THE EFFECT OF ELEMENTARY AND MIDDLE SCHOOL GRADE SPAN AND TRANSITION ON STUDENT ACHIEVEMENT AND GRADUATION

by

Jeana Conley
Liberty University

A Dissertation Presented in Partial Fulfillment Of the Requirements for the Degree Doctor of Education

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2016
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APPROVED BY:

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ABSTRACT

Social factors surrounding critical transition periods, school and class size, and grade configuration at the elementary level greatly impact current and future student performance. The expectation is that all of these factors are standard among schools, but in reality, every school is different; therefore, the potential for inconsistent quality of learning exists. This causal-comparative study explored the difference between school size, grade span configuration, and transitions associated with a district’s seven elementary feeder schools in a small county in rural Western North Carolina. Differences in student performance, in both reading and math, at the elementary, middle, and high school level, as well as graduation rates, were examined for ties to the identified feeder school. The elements of teacher quality, teacher turnover, and principal turnover were explored as potential variables in student performance. An ex-post facto statistical analysis utilizing t-tests provided an exploration of feeder school characteristics and which feeder schools are more likely to produce successful academic achievement and graduation from high school. The data analysis revealed no statistically significant difference among students who experienced fewer transitions in their school career in regard to reading performance. However, the students who attended a Pre-K through grade eight school had higher mean scores in math than the students who attended a Pre-K through grade five school. Although no statistically significant difference was found between the school configuration and successful graduation, it was noted that students who did not attend any elementary school in the district had a much higher dropout rate.

Keywords: feeder school, dropout, self-contained, graduation rate, elementary education, economy of scale, grade configuration, academic performance, grade span, school transition.
Dedication

To my sons, Alex and Chase, who, for years, ate many cold bowls of macaroni and ramen noodles while their mother was typing and working in study. You both are my heart, and I could not be more proud of the adults you have become. This effort exemplifies years of my life’s work, but forever, you both will be my best work: my masterpieces. I love you.

To Randy Bryant, my best friend, who has been there for me at every turn. I understand how it feels to be loved because of you.

To my mother, Brenda Conley, who has been a constant and enduring source of strength and love to my children, my sisters, and me.

To my fellow administrators, who constantly give of their time and their hearts to make sure our students have what they need. I am blessed to work with such an amazing team of educators, who put children first.

To my best friend, Teresa Wood, who took care of me when no one else was there for me. I love you dearly.

To Dustina Reece, my mentor, friend, and life advisor, who not only encouraged and advised me, but gave me a place to go when I had nowhere else to turn.

To Deborah Brown, eternal student and intellectual twin.
Acknowledgements

I would like to express deep appreciation to God, who instilled in me a calling and a love of learning that has led me on a great journey of serving public education.

My committee chair, Dr. Linda Holcomb, has served not only as a model educator with a love for children, but has been a constant and guiding source of encouragement and strength, as have my committee members, Dr. Chris Baldwin, Dr. Jonathan Burton, and Dr. Scott Watson, who have read much of what, at times, could be termed drivel. Dr. Watson’s practical but painfully honest feedback and teaching during intensives on campus at Liberty gave me the confidence to believe I had what it takes to achieve this degree.

I give a special acknowledgement to the wonderful team with whom I work: John Higdon, Greg Chapman, Kim Gibson, Jennifer Cable, J-Ray Rayfield, Michelle Marasco, Julie Higdon, Stephanie Hass, Tonya Wiggins, Ellaree Clonts, Cindy Brown, Pam Pressley, Jennifer White, John Parker, Anne Boring, and Andrea Stewart. Your professionalism and dedication keep the district ship righted at all times, and I could not have completed this work were I not surrounded by such a competent, innovative, and amazing team. Most important, to my colleagues and data team, Kristy Allison and Sherry Peek, who were integral to this study in the collection and understanding of data, and went out of their way to help me, thank you. Randy Starnes, David Cornwell, and Jeremiah Jackson were there when this all began: thank you.

Thank you to my sister, Dr. April Tallant, whose intellect I respect more than anyone else’s, and whose love I appreciate and cherish. Also, thank you to my sister, Susann McWhorter, who needs no explanation for why I love her. My special friends, Jamie Barnett, Wanda Arrowood, Dr. Lisa Fletcher, Kathy Kent, Cindy Brown, and Muffy Kerber, kept me sane, with infrequent but memorable evenings filled with life-changing conversation and advice.
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CHAPTER ONE: INTRODUCTION

In the simplest of measurable terms, the goal of public education is to provide students an optimum learning experience in grades kindergarten through twelve, culminating in high school graduation. However, most would agree that the goal of education is much more than graduation, but includes readiness for life in the post-secondary world, whether this involves further education or career readiness. Graduation, however, has become a proxy measurement, and the primary method in which political and societal entities measure the success of public schools. In order to sustain standards for our society, economy, and government, the United States, over the last twenty years, has systematically designed educational programs to address the needs of students. Examples of these efforts are The No Child Left Behind Act, championed by the George W. Bush administration, and eventually, the newly adopted Common Core State Standards, which emerged under President Barak Obama. Both programs have attempted to establish accountability and standards for students that result in the development of knowledgeable citizens who are ready for post-secondary life, either college and/or a career (Jones, 2012). According to Allison Jones, vice president of the post-secondary collaboration for Achieve.Org, “there is much more to college and career readiness than English language arts and mathematics” (Jones, 2012, p. 38). National programs such as No Child Left Behind and the Common Core State Standards are expected to drive rigor and the standardization of expectations for students on a national level so that students are prepared for life after high school. It is the standardization of rigor and knowledge, however, that is often difficult to gauge from state to state, or even district to district, or school to school.

Theoretically, each student should graduate with at least a minimum standard of knowledge from any school within the United States. In fact, the North Carolina Department of
Public Instruction holds this mission statement: “The guiding mission of the North Carolina State Board of Education is that every public school student will graduate from high school, be globally competitive for work and postsecondary education, and be prepared for life in the 21st Century” (North Carolina Department of Public Instruction, Appendix B, 2013, p. 1). However, because of a range of factors, some students do not achieve graduation, and in fact, they may have a different set of experiences and opportunities based on the elementary or feeder school attended, even within the same district or same community. The quality of learning and social factors surrounding critical transitional periods can greatly impact not only current, but also future student performance. Baker, Grant, and Morlock (2008) and Blum (2005) posited that the design or structure of the various schools that a student attends can shape the student’s experience; therefore, differences in the early grades may critically impact later performance. Depending upon school size, classroom size, the grade span configuration of the school, and the number of transitions between schools that a student makes prior to high school, cohorts of students may be influenced by a variety factors that impact their achievement and/or their ability to graduate.

The mission of this study was to hone in on these factors, with a particular focus on a single district. This ex-post facto causal comparative study explored the factors, analyzed student performance in the elementary feeder schools in a rural Western North Carolina county, and drew comparisons to student academic performance in middle and high school based upon the elementary feeder school that was attended. In some instances, the feeder schools serve the same community and feed the same middle and high schools. A quantitative analysis of student performance based on the type of school attended provides comparisons of the varied examples of differing grade configurations, as well as class assignments that range from self-contained to
grade-level departmentalization. School and class sizes were further variables of interest that were compared. Differences in student performance at the middle and high school level, as well as the graduation rates, were examined and traced back to the identified elementary feeder school. The demographic characteristics of the middle and high schools regarding size, grade configurations, and socioeconomic factors were also explored.

The intention of this study was not only to explore perceived academic discrepancies among feeder schools serving the same district, but also to discuss research that addresses school transitions and the attributes of high school dropouts. The accessibility of data produced from accountability testing and the advent of computer programs that allow for data disaggregation have simplified the process of identifying performance discrepancies among schools, and even teachers and individual students. Data can reveal trends and performance factors, exposing similarities and differences between schools within the same district. The reasons leading to such discrepancies can be varied, and determining the causes often requires exploration beneath the surface. This is presented in a theoretical framework and provides a snapshot of the literature that explores the causes of discrepancies between the schools and the individual students who attended the different feeder schools. Much of the research discussed in the literature suggests that success is based on student perceptions of the school and their perceived potential for success (Baker et al., 2008). Also, there is a clear relationship between at-risk and dropout behaviors and events, skill acquisition, and performance in elementary school (Hernandez, 2011; Miller, 2011; Tilleczek & Ferguson, 2007). The research adds a thoughtful backdrop to the query: If all the elementary feeder schools in question are imparting quality instruction, and the students are leaving grammar school on the same level, academically speaking, then the variable or variables causing the discrepancy in middle school and high school performance must be
found elsewhere. Middle school transition theory, causes of dropout behavior, and dropout prevention studies are also important aspects of the theoretical framework for this study (Akos, 2002; Alspaugh, 2000; Cauley & Jovanovich, 2006; Wormeli, 2011).

The first chapter of this study provides the skeleton of the research project in general and also includes descriptions of the environmental and historical settings of the research subjects, and background detailing the relevant literature. Further, this chapter details the problem of the potential differences or disparities in education within a single school district, which are factors possibly impacting the high school dropout rate. The significance of the study, as outlined by the research questions and hypotheses, as well as the important variables and operational definitions, are also included in this introduction.

Background

The issue of school dropouts has far-reaching economic and social consequences on a national level (Tinto, 2000). In a 2007 study, *The High Cost of Low Graduation Rates in North Carolina*, Gottlob attested that only two thirds of the students in North Carolina graduate, indicating that North Carolina was in the midst of what he concluded was a “dropout crisis.” This study estimated that over a period of fifty years, dropouts will cost the taxpayers in North Carolina 8.5 billion dollars (Gottlob, 2007). According to *Building a Grad Nation*, a study commissioned in 2012, the national cost of dropouts to the taxpayers in America could be reduced by 4.5 billion dollars if one class of dropouts was cut by half nationally (Balfanz, 2013).

Designing interventions for the dropout issue is complex and difficult to conceptualize because so many variables surrounding the issue are impacted by factors such as student experience and demographic data. However, many researchers, social theorists, and teachers agree that prevention of dropout tendencies should begin in elementary school (Deridder, 2001;
Hernandez, 2011; Wilson, Tanner-Smith, Lipsey, Steinka-Fry, & Morrison, 2011). Zeroing in on a particular district to analyze the impact of this range of differences is the crux of this study. The district selected for this study offers several different types of elementary feeder schools, allowing for a close study within a compact area.

The district under study is located in the westernmost part of North Carolina, which borders both Tennessee and Georgia. Demographically and structurally, the design of the feeder school systems and the variations in the schools, as well as the class sizes and class assignment models, provide a wealth of data to compare. There is a total of 14 schools: five high schools (grades 9-12), two middle schools (grades 6-8), three elementary/middle schools (grades Pre-K-8), and four elementary schools (grades Pre-K-5). They are located in a small community that takes pride in the performance of the local schools. Culturally, the schools are a hub for community events. Athletics are a centerpiece of neighborhood discussions, as is student academic performance. The local papers are dependent upon the schools, as many, if not most of their stories highlight events involving the schools in the community. These 14 schools are scattered throughout the county, with a mix of grade configurations and class assignments.

District administrators are often challenged by policy makers and community leadership to lower the number of physical plants in the small district for efficacy and cost savings. The district has thus far avoided embracing consolidation and the arguments referring to economies of scale as part of its long-term planning (Dodson & Garret, 2004; Howley, 1996; Imazeki, 2006).

The district administrators have maintained that “small community schools” provide more of a family-like approach, and philosophically, they remain a key component of the district’s perceived success (Baker & Bridger, 1997; Baker et al., 2008). The theoretical framework upon which this district has built its philosophy is the concept of school
connectedness. School connectedness refers to the level of support and the relationship that the teachers and staff offer a student in the learning environment (Blum, 2005). The middle schools in this small rural county, however, are experiencing distinct differences in performance among the students from the multiple feeder schools. Students from one feeder school, in particular, have academic difficulties; this assertion is validated through comparisons of state end-of-grade accountability tests. Further, the high school in one community, which is one of five in the district, maintains the highest dropout rate. A variety of factors have been explored to determine why the dropout rate in this high school remains the highest, but the most notable among them is that the students who drop out are graduates of one particular elementary feeder school.

A formal study of the graduation and dropout statistics of this small, rural county and the variables surrounding the dropout rate provides information that is integral to the development of intervention strategies. A thorough examination of the data generated from both the elementary feeder schools and the middle school students, as identified by the particular feeder schools, will enable the isolation of factors and provide more information that will assist in driving district decisions, particularly in regard to the long-range planning of facilities and potential consolidation.

**Demographics of Selected Schools**

Table 1 provides a brief description of each school in the district, including the average daily membership, the configuration of the grade spans, the attribute of students changing classes or remaining in a self-contained environment, and the destination school that the school “feeds” or readies students to enter in general.
## Table 1

*School Acronyms and Attributes*

<table>
<thead>
<tr>
<th>School identifier</th>
<th>School name</th>
<th>Grade level configuration</th>
<th>School size ADM</th>
<th>Minimum number of transitions</th>
<th>Self-contained or change classes</th>
<th>Destination school</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeder school 1 (FS1)</td>
<td>AES</td>
<td>Pre-K-5</td>
<td>381</td>
<td>2</td>
<td>Self-contained Pre-K-3 Change 4-5</td>
<td>AMS, AHS</td>
</tr>
<tr>
<td>Feeder school 2 (FS2)</td>
<td>HDEMS</td>
<td>Pre-K-8</td>
<td>171</td>
<td>*0</td>
<td>Self-contained Pre-K-5 Change 6-8</td>
<td>HDHS</td>
</tr>
<tr>
<td>Feeder school 3 (FS3)</td>
<td>MARES</td>
<td>Pre-K-4</td>
<td>110</td>
<td>2</td>
<td>Self-contained Pre-K-5</td>
<td>AMS, AHS</td>
</tr>
<tr>
<td>Feeder school 4 (FS4)</td>
<td>MCEMS</td>
<td>Pre-K-8</td>
<td>248</td>
<td>1</td>
<td>Self-contained Pre-K-5 Change 6-8</td>
<td>MHS</td>
</tr>
<tr>
<td>Feeder school 5 (FS5)</td>
<td>MES</td>
<td>Pre-K-5</td>
<td>499</td>
<td>2</td>
<td>Self-contained Pre-K-3 Change 4-5</td>
<td>MHS</td>
</tr>
<tr>
<td>Feeder school 6 (FS6)</td>
<td>PES</td>
<td>Pre-K-5</td>
<td>161</td>
<td>2</td>
<td>Self-contained Pre-K-5</td>
<td>MHS</td>
</tr>
<tr>
<td>Feeder school 7 (FS7)</td>
<td>REMS</td>
<td>Pre-K-8</td>
<td>297</td>
<td>1</td>
<td>Self-contained Pre-K-5 Change 6-8</td>
<td>HDHS</td>
</tr>
<tr>
<td>School identifier</td>
<td>School name</td>
<td>Grade level configuration</td>
<td>School size ADM</td>
<td>Minimum number of transitions</td>
<td>Self-contained or change classes</td>
<td>Destination school</td>
</tr>
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<td>-------------------</td>
</tr>
<tr>
<td>Feeder school 8 (FS8)</td>
<td>AMS</td>
<td>6-8</td>
<td>184</td>
<td>2</td>
<td>Change 6-8</td>
<td>AHS</td>
</tr>
<tr>
<td>Feeder school 9 (FS9)</td>
<td>MMS</td>
<td>6-8</td>
<td>328</td>
<td>2</td>
<td>Change 6-8</td>
<td>MHS</td>
</tr>
<tr>
<td>High school 1 (HS1)</td>
<td>AHS</td>
<td>9-12</td>
<td>279</td>
<td>N/A</td>
<td>Change N/A</td>
<td></td>
</tr>
<tr>
<td>High school 2 (HS2)</td>
<td>HDHS</td>
<td>9-12</td>
<td>207</td>
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<td>Change N/A</td>
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<tr>
<td>High school 3 (HS3)</td>
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<td>9-12</td>
<td>500</td>
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<td>Change N/A</td>
<td></td>
</tr>
<tr>
<td>High school 4 (HS4)</td>
<td>TCEC</td>
<td>9-12</td>
<td>142</td>
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<td>Change N/A</td>
<td></td>
</tr>
<tr>
<td>High school 5 (HS5)</td>
<td>MYS</td>
<td>9-12</td>
<td>34</td>
<td>N/A</td>
<td>Change N/A</td>
<td></td>
</tr>
</tbody>
</table>

*HDEMS is part of a Pre-K through grade 12 union school. Although two separate local education agencies (LEAs) exist, both are housed in a single facility. Student transitions are merely from grade level to grade level.

