation (Hui, 2018; Petty et al., 2016). However, less than 20% of National Board-Certified teachers work in low performing schools with a high concentration of students of color and poverty (Humphrey et al., 2005). National Board certification is one way to improve teacher quality (Humphrey et al., 2005). Teachers who receive this certification perceive themselves as more effective practitioners (Petty et al., 2016). These teachers are seen as vital members of their schools (Humphrey et al., 2005). Some of these teachers even believe the improvement in lessons and engagement caused an increase in student achievement on standardized tests (Petty et al., 2016). It is important to note that this information is self-reported and concrete data on National Board Certification and increased student achievement is inconsistent.

Regardless of the method teachers used to obtain their license, it does not reduce teacher turnover. Teacher turnover is one of the challenges schools face. Many factors

contribute to teacher turnover, including “non-competitive salaries, inadequate facilities, large class sizes, student characteristics, and student academic performance” (Fuller et al., 2018, p. 1). Recently, teacher working conditions have added to teacher turnover, overtaking the previously listed factors (Fuller et al., 2018). Experienced teachers can transfer schools within their district because of their longevity (Clodfelter et al., 2004). One rationale for teachers leaving schools regards their salary and workload. Teachers have the same wage regardless of working at a high or low performing school (Clodfelter et al., 2004). Low performing schools need strong instructional teachers and leaders but are staffed by inexperienced teachers (Orfield, 2013). Teachers find themselves wanting to teach at schools with a higher percentage of students who demonstrate grade-level proficiency. Teachers blamed for school failure in low performing minority schools and frustrated teachers tend to leave those schools, but teachers are celebrated for success at high performing schools (Orfield, 2013). These students are perceived as “easy to teach” (Clodfelter et al., 2004, p. 252). With this rationale, schools classified as high needs schools seem to suffer from teacher turnover more than other types of schools. Teachers are not trained to teach in high needs schools. Teachers are trained universally like school administrators and then must use their on-the-job experiences to learn how to navigate their environments (Berry, 2013). Schools with a high concentration of students who live in poverty, a high concentration of students of color, and/or low academic achievement levels have difficulty in keeping highly qualified and experienced teachers (Clodfelter et al., 2004; Fuller et al., 2018). Teacher turnover can be beneficial by causing some inadequate teachers to leave their schools or the profession (Fuller et al., 2018). Fortunately, teacher turnover benefits beginning teachers by creating jobs upon the

completion of their degree (Fuller et al., 2018). However, the counterargument is the lack of familiarity and experiences of these teachers with the school and curriculum, which perpetuates the low student achievement for students who need the most support (Fuller et al., 2018). Weaker teachers, plus students who are behind academically, lead to less rigorous instruction and stunted student academic performance (Orfield, 2013).

Also associated with teacher turnover is teacher absenteeism. Approximately one-third of “teachers miss more than 10 days of school each year” (Toppo, 2013, para. 1). Teacher absenteeism affects student outcomes (Clodfelter et al., 2009; Miller et al., 2008; Ots & Schiman, 2017) and school finances negatively (Keller, 2008). Schools that experience high levels of absenteeism struggle to provide teachers with professional development and resources because their finances are allocated to substitutes (Toppo, 2013). In addition to finances, students who attend low-income schools are more likely to have an absent teacher (Clodfelter et al., 2009; Keller, 2008; Miller et al., 2008). Teachers who have unforeseen absences cause more of a decrease in student outcomes, especially because they may not find coverage (Miller et al., 2008). It is more difficult for teacher in low-income schools to find suitable substitute teachers when a teacher is absent (Miller et al., 2008). Teachers who have a high number of absences also cause interruptions in student learning and outcomes because the content is not taught (Miller et al., 2008). Additionally, an increase in teachers’ absences occur at schools that experience high rates of chronic absences among their students (Clodfelter et al., 2009; Keller, 2008; Ots & Schiman, 2017).

The leadership team strongly impacts the teachers in their schools. School leadership preparation no longer focuses solely on principals and assistant principals, but



also includes teacher leaders such as facilitators and lead teachers (Bloom & Owens, 2011). The effectiveness of principals carrying out their responsibilities does depend on their preparation, their experiences, and the school's environment (Fuller et al., 2011). However, some schools hire academic facilitators to assist with the instruction but use these people as pseudo school administrators (Payne, 2008). School principals are responsible for leading and motivating their entire school community, including their staff, students, and even the parents (Dolph, 2017; Johnson, 2008). Principals are the visionary for the schools they lead, and the vision of the school changes when leadership shifts every few years (Johnson, 2008). Principals must invest in their staff and make them a part of the overall vision (Duke, 2014). Principals need each staff member to do their job in ensuring that students receive the quality education they deserve (Duke, 2014). The relationship between principals and student achievement is evident through the focal points of the principal. Even though the principal may hire academic facilitators, it causes distrust among the staff since teachers do not trust their instructional coach because they are always being evaluated and assistant principals become uncertain of their roles and responsibilities (Payne, 2008).

Principals are responsible for overseeing the overall instruction and operation of the school. Principals must learn how to use their budget effectively, build schedules, and manage their operations to provide the best environment for students and teachers (Bloom & Owens, 2011). Principals are the instructional leader for their schools (Dolph, 2017). Principals are responsible for integrating any district changes at the school level while maintaining the schools' culture and improving student achievement (Dolph, 2017; Snodgrass, 2018). As the instructional leader, principals must know what to look for in

their teachers' classrooms (Johnson, 2008). A significant responsibility for principals is to decipher the quality of each teacher's instruction and assist teachers who are missing critical components in delivering their content (Vaughn & Oliveras-Ortiz, 2015). They must understand the curriculum and identify good teaching practices and student engagement (Dolph, 2017; Johnson, 2008; Rozzelle et al., 2016). Principals must know how to evaluate teachers, provide meaningful feedback, and coach them when challenges arise (Dolph, 2017; Johnson, 2008; Rozzelle et al., 2016; Vaughn & Oliveras-Ortiz, 2015). Principals find that it becomes their responsibility to provide adequate time and teach their staff how to have collaborative meetings where the teachers are with one accord when analyzing the information and developing an implementation plan (Stosich & Bocala, 2018). The use of data is one way principals use the students' academic performance to gauge instructional practices. Principals must be proficient at using data to understand the challenges of their schools and make decisions that will initiate improvement immediately (Vaughn & Oliveras-Ortiz, 2015). Principals understand the need for using local data; however, principals express the difficulty they face in shifting their culture of their entire staff to have meaningful conversations and realistic strategies to improve student achievement for all (Stosich & Bocala, 2018).

Another responsibility of principals is to ensure that the students have a safe learning environment that meets the needs of various learners (Minkos et al., 2017). Principals must ensure they establish a safe working environment for their teachers and staff where they feel valued and heard (Minkos et al., 2017). When principals establish a productive working environment for students, it is easier for them to create a similar

learning environment for students, which is especially crucial with the diverse backgrounds found in schools (Minkos et al., 2017).

Principals perceive that they are two times more influential in the disciplinary policies and actions and their schools compared to the instructional materials and curriculum guidelines (Bloom & Owens, 2011). It is the school administrator's responsibility to establish and enforce disciplinary practices that address student conduct while maintaining the learning environment (Minkos et al., 2017). Principals' perceptions are important when measuring academic success at schools. Schools where students are below grade level have different needs than schools where the students perform at or above grade level. Not allowing principals the autonomy to make decisions instructional materials causes many schools to operate similarly, even though their academic needs and outcomes are vastly different. When principals have more influence over school discipline, the students are continuously evaluated on their behaviors rather than on what they know or what they are learning (Johnson, 2008).

Even though the principal's role is similar, school types determine the level of their oversight. Principals in elementary schools have different concerns than those of secondary schools. The same is true for principals of high and low performing schools. Principals from high performing schools believe they are 24 times more likely to influence the hiring and firing of their staff than those of low-performing schools (Bloom & Owens, 2011). The control school principals have when determining their staff allows them to find the teachers and staff who work with them to achieve the schools' goals. When principals do not believe they can hire or fire their staff, then principals find themselves trying to create a new vision with people who may be waiting for the next

change to happen. Principals and schools are most successful when the teaching staff connects to the current leader (Price, 2014). In addition to hiring and firing staff, principals of high performing schools are 14 times more likely to influence course offerings and 32 times more likely to affect curriculum changes than principals of low-performing schools based on their perceptions (Bloom & Owens 2011). Principals of low-performing schools only had a more considerable influence on school funding, which equated to being ten times more likely than principals of high performing schools (Bloom & Owens, 2011).

Principals are responsible for their staff and how they perceive their effectiveness (Fuller et al., 2018). The basis of their efficiency comes from how the principals handle the school's components, which is solely in their control (Fuller et al., 2018). Principals must deduce the cohesiveness of their staff and make improvements while cultivating a positive school culture (Dolph, 2017). It is through the principals' ability to plan, implement, and execute necessary changes while providing the staff with security that ensures school improvement (Dolph, 2017). Principals who encourage staff involvement during the process create ownership and collective vision for all stakeholders (Dolph, 2017). Trust is built through this collaboration because the staff has a voice and can inform the principal of prior change efforts (Dolph, 2017).

Principals determine the use of school funds. Schools have discretionary funds either from Title I funding, fundraisers, Parent-Teacher Associations, or grants (Bloom & Owens, 2011). This funding gives principals the ability to make budgetary decisions that are in the school's best interest (Bloom & Owens, 2011). These resources are spent on instructional resources, technological resources, or additional support staff, such as tutors.

Schools that hire teacher leaders have an advantage as they increase the number of people who work together, not administrators or teachers on behalf of the students (Bloom & Owens, 2011). Facilitators or instructional coaches are designed to be supportive and help teachers in areas of their content and instructional practices (Stosich & Bocala, 2018). These colleagues do not have administrative responsibilities and are not to operate in an evaluative manner (Stosich & Bocala, 2018). Because some teachers do not collaborate or use the suggestions of facilitators and coaches, their role requires them to be more commanding (Stosich & Bocala, 2018). Although facilitators or coaches intend to work with the teachers, some teachers felt uneasy with the implementation of these teacher leaders (Stosich & Bocala, 2018).

### **Theoretical Framework: Manifest and Latent Functions**

Structuralism is the interdependence of society and institutions to ensure that order is maintained (Ballantine & Hammack, 2012). Schools are one of many significant institutions used to develop and sustain human behavior. The knowledge gained through these institutions teaches people how to operate within their given boundaries based on the roles each person plays and their overall purpose. Merton (1949) relaxed the idea of structuralism through the theoretical framework of Manifest and Latent Functions. Manifest Functions focus on the concept of achieving the intended outcome; however, Latent Functions identify and understand that there are unwanted or unintended outcomes of social practices (Merton, 1949).

North Carolina school performance grades have Manifest and Latent Functions on the educational and economic practices in society. North Carolina stated that the purpose of their school performance grade was to be more transparent in sharing the progress of

their K-12 schools with their stakeholders (NCDPI, n.d.). The identified stakeholders are “parents, educators, state leaders, and others” (NCDPI, n.d.). The purpose of these school performance grades is to provide student academic and demographic information to the public by category. (NCDPI, n.d.). North Carolina wants people to have access to this information so they can make adequate decisions for their families and businesses, which will determine community growth. School performance grades are the Manifest Function. It is measured directly by the data collected used to group students, schools, and school districts by grade. These grades divide schools into two main types: successful or unsuccessful.

Additionally, school performance grades use the traditional letter grade system of A-F. Since the use of letter grades is widely established and is a structure of the majority of educational organizations, the determination of school and student performance and ability are assessed without any further information. This grading system does not lend itself to conversations about school improvements, but it stigmatizes schools that are not performing and praises those who meet society’s expectations. Consequently, the Latent Function of school performance grades has been more divisive. School performance grades identify low performing schools and do not measure each type of school equitably. Because of the letter grades, communities surrounding schools with inferior grades of D or F continue to experience an exodus of people who can afford to leave. As a result, these lower-income communities continue to lose funding. Neighborhoods with schools that are considered successful are experiencing school and community growth—this influx of people fuels the supply and demand cycle. The community invests more financial resources

into the schools that are successful because of the increased property value of those homes (Vinovskis, 2009).

### **Summary**

Educational reform policies affect the quality of education students receive in the United States. These policies follow a top-down approach where elected officials, such as senators and representatives, make decisions to improve education perception nationally. These policies become the responsibility of each state to implement for their students. For states to comply with the federal guidelines, the state's legislation must create additional policies to align with the overall goals. Because of the complexity of all of these policies, each school district's responsibility is to discover ways to meet these demands.

