

EFFECTS OF STUDENT FAMILY STRUCTURE AND ATTENDANCE ON ACADEMIC  
ACHIEVEMENT IN MIDDLE GRADES MATHEMATICS

by

Bobby L. Sneed, Jr.

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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## ABSTRACT

The purpose of this study was to explore the impact student attendance and family structure had on academic achievement as measured by the Georgia mandated criterion referenced competency test (CRCT) in middle grades mathematics. There were many factors that could have come into play regarding the level of academic achievement each child experiences. With federal, state and local entities placing increased pressure on schools and educators to be more accountable, specifically in the form of student test scores, it seemed imperative to understand the external variables that may negatively impact student learning potential. Utilizing the student's family structure data reported via contact information at the beginning of the academic year and their attendance history for the 2012-2013 academic year, this study focused on determining if attendance and family structure statistically impacted mathematics achievement scores on the 2013 annual CRCT in a North Georgia middle school. The overarching goal of this study was to explore variables associated with family structure in an effort to determine factors outside the educational systems control that affect student performance. Results from this study showed that both student attendance and family structure individually impacted overall achievement in middle grades mathematics.

*Keywords:* achievement, attendance, CRCT, family structure, mathematics

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### **List of Abbreviations**

Analysis of variance (ANOVA)

Criterion Referenced Competency Test (CRCT)

Georgia Department of Education (GDOE)

Georgia Teacher Keys Effectiveness System (TKES)

Institutional Review Board (IRB)

Socioeconomic status (SES)



## CHAPTER 1: INTRODUCTION

As proponents of educational reform continue to gain traction, it becomes more important to better understand what factors impact student learning and the teacher's ability to foster the learner's understanding of key concepts in the classroom. National and state legislation has continued to focus on the accountability issues which center most often on teacher abilities and student achievement data derived from mandated testing (Clements, 2013). In fact, little effort has been mobilized to better understand the seemingly endless factors that students endure outside the classroom. Based on current legislation it would suggest legislators believe students show up for class ready to learn and are able to cast off whatever external issues that would limit their ability to concentrate and thusly perform on high stakes tests accordingly.

The purpose of this study was to explore the impact student attendance and family structure had on academic achievement as measured by Georgia's mandated Criterion Referenced Competency Test (CRCT) in middle grades mathematics. The goal was to identify if these factors, outside the control of educator and educational systems, correlated with prospective achievement measured by state mandated high stakes testing. If achievement was linked to attendance and/or family structure, then perhaps, future education reform would consider such external factors in proposed decision-making, thus creating a better education system that could better address student needs. Therefore, the future goal would be to place a higher priority on better understanding the variables outside the educational system's control to better assist these students in the future.

Within this first chapter, the reader will find background information regarding the research, the problem and purpose statement, the significance of the study, research questions with hypotheses, variables of the study, and significant definitions to the research. The overall

emphasis of this endeavor was to better understand the significance that school attendance and family structures play on the individual middle school student's ability to achieve in mathematics.

### **Background**

The National Education Goals Report presented in 1995 by Congress as H.R. 1804: Educate America Act identified eight goals for the educational system in the United States. This legislation laid the framework for future educational reform including No Child Left Behind, (No Child Left Behind [NCLB] Act of 2001, 2002), in which goal oriented instruction was monitored and progress was determined ultimately by high stakes testing to current educational efforts, including President Obama's American Recovery and Reinvestment Act of 2009, commonly referred to as Race to the Top.

While all the goals in the original bill H.R. 1804, commonly referred to as Goals 2000 or America 2000, were never met, two of the standards remain relevant to this research and future reform, Goals One and Eight.

Goal One: By the year 2000, all children in America will start school ready to learn. Within this statement, three initiatives (physical health including properly nourished and proper care for illness, family support, and supportive community) were outlined as necessary to attain this goal. Of particular interest to this study was that every student would be socially prepared, including having their basic needs for food and healthcare provided upon entering school, and that each parent in the United States will be a child's first teacher and devote time each day to helping each child learn by creating a self-confident and socially competent individual.

Goal Eight: By the year 2000, every school will promote partnerships that will increase parental involvement and participation in promoting the social, emotional, and academic growth

of children. All three supporting objectives of this goal were specific to this study, including state supported policies that increase partnerships between schools and parents by involving families in academic work and decision making and parental support of schools and teachers to promote social, emotional and academic growth for students.