The district is comprised of four elementary schools, three elementary/middle schools, two full-fledged middle schools, and five high schools. As an example of the type of comparison on which this study focused, last year, Feeder School 1 (AES) and Feeder School 2 (MARES) ranked fifth and sixth among the local elementary schools, respectively, on the overall school percentile composite on accountability testing performance. Feeder School 2 (MARES),
however, is the smallest school in the county, with a total of only 119 students, 98% of whom are Caucasian. In previous years, Feeder School 2 (MARES) had enjoyed top scores, frequently ranking first or second in the county and even receiving the honor of being named one of NC’s Top Improving Schools in 2004 and the rank of number one district elementary school, with a composite percentile of 94.4%. Feeder School 1 is three times the size of Feeder School 2, which has 353 students, 84% of whom are Caucasian. Feeder School 1 (AES) also had enjoyed top scores on accountability tests, and in fact, in 2004, it was deemed an Honor School of Excellence, with a composite percentile of 91%. These percentiles reflect performance on end-of-grade accountability tests.

In 2005, however, the academic performance of Feeder School 2 (MARES), in regard to accountability measures, began to decline significantly. Feeder School 1’s (AES) test scores also declined, however, with less consistency than those of Feeder School 2 (MARES). In fact, in 2005, the long-time principal of Feeder School 2 (MARES) was transferred to another school, and the school’s composite moved from a 94.4, with a number one ranking status, to 70.5, ranked five out of six. Feeder School 1’s (AES) scores also dropped significantly, but the drop was consistent with the re-norming of the math component of the end-of-grade test, and Feeder School 1 (AES) still scored in relative context to the other schools. Between 2005 and the present, both schools have seen significant decline in scores compared to the other schools. Feeder School 2’s (MARES) small size and family approach to learning, however, implies that students receive more attention: This is the basis upon which the community continues to fight to keep the school open (Cherokee County Schools SACS District Accreditation Plan Narrative, 2008; NCDPI School Report Card, 2009, 2010, 2011, 2012).
As the economy has declined, and school faculty and administrators have come to expect budget cuts, more questions have emerged about the repurposing of buildings or the consolidation of schools in an effort to save resources. The results of this study may, in fact, assist district leaders by informing such decisions.

**Problem Statement**

This is a non-experimental causal-comparative study regarding a perceived disparity in academic performance at the middle and high school levels in a district in rural Western North Carolina. The research indicates that success in high school can be correlated to experiences in elementary schools (Deridder, 2001; Hernandez, 2011). Ex-post facto data will be utilized. The middle schools receive students from local elementary feeder schools, and the students from one of those feeder schools have historically out-performed the students from the other on the middle school state end-of-grade tests. Further, it has been postulated by faculty that the low-performing students comprise the majority of the local high schools’ dropout population, although nothing other than anecdotal examples have been provided as evidence of this. The various grade configurations, school size, and class size experiences at the elementary, middle, and high school levels, as well as the number of transitions between schools will provide comparative data for an analysis of the efficacy of the cohorts of learners produced by each elementary school and will increase understanding of academic performance at the middle and high school levels, as well as the impact of the elementary school experience upon graduation rates. Further, factors such as teacher quality and turnover in classroom teachers, and building leadership were identified in the research as factors that impact school and student achievement. The socio-economic factor of the rate of free and reduced lunches by school was also analyzed for correlational or causal impact.
Purpose Statement

The purpose of this study was to identify differences in middle and high school academic performance and high school dropout rates among students from different types of feeder schools, which vary in regard to grade configuration, class configuration, size, and transitions. The results from this study could contribute to an understanding of the root of any differences or discrepancies in student test scores or graduation rates, and may enable district leadership to design strategies to support students from elementary schools who do not perform well upon reaching middle and high school. Also, district level decisions regarding consolidation and future building projects could be informed and driven by the information from this study. Each year, questions regarding the concept of economies of scale and the efficacy of supporting the numbers of small community-based schools, as opposed to consolidation in facilities that would be less expensive to support over the long term, are the subjects of community political debates. Research demonstrating the efficacy or lack of efficacy of the smaller schools can inform leaders in making such decisions (Dodson & Garrett, 2004).

Significance of this Explorative Study

This study is an exploration that contributes to the body of literature discussing academic discrepancy among schools serving the same community, as well as to research addressing school transitions and the attributes of high school dropouts. Information gleaned from the study can be utilized to drive district decision making on a range of subjects, including school consolidation, curriculum, and/or social intervention(s), school wide or for individual students. School size, class size, grade configuration, and class models that follow self-contained or special-subject class change are elements that district and school-level administrators must continuously consider. Attributes of each school, such as teacher qualifications over time,
leadership, and teacher turnover, as well as socio-economic classifications, will also be considered as potential variables impacting performance. While many educational policymakers favor separate schools for grades 5-8 or 6-8 in order to accommodate the specific developmental needs of this age group, rural administrators often do not have the financial means to accomplish this (Coladarci & Hancock, 2002). The district that is the focus of this exploration is in the beginning phase of long-term building planning: It can use the information obtained in the study regarding the configuration that will optimize student performance to drive the design of the long-term plans. Further, strategies to improve the transition from elementary to middle school and to identify potential high school drop-out characteristics at the elementary level in order to target students for proactive intervention activities can be developed based on this study.

Research has indicated that there is often an achievement gap between the academic performance of minority students and that of their peers. Minority students also have the highest dropout rates nationally (Chapman, Laird, Ifill, & Kewal Ramani, 2011). The numbers tend to vary based on ethnicity; certain Asian and Caucasian students have the highest graduation rates, although other Asians, such as Laotians and Cambodians, fall into the category of students having the highest dropout rates, along with Hispanics and African Americans. More than 60% of Asian Americans are immigrants, and they struggle academically (Le, 2010). This study will examine a district that is identified as 98% Caucasian, which will enable a full consideration of factors other than race to identify issues related to academic performance and to dropouts.
Research Questions and Null Hypotheses

RQ 1: Is there a statistically significant difference in student achievement between the cohorts of students who attended a Pre-K through fifth grade school and students who attended a Pre-K through eighth grade school?

H₀₁A: There is no statistically significant difference in the means of end-of-grade reading scores between eighth grade cohorts who attended a Pre-K through fifth grade school and eighth grade cohorts who attended a Pre-K through eighth grade school.

H₀₁B: There will be no statistically significant difference in the means of end-of-grade mathematics scores between eighth grade cohorts who attended a Pre-K through fifth grade school and eighth grade cohorts who attended a Pre-K through eighth grade school.

RQ 2: Is there a difference between percent of students achieving high school graduation and type of feeder school attended: feeder schools which serve Pre-K through fifth grade feeder schools which serve Pre-K through eighth grade?

H₀₂: There is no difference between the percentage of students achieving high school graduation and the feeder school attended: feeder schools which serve Pre-K through fifth grade and feeder schools which serve Pre-K through eighth grade.

Identification of Variables

The independent variables (IV) include the characteristics of the elementary school the students attended. The characteristics addressed in this study are the school size and grade configuration of the school, class size, classroom assignment model (self-contained or special subject class change model), percentage of highly qualified teachers, teacher turnover, and
principal turnover. The dependent variable (DV) is middle school academic performance as demonstrated by eighth-grade math and reading EOG scores. An additional categorical variable is whether or not each student achieved high school graduation.

**Definitions**

*ADM*- Average Daily Membership is the number of days a student is enrolled as a member of a particular school, divided by the number of days in a school month or a school year. It is how a school and state defines enrollment numbers (North Carolina Department of Public Instruction, 2006).

*At-risk*- This term became part of the common language in the educational realm in 1983, when the study, *A Nation at Risk*, was published. This term is used to describe students at risk of educational failure as a result of challenges ranging from a lack of adequate service from school or social service organizations to negative life events, such as socioeconomic or physical/mental challenges (Gardner, 1983).

*Cohort*- A group of students who entered a grade at the same time and is scheduled to complete graduation together. In order to be considered a traditional graduate, one must complete high school with the cohort in which one began (North Carolina Department of Public Instruction, 2015).

*Departmentalization*- This is a model of student learning in which teachers specialize in a subject area and students rotate throughout the day to different teachers and classrooms receiving specialized subject teaching. The students refer to this process as “changing classes.” Departmentalized learning has been the foundational structure of secondary schools since they were initiated (Walker, 2009).

*EOG*- End-of-grade tests (EOG) are state-wide assessments given in both reading and
mathematics in grades 3-8 and taken by students during the last three weeks of the school year in North Carolina public schools (North Carolina Department of Public Instruction, 2006).

EOC - End-of-course tests (EOC) are state-wide assessments of student competencies as detailed in the North Carolina Standard Course of Study (SCS) for Algebra I, English I, and Biology. The tests are taken during the last two weeks of school for students on a traditional calendar and the last week of the course for students on a block schedule (North Carolina Department of Public Instruction, 2006)

Grade Span Configuration - The range of grades comprising a school is described as grade span configuration (Coladarci, 2002). Some examples of school configurations are kindergarten through grade 6, as opposed to kindergarten through grade 9. In the district under study, there are five different grade span configurations; Pre-K through 5, Pre-K through 8, grades 6-8, grades 9-12, and an extremely unique school that hosts Pre-K through grade 12 in one facility, although administratively, the school is technically two schools, with one principal for Pre-K through grade 8 and another principal for grades 9-12.

Self-contained classroom - The self-contained classroom is a classroom structure in which a pupil is under the supervision of a single teacher for most, if not all, of the subject teaching and activities. The teacher acquires a deep knowledge of the student in this arrangement based upon the amount of time the student and teacher spend together each day (Tillman, 1960; Walker, 2009).
CHAPTER 2: LITERATURE REVIEW

Introduction

What, if any, is the significance of the elementary school experience on future student performance? Does this experience impact potential success for graduation, and if so, to what degree? What factors and characteristics impact the student experience to prepare the student for success in the later grades and graduation from high school, and what interventions are in place to assist students when their graduation is in jeopardy? Despite the national attempts to level the playing field with initiatives such as the No Child Left Behind Act of 2001 and the new adoption of the Common Core Curriculum (2010), students’ experiences in public school are anything but the same. In fact, in rural areas, the public school experience can vary significantly between populations, with pockets of students from elementary, middle, and high school experiencing very different challenges and opportunities (Payne, 2001). Variables such as school and class size, resource availability, the grade span configuration of the feeder schools, and in particular, the social structure of classroom assignment and interaction with peers, can be completely different from one school to the next (Zoda, Combs, & Slate, 2011). What is the impact for students who develop learning styles specifically related to the support systems in their elementary school or classroom environment, and then, are thrust into a foreign situation in middle or high school without the proper transitional supports? Further, what interventions are in place at the high school level to influence or impact students who may be on track to drop out of high school?

The availability of accountability testing data has simplified processes and now enables school leaders to identify performance discrepancies among schools. The data indicate that even students in schools within the same state, region, or district may have vastly different educational
experiences leading to these performance discrepancies. The reasons for this can be varied, and determining the causes often requires exploration beneath the surface. Further, students who have performed well in elementary school will sometimes fail to thrive once they have transitioned from elementary to middle school, and similarly, from middle to high school (Akos & Queen, 2005; Cauley & Jovanovich, 2006). What is at the root of student performance discrepancies? Is the gap academic or economic, or are there social and/or environmental issues to consider? According to Miller (2011), “social intelligence is highly valued in many cultures, but in the United States intelligence tests focus on nonsocial school-related intellectual abilities” (p. 178). An examination of the factors before and after the development of the achievement gap experienced by some students may reveal an avenue to solutions and could reveal social, as well as academic reasons for discrepancies. Analysis by teachers and administrators of the data regarding academic discrepancies is a common strategy aimed at student academic improvement (Creighton, 2007). This study will analyze the economic, social, and environmental factors that are at the foundation of the feeder schools in a rural district to explore a relationship between achievement, and ultimately, graduation of students attending different feeder schools. Are there elements of the elementary school and classroom environment that promote success that are not being replicated as students transition to the next level of their education? If so, what are those elements, and how could and should they be replicated to support student success? Are these characteristics primarily academic or social in nature, or is there a mix of characteristics?

This review of the literature selectively provides past research and literature that discuss the identification of characteristics of the school and classroom environments that might cause a performance discrepancy between the schools and the individual students who attended the varying schools. If elementary feeder schools are imparting quality instruction, and students are
leaving the fifth grade on the same level academically, then the variable initiating or causing the performance discrepancy or dropout behaviors may be found elsewhere.

Transitions to middle school, and then, to high school, are approached differently depending on the district or even the community. Middle school transition elements and causes of dropout behavior are an important aspect of the literature content of this study. Further, what interventions exist to counter a student’s path toward dropping out of school? The support systems put in place in public schools that can help to ensure that a student can achieve graduation will also be a focus of this study and are detailed in this literature review.

**Theoretical Framework**

The foundation of this study is built upon the intertwining of several basic theoretical concepts. Maslow’s (1943) hierarchy of needs, partnered with Bandura’s (1989) social cognitive theory, and Vygotsky’s (1978) sociocultural theory, overlap to provide a framework for understanding the progression and/or regression of students from elementary to high school. Piaget’s (1952) constructivist philosophy provided a guide connecting the theories of Maslow, Bandura, and Vygotsky to their actual application in the school settings that are the subject of this study. These theories have a common emphasis on the influence of the environment upon the behaviors and growth of students as individuals. The students’ individual perceptions of and self-concepts about their own competencies, as demonstrated in the cultural atmosphere in which they participate, are a primary focus of each theory. Piaget’s cognitive assimilation and accommodation theories are also a primary component of the literature referenced in this study. Further, the theoretical framework is based on the need of students to receive solid foundational learning and experiences at the elementary level in order to successfully complete a course of study and earn a high school diploma. A trusting relationship within the school learning
community can generate a positive perception about school, which is directly linked to success and achievement (Akos, 2002; Parker, 2010; Stein & Hussong, 2007). Learning achievement is directly tied to high school completion (Nowiki, 2004; Tinto, 2000). A goal of this study is to create a model of analysis that enables districts to utilize data to make educational decisions that will explore and address the disparities between feeder schools at early levels. Also, the design of individual curriculum models for student assignment, for example, the self-contained learning model for elementary school, as compared to subject specific classes presented by instructors, can be explored in context with student learning preparation. Theorists Maslow, Vygtosky, Piaget, and Bandura paved the way for researchers who believe that prior knowledge and linking to prior knowledge through schema and scaffolding are critical to student learning, as well as the recognition of social needs and patterns that can impact academic performance.

Maslow’s hierarchy of needs

Noted psychologist Abraham Maslow is best known for the development of a concept that has been labeled as Maslow’s hierarchy of needs. This structure is comprised of five levels of basic needs deemed to be integral to the development of every individual. The theory posits that each level of need must be met before children can comfortably move forward. Physiological needs take precedent, then higher order needs such as love and acceptance, with a culminating goal of what Maslow describes as self-actualization. According to Maslow (1968), “self-actualization is an episode in which the abilities of a person form harmoniously to allow the person a true sense of self-efficacy and success and independent of the lower needs of the hierarchy” (p. 97).

Maslow’s Hierarchy of Needs is classified in five categories:

- Self-actualization–morality, creativity, and problem solving.
• Esteem—confidence, achievement, self-respect, and respect for others.
• Belongingness—love, friendship, intimacy, family, social acceptance, and interactions.
• Safety—feeling secure, having resources, and health.