North Carolina implemented policies to support the state to meet the Race to the Top grant criteria. Limited research exists on the use of school performance grades even though they are widely used. Many states, including North Carolina, use a variation of school performance grades to rank their public schools, but the information used to determine each school's effectiveness does not provide a complete picture of challenges or inequities between public schools. For North Carolina specifically, the only factor used to determine if a school is effective is the percentage of students who passed the End of Grade or End of Course tests. Community factors that impact schools and student achievement include antiquated housing policies, which leads to school funding and ultimately their overall demographics. Other factors that influence schools include a principal's school assignment (Dolph, 2017), the number of new teachers and teacher turnover (Clodfelter et al., 2004), teacher certification routes (Tricarico & Yendel-Hoppey, 2012), school funding (Bloom & Owens, 2011) and school and neighborhood

demographics. Without the inclusion of these additional factors, schools in North Carolina are not evaluated thoroughly. As these factors contribute to school performance, further investigation is necessary to determine which predictors also impact school performance grades. This study utilizes the Manifest and Latent Functions as the framework for examining North Carolina school performance grades in elementary schools. This study will provide information about factors that impact North Carolina school performance grades for researchers, school districts, community stakeholders, and legislators. School and school district factors are explored through this quantitative study. Understanding the influence of these predictors on school performance grades is the guiding purpose for this research. Additionally, understanding how these variables influence one another is necessary for influencing sustainable education reform in North Carolina. Accordingly, this research study is critical and vital for education reform.



## CHAPTER 3: METHODOLOGY

This study examined North Carolina school performance grades concerning school and school district characteristics in K-5 elementary schools. This dissertation examined additional school factors to reveal if any patterns existed that may affect the overall grade. Additionally, these factors focused on data from K-5 elementary schools in North Carolina because the two data points used to calculate these grades are generated from one source—the End of Grade tests in reading and mathematics. Hence, this study to understand if the variables addressed at the school- and school district-level are related to the overall school performance grades to reveal challenges and create solutions to increase the academic outcomes for all elementary students in North Carolina. Manifest and Latent Functions coincide with the variables chosen in this study found to influence the student’s educational outcomes within each school and the overall performance in each school district. This chapter addresses the methodology of the research. It consists of: a) study design, b) research questions, c) sample, d) data sources, e) variables, f) data analysis, g) research involving human subjects, h) data procedures, i) data analysis, j) limitations and delimitations. Every area will be addressed thoroughly throughout this chapter to provide clarity.

### Study Design

A non-experimental quantitative technique was used in this dissertation study. The purpose of this method is to discover “causal relationships or strength of relationships or differences between groups,” and for “descriptive studies ... to describe a phenomenon” (Mertens, 2015, p. 127). This research focused on school and school district factors and the outcome of the overall school performance grade. Two existing

databases contained the specific school and school district data referencing academic outcomes, teacher and student demographics for each K-5 elementary school, and the school district in North Carolina. The use of this existing secondary dataset allowed for the utilization of these factors to generate models for these elementary schools to understand how these additional factors affected the overall school performance grade.

Hierarchical linear models (HLM) was used to investigate the relationship school and school district variables have to school performance grades as it describes how schools are grouped in school districts (Raudenbush & Bryk, 2002). In this study, separate variables were utilized that represented the schools and school districts (Raudenbush & Bryk, 2002). HLM was used to demonstrate the impacts schools and school districts characteristics had on school performance grades in North Carolina, as schools are nested in school districts. Using the proposed theoretical framework for this study, the Manifest Function was represented by the reading and math school performance grade and the school's growth. Since school growth falls in three categories, does not meet, meets, or exceeds growth, does not meet was used as the reference group while the meet and exceeds growth was combined. The Latent Functions was represented by the additional factors that describe teacher, student, principal, and school demographics. The overall school performance grade was the outcome variable that measured the percentage of proficiency and growth made by the students in each school on the End of Grade reading and mathematics test in grades 3-5.

The theoretical framework in this study used Manifest and Latent Functions to determine school performance grades for each school and school district. HLM version 8 was used to examine all the research questions. The use of HLM "simultaneously

investigates relationships within and between hierarchical levels of grouped data, thereby making it more efficient at accounting variance among variables at different levels than other existing analyses” (Woltman et al., 2012).

### **Research Questions**

The following research questions guided my dissertation:

1. To what extent does school performance vary within and between districts in North Carolina?
2. What school-level characteristics are predictive of these differences?
3. What district-level characteristics are predictive of these differences?

### **Description of the Sample**

There are approximately 1,250 public elementary schools in North Carolina. Some elementary schools have grades beyond fifth grade, while others house a subsection of grades K-5. Because of the variety of structures in elementary schools, only elementary schools that contained grades 3-5 in the same building were used in this study. Elementary schools with grades three through five were included, as those grades take the reading and mathematics End of Grade tests. Public charter school were excluded from this study.

North Carolina has 115 school districts with more than 2,500 traditional public schools (North Carolina Government, n.d.), and 1096 schools were included in this study in 92 school districts. These schools are located in the rural, suburban, and urban areas of North Carolina.

### **Data Source**

Data for this study came from the North Carolina School Report Cards website and the Civil Rights Data Collection database through the Office of Civil Rights from the 2015 – 2016 school year. The NC school report cards website houses the annual report card for each public and charter school since the 2012 – 2013 school year (my study utilized the 2015-2016 data). This website aims to give educators, parents, and stakeholders information about each school in each local education agency (LEA). Outcome data includes the alpha and numeric school performance grade and the growth rating in one of the three categories (i.e., does not meet, meets, and exceeds). The school performance grade is also broken down by reading and mathematics tests separately. Other data information provided by the North Carolina school report cards includes teachers' qualifications, students' access to book and technology resources, and student enrollment and attendance (North Carolina School Report Cards, n.d.).

The purpose of the Office of Civil Rights “is to ensure equal access to education and to promote excellence throughout the nation through vigorous enforcement of civil rights” (United States Department of Education, 2020, “About OCR,” para. 1). The Civil Rights Data Collection “is a longstanding and important aspect of the ED Office of Civil Rights (OCR) overall strategy for administering and enforcing the civil rights statues for which it is responsible” (United States Department of Education, 2021, “Civil Rights Data Collection (CRDC),” para. 2). The Office of Civil Rights collects data and “requires all local educational agencies (LEA) in the county, including every public-school district, charter schools, juvenile justice facilities, alternative schools, and schools serving students with disabilities” (Civil Rights Data Collection, n.d., 2017-18 “CRDC,” para. 1). The Civil Rights Data Collection provides supplementary information on students’

demographic backgrounds, staffing, and school enrollment information “disaggregated by race/ethnicity, sex, limited English proficiency, and disability” (United States Department of Education, 2020, “Civil Rights Data Collection (CRDC) for the 2015-16 School Year,” para. 2). This database is updated every two years since 2009 and the most recent data available is from the 2017 – 2018 school year as of the last quarter of 2020 (Civil Rights Data Collection, n.d.).

### Variables

The dependent variable was school performance grades, which is a continuous variable from 0 - 100. The independent variables consisted of school and school district level measures. For the level-1 predictors,  $n = 16$  and for the level-2 predictors,  $N = 13$ . Table 1 lists the variables used in the study.

**Table 1**

*Variables Explored in the HLM Analyses*

Variables	Model Identifier	Description	Scale
Dependent			
School performance	SPG	The numeric score that measures how well a school is doing based on percent proficient and student growth.	0-100
Independent: School			
Level			
School Growth	Growth	Did not meet growth, met growth or exceeded growth	0 – met or exceeded growth 1 - did not meet growth
Title I	TITLE1	If a school receives Title I funding	0 – Not Title I 1 – Title I

Fully Licensed Teachers	LICENSED	Percent of teachers who met all state education and testing requirements	0 – 100
Advanced Degree Teachers	ADVDEGRE	Teachers with license areas beyond a bachelor’s degree	0 - 100
Nationally Board Certified	NBC	Teachers certified through the National Board for Professional Teaching Standards	0 - 100
Teacher Turnover	TTURNOVE	Percent of teachers employed on March 2015 that were no longer employed in March 2016	0 - 100
Beginning Teachers	BT	Teachers with 0-3 years of experience	0 - 100
Veteran Teachers	VT	Teachers with more than 10 years of experience	0 - 100
Student Attendance	ATTENDAN	Average daily student attendance	0 - 100
Read to Achieve	RTA	Percentage of 3 <sup>rd</sup> grade students who read at or above grade level	0 - 100
White Students	WHITE	Percentage of White students	0 -100
Student with Disabilities	SWDNO504	Percentage of Students with identified disabilities not including 504s	0 - 100
English Language Learners	LEP	Percentage of English Language Learners	0 - 100
Teachers absent more than 10 days	ABSENTTE	Percentage of teachers absent more than 10 days during the school year	0 - 100
Free and Reduced Lunch	FREEREDU	Percentage of students who receive free and reduced lunch at school	0 – 100

Independent: District level

Percentage of beginning teachers	BEGINTEA	Percentage of beginning elementary teachers in a district	0 - 100
Percentage of veteran teachers	VETTEACH	Percentage of veteran elementary teachers in a district	0 - 100
Beginning principals	BEGINPRI	Principals with 0-3 years of experience	0 - 100
Veteran principals	VETPRIN	Principals with more than 10 years of experience	0 - 100
Principal turnover	PTURNOVE	Percent of principals employed on March 2015 that were no longer employed in March 2016	0 - 100
Advanced degree Principals	ADVPRINC	Principals with a license beyond a master's degree	0 - 100
Average student attendance	STUDATTE	The average daily attendance for all elementary schools in a district.	0 – 100
State per pupil funding	STATEPPS	The amount of money each district receives from the North Carolina to operate.	0 - 12,000
Federal per pupil funding	FEDERALP	The amount of money each district receives from the US government to operate.	0 – 5,000
Local per pupil funding	LOCALPPS	The amount of money each district receives from each county to operate.	0 – 5,000
Percentage of White students	WHITEPER	Percentage of white students in the school district	0 - 100
Percentage of Students with Disabilities	PERSWD	Percentage of students with disabilities in the school districts not including 504	0 - 100
Percentage of Free and Reduced Lunch	PERFREER	Percentage of students receiving Free and	0 - 100

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## Reduced Lunch in the school district

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### **Data Analysis**

Because of the nested nature of the data (i.e., schools nested in districts), Hierarchical Linear Modeling (HLM) was used to analyze the data (Raudenbush & Bryck, 2002). Specifically, a two-level HLM was used, with schools being level-1 and districts being level-2. Theoretically, HLM is an appropriate analytic technique, as HLM conceptualizes school performance as a function of both school and district characteristics.

Before running the HLM analysis, I used SPSS 26 to conduct a thorough exploratory analysis. The exploratory analysis included determining the means, standard deviations, checking for missing data, outliers, and multicollinearity. In addition, I created a two-level SPSS data and imported them into HLM 8 for HLM analysis. The HLM analysis proceeded systematically using my research questions as a guide.

*Research Question One: To what extent does school performance vary within and between districts in North Carolina?*

To address this question, I fitted a fully unconditional 2-level HLM model (see Equations 3.1 and 3.2).

Equations 3.1 and 3.2 are models of the outcome variable with no predictor variables, commonly referred to as the null model. These models, equivalent to a one-way analysis of variance, allowed me to estimate the variation in school performance across schools within the same school district and school performance across different school districts in North Carolina. The null model at level-one is given by equation 1:



$$Y_{ij} = \beta_{0j} + r_{ij} \quad (3.1)$$

Where  $Y_{ij}$  is the outcome variable (school performance) for school  $i$  in district  $j$ ,  $\beta_{0j}$  is the intercept, representing the average school performance for district  $j$ , and  $r_{ij}$  is the level-1 residual. The level-two model (i.e., district level) is given by equation 2:

$$\beta_{0j} = \gamma_{00} + u_{0j} \quad (3.2)$$

As shown in equation 3.2, intercept  $\beta_{0j}$  from level-1 becomes the outcome variable at level-2. In equation 3.3,  $\gamma_{00}$  is the grand mean school performance, and  $u_{0j}$  is the level-two residual. The above level-one and level-two equations can be combined as equation 3:

$$Y_{ij} = \gamma_{00} + u_{0j} + r_{ij} \quad (3.3)$$

where  $Y_{ij}$  is the outcome variable (i.e., school performance) for school  $i$  in district  $j$ .  $\gamma_{00}$  is the grand mean school performance,  $u_{0j}$  is the residual at the district level, and  $r_{ij}$  is the residuals at the school level.