Fifteen years after Congress set these goals, educators are still hopeful all students will come to class prepared to learn to their full potential. However, pertinent questions still remain regarding if each student has the support both in and out of the school that will help them be successful: Are the parents of each child (student) actually their first teacher? Do parents actively participate in their child's education and support the overall goal of educating their child to their fullest potential? Do parents and school systems work together effectively to help each child to achieve academically? In other words, are parents, educators, communities, students, and all other stakeholders striving for the same educational goals and maximizing efforts to succeed academically?

Lareau (2003) described this type of partnership as cultural capital, and Lareau's (2003) research showed a positive correlation between the combined efforts of families with educators. In fact, the family unit plays an integral part in the development of the child and his/her ability to achieve academically. Hampden-Thompson (2009) concluded that students from single-family homes perform lower overall than their two-parent family counterparts, which suggests that the parent variable was vastly important. Redford, Johnson, and Honnold (2009) concluded that students from the traditional two-parent, binuclear home (meaning those students who live in a household comprised of both their biological parents) outperformed other students who did not have this common factor.

Roby's (2004) study of attendance in Ohio schools indicated that school attendance was a measureable component of the commitment to the education process by the student, which impacted learning. While there were students who had legitimate reasons for absences, and some were absent more than ten days per year for good reason, many students were absent without excuse, and some exhibited chronic poor attendance. Roby found a moderate to strong correlation between student attendance and achievement in Ohio school children in grades four, six, nine, and twelve. The study continued by saying that while attendance factors may be outside the control of school officials, positive attendance factors of exceptional students should be studied and considered for troubled students and schools.

Belfanz and Byrnes (2012) found that students who did not attend school regularly or had excessive absences were often living within situations involving housing instability, including homelessness, movement, temporary dislocation, inability to pay rent, and lack of parental support. Chang and Romero (2008) reported students with chronic absences in kindergarten performed lower academically in the first grade than their counterparts. Research in Ohio schools showed a moderate to strong negative correlation of absenteeism to academic achievement, and students whose home lives were less supportive experienced similar lesser academic gains (Roby, 2004).

From the research literature, it would appear there is a correlation between attendance, family structure, and achievement, but what impact does family structure have on overall attendance, and what were the combined academic results? Is there a link between family structure and student attendance? If a resultant decrease in academic achievement exists for students with chronically poor attendance, does it diminish more based on a non-traditional family structure?

### **Problem Statement**

The problem has been that educational reform (improvement) has not, to date, considered all factors impacting the student's ability to learn, which include both those variables internal to the educational system and those external, which remain largely outside their control.

Legislative reforms including No Child Left Behind (NCLB Act of 2001, 2002), and Race to the Top have focused predominately on the role of the current educational system and high stakes testing without consideration for the other external variables in a child's life. Research has shown that attendance plays a significant part of the student's ability to learn (Chang & Romero, 2008; Roby, 2004). Studies have also shown the importance of parenting to the overall learning process and achievement (Belfanz & Byrnes, 2012; Lareau, 2003; Redford et al., 2009). By reviewing attendance, family structure, and mathematics achievement scores of a North Georgia middle school (grades six through eight), this study attempted to determine if attendance and family structure impacted overall student achievement in middle grades mathematics.

### **Purpose Statement**

The purpose of this causal comparative quantitative study is to determine the impact that differences in family structure and student attendance, including absence type, had on academic achievement in middle grades mathematics using statistical analysis of a 503 student sample in a Northwest Georgia district's middle school (six through eight), where 118 students were absent ten or more days for the 2012-2013 academic year.

### **Significance of the Study**

The significance of this study was to attempt to better understand how student absences and familial structure were correlated to absence type (excused compared with unexcused) and academic achievement in middle school (grades six through eight) mathematics resultant from

excessive school absences. Should a school's success or failure be contingent upon academic achievement determined from high stakes testing without considering extenuating circumstances students cope with on a daily basis? By better understanding the significant role parents play on student self-efficacy, beginning first with simple attendance and secondly with testing results, perhaps educators could further bridge the gap to enhance cultivated capital (Lareau, 2003) where families, school boards, schools, and teachers were all working together toward the same goal of overall success for each child.