Maslow’s theory clearly paves the way for an understanding of how the elements of transition from one environment to another, for example, from elementary to middle school, and middle to high school, present a situation in which students may regress in their sense of safety, as well as in the meeting of their physiological and emotional needs. Students that have adjusted, assimilated, and acquired a sense of acceptance in one environment might be positioned in a situation that completely removes their sense of security when they move to another school or another level (Turnbull, 2006). This could significantly affect students’ sense of self-efficacy and impact their motivation to succeed. All people seek to overcome feelings of isolation; therefore, an environment that creates a sense of belonging and a feeling of acceptance is integral to healthy emotional and psychological development (Simons, Irwin, & Drinnien, 1987).

Social learning theory

Social learning theorists such as Bandura and Dweck have posited that as people establish goals, they are more likely to reach their desired outcomes. This achievement relays a higher self-efficacy to the person (Bandura, 1989). Conversely, Bandura believed that when people felt ineffectual, they began to question their sense of security and ability to succeed in different scenarios. Bandura’s theory asserts that a person’s self-perceived efficacy has a deep influence over their ability to succeed. Dweck and Legget (1988) theorized that people develop goals based on how they have perceived, interpreted, and then responded to events. Students in their study who failed to achieve success in their own established performance goals often
demonstrated a decline in academic performance. These theories establish a foundation for the hypothesis that students who leave an environment in which they have an established comfort zone could become academically disengaged if they experience a sense of failure after transitioning to a new environment.

Vygotsky and Piaget are the founders of constructivist theory, which is a core element in social learning theory. For both theorists, social interaction is a core component. However, Vygotsky posited that social learning occurs first, while Piaget’s research indicated that physical and psychological development precedes social interaction. Constructivist theory encompasses an understanding of the sociocultural context in which people interact and experience learning and life (Vygotsky, 1978). Viewing students through the constructivist lens as they progress through different grade levels, teachers, and even different buildings allows a consideration of the impact of social emotional variables.

**Economies of scale, school size, consolidation, and connectedness**

School size and class size research are also important components of the theoretical framework of this study. The concept of economies of scale is applied by educational and community leaders when planning the use of facilities. In designing the school or schools in a district, the focus remains on fiscal efficiency and the lowering of the cost of education per pupil based upon what is most cost effective in the community, as opposed to the social and academic needs of a community (Porter, 2008). For example, a district may have two community schools within a small area radius. In order to save funding on transportation, district administrators may decide to combine the resources for the cafeteria and the administration, consolidating the two schools into one building, thereby closing both and opting for a new school, or closing one and transferring its students to the remaining school. As a result, the consolidation of schools has
been a popular, and often, a controversial strategy to cut the per pupil cost of districts. It has been posited that it is more cost effective to maintain one large facility than several smaller facilities, thereby cutting the need for multiple administrators, multiple cafeterias, etc. (Dodson & Garret, 2004). However, more recent studies have challenged the economy of scale and consolidation models by analyzing data other than financial figures and operating costs. Imazeki (2006) analyzed student achievement and sub-groups with special needs, finding that when adjustments for students with special characteristics were factored into the school budget, the initial perception of cost effectiveness could be challenged. School connectedness or “the degree to which students feel supported and cared for by staff” (Cotton, 2001, p. 29) is an important variable that cannot be evaluated through financial figures or economic analysis. Blum (2005) also concurred that the positive support found in smaller schools results in an optimal learning environment. Grade configurations vary tremendously nationwide and can even vary significantly within a district. Configurations of Pre-K-12, 3-8, 6-9, 8-12, as well as various other grade structures, provide different support and challenges to students. Brown, Henig, Lacireno-Paquet, and Holyoke (2004) defined the controversy as one that can be summarized by reviewing all instances through the lens of the locus of control. Should a school district make decisions that consider a “market” locus of control? Or should decisions regarding facilities and resources of the public schools be left to those who apply a “mission-oriented” locus of control? The difference is that a market locus of control philosophy will consider financial stability. Those who emphasize a mission-oriented locus of control will ultimately value attributes that are less capable of being objectively measured, such as students’ sense of security and connectedness (Brown et al., 2004).
Related Literature

Disparity of performance among schools is a frequently reviewed issue across the nation. Additionally, the topic of dropouts and correlations to the possible reasons that students drop out of school are a continual conversation in both governmental and academic circles. In 2001, the United States adopted the No Child Left Behind Act in an effort to standardize performance criteria on a national level. Typically, a perceived cause of the disparity emerges quickly in any reporting or literature. A commonly discussed cause is different spending budgets in regards to the per pupil ratio, which may result in limited resources for one school compared to another (Arnold, 2000). The differences in the demographic population, particularly when one population is heavily weighted by numbers of minority and/or impoverished students, is always noted as a primary cause for disparity in performance. Also, the limited quality of instructional delivery, compared to other schools, is often speculated to be the cause of performance discrepancies between schools. Cultural and socio-economic characteristics are also found to impact student performance, highlighting the discrepancies between school entities. Descriptive attributes regarding school size, class size, grade configuration, and classroom structure are critical elements that must also be explored. The success of systemic dropout intervention strategies employed throughout public school districts is also a critical component to investigate (Cotton, 1996).

High school dropouts: issue, causes, and impact

Nationally, almost one third of all students attending a public high school (approximately 1.2 million students annually) do not earn a high school diploma; they do not graduate with their class, or they drop out of high school. Nearly half of these identified high school student dropouts are classified as minorities (Bridgeland, Balfanz, Moore, & Friant, 2010). Twenty-first
century demands on the United States’ workforce reflect the need for an educated and competent population to fill the growing opportunities in new and emerging technical fields. America is competing on an increasingly global platform, and many businesses, corporations, and people are realizing the necessity for a higher level of education (Monrad, 2007).

In October of 2007, the Milton and Rose D. Friedman Foundation and a group called Parents for Educational Freedom in North Carolina published a study by Gottlob (2007) entitled The High Cost of Low Graduation Rates in North Carolina. According to his research, North Carolina absorbs 169 million dollars annually for one class year of dropouts. This amounts to about $4,437 per dropout (Gottlob, 2007). The North Carolina Department of Public Instruction reports that per pupil spending is approximately $4,887 dollars. Thus, this means that in regard to lost revenue, North Carolina pays almost as much per dropout as per pupil annually. The state is also incurring the cost of additional support mechanisms that tend to disproportionately serve those who drop out of school, and consequently, do not receive a high school education. These dropouts will typically not go on to be high earners; therefore, the state is also losing potential tax revenues. Also, according to this research, a third of North Carolina students fail to graduate and are classified as dropouts (Gottlob, 2007). Nationally, the numbers mirror those of North Carolina, indicating that nearly a third of students attending public high schools throughout the United States fail to graduate from high school (Bridgeland, Dululio, & Morison, 2006).

According to an international study entitled Education at a Glance, the United States is ranked seventeenth among developed nations for high school graduation (Organization for Economic Co-Operation and Development, 2006). National statistics reveal that 50% of the inmates slated for death row are high school dropouts. Further, 30% of federal prisoners, as well as 40% of
state prisoners, also failed to graduate from high school and to secure a diploma (US Department of Justice, 2002).

The leading reason reported by student dropouts for their failure to graduate was their inability to draw the connection between what they were learning in the classroom and what they perceived to be their own goals, career aspirations, and dreams (Bridgeland et al., 2010). Other reasons included boredom, lack of interest, and the futility of courses that the students believed would “never be used in life” (Bridgeland et al., 2010, p. 4). Further, these dropouts indicated that their lack of engagement with teachers who were “interesting” and offered one-on-one instruction was a variable in the choice or the result of failure. Their teachers did not know their individual names, and there was very little parent engagement in their education (Bridgeland et al., 2010).

**Alternative programs and schools as dropout interventions**

In the last two decades, many types of alternative education programs have been implemented throughout the United States in an attempt to curb a growing dropout rate. The program that has become known by the acronym GED, shorthand for the Graduate Equivalency Diploma, and the Adult High School Diploma program, have become the programs most used by students who dropped out of a traditional public high school before earning a standard diploma (Smith & Thomson, 2014). The formation of these alternative programs stemmed from students who failed to secure a traditional diploma, typically because of one or more of these three basic risk factors: socio-economic factors, personal factors, or school-related factors (Smith & Thomson, 2014). However, even when students secure a GED or an Adult High School Diploma, many states, including North Carolina, still count them as high school dropouts. North Carolina State Superintendent June Atkinson stated: “It is not acceptable for North Carolina to
lose so many young people before they graduate from high school. The cost to these young men and women and their families is high, financial and otherwise. The heaviest cost of all is the loss of human accomplishment, of happiness, and satisfaction” (Atkinson, 2015, para. 2).

Every state establishes criteria and requirements regarding the benchmarks for receiving a high school diploma. According to North Carolina State Superintendent June Atkinson, “...approximately one-third of the North Carolina students who enter high school each fall will not graduate within four or even five years” (2015, para. 1). Further, her message stated that students who do not have a high school diploma are more likely to:

- be incarcerated
- suffer from poor health
- be unable to financially support themselves or a family
- need help from government and social agencies or charities (Atkinson, 2015).

Although the dropout issue is still in the critical spotlight in 2016, earnest interventions began in 1999, when the North Carolina State Board of Education created and adopted guidelines for alternative learning programs and initiated the creation of alternative schools in North Carolina. At that time, even students who secured a GED began to be considered dropouts, and the alternative program/alternative school concept became the primary intervention for students at risk of dropping out. According to Knutson (1999), it is more critical to focus on programs that exist internally within school districts that promote successful high school completion, as opposed to the acquisition of a GED post dropout. This is because states such as North Carolina still count GED holders (and similar program completers) as dropouts who are more likely to fall into the categories previously detailed by Superintendent June Atkinson.
Alternative schools differ significantly in operation, mission, and service from the traditional public high school (Smith & Thomson, 2014). Alternative schools are tasked with meeting standard requirements for graduation; however, they have latitude in their scope of work to only require the basic minimum credits allowed by the state in order to graduate. For example, North Carolina requires 22 high school credits to graduate; however, most North Carolina counties have adopted additional local requirements before allowing a student to receive a diploma. The North Carolina local district under study requires 32 credits, which is 10 credits beyond the minimum requirement. In the aforementioned district, when students are allowed to enroll in an alternative program or alternative school, this number of credits is waived, and only 22 are required. This is a powerful intervention tool for students who consider quitting because circumstances have forced them to lag behind. The alternative school option often allows these students to finish with their same age peers, in spite of losing a year of academic training. Only extraneous credits are discarded, i.e., electives that are not critical to core knowledge (Cherokee County Schools, 2016).

As Smith and Thomson (2014) posited, educators can apply knowledge of several theories to address the at-risk characteristics that lead to student dropouts. The alternative school concept draws on the idea proposed by Bandura (1989) that individuals should be in control of their own learning. Students in an alternative school setting are typically allowed to work at their own pace. Such students are given ownership, not only over their learning, but over their lives. This ownership facilitates cognitive engagement, making their learning simultaneously engaging and relevant. As Knutson (1999) stated: “Innovation and flexibility are usual practice in alternative high schools” (para. 1).
Causes of disparities in school and student performance

Overall school academic performance and individual student performance can be tied to a range of factors that include both internal and external variables. Current news articles describe many districts that are under fire for disparities in academic performance among students and schools. The media often frames these disparities as tied to an inequity of spending in cost per pupil or inequity in the student demographic make-up. Education analyst Theodore Creighton (2007) stated: “The challenges we face in schools today are increasing, and never before has the importance of using data and evidence to make decisions about school improvement and increasing student achievement been so crucial” (p. xiii). However, not all disparities can be easily explained, and further exploration is necessary to discover why schools within the same district or even the same community produce such discrepancies in student performance and high school graduation rates. Typically, the causes or reasons for these disparities in student performance, as they progress from elementary to middle to high school, are more complex than a lack of equity in instruction alone. Additionally, it is highly implausible for two schools from the same community, with the same demographic and socio-economic makeup, to have a tremendous discrepancy in teacher quality. Regardless of the causes of disparity among schools, it is important to recognize that as students from different experiences converge to create a new system of learners, they react to the new environment based upon self-perceptions of their efficacy and ability to perform that were created at the prior level. The support systems in place in the previous learning environment may not be replicated in the new environment, possibly causing the student to disengage (Parker, 2010). Many studies that have focused on student performance or graduation rates have dealt with obvious variables of race, gender, and/or socioeconomic factors. While these studies indicate a correlation between the demographic
characteristics of students who fall into the achievement gap, they do not necessarily suggest or dissect the reasons why these students are not as successful as their peers. A glaring issue impacting the disparity of performance between cohorts of students is the issue of teacher quality. The research has indicated that teacher quality and effectiveness is the single most crucial element in the success and performance of students (Andere, 2015).

**Concepts and issues related to transitions between schools**

Early adolescence is noted in the research as a time when many students become disengaged with the academic elements of school, instead moving their focus to social acceptance and status among their peers. Students at this stage of development have been observed to participate in cliques, teasing, and forms of bullying to maintain their social position in their environment. Researcher Rick Wormeli (2011) stated: “Students experience their first year of middle school as intense and tumultuous. Every day is the end, or beginning of all life as they know it” (p. 51). Eccles and Wigfield (2002) asserted that peer-related activities, acceptance, and appearance become the primary concerns for students in this age group. Further, Eccles and Wigfield (2002) suggested that the middle school transition can emphasize isolation and the “lack of fit” in meeting the needs of the students as they leave elementary school and move to a middle school environment. Wormeli (2011) stated that belonging is a core source of apprehension for students, and that teachers and administrators must address their socio-emotional needs in order to ensure a successful transition and to avoid the initiation of a decrease in students’ intrinsic motivation for academic progress.

Stein and Hussong (2007), Parker (2010), and Akos (2002) conducted considerable research surrounding the relationship of student perceptions of school and student academic performance. Students with parents who exhibit a positive perception of the school experience
produce higher scores on accountability testing, report a positive experience in regard to school, and exhibit less potential to drop out of high school (Cohen & Smerdon, 2009). Designing a transition plan for students as they cross from elementary to middle school, and then, from middle to high school, is a critical aspect of student success (Akos & Queen, 2005; Cauley & Jovanovich, 2006; Greene & Ollendick, 1993). These authors and their publications are significant for this research, as they provide a framework for understanding disparity beyond a simple lack of quality instruction in the schools.

Schumacher (1998) discussed the quality of school life in relation to student experience and student perception. Students reported a sense of decline in the quality of school life in the transition between elementary and middle school. Along with this sense of decline, Anderman and Maehr (1994) argued that especially in the sixth and seventh grade years, students experienced negative feelings about their own abilities and about school, and a serious decrease in their intrinsic motivation. Further, although there was no notable decrease in student IQ scores, grades declined in a correlational pattern regarding attitudes toward school and specific subject areas, such as math and science (Anderman & Midgley, 1997).

Research has indicated that at-risk students can be targeted before they become high school dropouts by being aware of and addressing the attributes, behaviors, and characteristics that are frequently associated with the dropout population (Nowicki, 2004; Tinto, 2000). According to Deridder (2000), combating the dropout issue essentially begins in elementary school. Cohen and Smerdon (2009) asked: “What happens to adolescents during the first year of high school? Why do so many ninth-grade students, even those who have done well in the past, struggle to stay on course and advance to the next grade?” (p. 179). Cohen and Smerdon further drew a connection between the healthy evolution of physiological and social development, which
begins in kindergarten, and a successful assimilation into larger social networks and a successful school experience. Grade span, in addition to transition research, has been explored as an element affecting student decisions to remain in school or to drop out. Alspaugh (2000) asserted that students who have fewer transitions are less likely to drop out of high school. For example, schools with a 7-12 grade configuration assimilate students into a singular environment as seventh graders, when dropping out is not an option. Therefore, the students are already immersed in a comfort zone with established peer groups and a sense of social comfort, and are less likely to leave school for socio-emotional reasons.