*Research Question Two: What school-level characteristics are predictive of these differences?*

To investigate this question, I incorporated school-level predictors in equation 4 as follows:

$$\begin{aligned} Y_{ij} = & \beta_{0j} + \beta_{1j} (\text{PASSFAIL}_{ij}) + \beta_{2j} (\text{Growth}_{ij}) + \beta_{3j} (\text{RTA}_{ij}) + \beta_{4j} (\text{Fully Licensed}_{ij}) + \\ & \beta_{5j} (\text{Advanced Degree}_{ij}) + \beta_{6j} (\text{Nationally Board Certified}_{ij}) + \beta_{7j} (\text{Teacher} \\ & \text{Turnover}_{ij}) + \beta_{8j} (\text{Beginning Teachers}_{ij}) + \beta_{9j} (\text{Veteran Teachers}_{ij}) + \beta_{10j} (\text{Student} \\ & \text{Attendance}_{ij}) + \beta_{11j} (\text{Title 1}_{ij}) + \beta_{12j} (\text{White}_{ij}) + \beta_{13j} (\text{Students with Disabilities}_{ij}) \\ & + \beta_{14j} (\text{Teachers Attendance}_{ij}) + \beta_{15j} (\text{LEP}_{ij}) + \beta_{16j} (\text{Free and Reduced Lunch}_{ij}) + r_{ij} \end{aligned} \quad (3.4)$$

*Research Question Three: What district-level characteristics are predictive of these differences?*

Once I ran HLM with level-1 predictors, I moved on to build the level-2 district level model and investigated Research Question Three. In this analysis, the level-1 model was the same from the model used to address Research Question Two (see equation 1). But at the level-2 (i.e., district-level), I added district-level predictors and now level-2 model with predictors as follows:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} (\text{Advance Degree Principals}) + \gamma_{02} (\text{Principal Turnover}) + \gamma_{03} (\text{State Per Pupil Funding}) + \gamma_{04} (\text{Beginning Principals}) + \gamma_{05} (\text{Veteran Principals}) + \gamma_{06} (\text{Average Student Attendance}) + \gamma_{07} (\text{Percentage of Beginning Teachers}) + \gamma_{08} (\text{Percentage of Veteran Teachers}) + \gamma_{09} (\text{Federal Per Pupil Spending}) + \gamma_{10} (\text{Local Per Pupil Spending}) + \gamma_{11} (\text{White Student}) + \gamma_{12} (\text{Students with Disabilities}) + \gamma_{13} (\text{Free and Reduced Lunch}) + u_{0j} \quad (3.5)$$

### **Analytic Issues and Handling Strategies**

#### **Missing Data**

This study did not contain any missing data for any of the variables.

#### **Multicollinearity**

This study checked for multicollinearity to ensure that variables were not similar. The data assessed multicollinearity using four correlations. These correlations were between the outcome variable and the school-level predictor variables, between the outcome variable and the school district-level predictor variables, between the school-level variables and the school district-level variables. The EOG Math and EOG Reading variables were eliminated as they both positively correlated with the outcome variable,

overall school performance grades. The total number of teachers and the overall student enrollment variables were eliminated from the level – 1 model because a strong positive correlation existed between them. The variables, average number of elementary teachers, and average number of students were eliminated from the level - 2 model as they also had a strong positive correlation with each other.

### **Centering**

Grand mean centering was used for all of the variables as it is perceived that all North Carolina public schools are structured similarly. It was used to provide meaning to zero points for each variable.

### **Limitations**

Despite the noted implications of this study, there are potential limitations. The primary limitation of this study is the use and availability of existing data. This data is based on the information collected and provided by the state of North Carolina and the Civil Rights Data Collection. The 2017-2018 data was released from the Office of Civil Rights after the data was collected and analyzed.

The omission of several schools is an additional limitation of this study. All schools in Alleghany, Ashe, and Catawba counties were eliminated because they do not have any K-5 elementary schools. All of the elementary schools in Anson, Beaufort, Bladen, Buncombe, Caldwell, Camden, Carteret, Charlotte-Mecklenburg, Chatham, Cherokee, Clay, Cleveland counties, and Clinton City schools were not included because several schools in each of these school districts are not organized as K-5 schools.

This analysis is relational and sought to determine the strength of the associations between the level-1 and level-2 predictors concerning North Carolina school performance

grades. It revealed patterns between the variables. Future studies could probe further to determine which factors impact low school performance grades. Accordingly, the results from this study should be examined regardless of these limitations.

### **Summary**

This chapter provided details regarding the methodology for this research. It outlined the purpose of the research, research questions, sample, methods and design, data sources, data procedures, data analysis, and limitations. In conjunction with Manifest and Latent Functions, this study investigated school and school district factors that affect North Carolina school performance grades in K-5 elementary schools. The 2015 – 2016 North Carolina School Report Cards and the Civil Rights Data Collection for the same school year was used as both datasets contained the variables used in this study. The data from this study included 1096 schools from 92 school districts in North Carolina. This sample was diverse in setting as the schools represented urban, suburban, and rural school districts. Sixteen level-1 predictors and 13 level-2 predictors were used in this multilevel modeling analysis. All three research questions were answered using the models generate by these variables. The next chapter details the results from this analysis.

## CHAPTER 4: RESULTS

The purpose of my dissertation research was to examine the extent to which various school and district level factors are predictive of school performance among K-5 elementary schools in North Carolina. North Carolina was chosen because of its location, the availability of the school performance data and demographics, and the diverse school system structures throughout the state. Elementary schools were chosen because elementary grade are the foundational stage of student learning. Third grade was chosen because this is the beginning grade that North Carolina administers the End of Grade Reading and Mathematics accountability assessments. This chapter provides the HLM results following descriptive statistics. As a reminder, the following research questions guided my dissertation research:

1. To what extent does school performance vary within and between districts in North Carolina?
2. What school-level characteristics are predictive of these differences?
3. What district-level characteristics are predictive of these differences?

### Exploratory Analysis

Table 2 presents descriptive statistics from HLM 8.

**Table 2**

*Descriptive Statistics for Level – 1 (School) and Level – 2 (District) Predictors*

Variables	N	Mean	SD	Min	Max
Outcome					
School Performance	1096	63.46	12.19	21	94

## Independent: School Level

Pass or Fail	1096	0.21	0.41	0	1
School Growth	1096	0.20	0.40	0	1
Read to Achieve	1096	84.77	11.56	19.8	95
Fully Licensed Teachers	1096	97.7	3.49	77.7	100
Advanced Degree Teachers	1096	28.35	10.69	0	66.7
National Board Certified	1096	4.64	3.61	0	23
Teacher Turnover	1096	13.09	7.94	0	54.6
Beginning Teachers	1096	22.56	11.66	0	75.9
Veteran Teachers	1096	50.53	13.72	6.9	88.5
Student Attendance	1096	95.86	1.33	92	100
Title I	1096	0.83	0.37	0	1
White Students	1096	48.13	27.37	0.5	96.3
Students with disabilities	1096	12.29	4.3	0	31.3
English Language Learners	1096	9.27	9.01	0	62.5
Free and Reduced Lunch	1096	67.09	28.16	2.2	99.9
Teachers absent more than 10 days	1096	13.07	9.03	0	93

## Independent: District Level

Percentage of beginning teachers	92	22.11	7.46	9.1	44.6
Percentage of veteran teachers	92	51.83	8.91	14.3	70.7
Beginning Principals	92	48.46	17.89	11.1	100
Veteran Principals	92	13.88	11.78	0	75

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Principal Turnover	92	11.41	10.48	0	66.70
Advanced Degree Principals	92	21.61	14.99	0	95.2
Average Student Attendance	92	95.01	0.77	93.5	97.4
State per pupil funding	92	6369.15	1195.13	5200.55	12723.04
Federal per pupil funding	92	1179.59	384.61	535.23	2847.1
Local per pupil funding	92	2110.40	873.73	748.37	5879.17
Percentage of White students	92	54.52	20.8	4.3	93.5
Percentage of Students with Disabilities	92	13.39	4.47	6.30	50.5
Percentage of Free and Reduced Lunch	92	66.67	19.72	26.7	99.2

### Hierarchical Linear Modeling Results

#### Research Question 1: To what extent school performance vary across districts?

##### *Model 1: Unconditional Model*

To examine the extent to which school performance varies across the districts, a two-level unconditional HLM model was performed only using the overall school performance grade as the dependent variable (see equation 4.1).

**Level-1 Model:** (4.1)

$$SPG_{ij} = \beta_{0j} + r_{ij}$$

**Level-2 Model:** (4.2)

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

**Mixed Model:** (4.3)

$$SPG_{ij} = \gamma_{00} + u_{0j} + r_{ij}$$

Elementary schools in North Carolina have a mean school performance grade of 63.2.

North Carolina school performance grades have a mean of approximately 63.5 with a

12.4 point standard deviation. The statistically significant between school-district variance indicated that the average elementary school performance grade varied across North Carolina school districts ( $\tau_{00} = \text{var}(\mu_{0j}) = 30.28, X^2(91) = 340.82, \rho = 0.00$ ). The statistically significant between school-district variance indicated that the average elementary school performance grade varied across North Carolina school districts ( $\tau_{00} = \text{var}(\mu_{0j}) = 30.28, X^2(91) = 340.82, \rho = 0.00$ ). Intraclass correlation showed that 20% of the total variance in North Carolina school performance grades is attributable to schools districts, while 80% (100-20) is attributable to schools. Although the variation of between school districts is 20%, the majority of the variation lies between schools. This is a good indication that school district effects exist. The intercepts in the null model,  $\beta_{0j}$ , indicated the average school performance grade for the  $J$  school districts, and as identified above, vary at the school district level. The reliability for  $\beta_{0j}$  measures the extent to which we can discriminate among school districts in their average school performance grades. The reliability is an overall summary measurement across  $J$  school districts. In this null model, the reliability is a good indicator of how well each school district's sample mean estimates the unknown parameter,  $\beta_{0j}$ . Because the reliability estimate ranges from zero to one, the magnitude of 0.62 is reasonable. Given that the goal is to model school district effects, the ideal reliability coefficient should be fairly high. The results of the null model are summarized in Table 3.

**Table 3**

*Statistical Results on the Null Model of the School District Effects on School Performance Grades*

	Fixed effects			
	Coefficient	SE	t-ratio	$p$
<hr/>				



Intercept (School Performance Grade), $u_0$	63.18	0.73	86.76	0.00
	<b>Random effects</b>			
	<b>Variance</b>	<b><i>df</i></b>	<b>Chi-square</b>	<b><i>p</i></b>
Between-school district variability (Intercept)	30.28	91	340.82	0.00
Within-school district variability	120.88			
Reliability (Intercept)		0.62		
Intraclass Correlation		0.20		

**Research Question 2: What school-level characteristics are predictive of these differences?**

***Model 2: Conditional Model with School Level Predictors***

The conditional model with level – 1 predictors answered the second research question of the school-level factors that are predictive of the differences in North Carolina school performance grades. To develop a school model, school level variables were added to the null model. Each school level variable was either treated as a fixed effect or a random effect (Ma et al., 2008). All school level variables were treated as fixed effects assuming that the variables are the same at all elementary schools in North Carolina. Grand mean centering was used for all of the variables as it is perceived that all North Carolina public schools are structured similarly. The reliability estimate increased to 72.2%. This is reasonably high which allowed this study to determine which school level factors contribute to North Carolina school performance grades. The conditional model with level – 1 predictors is shown in the following equations.

**Level-1 Model**  
(4.4)

$$\begin{aligned}
 SPG_{ij} = & \beta_{0j} + \beta_{1j}*(PASSFAIL_{ij}) + \beta_{2j}*(GROWTH_{ij}) + \beta_{3j}*(RTA_{ij}) + \\
 & \beta_{4j}*(LICENSED_{ij}) + \beta_{5j}*(ADVDEGRE_{ij}) + \beta_{6j}*(NBC_{ij}) + \beta_{7j}*(TTURNNOVE_{ij}) + \\
 & \beta_{8j}*(BT_{ij}) + \beta_{9j}*(VT_{ij}) + \beta_{10j}*(ATTENDAN_{ij}) + \beta_{11j}*(TITLE1_{ij}) + \beta_{12j}*(WHITE_{ij}) + \\
 & \beta_{13j}*(SWDNO504_{ij}) + \beta_{14j}*(LEP_{ij}) + \beta_{15j}*(FREEREDU_{ij}) + \beta_{16j}*(ABSENTTE_{ij}) + \\
 & r_{ij}
 \end{aligned}$$

### **Level-2 Model**

(4.5)

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40}$$

$$\beta_{5j} = \gamma_{50}$$

$$\beta_{6j} = \gamma_{60}$$

$$\beta_{7j} = \gamma_{70}$$

$$\beta_{8j} = \gamma_{80}$$

$$\beta_{9j} = \gamma_{90}$$

$$\beta_{10j} = \gamma_{100}$$

$$\beta_{11j} = \gamma_{110}$$

$$\beta_{12j} = \gamma_{120}$$

$$\beta_{13j} = \gamma_{130}$$

$$\beta_{14j} = \gamma_{140}$$

$$\beta_{15j} = \gamma_{150}$$

$$\beta_{16j} = \gamma_{160}$$

The school-level model is the basis for researchers to build the models at the school district level. Results of this analysis indicated which school-level variables are predictive of North Carolina school performance grades. Twelve school-level variables were found statistically significant. These variables included if schools had a passing or failing school performance grade, if schools met or exceeded growth compared to not meeting growth, meeting the read to achieve benchmark, percentage of nationally board certified teachers, percentage of beginning teachers, student attendance, Title I status, percentage of White students, percentage of students with disabilities not including students with 504s, percentage of limited English proficiency, percentage of free and reduced lunch,

and number of teachers absent more than 10 days. The addition of these twelve school level variables reduced the variance at both the school and the school district level. The reduction in the within-school district variance was calculated by:

$$\frac{\sigma_{(null)}^2 - \sigma_{(school)}^2}{\sigma_{(null)}^2} = \frac{120.88 - 22.43}{120.88} = 0.81 \quad (4.6)$$

The reduction in the within-school district variance explained by the schools is 81%. The reduction in the between school district variance was calculated by:

$$\frac{\tau_{(null)}^2 - \tau_{(school)}^2}{\tau_{(null)}^2} = \frac{30.28 - 9.11}{30.28} = 0.70 \quad (4.7)$$

The reduction in the between-school district variance of the schools nested in the district is 70%. The results of the conditional model with level-1 predictors are summarized in Table 4.