A deeper contribution of this study was to better understand the significance of cultural capital (Lareau, 2003), specifically the parenting role and its contribution to student attendance, on mathematics academic achievement in the middle grades. With an increased emphasis on student learning outcomes, it was important to better understand how educators could best partner with all stakeholders to enhance the education process. A primary goal was to identify the combined impact that family structure coupled with student attendance played on overall mathematics achievement in this study.

According to the Georgia Department of Education (GDOE), 180,995 students in the state missed fifteen or more days of school in 2010, or roughly 9.7%. The same data indicated those students who missed ten or more days in eighth grade had a graduation rate 26% lower than those students absent fewer than ten days. The GDOE also found when students with a high percentage of unexcused absences were grouped and compared with students grouped based on a higher percentage of excused absences, the academic results were similar, suggesting absence type had no bearing on academic results. So while absence type may not have been proven significant according to state level data, school attendance was significant when compared with academic achievement measured by graduation rate.

Considering Belfanz and Byrnes' (2012) research that reported the negative impact absenteeism had on learning, and the significant increase of attendance issues based on a family's decreased socioeconomic status, which was a common negative result of family dissolution according to multiple researchers (Jeynes, 2002; Kelly, 2003; Pong, Dronkers, & Hampden-Thompson, 2003; Redford et al, 2009), it seems important to better understand what correlations exist between attendance and family structure and the impact on mathematics academic achievement. In addition, to better understanding the impact attendance and family structure played on academic achievement, of greater significance is to hopefully better understand students and their independent needs. By considering the role of family, and possibly the resultant attendance issues, teachers and schools could determine strategies to best meet the student where they are at the moment and enhance their educational experience and academic progress.

### **Research Questions**

Based on the purpose of this study, the researcher attempted to address four research questions consisting of the three independent variables (attendance, absence type, and familial structure) to the dependent variable, mathematics achievement.

**RQ1:** Is there a difference in cumulative mathematics achievement between high absence and low absence students?

**RQ2:** Is there a difference in cumulative mathematics achievement of students based on their parental family structure?

**RQ3:** Is there a difference in cumulative mathematics achievement of high absence students based on the proportion of their absences, which are unexcused?

**RQ4:** Is there a difference between the cumulative mathematics achievement of high absence students who exhibited two risk factors, a non-nuclear family structure combined with mostly unexcused absences, compared to those who exhibited either one or no risk factors?

### **Null Hypotheses**

**H01:** There is no statistically significant difference in middle grade students' cumulative mathematics achievement of high absence compared with low absence students.

**H02:** There is no statistically significant difference in middle grade students' mathematics CRCT scores based on their family structure type (two parent binuclear compared to single parent, step parent, and guardian family home).

**H03:** There is no statistically significant difference in middle grade students' mathematics CRCT scores when comparing those students with a higher proportion of unexcused absences to those with excused absences.

**H04:** There is no statistically significant difference between the cumulative mathematics achievement of high absence students who exhibit two risk factors of non-nuclear family type along with mostly unexcused absence types, as compared with those students with only one or none of these risk factors.

### **Identification of Variables**

The first independent variable of this study was student attendance. This variable included all students with ten or more absences both excused and unexcused from the academic year, which was similar to the attendance threshold of eight absences from Hixson's (2012) study which focused on reading. The ten day threshold for identifying high absence students was chosen primarily because the Georgia Department of Education's Presentation of Student Attendance and Student Achievement (2011) report stated if attendance was improved by only



five days per year, or three percent (15 days was the GDOE identifier so reducing by five would yield 10 days), then 8440 sixth graders, 4994 seventh graders, and 3602 eighth graders would have either met or exceeded on the mathematics CRCT. In comparison to Hixson's research, the same categories (unexcused absences to total absences) were used, consisting of four sub-groups. The four groups were calculated from total unexcused compared to overall absences percentages of 0 to 24%, 25-49%, 50-74%, and 75-100%.