**Impact of leadership change on school/student performance**

In 2009, the Consortium for Policy Research in Education (2009) published a report entitled *Taking Human Capital Seriously: Talented Teachers in Every Classroom, Talented Principals in Every School*. The strategic management of human capital was the major focus of the document, which posited:

Principals bear the ultimate responsibility for implementing school-wide reforms that will lead to high academic achievement for all students. The principal must assume many roles: building leader, education visionary, disciplinarian, community builder, budget analyst, facility manager, and guardian of legal contractual and policy mandates, but none is more important than the instructional leader. (Consortium for Policy Research in Education, 2009, p. 5)

A 2004 study reported that only 48% of new principals remained principals within the state of North Carolina after a six-year period (Gates et al., 2004). In 2009, Miller’s (2009) research found that at least half of North Carolina principals left their assignments within four years. According to Mitgang (2003), schools with a high percentage of low-income students find
it difficult to acquire and retain leadership. Research has indicated that there are correlations between schools and districts with poor student achievement, as demonstrated through standardized testing, and the principal of the school (Baker & Cooper, 2005). Management documentation, anecdotal information, and research have indicated that schools in impoverished or high poverty locations do not have the same success in acquiring and retaining quality principals as schools located in neighborhoods with more affluent populations (Branch, Hanuschek, & Rivkin, 2012). Branch et al. (2012) also asserted that a principal who is categorized as highly effective will improve student achievement by levels ranging from two to seven months within the limits of a single school year. The Consortium for Policy Research in Education (2009) advocated that school districts should design a talent development acquisition plan to reward and eventually retain excellent teachers and administrators. Further, the Consortium recommended placing effective teachers and effective principals in the schools and areas with the highest need.

**Impact of teacher turnover and student success**

According to a report published by the Alliance for Excellence in Education in July 2014, teacher turnover, also referred to as attrition, costs the nation up to 2.2 billion dollars every year. However, it is not only the monetary factor that should be considered when discussing the impact of teacher turnover on a school or a community. In fact, Bob Wise, the president of the Alliance for Excellence in Education (2014), stated:

“The monetary cost of teacher attrition pales in comparison to the loss of human potential associated with hard-to-staff schools that disproportionately serve low-income students and students of color. In these schools, poor learning climates
and low achievement often result in students—and teachers—leaving in droves.”

(para. 2)

In general, the report concluded that schools classified as serving a high poverty area report a 20% turnover rate for each calendar school year. This statistic is almost a full 50% higher than the rate of other districts located in communities that are not considered to be impoverished or labeled high-poverty.

In 2013, a report was published regarding a study that included observations of 850,000 New York City fourth and fifth grade students (Loeb, Ronfeldt, & Wyckoff, 2013). This study spanned an eight-year period and revealed that students in grade levels with higher teacher turnover rates had lower scores, not only in English language arts but also math (Loeb et al., 2013). Further, the turnover created a disruptive effect that impacted the professional connections and financial statements of the districts. This disruptive effect also impacted the ability of students to bond as a community of learners with their peers and their teachers, impeding the process and possibility of connectedness and a sense of belonging (Loeb et al., 2013).

**Rural and cultural characteristics impacting dropout behaviors**

The Appalachian region, which is the setting for this study, is characterized by what seems to be a cultural challenge when it comes to academic retention. In fact, research has indicated that over the past two decades, the high school dropout rate in Appalachia has actually been double the national average (Ziliak, 2007). According to the Appalachian Regional Commission (ARC), the county that is the subject of this study has been defined as economically “at risk” for several years (ARC, 2014). The county under study, according to the ARC, is composed of many students who attend small rural schools and come from noted areas of
poverty (ARC, 2014). Many scholars and their accompanying research have suggested that the culture of Appalachia is denoted by the forming of deep bonds within the community and that a shared community responsibility exists in the rearing of children (Templeton, Bush, Lash, Robinson, & Gale, 2008). The research has indicated that the values of Appalachian residents, as a whole, are considered to be “collectivistic,” meaning that the network of people involved and accountable for the interest of a child includes extended family, teachers, neighbors, and community members (Tighe, 2007). This evidence provides an understanding that is parallel to the school connectedness concept. School connectedness is a theory that describes the level to which students feel connected to, cared for, and positively reinforced in socio-emotional matters (Blum, 2005).

School connectedness has been attributed to enabling students to overcome demographic obstacles such as poverty (Brookmeyer, Fanti, & Henrich, 2006). School climate and student engagement research has indicated that smaller schools provide a more nurturing atmosphere, thereby resulting in students who engage in extra-curricular activities, ask for help when necessary or when struggling, and overall, achieve more individual success (Cotton, 2001). Cotton (2001) further reported that the positive relationships and support built between students and teachers in the smaller schools resulted in fewer incidents of violence and were a deterrent to student dropout behaviors.

In contrast, Zehr (2010) explained that there is also a body of research indicating that many students attending a small, rural schools still drop out, in spite of their attendance at a small school described as providing students with a great deal of personal attention. Zehr’s research indicated that although students may receive personal attention, which is often available
to students attending larger urban schools, the motivation to earn a diploma and the ability to attach relevance to pursuing a diploma are often lacking (2010).

**Relationship of teacher quality and student success**

In 2001, the administration of President George Bush emphasized the importance of teacher quality with the adoption of NCLB, the No Child Left Behind Act (North Carolina Department of Public Instruction, 2015). This act reauthorized the Elementary and Secondary Education Act of 1965 and highlighted the legislation’s precept that there is a deep connection between teacher quality and student performance. As a result, the law required all states to mandate a standard evidence of competency for teachers and para-professionals. In North Carolina, highly qualified means that a teacher must hold at least a Bachelor’s degree or higher and possess a full North Carolina State Teaching Certification, as well as hold a major or coursework equivalent to a major (24 semester hours). To meet the requirements of a Highly Qualified teacher, a teacher may also hold a National Board Certification in the content area in question, or the teacher may have passed the PRAXIS II in a particular content area (North Carolina Department of Public Instruction, 2015).

The National Council for Accreditation of Teacher Education (2014) characterized effective teachers as possessing four crucial elements: subject matter knowledge and methods to increase student achievement; knowledge of student development and the ability to apply it to motivation and student engagement; the ability to apply knowledge to diagnose student academic needs; and the ability to use developmental strategies to create a positive, stimulating learning atmosphere.

Principals, superintendents, and parents generally indicate that teachers with the most experience tend to be the most effective. This is often evidenced in hiring practices and within
communities where parents commonly discuss education and make requests for their children to have particular classes or instructors. The reason for this is simple and does not require complex statistical analysis. Simply stated, over time, a learning community observes and realizes when a teacher is effective and impacts students in critical ways, academically and/or socially.

**Socioeconomic factors impacting student achievement**

Socioeconomic status (SES) is a mathematical assignment that combines the measures of education, income, occupation, and relevant factors of economic impact in the place in which an individual lives (American Psychological Association, 2015). It can further be defined as the way people are viewed when they are separated into different groups that have commonalities in social and/or economic variables (Alordiah & Akpadaka, 2015). Students who are designated as having a lower SES encounter trials that students from a higher SES do not experience (Hart, 2014). Further, Hart (2014) posited that these challenges include a lack of access to educational resources, existing in conditions that prioritize living over learning, and a chronic lack of motivation for education. In the research, lower socioeconomic status has often been correlated with lower levels of education. Other indicators such as poverty and poor health are also characteristics measured by SES and can ultimately affect a community as a whole. Further, as a result, students who attend schools in a community designated with a low SES typically develop academic skills at a slower rate than children who live and attend schools in a community with a higher SES designation. The quality of teaching is widely accepted as the primary variable impacting student learning; however, effective instructional leadership from the school administration is needed in schools classified as lower SES schools in order assure student academic success (Vale et al., 2010). Further challenges identified by researchers as potential barriers to student success for students hailing from families identified with a lower SES include
segregation, single parent homes, lack of parent involvement and adult support, as well as lack of supervision. The research has also indicated that homes identified as low SES homes have fewer resources to support academic activity, for example, a lack of reading, informational, and learning material, and an overall lack of family rules, patterns, routines, etc. (Hofferth & Sandberg, 2001). Studies conducted by Street (2005), Cortes (2010), and Galindo (2013) connected a low SES to an adverse performance history regarding student assessments and academics.

**District and school spending and the relationship to student success**

Related literature discussing economies of scale and school funding formulas consistently return to the question of equality vs. equity, and the notion of how much funding is necessary to provide equal conditions for students. In other words, is equal adequate? Spring-boarding from the information that students from a lower SES community perform statistically significantly lower than their peers from higher SES communities (Hart, 2014), school districts typically subscribe to one of two funding philosophies. Some districts review student performance and variables regarding SES in the school community and apply a funding formula to compensate for shortcomings in performance and SES factors in order to promote better learning. Other districts apply a strict per pupil allowance equally divided by number, choosing not to apply questions of need or performance in the funding distribution (Wenglinsky, 1998).

In North Carolina, state funding is allotted by the average daily membership (ADM) of the local education agency (LEA). The allotment is distributed to the LEA, which is then charged to divide it among the schools. The number of physical buildings is not a variable in the formula (NC General Assembly, 2015). For districts in which multiple buildings/schools exist, the separation of funding in order to serve all students is up to the LEA leadership. This can
pose funding issues for school districts. For example, in NC, the staffing allotment for third grade classrooms is one to 24. If School A has 36 third graders, and School B has 12, the state will only allot two teachers. However, because the third graders exist in two separate schools, School A needs two third grade teachers, and school B needs one third grade teacher. The allotment formula leaves this district short one third grade teacher, because the individual building needs are not considered. Thus, the districts in this situation must then struggle to find any local discretionary funding that may exist to cover the shortfall. In most cases, any discretionary funding is used to cover personnel gaps, leaving no funding to address gaps in the academic culture of the schools.

In 1999, Munoz, Clavijo, and Koven conducted a study that explored the relationship between funding patterns and student/school achievement in a large urban Kentucky county. The study addressed whether the premise behind many school/district reform efforts is that an increase in funding will increase student performance. Munoz and colleagues concluded that adequacy in serving student populations was not clearly delineated—although students from a lower SES status do perform at a lower level, the achievement gap that exists between different societal groups or geographic areas should be addressed in ways that do not involve a monetary solution. However, in 1996, Deirdre Purdy published a study of economy of scale numbers in relation to the West Virginia School Building Authority (SBA). Purdy (1996) discovered in this research that the SBA created processes to ensure efficiency in the function and size of the school buildings, attempting to serve the greatest numbers possible, in the cheapest, most effective manner. Purdy postulated in the study that “[b]igger isn’t necessarily cheaper” (1997, p. 174). Purdy focused on the idea that services such as education have an “input/output relationship” that cannot necessarily be defined or measured in quantitative terms. Frequently,
the state statute in West Virginia utilizes the term “economies of scale” to demonstrate the idea that fewer larger schools would facilitate a cost savings. Purdy’s findings contradict this concept (Purdy, 1996).

**School size and the relationship to student success**

School size is an attribute that has been highly debated in regard to student academic success. Many studies have been conducted with varying outcomes. Financially feasible schools are found to provide better resources, therefore justifying the consolidation of smaller schools into single, larger units that operate with more fiscal efficiency. However, in many studies, smaller schools have been shown to have a statistically significant relationship to student achievement (Cotton, 1996).

Students who live in rural, impoverished areas, such as the area selected for this study, encounter different challenges to learning than those faced by students in urban or affluent areas. As a result, small rural schools have demonstrated that they are better equipped to address student issues in spite of facing “poverty, isolation, and difficulty competing for high quality teachers” (Arnold, 2000, p. 2). “More and more it seems that small schools hold particular promise for helping impoverished students maximize their potential to achieve academically” (Howley, 1996, p. 3). Small schools provide an intimate setting for student learning and facilitate the building of community in the classroom (School Renaissance Institute, 2000). Conversely, Howley and Bickel (2000) concluded that students from more affluent circumstances might benefit from schools of a larger scale, while students with a background of lower socioeconomic status demonstrated behaviors indicating they were struggling at bigger schools. According to the Louisiana Department of Education (2003), “a strong negative
correlation exists between district size and student achievement for low income populations” (para. 1).

**The impact of class size on student achievement**

The effect or impact of class size on student achievement has been heavily debated in a considerable number of studies since the 1930s. In regard to educational reform, the subject of school size can be seen as both an educational and a highly political issue (Ding & Lehrer, 2011).

In a comprehensive meta-analysis of class size research in 2009, Shin and Chung stated that Class Size Reduction strategies, also known as CSR strategies, are not only significant but thought provoking. After analyzing 17 studies, Shin and Chung suggested that the research indicates that student achievement in small classes is better than that in large classes by a statistically significant margin (Shin & Chung, 2009). This assertion is in direct contradiction to Hanushek (1990), whose research concluded that CSR methods did not result in any greater achievement than the use of classes of a larger size. CSR theory operates with the presumption that smaller classrooms result in better learning and higher student achievement (Shin & Chung, 2009). Conceptually speaking, this type of initiative directly contradicts the idea that school systems should operate primarily within the scope of economies of scale. Smaller classroom numbers mean more teachers for fewer students, which results in greater expense. According to Jepsen and Rivken (2009), California implemented a Class Size Reduction initiative in 1996, decreasing class sizes from 30 to only 20 students per class in kindergarten through third grade at a cost that exceeded one billion dollars. In their study, Jepsen and Rivken (2009) posited that lowering the class size had resulted in a greater demand for teachers, which had resulted in a lack of teacher quality, offsetting any benefits that a smaller class size might have provided. Similar
CSR initiatives have been implemented in several states. In Tennessee, Student Teacher Achievement Ratio (STAR) was established by the state legislature and received a great deal of attention. STAR programming mandated that the student to teacher ratio was one teacher to 15 students (Fan, 2012). In Krueger (2000), a study of the STAR program that included 300 plus classrooms, 79 schools, and more than 7000 students, Krueger established that small classes were identified with a statistically significant increase in scores in science, reading, and math at least through grade 8 (Krueger, 2000). However, other researchers in the field have contradicted the results of the aforementioned study. Borland, Howsen, and Trawick (2005) advised educational administrators and policy makers that changes in class size are “not necessarily achievement-increasing” (p. 75); instead, current class size versus optimal class size should be considered, taking into account other factors, such as teacher experience and ability, rank, and students’ innate abilities.

Bosworth (2014) agreed, pointing out that although smaller class size is heralded as a strategy to increase student achievement, the estimation or gauging of the effects of controlling for changes in class size is difficult to measure. Classroom composition based on students by type, peers, and teacher strategy are all compounding factors that mask or enhance attempts to measure the effects of classroom size in the research (Bosworth, 2014). Bosworth’s research, which was based on a survey in the North Carolina schools regarding the fifth grade, revealed that the assumption that random class assignments occur is erroneous. Administrators often defer to a parent’s request for a particular teacher; clearly, the class size reduction research that was based on the random assignment of students cannot be applied to classrooms in schools in which this occurs. Also, there are findings indicating “grouping” of ability, thereby discounting any effects of a suggested random assignment study regarding size. The studies of class size
effects have therefore fallen victim to variables that were not considered, such as class composition grouping (Bosworth, 2014).

**The impact of grade span configurations on student achievement**

Dove, Pearson, and Hooper (2010) asserted that dropout rates are also affected by transitions. Their research acknowledged that public school grade configurations have changed significantly over the past decades in response to economic, geographic, and developmental concerns. Historically, organized American education began in the ungraded one room schoolhouses that initially sprang up across America (Franklin & Glascock, 1998). One room school houses shifted to graded systems, with grades one through eight as the standard configuration in the 1800s. In 1900, the predominant structure was still grades one through eight, followed by four years of high or secondary school (Franklin & Glascock, 1998). In the 50s and 60s, growing elementary enrollment pushed sixth graders into a configuration called junior high (Craig, 2006).