**Table 4**

*Conditional Model with Level – 1 Predictors of School Level Effects on North Carolina School Performance Grades*

	Fixed effects			
	Coefficient	SE	t-ratio	p
Intercept (School Performance Grade),	63.52	0.39	163.61	0.00
<b>Y<sub>00</sub></b>				
School-Level Variables				
Pass or Fail, <b>Y<sub>10</sub></b>	-8.24	0.51	-16.23	0.00
School Growth, <b>Y<sub>20</sub></b>	-5.39	0.39	-13.85	0.00
Read to Achieve, <b>Y<sub>30</sub></b>	0.22	0.02	10.892	0.00
Fully Licensed Teachers, <b>Y<sub>40</sub></b>	-0.02	0.05	-0.48	0.61
Advanced Degree Teachers, <b>Y<sub>50</sub></b>	0.02	0.02	1.18	0.24
National Board Certified, <b>Y<sub>60</sub></b>	0.20	0.05	3.76	0.00
Teacher Turnover, <b>Y<sub>70</sub></b>	-0.00	0.02	-0.16	0.88
Beginning Teachers, <b>Y<sub>80</sub></b>	-0.05	0.02	-2.02	0.04
Veteran Teachers, <b>Y<sub>90</sub></b>	-0.00	0.02	-0.14	0.89
Student Attendance, <b>Y<sub>100</sub></b>	0.77	0.17	4.47	0.00
Title I, <b>Y<sub>110</sub></b>	-3.17	0.61	-5.17	0.00

White Students, $\gamma_{120}$	0.09	0.02	7.59	0.00
Students with disabilities, $\gamma_{130}$	-0.30	0.05	-6.49	0.00
English Language Learners, $\gamma_{140}$	0.08	0.02	3.36	0.00
Free and Reduced Lunch, $\gamma_{150}$	-0.11	0.01	-9.29	0.00
Teachers absent more than 10 days, $\gamma_{160}$	-0.09	0.02	-3.93	0.00
	Random effects			
	Variance	<i>df</i>	Chi-square	<i>p</i>
Between-school district variability (Intercept)	9.11	91	422.50	0.00
Within-school district variability	22.43			
		Proportion of Variance Explained		
At the school district level (between school districts)		0.70		
At the school level (within school districts)		0.81		

**Research Question 3: What district-level characteristics are predictive of these differences?**

***Model 3: Conditional Model with Level – 2 Added Predictors***

The conditional model with level – 2 added predictors answered the third research question of the school district factors that are predictive of the differences in North Carolina school performance grades. Grand mean centering was used for the level – 2 predictors. The reliability estimate is 68.6%. This estimate is increased from the null model to the fully conditional model with both level-1 and level-2 predictors, but it decreased from the conditional model with the level-1 predictors only. This is reasonably high, which allows this study to determine which school district factors contribute to North Carolina school performance grades. Fixed effects were used to assume that effects

of the variables are the same across elementary schools in the state. The conditional model with the added level-2 predictors is shown in the following equations.

**Level-1 Model:**

(4.8)

$$SPG_{ij} = \beta_{0j} + \beta_{1j}*(PASSFAIL_{ij}) + \beta_{2j}*(GROWTH_{ij}) + \beta_{3j}*(RTA_{ij}) + \beta_{4j}*(LICENSED_{ij}) + \beta_{5j}*(ADVDEGRE_{ij}) + \beta_{6j}*(NBC_{ij}) + \beta_{7j}*(TTURNOVE_{ij}) + \beta_{8j}*(BT_{ij}) + \beta_{9j}*(VT_{ij}) + \beta_{10j}*(ATTENDAN_{ij}) + \beta_{11j}*(TITLE1_{ij}) + \beta_{12j}*(WHITE_{ij}) + \beta_{13j}*(SWDNO504_{ij}) + \beta_{14j}*(LEP_{ij}) + \beta_{15j}*(FREEREDU_{ij}) + \beta_{16j}*(ABSENTTE_{ij}) + r_{ij}$$

**Level-2 Model:**

(4.9)

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(BEGINTEA_j) + \gamma_{02}*(VETTEACH_j) + \gamma_{03}*(BEGINPRI_j) + \gamma_{04}*(VETPRIN_j) + \gamma_{05}*(PTURNOVE_j) + \gamma_{06}*(ADVPRINC_j) + \gamma_{07}*(STUDATTE_j) + \gamma_{08}*(STATEPPS_j) + \gamma_{09}*(FEDERALP_j) + \gamma_{010}*(LOCALPPS_j) + \gamma_{011}*(WHITEPER_j) + \gamma_{012}*(PERSWD_j) + \gamma_{013}*(PERFREER_j) + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40}$$

$$\beta_{5j} = \gamma_{50}$$

$$\beta_{6j} = \gamma_{60}$$

$$\beta_{7j} = \gamma_{70}$$

$$\beta_{8j} = \gamma_{80}$$

$$\beta_{9j} = \gamma_{90}$$

$$\beta_{10j} = \gamma_{100}$$

$$\beta_{11j} = \gamma_{110}$$

$$\beta_{12j} = \gamma_{120}$$

$$\beta_{13j} = \gamma_{130}$$

$$\beta_{14j} = \gamma_{140}$$

$$\beta_{15j} = \gamma_{150}$$

$$\beta_{16j} = \gamma_{160}$$

**Mixed Model**

(4.10)

$$SPG_{ij} = \gamma_{00} + \gamma_{01}*(BEGINTEA_j) + \gamma_{02}*(VETTEACH_j) + \gamma_{03}*(BEGINPRI_j) + \gamma_{04}*(VETPRIN_j) + \gamma_{05}*(PTURNOVE_j) + \gamma_{06}*(ADVPRINC_j) + \gamma_{07}*(STUDATTE_j) + \gamma_{08}*(STATEPPS_j) + \gamma_{09}*(FEDERALP_j) + \gamma_{010}*(LOCALPPS_j) + \gamma_{011}*(WHITEPER_j) + \gamma_{012}*(PERSWD_j) + \gamma_{013}*(PERFREER_j) + \gamma_{10}*(PASSFAIL_{ij}) + \gamma_{20}*(GROWTH_{ij})$$

$$\begin{aligned}
& + \gamma_{30} * RTA_{ij} \\
& + \gamma_{40} * LICENSED_{ij} \\
& + \gamma_{50} * ADVDEGRE_{ij} \\
& + \gamma_{60} * NBC_{ij} \\
& + \gamma_{70} * TTURNOVE_{ij} \\
& + \gamma_{80} * BT_{ij} \\
& + \gamma_{90} * VT_{ij} \\
& + \gamma_{100} * ATTENDAN_{ij} \\
& + \gamma_{110} * TITLE1_{ij} \\
& + \gamma_{120} * WHITE_{ij} \\
& + \gamma_{130} * SWDNO504_{ij} \\
& + \gamma_{140} * LEP_{ij} \\
& + \gamma_{150} * FREEREDU_{ij} \\
& + \gamma_{160} * ABSENTTE_{ij} \\
& + u_{0j} + r_{ij}
\end{aligned}$$

Results of this analysis indicated which school-level and school district variables are predicative of the differences in North Carolina school performance grades. Schools that had a passing or failing school performance grade, schools that met or exceeded growth compared to not meeting growth, meeting the read to achieve benchmark, percentage of nationally board certified teachers, percentage of beginning teachers, student attendance, Title 1 status, percentage of White students, percentage of students with disabilities not including students with 504s, percentage of limited English proficiency, percentage of free and reduced lunch, and number of teachers absent more than 10 days showed statistical significance. Contextually, the school-level variables indicated that a one standard deviation increase in failing schools was associated with a decrease of about eight points on the school performance grade. A one standard deviation increase in schools that did not meet growth is associated with a decrease about five points on the school performance grades. The read to achieve proficiency percentage indicated that a one standard deviation increase is associated with an increase in school performance

grades by 0.21 points. The percentage of nationally board certified teachers indicated a one standard deviation increase is associated with a 0.20 increase in school performance grades. The percentage of beginning of teachers indicated that a one standard deviation increase is associated with a 0.05 decrease in school performance grades. The percentage of student attendance indicated that a one standard deviation increase is associated with 0.80 increase in school performance grades. Schools identified as Title I indicated that a one standard deviation increase was associated with a 2.9 point decrease in school performance grades. The percentage of White students indicated that a one standard deviation increase is associated with 0.91 increase in school performance grades. Students with disabilities not including students with 504s indicated that a one standard deviation increase is associated with 0.29 decrease in school performance grades. English Language Learners indicated that a one standard deviation increase is associated with a 0.10 increase in school performance grades. The percentage of students with free and reduced lunch indicated that a one standard deviation increase is associated with a 0.13 decrease in school performance grades. Teachers absent more than 10 days indicated that a one standard deviation increase is associated with a 0.08 decrease in school performance grades. These school-level predictors remains statistically significant when the level 2 predictors were added to the model. Additionally, one school district-level variable is significant, while two more variables are approaching significance. Per pupil funding from the local government indicated that an increase in one standard deviation is associated with an 0.001 increase in school performance grades. The percentage of principal turnover and the percentage of free and reduced students within the school district are both approaching significance. If the percentage of principal turnover was

significant, it indicated that an increase in one standard deviation is associated with a decrease in 0.09 points in school performance grades. If the percentage of students of free and reduced lunch within the school district was significant, it indicated that an increase in one standard deviation is associated with an increase in 0.07 points in school performance grades. A reduction in variance occurred when the level-1 and level-2 variables were added to the null model. The reduction in the within school district variance was calculated by:

$$\frac{\sigma_{(null)}^2 - \sigma_{(school)}^2}{\sigma_{(null)}^2} = \frac{120.88 - 22.39}{120.88} = .814 \quad (4.11)$$

The reduction in the within school district variance explained by the schools remained as 81.7%. The reduction in the between school district variance was calculated by:

$$\frac{\tau_{(null)}^2 - \tau_{(school)}^2}{\tau_{(null)}^2} = \frac{30.82 - 7.91}{30.82} = .743 \quad (4.12)$$

The reduction in the between-school district variance of the schools nested in the district increased to 75.9% using the fully conditional model with level – 1 and level – 2 predictors. The results of the fully conditional model with the added level-1 and level-2 predictors are summarized in Table 5.

**Table 5**

*Fully Conditional Model with Level – 1 and Level – 2 Predictors of School Level and School District Effects on North Carolina School Performance Grades*

	Fixed effects			
	Coefficient	SE	t-ratio	p
Intercept (School Performance Grade), <b>Y<sub>00</sub></b>	63.80	0.39	162.69	0.00
School-Level Variables				
Pass or Fail, <b>Y<sub>10</sub></b>	-8.17	0.51	-15.93	0.00



School Growth, $\gamma_{20}$	-5.41	0.39	-13.90	0.00
Read to Achieve, $\gamma_{30}$	0.21	0.02	10.453	0.00
Fully Licensed Teachers, $\gamma_{40}$	-0.001	0.05	-0.14	0.89
Advanced Degree Teachers, $\gamma_{50}$	0.02	0.02	1.24	0.22
National Board Certified, $\gamma_{60}$	0.20	0.05	3.60	0.00
Teacher Turnover, $\gamma_{70}$	-0.004	0.02	-0.17	0.86
Beginning Teachers, $\gamma_{80}$	-0.05	0.02	-2.12	0.03
Veteran Teachers, $\gamma_{90}$	-0.007	0.02	-0.14	0.89
Student Attendance, $\gamma_{100}$	0.79	0.18	4.46	0.00
Title I, $\gamma_{110}$	-2.93	0.62	-4.70	0.00
White Students, $\gamma_{120}$	0.09	0.01	6.68	0.00
Students with disabilities, $\gamma_{130}$	-0.29	0.05	-6.19	0.00
English Language Learners, $\gamma_{140}$	0.10	0.02	3.92	0.00
Free and Reduced Lunch, $\gamma_{150}$	-0.13	0.01	-9.57	0.00
Teachers absent more than 10 days, $\gamma_{160}$	-0.08	0.02	-3.51	0.00
School District -Level Variables				
Percentage of Beginning Teachers, $\gamma_1$	0.10	0.12	0.79	0.44
Percentage of Veteran Teachers, $\gamma_2$	0.04	0.10	0.46	0.65
Beginning Principals, $\gamma_3$	0.03	0.03	1.01	0.32
Veteran Principals, $\gamma_4$	0.04	0.04	1.04	0.30
Principal Turnover, $\gamma_5$	-0.09	0.05	-1.87	0.07
Advanced Degree Principals, $\gamma_6$	0.03	0.03	1.04	0.30
Average Student Attendance, $\gamma_7$	-0.18	0.54	-0.33	0.74
State Per Pupil Funding, $\gamma_8$	0.00	0.00	0.57	0.57
Federal Per Pupil Funding, $\gamma_9$	0.00	0.00	0.90	0.37
Local Per Pupil Funding, $\gamma_{10}$	0.001	0.00	2.36	0.02
Percentage of White Students, $\gamma_{11}$	0.03	0.03	1.24	0.22
Percentage of Students with Disabilities, $\gamma_{12}$	-0.05	0.10	-0.49	0.62
Percentage of Free and Reduced Lunch, $\gamma_{13}$	0.07	0.04	1.91	0.06

	Random effects			
	Variance	<i>df</i>	Chi-square	<i>p</i>
Between-school district variability (Intercept)	7.91	78	351.61	0.00
Within-school district variability	22.39			

	Proportion of Variance Explained
At the school district level (between school districts)	0.74
At the school level (within school districts)	0.81

### Summary

This data analysis included 1096 elementary schools in 92 school districts where grades three through five are in the same building. The unconditional model for North Carolina school performance grades revealed that 20% of the variance existed between school districts. Consequently, 80% of the variance occurred between schools. Sixteen school-level variables and 13 school district-level variables were used in this study. Of the sixteen school-level variables utilized in this model, twelve of them were significant. The significant variables in the level-1 model included if schools had a passing or failing school performance grade if schools met or exceeded growth compared to not meeting growth, meeting the read to achieve benchmark, percentage of national board-certified teachers, percentage of beginning teachers, student attendance, Title I status, percentage of White students, percentage of students with disabilities not including students with 504s, percentage of limited English proficiency, percentage of free and reduced lunch, and the number of teachers absent more than 10 days. When the school district-level variables were added to the level-2 model, the initial twelve school-level variables remained significant, and one school district-level variable was significant. Two more level-2 variables approach significance. Per pupil funding from the local government surrounding the school district was the only significant variable. In contrast, principal turnover and the school district's percentage of free and reduced lunch approached

significance. Discussion, implications, and recommendations of this analysis are provided in the next chapter.

## CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

The development of North Carolina school performance grades was to determine and categorize how well students are performing academically. This A-F letter grade system is similar to the grading system used by schools to determine success or failure. Unlike student grades, this grade calculations uses the data from the students who take the End of Grade tests in reading and mathematics from grades 3-8 or selected End-of-Course tests in high school. This standardized test only measures the knowledge of students on one given day using this one assessment (Pandya, 2011). The students' scores on these tests are the only determining factor in elementary and middle school. The grade is measured by 80% proficiency and 20% growth (N.C.G.S. § 115C-83.11, 2013; Public Schools First NC, 2019). Proficiency is based on the proportion of students who pass each test out of the total number of students who were tested. Growth compares how well the students performed on the test compared to their expected score based on their previous scores (NC Department of Public Instruction, 2014). Because the formula only uses the students' scores, school performance grades do not take into consideration any other factors that may influence student achievement. Even though existing literature has researched factors that affect school performance in isolation, these factors have not been combined with student test data. It is critical that I studied factors that affect student outcomes in addition to their actual standardized testing data in reading and mathematics to understand why certain factors affects particular schools more than others.

Several factors contribute to North Carolina school performance grades. Educational reform policies at the federal and state level shape how schools and school districts operate. Unfortunately, these reform policies are everchanging with the political

climate. The change in federal policy forces states and even school districts to shift how and what learn often, which does not solidify proper instruction for them (Darling-Hammond, 2010). The major stimulus for many current educational policies are centered around high-stakes testing (Darling-Hammond, 2010). In addition to educational reform policies, community, school district, and school factors influence student achievement. The community factors surround the economic disparities and their effect on school demographics and resources. Even though policies do not exist to address the financial inequalities between rich and poor districts (Darling-Hammond, 2013), housing regulations have caused segregated communities, leading to segregated schools (Orfield, 2013).

Schools in low-income neighborhoods have challenges with retaining quality teachers who know their content areas (Clodfelter et al., 2004; Darling-Hammond, 2013). One reason for these challenges is the needs of the diverse needs of their student population. Consequently, it is especially difficult when teachers within the same school district receive the same salary and more accolades for working at schools that have fewer needs (Berry, 2013; Clodfelter et al., 2004). School districts face the biggest challenge of finding the right person to lead each school. School districts find it more difficult to keep effective principals in their hard to staff schools (Snodgrass Rangel, 2018). Although all of these factors have been previously researched, these factors have not been combined to determine the impact or interaction they may have on student achievement. Hence, this study desired to understand how school- and school district-factors influence overall school performance grades in North Carolina.

This chapter examines the results and how they are aligned with previous literature and research studies in conjunction with school performance. Then, I use the information from the analysis with the theoretical framework to further explain my findings. Following this, I address that study's implications. Lastly, recommendations for various stakeholder groups are discussed. Conclusively, the purpose of this chapter is to situate the results of this study in the context of K-5 elementary schools in North Carolina while fostering direction for future research.

### **Discussion**

Researchers have concluded that differences exist between and within school districts with regard to their student demographics, teacher characteristics, and school leadership (Berry, 2013; Bloom & Owens, 2011; Clodfelter et al., 2004; Darling-Hammond, 2013; Gandara, 2013; Levine et al., 2004; Peske & Haycock, 2006; Petty et al., 2016; Rabren et al., 2014; Snodgrass Rangel, 2018; Tricarico & Yendel-Hoppey, 2012). However, little to no research investigates how the combination of school- and school district- factors influence student outcomes. So, this study examined the school- and school district- factors of public K-5 elementary schools in North Carolina to determine if a relationship existed between these factors and their overall school performance grade. The variables analyzed were purposely selected based on previous research findings and North Carolina policies.

Manifest and Latent Functions were applied to this research. Manifest Functions concentrate on the targeted result while Latent Functions identify and acknowledge that unintended consequences may arise (Merton, 1949). It considers that factors outside the data collected from standardized state test scores may contribute to North Carolina school

performance grades when positioned within this study. It was hypothesized that several school- and school district- factors affected the overall school performance grade.

### **Research Question One**

RQ1: To what extent does school performance vary within and between districts in North Carolina?

Findings for this research question indicated that North Carolina school performance grades vary by 20% between school districts. Eighty percent of the variance is within North Carolina school districts. The findings align with the research about North Carolina educational policies and the differences that exist with schools within the same school district. The between-school district variation supports that differences exist between school districts even though the state policies are enacted for all school districts to follow. The within-school district variation explains that schools have different educational outcomes based on their economics which influence their location and needs (Ladson-Billings, 2013; Orfield, 2013).

### **Research Question Two**

RQ2: What school-level characteristics are predictive of these differences?

Findings for this research question suggested that a passing or failing school performance grade, meeting or exceeded growth compared to those that did not, Read to Achieve proficiency, nationally board certified teacher, beginning teachers, student attendance, Title I status, White students, students with disabilities not including 504s, limited English proficiency, receiving free or reduced lunch, and teachers absent more than 10 days were the school factors that influenced North Carolina school performance grade in K-5 elementary schools. These factors agree with the existing research.

Results from the hierarchical linear model indicated that twelve out of sixteen variables were significant predictors for North Carolina school performance grades in K-5 elementary schools. The twelve predictor variables were the following:

- Schools that had passing or failing school performance grades ( $\beta = -8.24$ , SE = 0.51,  $p = 0.00$ )
- Schools that met or exceeded growth compared to those that did not meet growth ( $\beta = -5.39$ , SE = 0.39,  $p = 0.00$ )
- Percentage of students who met the Read to Achieve benchmarks ( $\beta = 0.22$ , SE = 0.02,  $p = 0.00$ )
- Percentage of national board certified teachers ( $\beta = 0.20$ , SE = 0.05,  $p = 0.00$ )
- Percentage of beginning teachers ( $\beta = -0.05$ , SE = 0.02,  $p = 0.04$ )
- Percentage of student attendance ( $\beta = 0.77$ , SE = 0.17,  $p = 0.00$ )
- Title I status ( $\beta = -3.17$ , SE = 0.61,  $p = 0.00$ )
- Percentage of White students ( $\beta = 0.09$ , SE = 0.02,  $p = 0.00$ )
- Percentage of students with disabilities not including those with 504s ( $\beta = -0.30$ , SE = 0.05,  $p = 0.00$ )
- Percentage of students with Limited English Proficiency ( $\beta = 0.08$ , SE = 0.02,  $p = 0.00$ )
- Percentage of students receiving free or reduced lunch ( $\beta = -0.11$ , SE = 0.01,  $p = 0.00$ )
- Percentage of teachers absent more than 10 days ( $\beta = -0.09$ , SE = 0.02,  $p = 0.00$ )



The gap between schools that earned failing and passing school performance grades was statistically significantly different from 0 within school districts. On average, failing schools scored 8.2 points lower than passing schools. The gap between passing and failing school performance grades aligns with North Carolina's policy surrounding school accountability while meeting the guideline set forth by the federal government. This policy began with North Carolina's General Statute § 115C-105.35 (2012) which uses end of year standardized test data to determine if schools are closing the achievement gap. The data from this study revealed that the achievement gap still exists between schools with passing school performance grades and those schools that do not.

The gap between schools that did not meet growth and those that met and exceeded growth was statistically significantly different from 0 within school districts. On average, schools that did not meet growth scored 5.4 points lower than schools that met or exceeded growth. This aligns with the EVAAS model classifications and student outcomes. The schools that did not meet growth means that the students did not perform as expected on the End of Grade test based on their individual testing history (North Carolina Public Schools, 2013).

The gap between schools that are classified as Title I and those that are not Title I was statistically significantly different from 0 within school districts. On average Title I schools scored about 3.0 points less than non-Title I schools. The findings in this study align with the existing research. The purpose of Title I funding was to provide educational resources for schools that had high concentrations of students with special education needs and those living in poverty (Jeffrey, 1978). Title I funding solidifies that economic disparities exist in schools which demonstrates that all schools are not

equitable in their educational practices. Since Title I classification still exists from 1965, the disparities between students living in poverty and those who do not is still evident in student achievement.

The results pertaining to free and reduced lunch are in alignment with the existing literature. For every one point increase in the percentage of students receiving free and reduced lunch is associated with a 0.11-point decrease in school performance grades. Free and reduced lunch is used to measure economic disparities in schools (U.S. Department of Education, National Center for Educational Statistics, 2020). The higher the free and reduced lunch percentage in a school, the more students who attend the school who live in poverty. Schools where more than 75% of the students receive free and reduced lunch are considered high poverty schools (U.S. Department of Education, National Center for Educational Statistics, 2020). This coincides with the research that students who attend low-income schools perform below students at other schools.

For every one point increase in the percentage of meeting the Read to Achieve benchmark is associated with 0.22 increase in school performance grades. The findings in this study coincide with the North Carolina's legislations as well. The North Carolina General Statute §115C-83 (2012) seeks for all students to display reading proficiency by the end of third grade. This legislation believes that the more students who are proficient on their read to achieve benchmark, the more students will be college and career ready according to their scores on the NC End of Grade test as well as in the future. The more students that demonstrate proficiency on their End of Grade tests, the better the overall school performance grade because 80% proficiency and 20% growth is used for its calculation (North Carolina Public Schools, 2015).