Jacob and Rockoff (2012) presented evidence that deliberate decisions regarding the organization and structure of schools in regard to grade span is a valuable strategy and has had an impact on student achievement. In a position paper prepared for The Hamilton Project, Jacob and Rockoff (2012) posited that the structure of middle schools, or the junior high schools that were previously the standard, was designed for the manner in which adolescents learned in the 1960s and 1970s. According to the research presented by Jacob and Rockoff, students learn better in a K-8 configuration, as opposed to a 6-8 or similarly structured school. The K-8 configuration removes one of the transitions from a student’s school experience. The transition from elementary to middle school occurs when there are already complicated biological and emotional issues occurring for the students. The difficult transition to a new school beginning at
fifth, sixth, or seventh grade and the entry into a new environment alongside a potentially large group of new classmates represents many unknowns that compound an already uncomfortable, challenging time for these students. Shifts in behavior and attitude are commonplace. Schwerdt and West (2011) used data acquired statewide in Florida to analyze the effect of different grade configurations on student academic performance. Their research indicated that students who transitioned to another level of school in grade six or seven suffered a clear decline in standardized scores during the year of transition. Further, they found that students who entered a middle school, as opposed to attending a K-8 configuration school, were associated with higher absences and dropout rates. Transitions to high school from K-8 schools are also associated with small drops in achievement, but were found not to affect students’ performance trajectories (Schwerdt & West, 2011).

**Classroom design: self-contained or departmentalized (subject specific classroom change model)**

The question of specialization teaching/learning has long been debated, as evidenced from the scope of the literature that emerged during the late 1950s and throughout the 1960s. Class structure in elementary schools has varied from the traditional self-contained class to what is considered departmentalized teaching. In 1968, Morrison addressed the question simply by denoting the comparison of both concepts: “Is one teacher teaching all subjects (self-contained) more effective than several teachers teaching separate subjects (departmentalized programming)” (p. 208). Morrison noted a previous study published by Gibb and Matala (1962) that indicated departmentalization demonstrated some advantages, particularly for mathematics and science classrooms. Overall, no single method has emerged with overwhelming evidence as the better strategy. However, Morrison described a study that was conducted in
Atlanta, Georgia over a two-year period from 1964-1965. While dated, this study posed some important questions relevant to this dissertation. Morrison (1968) postulated the existence of a relationship between socioeconomic factors and student achievement and the type of classroom structure, self-contained or departmentalized. Morrison’s results revealed that students from upper and middle class socioeconomic backgrounds demonstrated a significant success rate in the self-contained classrooms, while students from lower socioeconomic backgrounds were slightly more successful with the departmentalized structure (Morrison, 1968).

Culyer (1984), however, made a compelling case for the self-contained classroom, noting that this structure acquaints the teacher with the smallest number of pupils, best facilitates the needed flexibility in a school day, and results in less wasted instructional time. Culyer (1984) further stated that with the decline of self-contained classrooms, there has been a significant decline in reading rate progress as denoted by achievement tests.

On another note, Anderson (1962) made the case for specialization/departmentalization in the public schools. Anderson (1962) stated: “Only an extraordinary individual—a Leonardo da Vinci—could have an expert knowledge of all areas. Conclusion: Most children in the United States are instructed by teachers who are not expert in every field they teach” (p. 253). However, there is a body of literature that provides a converse point of view to the ideas and theories posited in this study. Cowen (1985) provided insight into the concept of the “person centered approach” (p. 36). The application of Cowen’s framework offers warm and optimistic approaches to problem solving. Cowen’s approach discourages attempts to manage situations through manipulation of the environment, instead helping students to work through their problems as they are encountered; this enables them to become stronger as a result of the transitions and challenges brought about by changes and the lack of consistency in the
configuration of their schools. Building on this foundation, it appears that much of the research that has focused on grade span configuration was really less about grade span and more about the systems in place or not in place to support students who are experiencing transition or change. Instead, this researcher posits that we should ask more questions about what causes vulnerability for students during these times of change and transition, and should respond by providing life skills, rather than the recreation of a school configuration. As Paglin and Fager (1997) stated, “[n]o particular sequence of grade spans is perfect or in itself guarantees student achievement and social adjustment” (p. 12). The rise of “elemiddle schools” is not a “quick fix” according to McEwin, Dickinson, and Jacobson (2004, p. 53).

Many studies have been unsuccessful in attempts to tie poor school adjustment or vulnerability to transitions or school configuration (Collins & Coulter, 1974). Williamson (2012) stated: “Grade configuration is merely a tool that can create the potential to improve student learning” (para. 2). These authors have promoted the idea that grade configuration in itself does not positively or negatively impact student performance, including the success or lack of success in achieving graduation.

**Summary**

Does the elementary experience impact or provide a significant foundation for academic success in high school? Does it provide an indication for graduation, or is it just a place where the actual elements that form a successful academic career come together to produce a student who achieves graduation? Researchers have identified many attributes that impact performance. Variables such as class size, resource availability, the configuration of the different grade spans within a school, the social structure of a classroom, etc., have all been identified as factors that can and do impact student performance (Zoda et al., 2011). Transitions between schools often
prove to be a vulnerable time for students as well (Akos, 2005; Cauley & Jovanovich, 2006). How early do these factors begin to influence student learning? What we know for certain, in regard to the existing literature, is that there is a consistent body of research that has established many of these items as causal factors to student performance at various levels of a student’s education. Several basic theoretical concepts have consistently been established as part of the reasons why students may or may not be successful at one level or another. Maslow’s hierarchy of needs, Bandura’s social cognitive theory, and Vygotsky’s sociocultural theory provide a general framework for understanding the relationship of students to their learning and to their learning environment from elementary, to middle, to high school. Piaget’s establishment of constructivist needs, behaviors, and methods of pedagogy provide a bridge from the theories of Maslow, Bandura, and Vygotsky to the actual observations of student performance in the school settings that have been the subject of this study. These theories have a common emphasis on the influence of the environment upon the behaviors and growth of students.

However, little research has tied the actual attributes of the elementary school attended to the academic success and the graduation rate of the high schools they feed within the same district/community. Typically, when reviewing data, an apples-to-apples approach is utilized to compare elementary schools to other elementary schools within a district; the same is done with middle schools and with high schools. However, this study reviewed the data by beginning the analysis with the student achievement results and the high school graduation data. The students were categorized as either graduates or dropouts, and then their experience was analytically recreated by unwinding the scores they had achieved and at what level, ending with the elementary school they had attended. As opposed to simply a year-by-year comparison of elementary school scores and performance, this ex-post facto study allowed the analysis of a
student-by-student experience from elementary, to middle, to high school. The research and analysis in this study revealed the differences or lack of differences between academic performance and the graduation rate of students based upon which elementary school was attended, thereby allowing the attributes of each elementary school to be reviewed individually as a variable for success or failure. Early identification and intervention for students who, for various reasons, may become disengaged with their learning has been noted to be a critical area of need and also an identified area of further study (Balfanz, Herzog, & MacIver, 2007). This study not only contributes to an existing body of literature regarding the issues surrounding high school dropouts, but approaches information from the viewpoint of a gap in the knowledge regarding discrepancies in learning at the secondary level that began because of inadequacy or configuration at the elementary level. As a result of this study, gaps in achievement and graduation have been tied to attendance at a particular elementary school, and even more revealing, have been tied to students who did not attend a local elementary school, indicating a major move or transition in the learning environment. Students who experienced the fewest transitions, in this study, by attending a Pre-K through eighth grade school, had the highest overall performance, according to the data analysis.
CHAPTER 3: METHODOLOGY

Research Design

This ex-post facto causal-comparative study consists of two major groups of students (Graduate or Dropout) that fall into seven main categories (the seven feeder schools attended). The students attended one of seven elementary feeder schools. The two groups are those that graduated and those that failed to graduate, who are also referred to as dropouts. Gall, Gall and Borg (2007) described a causal comparative research study as a discussion in which the cause-and-effect relationships are sought by the formation of two groups, one of which is exposed to an independent variable. Because the analysis of the data in this study involves no manipulation of the independent variable, the design is considered to be ex-post facto. All of the activities associated with the documentation have already occurred and will be reviewed for relevancy and correlation after the fact. The comparison groups have already been created by nature of which school was attended; therefore, random assignment is not possible. The graduation success/dropout rates of the individual students will be compared for correlation to school location attendance. The test scores of individual students and the class averages for EOG (End-of-grade tests) and EOC (End-of-course tests) will be compared by grade level and year to identify discrepancies in student academic preparedness as students transitioned to middle school.

Variables

The independent variable is the elementary school that was attended. Because all seven feeder schools have very different characteristics in regard to grade span configuration, class size, and whether or not the students participate in self-contained or departmentalized classrooms, there will be seven different independent variables. The school and class size, as
well as the departmentalization of subjects and the method of transition to middle and high school will also be studied as variables. Since this variable had already occurred years before the test scores and graduation or lack of graduation achievement was documented, the ex-post facto method is the best method of research. This variable will be measured by the analysis of class lists as collected by the year of elementary school completion. These lists are available upon request through the NC Public Records Law. This district has a process for information requests that is easily accessible.

The dependent variables in this study are the achievement of graduate status and the student academic performance on EOG and EOC tests. The dependent variables are: graduation achievement, EOG math achievement in eighth grade, and EOG reading achievement in eighth grade. This information is also easily accessible through the NC Public Records Law by completing the appropriate district request forms.

**Research Questions and Hypotheses**

RQ 1: Is there a statistically significant difference in student achievement between the cohorts of students who attended a Pre-K through fifth grade school and students who attended a Pre-K through eighth grade school?

- $H_0$1A: There is no statistically significant difference in the means of end-of-grade reading scores between eighth grade cohorts who attended a Pre-K through fifth grade school and eighth grade cohorts who attended a Pre-K through eighth grade school.
- $H_0$1B: There will be no statistically significant difference in the means of end-of-grade mathematics scores between eighth grade cohorts who attended a Pre-K through fifth grade school and eighth grade cohorts who attended a Pre-K through eighth grade school.
RQ 2: Is there a difference between percent of students achieving high school graduation and type of feeder school attended: feeder schools which serve Pre-K through fifth grade feeder schools which serve Pre-K through eighth grade?

H₀₂: There is no difference between the percentage of students achieving high school graduation and the feeder school attended: feeder schools which serve Pre-K through fifth grade and feeder schools which serve Pre-K through eighth grade.

**Setting and Participants**

The district has a population of 26,499 and is located at the southwestern end of the state, flanked by the Great Smoky Mountains and bordered by the states of Tennessee and Georgia. The two communities of focus neighbor one another, divided only by a valley surrounded by mountains in the state’s westernmost county, which is geographically isolated from the rest of the state. The county is actually closer to seven other state capitols than to the home state capital of Raleigh. The only two towns are linked by one major highway that stretches from east to west, while the rest of the county is accessible only by narrow, two-lane, curvy roads. The close proximity to recreational areas such as state forests, national parks and lakes, scenic byways, a casino, and other regional attractions, have contributed to the area’s emergence as a destination for many tourists and second-home owners. This county is touted to be “2 Hours from everywhere,” as only two hours driving distance separate the county seat from four major metropolitan cities: Atlanta, Georgia; Chattanooga, Tennessee; Knoxville, Tennessee; and Asheville, North Carolina.
Community Demographic Data

This county’s population breakdown estimations, provided by the 2007 U.S. Census Bureau, include:

- **Age** – 5.3% under 5 y/o, 20.0% under 18 y/o, 20.8% 65 years old and over;
- **Race/Ethnicity** – 94.9% White, 5.2% Minorities, with a recent influx of minority Hispanics, which is not yet reflected in the overall numbers;
- **Gender** – 52% Female, 48% Male;
- **Socioeconomic Status** – 17.4% below the poverty level, median household income $35,221 (below the State median income), majority of blue collar work for private companies, 27.7% are without a high school degree, unemployment rate is 12.7%;
- **Culture** – Rural Appalachian heritage with strong Native American influence and recent influx of Hispanic population;
- The district schools are small/rural: five high schools, two middle schools, and four elementary schools, and three elementary/middle schools; 65% of the students receive free lunch/reduced lunch, with some schools as high as almost 80%;
- **This community, like the rest of the nation, has been devastated economically. The area of focus in particular has not only weathered the systematic closing of many retail stores but also major factories, including Lee Company, Levi’s, and Outboard Marine Corporation, and the local hospital.**

Specific local conditions

- **Education level** – 27.7% of the county residents lack a high school diploma;
- **Below State average income level, poverty level:** 17.4% and unemployment rate: 12.7%;
- **Small tax base due to economy and large amount of untaxed federal lands;**
• Large number of children in Department of Social Service (DSS) care, 138 in foster care and of that group, 94% of youth are in foster care due to drug-related issues;

• Isolated communities bordering GA and TN, making drug trafficking easier.

**Environmental trends**

• Closing of factories and plants – limited job opportunities. Construction jobs and factories have been the primary job base for many individuals without a high school degree. This has led to an unemployment rate of 12.7%, the highest in history.

• The Department of Social Services states that historically, when unemployment increases, so does family stress, both financial and mental, and thus, reported child abuse cases increase. The rate was already among the highest per capita in the state prior to the economic downturn.

• Law enforcement reports that 94% of the children in foster care participate because of family drug abuse.

• Marked increase in deaths and crime related to prescription drug over dosage.

• County is among the top 10% of 100 counties in the state for alcohol-related crashes/fatalities (C. Allen, CC Department of Social Services, personal communication, October 5, 2010).

**Community and School Demographic Comparison**

It is impossible for a community to be unaffected by the socioeconomic status of the inhabitants. The unemployment rate for August 2010, per the North Carolina Employment Security Commission, was 13%. The free/reduced lunch rates published by this district’s child nutrition department and the National School Lunch Program (NSLP) list this district at a 75% free and reduced lunch rate. That is a tremendous proportion of the population in all of the
district schools, registering below the poverty baseline. It cannot be ignored that the declining scores of some of the schools seem to mirror the decline in commerce and the overall economic outlook of the community.

As the economy has declined and budget cuts have become an expectation, more questions have emerged about the repurposing of the buildings or the consolidation of both schools in an effort to save resources. The results of this study may, in fact, assist district leaders by informing such a decision.

Participants

The sample of this causal-comparative study consists of 375 students who entered high school as freshmen during the following years: 2005 (senior class of 2009), 2006 (senior class of 2010), 2007 (senior class of 2011), 2008 (senior class of 2012), and 2009 (senior class of 2013). Students, on average, are 15-years-old upon entering high school. Students should finish high school with the cohort of students with which they entered in the ninth grade to be considered a traditional graduate. The socio-economic classifications of each school are similar and are denoted in Table 2.
Table 2

**Percentage of Students Participating in Free and Reduced Lunch**

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<th>School</th>
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<th>2010</th>
<th>2011</th>
<th>2012</th>
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<td>76.97</td>
<td>78.99</td>
<td>82.04</td>
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<td>61.37</td>
<td>63.04</td>
<td>66.39</td>
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</tr>
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<td>53.22</td>
<td>55.73</td>
</tr>
<tr>
<td>MMS</td>
<td>57.06</td>
<td>63.22</td>
<td>62.87</td>
<td>66.18</td>
<td>68.84</td>
</tr>
<tr>
<td>MYS</td>
<td>0</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>PES</td>
<td>89.66</td>
<td>86.27</td>
<td>87.50</td>
<td>91.91</td>
<td>94.24</td>
</tr>
<tr>
<td>REMS</td>
<td>65.8</td>
<td>70.28</td>
<td>73.18</td>
<td>76.10</td>
<td>78.46</td>
</tr>
<tr>
<td>TCEC HS</td>
<td>0</td>
<td>41.18</td>
<td>33.02</td>
<td>35.25</td>
<td>39.10</td>
</tr>
</tbody>
</table>
Snapshot of Teacher Quality in the District

Teacher quality is consistently a critical variable in the overall performance of students. The academic impact of a quality teacher is clearly denoted in the research. Table 3 demonstrates the teacher qualifications for the schools in the district for the five-year period of 2008 through 2012.