For every one point increase in the percentage of nationally board certified teachers is associated with a 0.20 increase in school performance grades. Humphrey et al. (2005) analyzed the teaching location of nationally board-certified teachers in six states and found that approximately 15 percent work in low-performing schools or schools with a high concentration of students of color. This means that nationally board-certified teachers primary teach in high performing schools (Humphrey et al., 2005). The increase in the number of nationally board-certified teachers corresponds with an increase in school performances grades seen in the results.

For every one point increase in the percentage of beginning teachers is associated with 0.05 decrease in school performance grades. Beginning teachers usually get hired at low-performing schools as a result of more experienced teachers transferring to high-performing schools when the opportunity arises (Clodfelter et al., 2004; Fuller et al., 2018; Tricarico & Yendel-Hoppey, 2012). These teachers are also inexperienced with their content and pacing, which causes students in low performing schools to receive unclear and choppy instruction (Darling-Hammond, 2013; Payne, 2008; Peske & Haycock, 2006). Teacher licensure is also associated with these findings as some teachers do not attend traditional licensure routes, so their exposure to educational practices are minimal. Teachers who receive their license through alternative routes are also unfamiliar with the content they teach (Tricarico & Yendel-Hoppey, 2012). Even though both traditionally and alternatively certified teachers follow different paths, both groups of beginning teachers have the same problem: they are unfamiliar with their content areas and the students are not receiving high quality instruction, causing the decline of student achievement. These findings match that school performance grades decrease as the

percentage of beginning teachers increases. Additionally, the percentage of veteran teachers was not significant. These results make sense as the more beginning teachers are in a school, the fewer veteran teachers are employed. These results work together to illustrate the effect the teacher workforce has on student achievement.

For every one point increase in the percentage in student attendance is associated with 0.77 increase in school performance grades. Schools located in high poverty areas traditionally have higher absenteeism rates. Some of the students face chronic health challenges which may cause them to miss school (Jensen, 2009). Students who miss school provided transportation may also have attendance concerns because some families lack transportation to bring the students to school or the parents are not home at the time to take them to school (Rothstein, 2013b).

The findings for this study found that for every one point increase in the percentage of White students is associated with 0.09 increase in school performance grades. The findings for the racial composition of the students in a school does affect school performance. School composition is a reflection of the neighborhoods in which they are located. According to Orfield (2013), segregated housing equates to segregated schools. Housing policies assisted in segregating neighborhoods, which exacerbated schools with higher concentrations of students of color (Orfield, 2013). White families aided in segregated neighborhoods by moving out of the inner cities and to the suburbs, leaving inner cities desolate and lacking resources (Orfield, 2013). The resources of inner cities are reduced because of the diminished property value as potential buyers are not shown low-income properties as options (Orfield, 2013). As a result, lower income

schools traditionally have lower test scores (Jensen, 2008; Orfield, 2013) as seen in this study.

The results for students with disabilities without including students with 504s correlated with the existing research. For every one point increase in the percentage of students with disabilities, not including students with 504s, is associated with a 0.30 point decrease in school performance grades. Students with disabilities are more likely to be attend a high-poverty school than their non-disabled peers (Levine et al., 2014). These students, like English language learners, are more likely attend low-income schools with high teacher turnover and inadequate instruction (Clodfelter et al., 2004; Darling-Hammond, 2013; Fuller et al., 2018; Payne, 2008; Peske & Haycock, 2006). An additional factor that affects student achievement when only looking at students with disabilities not including 504s includes the shortage of special education teachers to oversee that their needs are being met and teachers are providing their accommodations (Mason-Williams, 2015). The lack of special education teachers and resources means that students with disabilities are not receiving an equal opportunity to learn the curriculum and they are more likely to perform below their non-disabled peers.

The results of this study do not correspond with the existing literature with English Language Learners and student achievement. This current study said for every one point increase in the percentage of students with limited English proficiency is associated with 0.08 point increase in school performance grades. English Language Learners are largely represented in low-income schools. The students that attend high-poverty schools lack instructional stability, as teacher turnover is high, as well as content understanding and delivery can be subpar (Clodfelter et al., 2004; Darling-Hammond,

2013; Fuller et al., 2018; Payne, 2008; Peske & Haycock, 2006). Teachers are not always prepared to teach English Language Learners because teacher preparation programs and professional development do not offer or focus on the needs of these students (Berry, 2013; Darling-Hammond, 2013; Gandara, 2013). Additionally, provisions for English Language Learners were not discussed in No Child Left Behind or any other federal educational policy following it, causing school districts not to focus on their needs (Vinovskis, 2009). Because English Language Learners are learning the language and the curriculum at the same time and the test is written in the language the students are learning, English Language Learners perform below their native English speakers' counterparts (Gandara, 2013).

The results from this study supported the existing literature about teachers absent more than 10 days and the association with student achievement (Clodfelter et al., 2009; Miller et al., 2008; Ots & Schiman, 2017). For every one point increase in the percentage of teachers absent more than 10 days is associated with a 0.09 point decrease in school performance grades. One of the major challenges schools face with high teacher absenteeism is finding coverage for those classrooms where the teacher is not present. Finding coverage for absent teachers is a problem particularly in low-income schools because of the substitutes and teachers do not want to work harder for the same pay when some schools' populations do not require this intensity of work (Clodfelter et al., 2004). The administrators must find ways to ensure all students are supervised and the teachers who are present become responsible for more students than they are assigned. When other teachers are asked to increase their workload because of absent teachers, the cycle continues as the workload is increasing for teachers who consistently come to work; this

may cause them to see employment at other schools where they are responsible for their assigned classroom.

### **Research Question Three**

RQ3: What district-level characteristics are predictive of these differences?

Results from the fully conditional model with the level-2 predictors indicated that one out of thirteen school district variables were statistically significant. Two additional variables were approaching significance. The hierarchical linear model identified the local per pupil funding ( $\beta = 0.001$ ,  $SE = 0.00$ ,  $p = 0.02$ ) as significant. The two variables approaching significance are the percentage of students receiving free and reduced lunch ( $\beta = 0.07$ ,  $SE = 0.04$ ,  $p = 0.06$ ), and principal turnover ( $\beta = -0.09$ ,  $SE = 0.05$ ,  $p = 0.07$ ) within each school district.

Local per-pupil funding is the amount of money each school receives district receives from the local government. Based on this study's findings, for every one dollar increase in government funding based on the school district's location, the overall school performance grade increases by 0.001 points. This data suggests that local government funding impacts how well schools perform on End of Grade tests in reading and mathematics. The minimal amount of increase is more applicable if every thousand dollars calculate it. This equates that every 1000 dollar increase in local per-pupil funding will result in a one-point rise in the overall school performance grades. The funding schools receive locally is based on property taxes and neighborhoods (Darling-Hammond, 2013). The difference in financial resources within a school district impacts the quality of education the students receive. Schools low-income neighborhoods receive less money as the property tax contribution is less because of the type of housing in the

neighborhoods surrounding each school (Ladson-Billings, 2013; Orfield, 2013). Schools that receive lower amounts of funding have higher needs and a lower quality of education (Anyon, 2005; Darling-Hammond, 2010). These schools also have fewer instructional resources and personnel, which means students have lower standardized test scores (Darling-Hammond, 2013).

The percentage of free and reduced lunch students in a school district is also approaching significance. Based on this study's findings, for every one-point increase in the percentage of free and reduced lunch students in a school district, the overall school performance grade increases by 0.07 points. These results imply that the higher the percentage of free and reduced lunch recipients in a school district, the better students perform on the North Carolina End of Grade test, thus increasing school performance grades. These results are not in with the level-1 model or the existing research. A high percentage of students receiving free and reduced lunch traditionally corresponds with the school's identity as low-income. This identification criterion is that more than 75% of the student qualify to receive free and reduced lunch (U.S. Department of Education National Center for Educational Statistics, 2020). This model's results are opposed to the Weimer and Wolkoff (2001), which states that students at low-income schools perform at least 15% less than students at other schools. This means that high poverty school districts or high poverty schools within a school district perform below their peers at affluent schools.

Principal turnover is approaching significance. Principal turnover in North Carolina school districts is the rate at which principals leave schools after one year. Based on the findings in this study, for every one point increase in principal turnover in a



school district, the overall school performance grade decreases by 0.09 points. This result explains the importance of school leadership with respect to student achievement.

Schools that retain their principals provide more stability for their students and their teachers (Bloom & Owens, 2011). Low performing schools experience high principal turnover as many principals are not equipped with the skills to lead these schools which affects student achievement (Dolph, 2017).

### **Application to Theoretical Framework**

Manifest and Latent Functions was the theoretical framework used in this study as it is a branch of structuralism based to ensure that order is maintained (Ballantine & Hammack, 2012). Manifest and Latent functions look at the intended and unintended outcomes of social practices (Merton, 1949), and as it relates to this study, helps clarify the Manifest and Latent Functions with respect to North Carolina school performance grades. This theory was applied to North Carolina school performance grades in context by utilizing the overall grade as the Manifest Function. The overall school performance grade is the numeric score that corresponds with the letter grade. North Carolina expected to analyze the grades of each school to determine overall student achievement since End of Grade and End of Course test scores are used in the calculation. Latent Functions were used in this study as school and school district characteristics that impact student achievement were identified. The factors were used in a model to determine their level of influence on overall school performance grades. The modeling of these variables demonstrated the theory as unintended outcome affect school performance grades as well as the communities in which these schools serve. As a result of this study, twelve school-level and three school district-level predictors influenced overall North Carolina school

performance grades. These variables cause the grade to increase or decrease according to the students' performance the North Carolina End-of-Grade tests in K-5 elementary schools.

### **Study Implications**

The overall findings for this study identified 12 school-level and one school district-level predictors as influencers on North Carolina school performance grades in K-5 elementary schools. The school-level predictors included: schools having a passing or failing school performance grade, meeting or exceeding growth compared to not meeting growth, meeting Read to Achieve benchmarks, percentage of nationally board certified teachers, percentages of beginning teachers, percentage of student attendance, schools identified as Title I or not, percentage of White students, percentage of students with disabilities not including those with 504s, percentage of students with Limited English Proficiency, percentage of students receiving free or reduced lunch, and percentage of teachers absent more than 10 days. The school district-level predictor is local per pupil funding. As North Carolina school performance grades are used to determine the success of each school, understanding these predictors helps people understand other factors schools and school districts face that impact a school's success. It is suggested that understanding the factors that change school performance grades and finding ways to counteract those factors will aid in producing more successful schools in North Carolina. Helping stakeholders understand these predictors will benefit students in the future and potentially increase overall student academic achievement and decrease the achievement gap between students.

The passing and failing school performance grade illustrated that there was a gap between these two types of schools. These findings suggest that the students at schools with a failing school performance grade are not learning and retaining the curriculum as their peers at schools with higher school performance grades. The differences in the students' performance on the End of Grade test means that the students' access to instruction is diminished because all of the students take the same test across the state of North Carolina. The reasoning for diminished instruction cannot be identified from this variable alone, but it is assumed that the students at schools with failing performance grades are receiving similar instruction.

The comparison of schools that meet or exceed growth compared to those schools that did not meet growth also shows that there is a gap between these two types of schools. This finding suggests that students at schools that did not meet growth have a lower school performance grade than the schools where the students are meeting and exceeding growth. Since growth is measured using the EVAAS model, it also suggests that teachers are not teaching effectively because students are not achieving a year's worth of growth (North Carolina Public Schools, n.d.). Once again, this variable does not shed any light on why students are not demonstrating academic growth because all students take the same End of Grade test. Additionally, the algorithm used to determine each student's predicted score uses the student's prior academic history (North Carolina Public Schools, 2013). The fact that students are not growing states that students are not mastering enough grade level content knowledge to be successful on the End of Grade test.

The students who met the Read to Achieve benchmark shows that students at schools who demonstrate reading proficiency at the end of third grade have an increase in

school performance grades. This finding suggests that the more students demonstrate reading proficiency, the more likely they are to pass the End of Grade reading test. This is critical as the more students who pass the End of Grade reading test and demonstrate growth has a positive impact on the overall school performance grades. This finding reinforces the critical need for students in elementary schools to know how to read by the end of third grade. Schools and school district must find a way to increase the literacy rate for their elementary students.

The percentage of nationally board-certified teachers affects overall school performance grades. This finding suggests that the increase in school performance grades exists as the percentage of Nationally Board-certified teachers because type of schools most of them work. As found by Humphrey et al., (2005), most Nationally Board-certified teachers work at more affluent schools with fewer students of color. Given that these teachers work at schools where more students demonstrate grade-level proficiency and do not face school challenges such as instable instruction (Payne, 2008) and teacher turnover (Clodfelter et al., 2004), this study shows that North Carolina needs to find a way to attract and retain more nationally board-certified teachers at their lowest performing schools.