Table 3

*Highly Qualified Teachers by School*

<table>
<thead>
<tr>
<th>School</th>
<th>2008 (%)</th>
<th>2009 (%)</th>
<th>2010 (%)</th>
<th>2011 (%)</th>
<th>2012 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AES</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>AHS</td>
<td>100</td>
<td>91</td>
<td>94</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>AMS</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>HDEMS</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>96</td>
<td>100</td>
</tr>
<tr>
<td>HDHS</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>MAR</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>MCEMS</td>
<td>100</td>
<td>100</td>
<td>98</td>
<td>97</td>
<td>100</td>
</tr>
<tr>
<td>MES</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>MHS</td>
<td>90</td>
<td>86</td>
<td>97</td>
<td>98</td>
<td>100</td>
</tr>
<tr>
<td>MMS</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>95</td>
<td>100</td>
</tr>
<tr>
<td>MHS</td>
<td>100</td>
<td>100</td>
<td>93</td>
<td>98</td>
<td>100</td>
</tr>
<tr>
<td>PES</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>REMS</td>
<td>100</td>
<td>100</td>
<td>99</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>TCEC HS</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Teacher Turnover in the District

The teacher turnover rates vary considerably by each school, depending upon the year. North Carolina collects comprehensive teacher turnover data annually. Table 4 demonstrates teacher turnover in the district for the four-year period from 2008 through 2012.
Table 4

*Teacher Turnover by School*

<table>
<thead>
<tr>
<th>School</th>
<th>2008 (%)</th>
<th>2009 (%)</th>
<th>2010 (%)</th>
<th>2011 (%)</th>
<th>2012 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AES</td>
<td>12</td>
<td>7</td>
<td>8</td>
<td>15</td>
<td>17</td>
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<tr>
<td>AHS</td>
<td>20</td>
<td>14</td>
<td>25</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>AMS</td>
<td>*</td>
<td>28</td>
<td>6</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>HDEMS</td>
<td>*</td>
<td>11</td>
<td>6</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>HDHS</td>
<td>12</td>
<td>0</td>
<td>12</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>MAR</td>
<td>27</td>
<td>22</td>
<td>9</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>MCEMS</td>
<td>16</td>
<td>0</td>
<td>5</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>MES</td>
<td>5</td>
<td>3</td>
<td>10</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>MHS</td>
<td>16</td>
<td>9</td>
<td>12</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>MMS</td>
<td>10</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>MYS</td>
<td>7</td>
<td>13</td>
<td>14</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>PES</td>
<td>*</td>
<td>7</td>
<td>27</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>REMS</td>
<td>3</td>
<td>15</td>
<td>11</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>TCEC HS</td>
<td>*</td>
<td>20</td>
<td>8</td>
<td>55</td>
<td>0</td>
</tr>
</tbody>
</table>

**District Principal Turnover**

Principal turnover in the district has been significant, considering a four-year period.

Students need stability and structure, as do their teachers. When a strong instructional leader leaves, this presents a gap that must be addressed.
Table 5

*Principal Turnover by School*

<table>
<thead>
<tr>
<th>School</th>
<th>Number of principals between 2008 and 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>AES</td>
<td>4</td>
</tr>
<tr>
<td>AHS</td>
<td>3</td>
</tr>
<tr>
<td>AMS</td>
<td>3</td>
</tr>
<tr>
<td>HDEMS</td>
<td>3</td>
</tr>
<tr>
<td>HDHS</td>
<td>3</td>
</tr>
<tr>
<td>MAR</td>
<td>4</td>
</tr>
<tr>
<td>MCEMS</td>
<td>2</td>
</tr>
<tr>
<td>MES</td>
<td>2</td>
</tr>
<tr>
<td>MHS</td>
<td>2</td>
</tr>
<tr>
<td>MMS</td>
<td>1</td>
</tr>
<tr>
<td>MYS</td>
<td>1</td>
</tr>
<tr>
<td>PES</td>
<td>1</td>
</tr>
<tr>
<td>REMS</td>
<td>3</td>
</tr>
<tr>
<td>TCEC HS</td>
<td>2</td>
</tr>
</tbody>
</table>

**Instrumentation**

End-of-grade (EOG) and end-of-course (EOC) scale scores will be utilized to assess the achievement and performance of the students from each school. End-of-grade assessments in both reading and math will be utilized for students at the fifth grade level. This will establish a baseline performance level of the students associated with each feeder school. Reading and math achievement from scale scores collected from the ninth grade EOC’s will also be utilized. These ex-post facto scores will be analyzed for a correlational difference to the EOG performance of the different feeder schools. According to the *North Carolina Reading Comprehension Tests Technical Report* (North Carolina Department of Public Instruction (NCDPI), 2009b), NC Reading Tests (which include EOG and EOCs) are used not only to measure growth but also to measure student performance, with the creation of a performance composite that represents an absolute standard (NCDPI, 2009). Through a comprehensive process including item analysis
selection, classical measurement analysis, and item response theory analysis implemented through a rigorous field testing program, the NC EOGs and EOCs demonstrate high construct validity in the creation of the test items, as well as the test itself. Field tests were developed from the created item questions and were used in a stratified random sample (North Carolina Department of Public Instruction, 2009). According to the North Carolina Reading Comprehension Tests Technical Report (North Carolina Department of Public Instruction (NCDPI), 2009b), curriculum specialists, as well as testing consultants, reviewed all items for accuracy, content, and instructional validity, as well as bias. Curricular and psychometric appropriateness was gauged by field-testing and surveying teachers and educational reviewers.

The NCDPI speaks to the reliability of the end-of-grade and end-of-course assessments in a publication from October of 2014 (North Carolina Department of Public Instruction, 2009a).

Reliability refers to the consistency of a measure when the testing procedure is repeated on a population of individuals or groups. Three broad categories of reliability coefficients are recognized as appropriate indices for establishing reliability in tests: (a) coefficients derived from the administration of parallel forms in independent testing sessions (alternate-form coefficients); (b) coefficients obtained by the administration of the same instrument on separate occasions (test-retest coefficients); and (c) coefficients based on the relationships among scores derived from individual items or subsets of the items within a test, all data accruing from a single administration of the test (internal consistency coefficients). The internal consistency coefficient is the statistic used to quantify reliability for the End-of-Grade (EOG) English Language Arts/Reading, Mathematics, and Science Assessments and the End-of-Course (EOC) Assessments of English II, Math I, and Biology. These assessments were administered operationally for the first time during the 2012-13 school year.
Internal consistency reliability estimates examine the extent to which items on a test are related. One procedure for determining the internal consistency of a test is coefficient alpha ($\alpha$). Coefficient alpha estimates the reliability of test scores constructed in terms of the domain sampling model. Test scores must be reliable if any valid inferences are to be made on the examinees’ performances. The North Carolina Statewide Testing Program meets or exceeds industry norms on reliability. Tables 6, 7, 8, and 9 are the measures of internal consistency as calculated by Cronbach’s coefficient alpha.

(www.ncpublicschools.org/docs/accountability/testing/eogeocreliabilities14.pdf)

Table 6

*Cronbach’s Alpha Results for EOC English Language Arts/Reading Reliabilities (Edition 4)*

<table>
<thead>
<tr>
<th>Grade</th>
<th>Form</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>3</td>
<td>0.91</td>
<td>0.92</td>
<td>0.91</td>
</tr>
<tr>
<td>4</td>
<td>0.89</td>
<td>0.90</td>
<td>0.88</td>
</tr>
<tr>
<td>5</td>
<td>0.90</td>
<td>0.88</td>
<td>0.89</td>
</tr>
<tr>
<td>6</td>
<td>0.89</td>
<td>0.91</td>
<td>0.89</td>
</tr>
<tr>
<td>7</td>
<td>0.89</td>
<td>0.90</td>
<td>0.89</td>
</tr>
<tr>
<td>8</td>
<td>0.89</td>
<td>0.88</td>
<td>0.88</td>
</tr>
</tbody>
</table>
Table 7

*Cronbach’s Alpha for EOC English II Reliabilities (Edition 1)*

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>M</th>
<th>N</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>English II</td>
<td>0.89</td>
<td>0.89</td>
<td>0.89</td>
<td>0.89</td>
<td>0.90</td>
<td>.89</td>
</tr>
</tbody>
</table>

Table 8

*Cronbach’s Alpha EOG Mathematics Reliabilities (Edition 4)*

<table>
<thead>
<tr>
<th>Grade</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0.91</td>
<td>0.92</td>
<td>0.91</td>
</tr>
<tr>
<td>4</td>
<td>0.92</td>
<td>0.92</td>
<td>0.92</td>
</tr>
<tr>
<td>5</td>
<td>0.91</td>
<td>0.92</td>
<td>0.91</td>
</tr>
<tr>
<td>6</td>
<td>0.93</td>
<td>0.93</td>
<td>0.93</td>
</tr>
<tr>
<td>7</td>
<td>0.93</td>
<td>0.93</td>
<td>0.93</td>
</tr>
<tr>
<td>8</td>
<td>0.92</td>
<td>0.92</td>
<td>0.92</td>
</tr>
</tbody>
</table>

Table 9

*Cronbach’s Alpha EOC Math 1 Reliabilities (Edition 2)*

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>M</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 1</td>
<td>0.91</td>
<td>0.91</td>
<td>0.90</td>
<td>0.90</td>
</tr>
</tbody>
</table>

The Annual Dropout Data Report for each school generated by the student information system of the district will also be utilized. According to the Dropout Data Collecting and Reporting procedures manual, “School systems are required to report dropout data on all dropouts in grades one and higher to the Department of Public Instruction” (North Carolina Department of Public Instruction, 2015, p. 1).
Procedures

The EOG (End-of-grade) for reading and math at the elementary level were collected for students who were fifth graders in the feeder schools (for those in the graduating classes from 2011-2015). These same students were tracked through their eighth-grade Reading and Math EOGs, as well as their high school EOC (end-of-course) English and Algebra I (Math I) test scores during their ninth-grade year. Both the EOG’s and EOC’s raw scores are referred to as “scale scores” (North Carolina Department of Public Instruction, 2014). The raw scores or “scale scores” provide a raw number representing the number of assessment questions the student answered correctly on the assessment. The raw score is then converted to a “scale score.”

Finally, this same list of students was then checked for successful graduation. The lists of students were categorized by the attendance of each school and respectively labeled as the list of graduates/dropouts for each year to assess if the numbers of graduates from one feeder school were significantly more than those of another. All the data necessary to complete the study were housed in the district data archives and were retrieved once all the appropriate form requests and permissions were granted through the IRB process.

Data Analysis

In this causal-comparative study, two statistical procedures were used to determine if there was a statistical difference in the middle school academic performance and the high school dropout rate between the students from the different types of feeder schools, which vary in regard to grade configuration, class configuration, size, and transitions. The data analysis was initiated by generating descriptive statistics comparing graduation success or dropouts from the identified feeder school. A t-test built with string variables and assigned a numeral based on which school was attended, and Yes or No, as to whether or not the student dropped out,
provided data indicating if one feeder school or another produced a higher percentage of graduates or dropouts. The t-test was again used to compare different groups of students’ scale scores on the reading and math EOG achievement tests to assess whether the grade span configuration, as well as the self-contained model or special subject classroom change model produced a statistically significant difference in academic performance or graduation rate. The year of attendance was also included, as well as common descriptive variables, such as gender, free and reduced lunch, etc., so the results can be further filtered if deemed necessary. The student EOG scores, as presented in the raw “scale score” form, were entered as variables, enabling the comparison of test scores and preparedness between cohorts. A simple t-test was utilized to indicate if student achievement was greater at the middle and high school level from a particular feeder school, and if lower scale scores on these performance tests were statistically significant for dropouts of a particular location.

For research question one, independent sample t-tests were used to compare the means between two categorical variables. Research question two, however, did not use the comparison of a mean. In this question, the unit of analysis was either achieving graduation or not achieving graduation per each cohort. Therefore, a chi-square test was performed to determine if there is a statistically significant difference between the categorical variables.

For the hypotheses of research question one, an independent sample t-test was used to compare the means of two categorical variables. The mean of the eighth-grade EOG student achievement in reading scale scores was calculated for each of the two cohorts of students: those who attended a Pre-K through grade five school and students who attended a Pre-K through grade eight school. An independent sample t-test was then performed to determine if there is a statistically significant difference in reading achievement between these two cohorts. This same
procedure was used for the second null hypothesis of research question one to determine if there is a statistically significant difference between these same two cohorts of students, only this time the mathematics scores from the eighth-grade EOG assessments were used, instead of the reading scores.

For the hypothesis of research question two, each unit of analysis is either the achievement of graduation or not achieving graduation. A chi-square test for independence was performed to examine statistically if there is a statistically significant difference between the categorical variable of graduation/no graduation and the categorical variable of type of feeder school: feeder schools that serve Pre-K through fifth grade and feeder schools that serve Pre-K through eighth grade.
CHAPTER FOUR: FINDINGS

The primary purpose of this quantitative ex-post facto causal-comparative study was to determine if the school size, class size, or grade configuration of the attended elementary school had any impact on a student’s academic performance or graduation success.

Student graduation/dropout data were collected for the years 2011 through 2015. Each of these years is identified as a cohort of students. For each student in cohorts 2011, 2012, 2013, 2014, and 2015, the following student data were collected: End-of-Grade Testing for the subjects of math and reading for third, fourth, fifth, sixth, and eighth graders; Math 1 End-of-Course Testing; and English 2 End-of-Course testing. Each student in these cohorts was assessed as to which elementary school was attended, as well as whether or not successful graduation/diploma acquisition was achieved.

Research Questions

RQ 1: Is there a statistically significant difference in student achievement between the cohorts of students who attended a Pre-K through fifth grade school and students who attended a Pre-K through eighth grade school?

RQ 2: Is there a difference between percent of students achieving high school graduation and type of feeder school attended: feeder schools which serve Pre-K through fifth grade feeder schools which serve Pre-K through eighth grade?

Hypotheses

H₀1A: There is no statistically significant difference in the means of end-of-grade reading scores between eighth grade cohorts who attended a Pre-K through fifth grade school and eighth grade cohorts who attended a Pre-K through eighth grade school.
H₀₁B: There will be no statistically significant difference in the means of end-of-grade mathematics scores between eighth grade cohorts who attended a Pre-K through fifth grade school and eighth grade cohorts who attended a Pre-K through eighth grade school.

H₀₂: There is no difference between the percentage of students achieving high school graduation and the feeder school attended: feeder schools which serve Pre-K through fifth grade and feeder schools which serve Pre-K through eighth grade.

Descriptive Statistics

This study reviewed five years of student data organized by cohort graduation or dropout year in the following years: 2011, 2012, 2013, 2014, and 2015. The sample included 725 students (N = 725). All of the results are as reported by SPSS Version 22. For the purposes of this study, the raw scores are also referred to as “scale scores” and provide a number representing the total number of assessment questions that the student answered correctly. The raw score is then converted to a “scale score.”

For each type of data collected, the means and standard deviations for each cohort year were calculated.

Assumptions Testing

Assumption tests were conducted for the following dependent variables: the reading raw scores, the reading proficiency scores, the math raw scores, and the math proficiency scores. Each of the dependent variables was found to follow a normal distribution. Inferential statistics have assumptions that must be met (Hosmer, Lemeshow, & Sturdivant, 2013). One assumption is that any dependent variables show normality in the distribution of scores (Hosmer et al., 2013). The t-test is viewed as already having robustness regarding assumptions of normality,
and any deviations from normality do not have a large influence on the results (Wonnacott & Wonnacott, 1990). Therefore, while Komolgorov-Smirnov tests were conducted to test normality, the researcher relied on the stem-leaf plots, which demonstrated normality. The results of the stem-leaf plots (Figures 1-4) show a normal distribution for reading raw scores. These stem-leaf plots show an almost symmetrical, mound shape. The data for the math raw scores do not show a symmetrical, mound shape; a Levene’s test was run for this data. The Levene’s test results were significant at .017, indicating that the equal variances are not assumed, in other words, that the data varies widely for the Pre-K-5 group. Therefore, the reported p values are for equal variances not assumed.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Interval</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>Extremes</td>
<td>(=&lt;337)</td>
</tr>
<tr>
<td>4</td>
<td>33.</td>
<td>8&amp;</td>
</tr>
<tr>
<td>10</td>
<td>34.</td>
<td>0234&amp;</td>
</tr>
<tr>
<td>23</td>
<td>34.</td>
<td>66677788999&amp;</td>
</tr>
<tr>
<td>70</td>
<td>35.</td>
<td>000111111111222233333333444444444</td>
</tr>
<tr>
<td>112</td>
<td>35.</td>
<td>55555555555666666666677777777777888888888999999999999</td>
</tr>
<tr>
<td>122</td>
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<td>00000000000111111111111222222222223333333333334444444444</td>
</tr>
<tr>
<td>77</td>
<td>36.</td>
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</tr>
<tr>
<td>42</td>
<td>37.</td>
<td>0000001111113333444&amp;</td>
</tr>
<tr>
<td>7</td>
<td>37.</td>
<td>56&amp;</td>
</tr>
</tbody>
</table>

Stem width: 10
Each leaf: 2 case(s) & denotes fractional leaves.

Figure 1. Stem-Leaf Plot for Pre-K-5 Reading Score Raw Data
This figure demonstrates the distribution of scores for students who attended the Pre-K-5 school configuration and their reading score raw data.
<table>
<thead>
<tr>
<th>Frequency</th>
<th>Interval</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Extremes</td>
<td>(=&lt;341)</td>
</tr>
<tr>
<td>7</td>
<td>34.</td>
<td>344&amp;</td>
</tr>
<tr>
<td>16</td>
<td>34.</td>
<td>5566899&amp;</td>
</tr>
<tr>
<td>44</td>
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<td>000111122222233344444</td>
</tr>
<tr>
<td>97</td>
<td>35.</td>
<td>555555556666666677777777888888889999999999</td>
</tr>
<tr>
<td>129</td>
<td>36.</td>
<td>00000000000000111111111222222222222333333333333444444444444444444</td>
</tr>
<tr>
<td>108</td>
<td>36.</td>
<td>555555555555666666666666666677777777777777778888888899999999999</td>
</tr>
<tr>
<td>47</td>
<td>37.</td>
<td>000000001111111122223444</td>
</tr>
<tr>
<td>17</td>
<td>37.</td>
<td>5566777&amp;</td>
</tr>
<tr>
<td>3</td>
<td>38.</td>
<td>&amp;</td>
</tr>
<tr>
<td>1</td>
<td>Extremes</td>
<td>(&gt;=383)</td>
</tr>
</tbody>
</table>

Stem width: 10
Each leaf: 2 case(s) & denotes fractional leaves.

Figure 2. Stem-Leaf Plot for Pre-K-5 Math Score Raw Data
This figure demonstrates the distribution of scores for students who attended the Pre-K-5 school configuration and their math score raw data.
<table>
<thead>
<tr>
<th>Frequency</th>
<th>Interval</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Extremes</td>
<td>(=&lt;344)</td>
</tr>
<tr>
<td>0</td>
<td>34.</td>
<td>6777</td>
</tr>
<tr>
<td>3</td>
<td>34.</td>
<td>899</td>
</tr>
<tr>
<td>9</td>
<td>35.</td>
<td>0001111111</td>
</tr>
<tr>
<td>9</td>
<td>35.</td>
<td>2222333333</td>
</tr>
<tr>
<td>10</td>
<td>35.</td>
<td>4444444555</td>
</tr>
<tr>
<td>11</td>
<td>35.</td>
<td>66666666777</td>
</tr>
<tr>
<td>20</td>
<td>35.</td>
<td>88888999999999999</td>
</tr>
<tr>
<td>24</td>
<td>36.</td>
<td>0000000000011111111111111</td>
</tr>
<tr>
<td>26</td>
<td>36.</td>
<td>2222222222222333333333333</td>
</tr>
<tr>
<td>31</td>
<td>36.</td>
<td>4444444444445555555555555555555555555</td>
</tr>
<tr>
<td>16</td>
<td>36.</td>
<td>666666666777777</td>
</tr>
<tr>
<td>15</td>
<td>36.</td>
<td>88888888899999</td>
</tr>
<tr>
<td>18</td>
<td>37.</td>
<td>0000000001111111111</td>
</tr>
<tr>
<td>10</td>
<td>37.</td>
<td>22333333333</td>
</tr>
<tr>
<td>5</td>
<td>37.</td>
<td>45555</td>
</tr>
<tr>
<td>5</td>
<td>37.</td>
<td>66677</td>
</tr>
</tbody>
</table>

Stem width: 10
Each leaf: 1 case(s)

*Figure 3. Stem-Leaf Plot for Pre-K-8 Reading Score Raw Data*

This figure demonstrates the distribution of scores for students who attended the Pre-K-5 school configuration and their reading score raw data.
<table>
<thead>
<tr>
<th>Frequency</th>
<th>Interval</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Extremes</td>
<td>(&lt;=342)</td>
</tr>
<tr>
<td>4</td>
<td>34 .</td>
<td>6799</td>
</tr>
<tr>
<td>16</td>
<td>35 .</td>
<td>0001222223334444</td>
</tr>
<tr>
<td>36</td>
<td>35 .</td>
<td>55556666666666777788888888889999999</td>
</tr>
<tr>
<td>53</td>
<td>36 .</td>
<td>0000000111111111112222222222233333333334444444444444</td>
</tr>
<tr>
<td>62</td>
<td>36 .</td>
<td>55555555556666666666666777777777777777778888888888888888889999999</td>
</tr>
<tr>
<td>32</td>
<td>37 .</td>
<td>00000000011111111112222223333333333</td>
</tr>
<tr>
<td>12</td>
<td>37 .</td>
<td>555566667888</td>
</tr>
<tr>
<td>6</td>
<td>38 .</td>
<td>013333</td>
</tr>
</tbody>
</table>

Stem width: 10
Each leaf: 1 case(s)

*Figure 4. Stem-Leaf Plot for Pre-K-8 Math Score Raw Data*

This figure demonstrates the distribution of scores for students who attended the Pre-K-5 school configuration and their math score raw data.

**Results**

The data analysis associated with Research Question One revealed differing results in regard to reading as compared to math. The statistical analysis revealed that there was no statistically significant difference in the reading EOG mean scores between students who attended a Pre-K-5 versus a Pre-K-8 school configuration, when comparing the raw reading scores. For reading performance, as shown in Table 10, the means of both categorical sets of students are very similar: 343.40 for Pre-K-5 and 344.90 for Pre-K-8. Further, the data analysis associated with Research Question Two, the math performance analysis, indicates that students who attended a Pre-K-8 configuration scored higher. As shown in Table 11, the means of the students’ mathematics EOG raw scores were 356.58 for Pre-K-5 configuration students and 364.31 for students who attended a Pre-K-8 configuration, with the independent sample test revealing a .010 difference. This is a statistically significant difference, affirming the higher performance levels of the students who attended a Pre-K-8 configuration.
**Question One: Null Hypothesis One**

The first research question inquired whether the type of feeder school that students attend (Pre-K through grade 5 or Pre-K through grade 8) affects student achievement in reading and math. The first set of results presented here focuses on reading. The results from the t-test for the reading raw scores indicate that there is not a significant difference in the reading scores for students who attended the Pre-K through grade 5 schools, as compared to the students who attended the Pre-K through grade 8 schools. Table 10 contains the t-test results for the comparison of the reading raw scores for the EOG testing for students in schools identified as Pre-K-5, as opposed to Pre-K-8.

Table 10

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-K-5</th>
<th>Pre-K-8</th>
<th>t(720,449)</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Raw Score</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>t</td>
</tr>
<tr>
<td>Score</td>
<td>343.40</td>
<td>74.71</td>
<td>344.90</td>
<td>77.80</td>
<td>-0.25</td>
</tr>
</tbody>
</table>

It is noted here that for the raw reading scores, there is not a statistically significant difference between students who attended Pre-K-5 elementary schools compared to students who attended Pre-K-8 elementary schools.

**Question One: Null Hypothesis Two**

The second part of the first research question inquired as to whether the type of feeder school that students attend (Pre-K through grade 5 or Pre-K through grade 8) affects student achievement in math. The results from the t-test for the reading raw scores indicate that there is a statistically significant difference in the math raw scores for students who attended the Pre-K
through grade 5 schools, as compared to the students who attended the Pre-K through grade 8 schools. Table 11 contains the t-test results for the comparison of math raw scores for EOG testing for students in schools identified as Pre-K-5, as opposed to Pre-K-8.

Table 11

*Mathematics Raw Score Independent Samples T-Test Results*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-K-5</th>
<th>Pre-K-8</th>
<th>t(720,449)</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics Raw Score</td>
<td>356.59</td>
<td>364.32</td>
<td>-3.74</td>
<td>0.00</td>
<td>[-11.79, -3.66]</td>
</tr>
</tbody>
</table>

The Levene’s test results were significant at .017, indicating that the equal variances are not assumed, in other words, that the data vary widely for the Pre-K-5 group. Therefore, the reported p values are for equal variances not assumed p > 5. In light of this, it is noted here that for the raw math scores, there is a statistically significant difference between students who attended Pre-K-5 elementary schools, compared to students who attended Pre-K-8 elementary schools with equal variances not assumed. The values reported are for equal variances not assumed.

**Question Two: Null Hypothesis**

This null indicates that there is no statistically significant difference between which configuration or school a student attended and successful graduation, regardless of whether it was configured to serve Pre-K-5 or Pre-K-8. According to the chi-square test, 10.2% of the students who attended a Pre-K-5 school over the selected five-year period dropped out, but 7.6% of the students who attended a Pre-K-8 school dropped out. Although the Pre-K-8 results are less than that of Pre-K-5, the Asymp Significance (two-sided) analysis revealed a difference of
.249, which is not a statistically significant difference. Therefore, the researcher failed to reject the null hypothesis.

Table 12

Results of Chi-Square Test for Graduation Completion by Elementary School

<table>
<thead>
<tr>
<th>School Type</th>
<th>Graduation Completion</th>
<th>( \chi^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (%)</td>
<td>No (%)</td>
</tr>
<tr>
<td>Pre-K-5</td>
<td>495 (90%)</td>
<td>56 (10%)</td>
</tr>
<tr>
<td>Pre-K-8</td>
<td>231 (92%)</td>
<td>19 (8%)</td>
</tr>
</tbody>
</table>
CHAPTER FIVE: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Discussion

The purpose of this study was to identify differences in the middle and high school academic performance and high school dropout rate between the students from the different types of feeder schools, which vary in regard to grade configuration, class configuration, size, and transitions.

This non-experimental study used correlational/causal/comparative statistical analysis and ex-post facto collected data to determine if there was a statistically significant difference between the size and grade span configuration of the elementary school attended and the academic success in reading and mathematics, as well as on graduation rates. The data demonstrated that in the reading mean scores, there was no difference based on the elementary school attended; however, in the means of the mathematics EOGs and the high school Algebra/Math 1 test scores, there was a statistically significant difference that indicates students who attended a Pre-K through grade 8 school score better than students who attended a Pre-K through grade 5 school. When reviewing graduation and dropout data, however, there was no statistically significant result that pointed to one configuration of the elementary or middle school as being more effective in producing graduates than the other.

Question One: Null Hypothesis One

The results for Research Question One revealed that there was no statistically significant difference in the raw reading scores between students who attended a Pre-K-5 elementary school and those who attended a Pre-K-8 elementary school. Using independent sample t-tests to compare the means of the raw scores at 343.40 for Pre-K-5 schools and 344.90 for Pre-K-8
schools, p = .804, indicating no statistical significance. The analysis utilized Cohen’s $d$. Therefore, the researcher failed to reject the null hypothesis.

**Question One: Null Hypothesis Two**

It should be noted that for raw math scores, there is a statistically significant difference between students who attended Pre-K-5 elementary schools and students who attended Pre-K-8 elementary schools. In the instance of this analysis, students who attended a Pre-K-8 configuration scored higher. As shown in Table 12, the means of the students’ mathematics EOG raw scores were 356.5863 for Pre-K-5 configuration students and 364.3153 for students who attended a Pre-K-8 school, with the independent sample test revealing a .000 difference utilizing Cohen’s $d$. This is a statistically significant difference affirming the higher performance levels of the students who attended a Pre-K-8 configuration.

**Question Two: Null Hypothesis One**

Research Question Two explores the graduation success rate of students in respect to the elementary school attended. The chi square test compares the categorical data describing each population, those that graduated, those that dropped out, those that attended a Pre-K-5 school configuration, and those that attended a Pre-K-8 configuration. The null hypotheses were tested using independent t-tests and chi square analysis using SPSS software and Microsoft Excel. The findings are summarized in the tables found in Chapter 4. In Table 13, the graduation rates between the configurations of schools for the years of graduation demonstrate Pre-K-8 at 92% and Pre-K-5 at 90%. Both analyses utilized Cohen’s $d$. Therefore, in this instance, the researcher rejected the null hypothesis. In the instance of this analysis, the researcher failed to reject the null hypothesis.
According to the research, academic success at the secondary level can often be directly connected to the experience of the student in elementary school (Deridder, 2001; Hernandez, 2011). Although the chi-square analysis did not reveal a statistically significant difference in relation to the graduation rate, the numbers clearly reveal that scores are higher among the students who attend schools with a Pre-K through 8 configuration as opposed to those with a Pre-K through 5 configuration. The Pre-K through 8 configuration offers students a more consistent experience with fewer transitions. As Akos (2002), Stein and Hussong (2007), and Parker (2010) stated, a trusting relationship and connectedness to the school learning community not only generate a positive atmosphere and perception about and within the school, this elemental trust is also linked directly to academic achievement. The Pre-K through 8 schools all practiced self-contained classrooms, further extending the family-like experience for students and meeting the need for acceptance or belongingness recognized by Maslow (1968). Each time students transition to another school, they converge with new personalities to create a new system, a different community of learners. Like elements in a chemical reaction, students react to the new environment based upon their perception of their own efficacy, level of self-actualization (Maslow, 1968), and own preconceived beliefs about their ability to perform, which were formed through prior experiences.

The environment in which those prior experiences occurred is integrally tied to their self-concept, ability to problem solve, and assignment of meaning to current issues and events in their lives. Sometimes, the support systems to which students have become accustomed disappear and may not be in place or readily visible in a new environment (Parker, 2010). Wormeli (2011) posited that transitions are times of concern for all students, with the transition between elementary and middle school being one of the most critical. The potential for isolation is high,
which impacts students’ perceptions of school, as well as academic performance (Akos, 2002; Parker, 2010; Stein & Hussong, 2007). Both students and the parents of students who indicate a positive perception of the school experience produce higher test scores, on average, than those with a less than stellar opinion of the school experience (Cohen, 2009). Given that the Pre-K through 8 configuration provides a longer time period in the experience of a child to build relationships with students and families, it is reasonable that the Pre-K through grade 8 data analysis supports higher scores in comparison to those for the Pre-K through grade 5 configuration. Also, it is logical that Pre-K through grade 8 schools provide a better opportunity for parents and students to form a positive perception about the school. Schumacher (1998) and Anderman and Maehr (1994) described studies that reported a sense of decline in the quality of school life during the transition between elementary and middle school. In a Pre-K through grade 8 configuration, this decline does not necessarily occur.

The students in the district who attended a Pre-K through 8 school are removed from this context simply by the nature of the school configuration. Students who begin their school experience in a Pre-K through grade 8 school have only one transition in their school career. In their research, Jacob and Rockoff (2012) validated that students learn better in a K-8 configuration as opposed to a 6-8 configuration. They noted that the transition from elementary to middle school occurs at a time when the student is already experiencing complicated biological and perhaps even social-emotional issues. If a transition to an entirely new environment is added to these issues, the risk of failure, regression, and dropping out increases exponentially. This thesis is further supported by the work of Schwerdt and West (2011), who found that students who entered a middle school from an elementary school were correlated to higher overall absences, as well as dropout rates. However, students who transition to high
school from a K-8 configuration demonstrated a small drop in achievement; however, the students’ overall performance was not wholly affected. All the aforementioned literature supports the statistically significant finding that the K-8 configuration is the most successful construct for student success.

**Conclusions**

A primary mission of the elementary school is to give students the foundational academic skills to succeed in high school. This study was undertaken to vet the performance of a system of elementary schools within a single district to accomplish this task. Although the schools should be equal, are the results equitable? Is one school outperforming another in regard to student success and preparation?