Beginning teachers represent teachers with fewer than four years of experience. These teachers are learning how to navigate the curriculum of their content area, classroom management, and student engagement in addition to any other duties they are responsible for at their schools. As these teachers are adjusting to their new normal, they are unsure of how to increase student achievement especially since many of them begin at low-performing schools. These factors which are associated with beginning teachers

affect school performance grades as noted in this study. Since this study focuses on elementary school teachers, it must be taken into account that many teachers teach all four content areas without a primary focus as secondary schools are structured. These factors must be taken into consideration because many beginning elementary teachers focus on multiple content areas. If these students are in low-performing schools, this can be a cause for fragmented instruction because teachers do not have time to master either set of curriculum standards.

Student attendance percentage affects school performance grades. The findings in this study suggest that an increase in student attendance increase school performance grades. The inverse of this finding is found in the existing research. The research explains how students at lower income schools have a higher rate of chronic absenteeism because they have greater health challenges that require medical attention to which these students have less access (Rothstein, 2013b). Their families may also lack transportation to get their children to school if they miss the bus (Jensen, 2009). These findings support the need for social reforms to provide equitable resources for students and their families.

The comparison of schools classified as Title I and those that are not illustrates between both types of schools. The findings suggest that schools denoted as Title I have lower school performance grades than schools that are not. This finding is interconnected with the percentage of students who receive free and reduced lunch at the school and the school district level. The findings about free and reduce lunch explain that the higher the number of students that receive free and reduced lunch, the lower the overall school performance grades. The free and reduced lunch percentage measures the poverty level at each school. According to the National Center for Education Statistics (2020), schools

where at least 75% of their students receive free and reduced lunch are identified as high poverty and receive Title I funding. These measures are different because a school could have a high percentage of students who qualify for free or reduced lunch and it be classified as Title I because it does not meet the threshold. The development of Title I funding came to fruition because President Johnson was trying to eliminate the disparities between schools of poverty and those not in poverty (Jeffery, 1978). The major difference between schools identified as Title I and those that are not is the additional financial resources these schools receive (Jeffery, 1978). Both of these factors must be taken into consideration because schools that have a high percentage of students who receive free and reduced lunch under 75% still faces the challenges of Title I schools, but they do not have the additional resources to enhance the students' education. Although Title I schools have funding restrictions, it is ultimately the principal's discretion for how these funds are used. In order for these schools to increase student achievement, schools with high free and reduced lunch percentages that do not receive Title I funding must be provided with additional support to meet the needs of their students. Low-income schools must also find creative ways to attract and retain quality teachers.

The percentage of White students affects the overall school performance grades in North Carolina. The findings in this study suggests that increase in percentage of White students in a school's population is associated with an increase in passing the End of Grade Reading or Mathematics test as these scores are used in the calculation of school performance grades. This result aligns with the existing research. Economic disparities are associated with race (Welner & Carter, 2013). Schools with high concentrations of poverty historically have affected Black students as the schools are isolated in segregated

neighborhoods (Orfield, 2013, Rothstein, 2013b). This means that low poverty schools have fewer White students who attend them and lower student achievement especially on standardized tests. Lower student achievement in low-income schools is impacted by the challenges these schools face including high teacher turnover (Berry, 2013; Clodfelter et al., 2004; Darling-Hammond, 2013; Peske & Haycock, 2006), high teacher absenteeism (Clodfelter et al., 2009; Miller et al., 2008), and less access to quality resources (Orfield, 2013). To combat this, school districts and local city governments should find a way to integrate their schools so that all students can have equitable schooling opportunities.

The percentage of students with disabilities not including 504s affects overall school performance grades. The findings in this study imply that students with identified disabilities not including students with 504s perform worse on North Carolina End of Grade Reading and/or Mathematics tests in elementary schools as it is reflected in the school performance grades. This result coincides with the existing research as many students with disabilities have other factors contributing to their education. Because twice as many students with disabilities live in poverty and there is an overall teacher shortage especially in special education, these students are not receiving the services (Levine et al., 2004). This lack of services and resources leads to students not receiving equitable educational outcomes. Students may not have or receive the appropriate accommodations to ensure that the curriculum is accessible to them or that their educational goals are met (Mason-Williams, 2015). Special education teachers already have an increased workload compared to their colleagues because they are responsible for assisting in classrooms as well as documenting the students' progress yearly. Furthermore, the students with disabilities who attend high poverty schools may not receive much of the curriculum

because of the high teacher turnover rates and the increased number of beginning teachers (Clodfelter et al., 2004). It is imperative for schools to find ways to attract special education teachers to the field and high poverty schools. Additionally, special education teachers should be trained more effectively on the systems used to generate the documentation for students with disabilities. This extra work does not make the position of a special education teacher attractive. Finding a way to assist with the caseload and teaching responsibilities would prevent these teachers from leaving the profession or leaving special education.

The percentage of students with Limited English Proficiency increases the overall school performance grades, however this finding presents concern as it does not support the existing research or experiences many teachers face in their classrooms. Data from No Child Left Behind found it difficult to meet the needs of English Language Learners as schools and school districts found it difficult to meet the academic goals for these students within the specified timeframe (Vinovskis, 2009). This indicates that English Language Learners were not demonstrating proficiency on the state standardized test, which in turn causes a decrease in North Carolina school performance grades. The findings from this study are contrary to the literature because many English Language Learners fall behind in academic subjects because they do not understand English (Darling-Hammond, 2013).

In North Carolina, students are classified as English Language Learners based on each family's information during student enrollment. Parents receive a home language survey. If the parents identify that they speak a language other than English at home, then a language screener is given to these students in English to determine their proficiency.



The student's score on the screener determines the frequency and type of service the students receive. However, these services are heavily dependent on the programs each school district offers. North Carolina identifies that more than 300 languages are spoken in students' homes (Sugarman & Geary, 2018). The top five languages spoken by 75% of North Carolina English Language Learners are "Spanish, Arabic, Vietnamese, Chinese and Hindi/Urdu" (as cited in Sugarman & Geary, 2018, p. 3).

A significant challenge English Language Learners face is the use of multiple-meaning words and homophones. As they learn English, it is hard for them to decipher the word's meaning in context because the context may also be unfamiliar to them. For example, the word change may refer to money or a transition from one thing to another. English uses many words that sound the same but have different spellings and meanings. Multiple-meaning words make decoding standardized tests more difficult. It is imperative to find adequate ways to teach English to language learners and assess them to understand their level of intelligence in their native language.

The language gap facilitates the achievement gap for English Language Learners, and students who may have once been proficient in their native language now fall behind (Gandara, 2013). It is even more difficult for students to grasp English when they are not proficient in their native language. This decline in English Language Learners' ability to understand the content translates to not showing proficiency on the North Carolina End of Grade or End of Course test. Since the content is taught and tested in English, many English Language Learners are perceived as less intelligent because they did not meet the state's criteria for college and career readiness. This perception causes many English Language Learners to be identified as needing special education services even though it

is difficult to assess them in their native language. Their language deficiency causes many schools and school districts to assume these students have a learning disability because it is easier to provide students with special education services than provide them with language services. Many school districts and schools may implement language immersion programs or ESL teachers, but many of these services are limited beyond elementary school. Lastly, the educational background of English Language Learners is not always consistent. Some students come from countries where they did not receive an adequate education, or they could not attend school for some time. This attendance gap in instruction also causes English Language Learners not to demonstrate language proficiency. These factors surrounding bilingual students must be considered while analyzing the impact English Language Learners have on North Carolina school performance grades.

Teachers absent more than 10 days decreases the overall school performance grade and this finding is consistent with the literature. The challenge with teacher absenteeism is two-fold: teachers are not present to teach their curriculum, and schools, especially low-performing schools, struggle to find substitute teachers (Miller et al., 2008). Ultimately, both of these factors impact student outcomes and other teachers. When substitutes are not available or not willing to work in schools, the students must have adult supervision. Oftentimes the school administrators must devise a plan in order for students to be monitored. The solutions to teacher absenteeism is either student dispersal where these students are sent to other teachers' classrooms for the day or teacher coverage where teachers are required to give up a portion of their planning period to supervise the class. These solutions negatively impact teachers as their workload

increases. This is especially challenging at low-income schools because they are hard to staff. Currently, the Coronavirus makes it virtually impossible to find people who are willing to put themselves at risk to work as a substitute. To combat this problem, North Carolina should consider increasing the salary for substitutes at it is currently \$80 per day if they are unlicensed and \$103 per day if they are licensed (Hinchcliffe, 2019).

Moreover, North Carolina should consider developing consistent standards to qualify as substitute. Every school district has its own requirement to become a substitute (Hinchcliffe, 2019), causing the substitute pool to vary across the state.

As local per-pupil funding increases, an increase in overall school performance grades also increases. These findings align with the existing research. Local per-pupil funding is imperative to school quality (Ladson-Billings, 2013). School funding is based on the school's location and the amount of money it receives from property taxes (Darling-Hammond, 2013). Low-income schools receive less money because fewer people own homes in the neighborhoods around the school (Orfield, 2013). The lack of funding low-income schools receive means schools does not have as much money to invest in important professional development and instructional resources (Darling-Hammond, 2013). The lack of these resources causes teachers to leave high-needs schools and work for a school that does not require as much work and has the necessary resources (Darling-Hammond, 2010, Darling-Hammond, 2013). Moreover, North Carolina should consider reallocating its funding to meet each school and school district's needs to ensure all students receive an equitable education.

An increase in principal turnover leads to a decrease in overall school performance grades. The findings with the existing research are consistent. Principals are

important to the leadership of every school and they carry out their vision of the school as it is aligned with the school district's vision (Dolph, 2017). It is important that school districts find the right principal for each school in order for student achievement to be improved (Decman et al., 2018). Principals oversee the instructional and operational needs of their schools, but their level of autonomy depends on the type of school they lead. Principals are responsible for their teaching staff, but that is more of a problem at low-income schools. Since low-income schools have higher teacher turnover rates (Berry, 2013; Clodfelter et al., 2004; Darling-Hammond, 2013; Peske & Haycock, 2006), and teacher absenteeism (Clodfelter et al., 2009; Miller et al., 2008), it is more likely that students are receiving watered down instruction (Darling-Hammond 2013; Payne, 2008; Peske & Haycock, 2006). These challenges restrict which courses principals can offer at their schools and the staff they can hire (Bloom & Owens, 2011). The challenges principals face that lead to their turnover can be adjusted by training principals for the types of schools they may lead. Currently, school administrator programs train principals the same way. This does not prepare leaders to lead different types schools or school levels. Additionally, school challenges affect principal turnover because the principal is responsible for everything that happens in their building. Finding ways to reduce teacher turnover and to retain quality teachers would help reduce principal turnover.

### **Recommendations**

Recommendations based on the findings from the study include a focused approach to meeting the needs of the North Carolina elementary students by looking at specific challenges of different types and finding ways to address those needs. As the current research addresses several of these factors individually, this model assessed

school- and school district-level predictors together to understand the impact on student achievement through North Carolina school performance grades.

In order to address the problem that exist between schools with passing and failing school performance grades, stakeholders who are impacted by a strong educational system must take corrective action to provide students with equitable educational resources. Additionally, addressing the issue at only the school or school district will not transform student achievement for the students. Instead, working together from a top-down and a bottom-up approach is vital to increase North Carolina school performance grades. Recommendations for each stakeholder including policy makers, educational programs, North Carolina, local communities, school districts, and schools are provided below.

### **Recommendations for United States Policy Makers**

Federal education policies dictate students' education, but they do not include the strategy or resources for implementing these policies. The first recommendation for federal policymakers is that they make educational policy more aligned with the previous administration. When federal education policies are created and passed, they are passed down to the states and each state must make provisions for school districts and schools to implement the policy. Because the president can potentially change every four years, educational policies have the potential to change every four years. Policymakers also try to create quick, cheap "magic beans and silver bullets" for schools to implement to yield major changes (Welner & Carter, 2013, p.3). This makes it challenging for states to execute and implement these changes because of the amount of time between presidential terms (Vinovskis, 2009). The second recommendation is for lawmakers to create an

education task force to include teachers, assistant principals, principals, and superintendents to understand how educational policy could be implemented in schools and school districts. Educational policies are created by lawmakers (Vinovskis, 2009) and they do not normally have experience in education. The task force would help lawmakers understand the pressure and accountability faced by schools and school districts even though they do not receive the same pressure (Welner & Carter, 2013). Creating a task force with educators would help lawmakers create policies that can be implemented with more fidelity and flawlessness. These educators can also help lawmakers understand the resources needed to implement the policies and become realistic about the timeframe needed to see the increase in student achievement.

In summary, the recommendations for policy makers include the following:

1. Make educational policies that are more aligned to the educational policies from previous administrations.
2. Create an education task force comprised of teachers, assistant principals, principals, and superintendents to work with lawmakers to make policies that can be easily implemented in school and school districts.