The hypotheses statements of this study explore and compare the means of two sets of scores (math and reading) as generated by the assessment data, as well as the overall graduation success rate isolated to a particular elementary school. First, the raw reading and mathematics scores, which are the number of items the students answered correctly with an assigned point value applied, were reviewed. The idea posited here is that students who attend a configuration of grade levels, whether it is a Pre-K through 5 or Pre-K through 8 school, either did or did not experience a difference in their assessment performance.

While the study results found no statistically significant difference in the means of the raw reading scores, the analysis of the mathematics data resulted in a statistically significant outcome. Clearly, the analysis revealed that students who attend a Pre-K through 8 school score better on the Math 1 (Algebra 1) test upon entering the ninth grade. Thus, from this study, the researcher can conclude that the Pre-K through 8 configuration of teaching and learning is more effective than the Pre-K through 5 configuration.
Further analysis revealed that there was no statistically significant difference of graduation or dropout percentages tied to a particular elementary school for students who attended a district elementary school and then also were identified as either graduates or drop-outs at a district high school. Using this analysis, the researcher can conclude that all the elementary schools in the district, regardless of the configuration, offer students an equal opportunity to successfully earn a high school diploma.

However, the data collection and analysis process did reveal that for students who were categorized as transferring or moving into a middle or high school post elementary age (NID: Not in District), a much higher number dropped out. Thus, from this study, the researcher can conclude that students who have fewer transitions in the early years of their educational career have a higher percentage of success in achieving graduation.

**Implications**

The study of factors impacting graduation and dropout rates is very important. The relationship between the earliest educational experiences at the elementary school and the academic potential/performance of students is something that administrators and commissioners must consider when distributing funding and planning building projects to serve communities. School size and other factors contribute to student success or the lack thereof. Researching the foundational approaches through which learning can be fostered most successfully is worthwhile and necessary to assist decision makers in designing school size and configurations.

The implications of this research are broad and far reaching in several respects. Although this study was specific to a particular set of schools in Western North Carolina, the concepts, theories, and study are relevant in that the research can be applied to a broad population.
Clearly, there are multiple factors that influence the academic success of a student, and inevitably, the student’s ability to achieve graduation.

The first implication of this study relates to the finding that students who attended Pre-K through grade 8 schools had a higher rate of success academically in regard to math performance. Incidentally, these schools are also much smaller in student number than the larger Pre-K through grade 5 schools. The implication is that schools with a smaller size and requiring fewer transitions for students promote a higher rate of academic success.

The second implication relates to the finding that students labeled NID (not in district), who did not attend elementary school within the district, had a much higher dropout rate than that of students who did attend an elementary school within the district. Of the students who did not attend an elementary school within the district, 16.09% dropped out. These were students who transferred into the district and did not attend one of the elementary schools. These students experienced a move, which is a major transition, supporting the implication that transitions negatively impact student performance and graduation rate.
Table 13

*Graduates and Dropouts by School*

<table>
<thead>
<tr>
<th>School</th>
<th>Size (average of four year daily membership (adm))</th>
<th>Class Size Average</th>
<th>Configuration</th>
<th>Number of Dropouts per Each Elementary Year</th>
<th>Number of Graduates per Each Elementary Year</th>
<th>Total Number of Students</th>
<th>Percentage of Students Dropping Out / Total # Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>AES</td>
<td>385</td>
<td>23</td>
<td>Pre-K-5</td>
<td>12</td>
<td>171</td>
<td>183</td>
<td>6.56</td>
</tr>
<tr>
<td>HDEM</td>
<td>140</td>
<td>22</td>
<td>Pre-K-8</td>
<td>4</td>
<td>54</td>
<td>58</td>
<td>6.89</td>
</tr>
<tr>
<td>MARES</td>
<td>110</td>
<td>24</td>
<td>Pre-K-5</td>
<td>4</td>
<td>50</td>
<td>54</td>
<td>7.40</td>
</tr>
<tr>
<td>MES</td>
<td>485</td>
<td>25</td>
<td>Pre-K-5</td>
<td>15</td>
<td>210</td>
<td>225</td>
<td>6.67</td>
</tr>
<tr>
<td>NID</td>
<td>Not in district</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PES</td>
<td>135</td>
<td>23</td>
<td>Pre-K-5</td>
<td>4</td>
<td>62</td>
<td>66</td>
<td>6.06</td>
</tr>
<tr>
<td>REMS</td>
<td>220</td>
<td>19</td>
<td>Pre-K-8</td>
<td>1</td>
<td>112</td>
<td>113</td>
<td>.884</td>
</tr>
<tr>
<td>MCEMS</td>
<td>235</td>
<td>21</td>
<td>Pre-K-8</td>
<td>1</td>
<td>60</td>
<td>61</td>
<td>1.64</td>
</tr>
</tbody>
</table>

The figures in Table 13 were derived by dividing the total number of students who graduated from each elementary school by the number of dropouts tied back to each elementary school. This creates a critical implication, as it drives an assumption that students who have experienced a move to the district are immediately at a higher risk for dropping out than students who attend their district school with no interruption.

The third implication relates to the fact that students who attended a Pre-K-5 configuration school, like the students who were NID (not in district), also had more transitions. Therefore, students who attended a Pre-K-5 configuration school should be monitored and supported as the transitions are made.
The fourth implication relates to the finding that schools that encountered significant teacher and principal turnover demonstrated a decline in overall score composites. The composite is formed by adding the overall average performance in math and reading at each grade level and then dividing by two. This composite is provided by NCDPI each year on the school report card. See Tables 14 and 15 and the corresponding discussion. This is best demonstrated by isolating MARES, which has both the highest turnover rates in teachers and principals, as well as the highest dropout rates over the selected years of 2008 through 2012. The implication here is that schools with the greatest at-risk factors, i.e., relatively high rates of free and reduced lunches and teacher turnover, should implement a concerted effort to recruit and maintain consistent, qualified leadership.

Table 14

5-Year Average: Teacher Turnover

<table>
<thead>
<tr>
<th>School</th>
<th>Number of Principal Changes</th>
<th>Percentage Principal Turnover Rate 2008-2013</th>
<th>Percentage of Students Dropping Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>AES</td>
<td>4</td>
<td>80%</td>
<td>6.56</td>
</tr>
<tr>
<td>MARES</td>
<td>4</td>
<td>80%</td>
<td>7.40</td>
</tr>
<tr>
<td>HDEMS</td>
<td>3</td>
<td>60%</td>
<td>6.89</td>
</tr>
<tr>
<td>REMS</td>
<td>3</td>
<td>60%</td>
<td>.884</td>
</tr>
<tr>
<td>MCEMS</td>
<td>2</td>
<td>40%</td>
<td>1.64</td>
</tr>
<tr>
<td>MES</td>
<td>2</td>
<td>40%</td>
<td>6.67</td>
</tr>
<tr>
<td>PES</td>
<td>1</td>
<td>20%</td>
<td>6.06</td>
</tr>
</tbody>
</table>
Table 15

Teacher Turnover Rate 2008-2013

<table>
<thead>
<tr>
<th>School</th>
<th>Number of Principal Changes</th>
<th>Percentage Teacher Turnover Rate 2008-2013</th>
<th>Percentage of Students Dropping Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>AES</td>
<td>4</td>
<td>11.0%</td>
<td>6.56</td>
</tr>
<tr>
<td>MARES</td>
<td>4</td>
<td>15.6%</td>
<td>7.40</td>
</tr>
<tr>
<td>HDEMS</td>
<td>3</td>
<td>4.6%</td>
<td>6.89</td>
</tr>
<tr>
<td>REMS</td>
<td>3</td>
<td>8.2%</td>
<td>.884</td>
</tr>
<tr>
<td>MCEMS</td>
<td>2</td>
<td>6.6%</td>
<td>1.64</td>
</tr>
<tr>
<td>MES</td>
<td>2</td>
<td>5.2%</td>
<td>6.67</td>
</tr>
<tr>
<td>PES</td>
<td>1</td>
<td>10.8%</td>
<td>6.06</td>
</tr>
</tbody>
</table>

The figures in these tables were derived by dividing the sum of the percentages of the five years of teacher turnover (Table 16), and then again, for principal turnover (Table 17), and dividing by the number of years, which was five. It is important to note that MARES, which was a high performing school in 2004 under the consistent leadership of a principal who had been there for five years, began a merry-go-round of turnover that provided no consistency in leadership. While there are many external factors that would need to be considered in an overall analysis of the performance of MARES and the decline of its test scores, it cannot be ignored that in this district, MARES now has the lowest test scores, as well as the highest turnover rate for teachers (15.6%) and leadership (80 %) over a five-year period. Further, when the percentage of students who drop out is juxtaposed with the turnover rates, it is also critical to note that MARES had the highest percentage of students who dropped out over this same five-year period. More study and analysis is recommended to establish or refute causality. A phenomenological study of this school, in particular, may reveal interesting cause and effect
data. It should also be noted that MARES has the highest free and reduced lunch rates, which hover between 83.06 % and 92.62 % between the years of focus, 2008 through 2012.

Table 16

*MARES Principal Turnover 15 Year Analysis Table*

<table>
<thead>
<tr>
<th>Year</th>
<th>Composite</th>
<th>Principal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-2002</td>
<td>89.25</td>
<td>A</td>
</tr>
<tr>
<td>2002-2003</td>
<td>83.60</td>
<td>A</td>
</tr>
<tr>
<td>2003-2004</td>
<td>85.25</td>
<td>A</td>
</tr>
<tr>
<td>2004-2005</td>
<td>94.30</td>
<td>A</td>
</tr>
<tr>
<td>2005-2006</td>
<td>74.60</td>
<td>A</td>
</tr>
<tr>
<td>2006-2007</td>
<td>94.30</td>
<td>A</td>
</tr>
<tr>
<td>2007-2008</td>
<td>67.75</td>
<td>B</td>
</tr>
<tr>
<td>2008-2009</td>
<td>63.75</td>
<td>B</td>
</tr>
<tr>
<td>2009-2010</td>
<td>67.00</td>
<td>B</td>
</tr>
<tr>
<td>2010-2011</td>
<td>69.40</td>
<td>C</td>
</tr>
<tr>
<td>2011-2012</td>
<td>76.55</td>
<td>D</td>
</tr>
<tr>
<td>2012-2013</td>
<td>39.00</td>
<td>D</td>
</tr>
<tr>
<td>2013-2014</td>
<td>61.00</td>
<td>D</td>
</tr>
<tr>
<td>2014-2015</td>
<td>49.00</td>
<td>E</td>
</tr>
<tr>
<td>2015-2016</td>
<td>56.00</td>
<td>E</td>
</tr>
</tbody>
</table>

MARES had the same principal for a consistent set of years from 2001-2007. Although many external factors may play a part in the success and the consistency of academic performance, it cannot be argued that once the changes began to occur, the scores began to decline, as demonstrated in the 15-year analysis provided in Table 18.
Limitations

The nature of the comparison of the dropout percentages as tied to the elementary schools indicates that depending upon which configuration attended, Pre-K-grade 5 or Pre-K-grade 8, there could be span of four to seven years that could pass before a student graduates from elementary school, based upon which elementary school was attended. For students who attend a Pre-K-grade 5 school, there is an additional transition that occurs when moving into middle school. For students remaining in a Pre-K-grade 8 school, there is consistency in their learning experience. There is no way to account for external variables that impacted students over that amount of time, because certain characteristics were not associated with and may not have even been known to the school. Often, students may have had multiple transitions in their families, such as divorce, death, and financial struggles. Issues within the home can impact student performance, not only the configuration of the schools.

The same attributes that made this grouping of schools an important and interesting subject to study also create obstacles in defining generalizable results. Because each school is so unique in its offerings and cultural climate, the overtones of subjective behaviors, such as family atmosphere, caring teachers, and committed administrators, are not measurable in this type of study. However, regarding future research, defining and isolating such a characteristic for a singular study is recommended and would be beneficial. Suggestions for such research include teacher turnover, the leadership style of principals, parent participation in the school environment, and activities.

Another limitation is the lack of explicit attention to the element of poverty and the different rates of free and reduced lunch/poverty identified for the students at each school. The district as a whole hovers between 70% and 80% free and reduced lunch. Another limitation is
the lack of attention to the characteristic of gender and the identification of any potential gaps favoring either males or females in a particular school.

**Recommendations for Future Research**

Based on the existing research, students enter both middle and high school with varying levels of preparedness based upon their experiences in their previous level of schooling. The foundation of one’s beliefs about one’s own self-efficacy is grounded in the elementary experience. This indicates the importance of appropriate transition programs to assist students’ assimilation into the socio-cultural environment of any new assignment, whether it is middle school or high school. The differing levels of preparedness of each student are a result of the characteristics of the different feeder schools that each student attended. Students accustomed to the self-contained, family environment provided by small schools and small classroom sizes may need elements of transition assistance and support that are not necessary for students who attended a large school with varied school assignments, for example, changing classes with departmentalized or special subject teachers and experiencing a different grouping of peers at each class and grade level.

The varying size of the schools, the grade span configurations, and the philosophical approach to serving the students in a district impacts the learning environment and climate that exists within the school building. Grade span directly impacts the number of transitions students will experience, and the class and school size can have an effect on how much time and individual attention a student may receive. While much data in U.S. public schools is analyzed for academic growth, there continues to be a gap in many systems in addressing the socio-emotional and cultural aspects that seem to naturally accompany transitions between schools, even within singular districts. Ultimately, school success, by current evaluation standards, is
measured by a student’s ability to graduate from high school and to secure a diploma. The merging of student experiences, from one school environment to the next, presents educators and administrators with an opportunity to level the playing field, both academically and socially, for students. An awareness of these vulnerable times provides educators the opportunity to enhance or intervene, and to deliberately shape the student’s experience, rather than leaving the child’s perceptions and experiences to chance. According to Maslow (1968), perceptions of self-efficacy begin developing in elementary school. How can educators leverage their knowledge of student needs based on the philosophies of constructivism, social learning theory, and Maslow’s hierarchy of needs to engineer the best method of ensuring that students are ready to learn? And how can we structure the school experience within the concepts of class size and grade configuration to make a difference?

Further, we must accept that any change agent in the student’s learning environment may result in conditions that impact the student, their learning, and their achievement. Teacher and leadership turnover can contribute to a climate of instability in a school. Frequent changes in teaching assignments and leadership can chip away at the foundation of a student-focused program and contribute to a lack of knowledge or understanding of the overall student population of the school. There are many culminating factors and external variables related to socioeconomic status and rural conditions that create differing issues in each school. These elements inevitably impact the students’ performance and ability to learn. District leadership should leverage this knowledge not only to engineer the best method of ensuring that students are provided with an optimum environment in which to learn, but also to ensure that all students have access to support systems and interventions that will facilitate graduation if or when obstacles to their learning process occur. District level administrators and decision makers
should use examples from this research to ensure that the decisions made in allocating resources are not necessarily equal, but equitable, based on school need. Future recommendations for research include:

1. A new analysis of data in this study to include the removal of the lowest performing school, which easily identifies possible poor performance with overt change in leadership and other confounding variables. The removal of this data which is potentially skewed could provide a truer snapshot of the variables that were emphasized in this study: school configuration and academic performance.

2. A deeper study of the elementary experience as it relates to academic success in high school is needed. Is Pre-K a viable variable? It is not known whether or not the majority of students who dropped out attended a Pre-K.

3. Qualitative studies regarding students who transferred in from other districts, but were successful academically and achieved graduation, could prove to be very revealing. What differed in their experience that allowed their success or promoted it?

4. Qualitative studies regarding students who dropped out could provide details as to how to design interventions to promote better academic success and graduation for students who fall into different circumstances. Are there aspects of what we have learned about the concept of community and school “connectedness” that could be applied to help? Interviews of actual students who dropped out could provide much information.

5. A quantitative study regarding students who graduated from an alternative school or alternative program would reveal how many of them experienced transitions and whether or not school characteristics or attributes contributed to their academic struggles, or if they were environmental or home related.
6. While factors such as teacher turnover and leadership changes/turnover were discussed in this study, their actual relationships to the cause and effect of graduation among the students in the study remain nebulous at best. A more focused study, perhaps in a single school, regarding academic performance and graduation achievement over time in relationship to leadership change and/or teacher turnover could reveal important data.
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