### **Recommendations for University Educational Programs**

Educational programs play a critical role in preparing teachers and principals for working in schools. The first recommendation for university educational programs is to incorporate more field experiences in low-income school settings. Each potential teacher should be assigned to a low-income school for one year in addition to any other setting. These students in the teacher preparation program will spend a year in a low-income school to understand the challenges that teachers face in them. Since many beginning

teachers are employed at low-income schools during their first three years (Clodfelter et al., 2004), this year long experience would provide these teachers with experience around their assigned content area and classroom management. As teachers have more experience in low-income schools and become more familiar with the curriculum, it is more likely to improve student achievement (Fuller et al., 2018).

The second recommendation for university educational programs is to require an internship at a low-income school for one semester for school administrators. This experience, like the teacher field experience, would expose school administrators to the challenges these schools face before they are hired to lead them. This experience allows prospective principals to see how to balance being an instructional and operational leader. For example, a prospective principal will see firsthand how to teacher absenteeism, teacher turnover, professional learning communities, and other factors to ensure the school runs smoothly.

The third recommendation for university education programs is for professors to partner with low-income schools so that they can stay abreast with the current trends in public schools. This would also build the bridge between theory and practice. The fourth recommendation for university education programs is for school administrators to take at least two business courses in management, finance, leadership, and organization management. These courses would help school administrators transition from a teacher to a leader. Teachers who are successful in managing their classrooms may not be successful in managing an entire school. Business courses would provide school leaders with insight from another field to assist them in making needs assessments and developing strategies for meeting the universal of increasing student achievement.

In summary, recommendations for university educational programs include the following:

1. Incorporate a year-long field experience for teachers at a low-income school to understand the challenges teachers face. Teachers will become familiar with their content area and with classroom management before obtaining a job.
2. Require a semester-long internship for school administrators at a low-income school to understand how to lead it. Principals will see how low-income schools run instructionally and operationally.
3. Professors who teach in school-based educational programs will partner with a low-income school to stay abreast with the challenges in public schools to connect theory to practice.
4. Require school administrators to take a minimum of two additional business courses to help transition teachers to school leaders.

### **Recommendations for North Carolina Policymakers**

North Carolina policymakers are the liaison between the federal education policies and the school districts. They are responsible for determining how to incorporate the mandates passed down from the United States government to the school districts. The first recommendation for North Carolina policymakers is to adjust the formula used for North Carolina school performance grades. The current formula for North Carolina school performance grades is based on the End of Grade Reading and Mathematics scores for elementary and middle school. The calculation is 80% of the school's proficiency and 20% of the school's growth (North Carolina Public Schools, 2015). Based on the current formula a school that is low-performing or whose student



population is comprised of students who below grade level will never receive a passing score if their students grow but do not pass the test. Additionally, schools whose population is comprised of students on or above grade level students will always have a passing school performance grade but may never experience positive growth. Positive growth is an assessment for teacher effectiveness based on the EVAAS model (North Carolina Public schools, n.d.). The lack of growth from this model makes it appear as teachers are not assisting in the learning process of the new curriculum. The major challenge with the growth model is it mimics the logarithmic model, meaning that lower performing students experience more growth than higher performing students because they have continually demonstrated mastery of the curriculum. The new formula would represent 65% proficiency and 35% percent growth. This formula would still use these two factors, but the growth calculation would support lower performing students more by using the growth formula to illustrate changes in student achievement and show that higher performing students still have challenges that do not rely on their environment and access to outside resources. Given that the findings of this study depicted an associate between 12 school level and 3 school district level predictors, incorporating these predictors would present a more accurate information about student achievement.

The second recommendation is to adjust the teacher allotment policy that is dependent on the student enrollment during the first month of school (North Carolina Department of Public Instruction, 2020a). Even though it is necessary to ensure that schools with higher than predicted enrollments during the first month of school have enough teachers, it does not take into consideration the number of students who move in and out of a school during the school year. So once the teacher allotment time window is

closed, schools cannot add teachers if they are needed. Additionally, schools with smaller enrollments need more teachers because of the challenges they face within a school. For example, if a school has a high special education population, it is not beneficial to have a high number of these students in the same class together. It becomes difficult to meet their needs and the set accommodations to ensure they receive an equitable education based on their disability. This also do not account for students who move into a school with an Individualized Education Plan that must added to this classroom. There is no room for growth when teacher allotments are solidified at the beginning of the school year. The same philosophy holds true for English Language Learners.

The third recommendation is to remove school counselors, social workers, and special education teachers from the teacher allotment calculation. The teacher allotment calculation includes school counselors, social workers, and special education teachers. This is important because these employees are paid on the teacher salary scale which classifies them as instructional staff, but they are also capped based on the student enrollment. These instructional staff members have greater accountability at some schools compared to others. School counselors are responsible for academic, social, and emotional learning and needs, maintaining 504s, connecting families to community resources, and make home visits. Social workers are similar to counselors, but they focus mainly on meeting the needs of students and families outside of schools and how those needs affect the students in school. Special education teachers are responsible for instruction, but also must maintain the caseload of all special education students and asses their needs yearly based on their progression. Their paperwork must remain in compliance with federal education regulations at all times.

The fourth recommendation is for North Carolina policymakers to create an education task force to include teachers, assistant principals, principals, and superintendents to understand the best way for educational policy to be implemented in schools and school districts. This task force is similar to the task force recommended for the federal policymakers. The members of this task force should be from all of North Carolina regions to understand the challenges these school districts face. Students who attend schools in the mountains miss more school during the winter because of inclement weather. Students who attend schools along the coast miss schools because of flooding resulting from hurricanes. Rural counties have challenges with have reliable internet connections. Because of the vast differences across North Carolina, these representatives are capable of providing insight into the needs school districts may have to implement these policies effectively.

In summary, the recommendations for North Carolina policymakers includes the following:

1. Change the North Carolina school performance grade calculation to 65% proficiency and 35% growth. It would also include school and school district factors that were associated with school performance grades from the model.
2. Adjust the teacher allotment policy to take into consideration the needs of the school and recognize that students move in and out of school fluidly.
3. Remove school counselors, social workers, and special education teachers from the teacher allotment policy.

4. Create an education task force comprised of teachers, assistant principals, principals, and superintendents to work with lawmakers to make policies that can be easily implemented in school and school districts.

### **Recommendations for Local Governments**

Local governments are essential to the success of school districts. The decisions made by the local governments impact community factors that affect educational outcomes. The factors of housing, health, transportation, jobs, and other factors affect teaching and learning (Welner & Carter, 2013). The first recommendation for local governments is to provide adequate transportation for their areas. This is important because transportation is a factor that affects families and their abilities to leave their neighborhoods. Families who live in communities that do not have access to public or personal transportation will not be able to get their children to school if they miss the bus. This can lead to chronic absenteeism for students (Rothstein, 2013b). Transportation would also allow parents to participate in more school activities and provide them access to jobs outside of their neighborhoods.

The second recommendation for local governments is to approve and incentivize vital business that can provide economic growth and development to low-income areas. Additionally, the local government would monitor redlining with respect to raising prices of products because of the business' location. This would include gas stations, grocery stores, hospitals, pharmacies and others. Incentivizing businesses would provide job opportunities to people who live in these neighborhoods. For example, the building of a grocery store that provides access to fresh foods would eliminate food deserts and increase the access for nutrition for students. This would increase student achievement.

In summary, the recommendations for local governments include the following:

1. Adequate transportation for families to leave their neighborhoods which would allow them access to their children's schools and other jobs.
2. Approve and incentivize vital businesses in low-income areas. Monitor redlining for prices of goods because of its location.

### **Recommendations for School Districts**

School districts are responsible for implementing federal and state education policies. They must use their resources to meet the decide how to meet the regulations. The first recommendation for school districts is to create boundary lines that do not segregate the students by income level and race. These boundary lines are sometimes drawn in a way to ensure that students from low-income neighborhoods do not mix with students from affluent neighborhoods. These boundary lines keep students who live in the same neighborhood with the same students all day. These lines do not provide students with access to other people or schools with other resources unless these students are permitted to attend another school because it has a magnet program which they must be accepted.

The second recommendation is for school districts to reallocate some of their financial resources to schools with high needs. Financial disparities exist within school districts as they are based on property taxes (Darling-Hammond, 2013). Schools that have the highest needs do not have adequate funding to meet those school needs because their neighborhoods traditionally generate lower income from property taxes (Darling-Hammond, 2013). The schools with the highest needs have a more diverse population of students where their staff needs more extensive training and professional development

(Darling-Hammond, 2013). When this money comes from the school's budget, then other instructional resources cannot be purchased or replaced.

The third recommendation for school districts would be for them to be more intentional in their hiring practices from the superintendent down to the bus drivers. Different schools within a school district have different needs. The availability of a person does not ensure fit for a school. It is imperative that school districts recruit administrators and central office staff that have the same vision and this vision is reflected throughout. When superintendents and principals are not retained, the vision for and within the school district changes continually, which does not increase student achievement because of its instability (Payne, 2008)

In summary, the recommendations for school districts include the following:

1. Redraw boundary lines to minimize or eliminate segregation.
2. Reallocate school district funding.
3. Create intentional hiring practices by school district personnel.

### **Recommendations for Schools**

Schools are in direct contact with the students and teachers and the goal of their job is to increase overall student achievement. The first recommendation for schools is for principals to use their teacher allotments to benefit students and learning. Some schools use teacher positions to hire instructional coaches and academic facilitators. These positions are beneficial to ensure that teachers understand the curriculum that they teach; however, this is not beneficial when a school has too many facilitators and class sizes are large. This goes against the MTSS model with which 80% of learning comes from core instruction because it becomes difficult to meet the needs of the students when

a school has more facilitators than it needs. Schools are given a suggested allotment for facilitators, but they should not be able to exceed this number if it will impede instruction.

The second recommendation for schools is for school administrators to build morale and positive community culture within their building. It is difficult for teachers to meet the needs of their students when they do not feel as though the school administrators care about their personal needs. It is also challenging to build and maintain morale and community culture in schools where principal and teacher turnover is high. Principals feel the pressure from the school district to increase student achievement, but they do not always model the behavior they want their teachers to exhibit with their students.

Principals whose actions and words are in alignment help build morale and community.

The third recommendation for schools is for the principal to adequately assess the needs of their school and implement programs and professional development that directly address these needs. Many times principals require professional development on topics, but they do not necessarily align with the needs of the school. It oftentimes feels like the principal is requiring another meeting, but they not intertwine this information with the needs and the direction of the school. Additionally, schools require all staff to participate in some professional development even though it is not beneficial to all content areas.

Most times this is required to prevent people from complaining that others did not participate; however, the professional development is not always suitable and does not serve all teachers well. For example, the school may require all teachers to participate in a Newsela professional development, but they will not require all teachers to sit in a math professional development. Also, it is important that schools hire staff based on their

needs. For example, if a school has a high English Language Learner population who predominately speak Spanish and no one in the building speaks Spanish, the school is unable to connect and communicate with that sector of students and families.

In summary, the recommendations for schools include the following:

1. Principals should use their teacher allotments to benefit students and instruction.
2. Build morale and positive community culture.
3. Adequately assess and meet the need of their school through programs and professional development.

### **Conclusion**

In conclusion, this study found that 12 school-level and three school district-level variables were significant predictors for the overall North Carolina school performance grades in K-5 elementary schools. Implications were discussed regarding these findings. To address the needs of the schools who have failing school performance grades, the stakeholders should find ways to make changes that illustrated in increase in school performance grades from the model. Recommendations were provided and summarized for the United States policymakers, university educational programs, North Carolina policy makers, local governments, school districts, and schools.

This study revealed how school- and school district-level predictors are associated with student outcomes as the only measure used was the End of Grade reading and mathematics scores. It is essential to increase overall student learning for learning and performance on these standardized tests. While the focus has been primarily on the outcomes of the tests, the models showed that factors affecting teachers influence student performance. It is the responsibility of all stakeholders to retain and recruit quality



teachers for all students. Additionally, school composition influences teachers' desires to work at specific schools, ultimately affecting student performance. It is most vital to decide whether North Carolina school performance grades accurately measure student outcome especially considering the coronavirus and the challenges during the 2019-2020 school year. School performance grades were not calculated as students did not take North Carolina End of Grade or End of Course tests. Because of the pandemic, virtual schooling was revitalized, but students were not held accountable for their learning from March 2020 – August 2020. Now that the 2020-2021 school year underway, the calculations will measure more than the students learning and the teacher's instruction, but it will also gauge student access to technology, including the internet, and their parents' influence in their education. It is truly in the best interest of everyone that all students receive equal access to education to prepare for the future.

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