The second independent variable of this study was student family structure. Family structure was identified as one of the following based on contact information collected from the student at the beginning of the school year. The family structure categories are defined as (a) nuclear family – student resided with both natural parents and/or adoptive parents, (b) single parent – student resided with one natural parent only, (c) step parent – student resided with one natural parent and a step parent, and (d) alternative (guardian) – student resided with a guardian who was not their natural parent.

The dependent variable for this study was the cumulative mathematics achievement determined by the student's score on the math portion of the state mandated high stakes test (CRCT).

It should be noted that these variables, along with the overall design of the study, were parallel to an identical study of reading achievement performed by Hixson (2012). Hixson's study did not show a significant correlation of attendance and family structure to reading achievement. However, Hixson (2012) reasoned that students may achieve in reading, in part, because it was also a leisure activity for many, while mathematics is not.

### **Definitions**

1. *Absence* – Students must attend school at least 3 ½ hours on a regular school day to be considered present. If a student is not present or is checked out earlier than the required 3 ½ hours, then they are considered absent according to the school district policy.
2. *Alternative (guardian) family* – A family unit where guardians that do not include relatives, such as foster homes, state homes, or other temporary homes, are raising a child. An alternative family might also consist of extended family members raising a relative child, such as grandparents or an aunt or uncle.
3. *Attendance* – Students in Georgia between the ages of six and sixteen are required to be enrolled and to attend school according to Georgia Compulsory School Attendance Law.
4. *Academic achievement* – Academic performance for each student will show competency and increased growth quarter each quartile in key subject matter including mathematics according to the National Education Goals SEC. 102.
5. *Cultural capital* – The combined efforts of parents, schools, school administrators, teachers, and other stakeholders to maximize the academic and personal achievement of each child/student (Lareau, 2003).
6. *Effective parenting* – A concerted effort, on the part of parents, to help their children in every way possible to achieve and develop (Redford et al., 2009).
7. *Family structure* – The organizational structure of the home based on the parental input identified as traditional, single, step, or alternative family (Parke, 2003)
8. *SES* – Socioeconomic status, the economic resources of the family unit.
9. *Single parent family* – A household with only one parent which could be either the mother or the father acting alone raising the children in the home (Parke, 2003).

10. *Step family* – A household with two parents but with only one parent being biologically associated with the child/student with the other parent being “married” into the family unit following divorce, abandonment, or death of the other biological parent (Parke, 2003).

11. *Traditional family* – A household with two parents of which both are biologically associated with the child/student acting in the traditional role of “mother” and father” (Parke, 2003). In this study, a traditional family might also consist of two adoptive parents who assume the same role in the child’s life as both biological parents would.

## CHAPTER TWO: REVIEW OF THE LITERATURE

### Introduction

A challenging question for current educators has been, what effects do fractured families and student's annual academic attendance have on academic achievement? Considering public schools are increasingly measured by academic improvement, and teachers are held accountable for student academic performance, it would seem prudent to explore a myriad of facets that directly correlate to student improvement or the lack thereof. In response to the question, the purpose of this chapter was to review literature that was related to student attendance, family structure of the student, and academic achievement, specifically measured by state mandated criterion based testing. Furthermore, a brief review of education reform as it relates to state assessment was explored to emphasize the impact testing has and possibly could have in the future. Finally, the argument or basis for this research resides on the premise that students cannot learn at their optimal level if they are not in school participating in the learning process, formally regarded as Bandura's (1977) social learning theory, while also considering the psychological, emotional, and physical conditions resulting from a broken family structure. Family structure conditions were also explored with emphasis on potential socioeconomic status decline, negative consequences to self-efficacy, school involvement, poor attendance, and overall disenfranchisement of the student toward academic goals as a result of a fractured family. Many fractured homes are the result of the dissolution of the marriage by divorce; therefore, much time was spent reviewing the subsequent factors of this event in a student's life and the impact on student learning. Other factors that result from fractured families included, but were not limited to, death of one or both parents, removal from the biological home, or abandonment. There are

numbers of factors resultant from family structure that were revealed during this literature review that illustrated the correlation these situations had on student annual academic achievement.

### **Theoretical Framework**

Caldas (1993) concluded that student attendance was positively necessary and directly correlates to student academic performance. As such, it would seem important for schools to ensure students are present for instruction and actively participating in the learning process to maximize positive gains in achievement. However, programs to ensure students are in school are often less than effective, especially the enforcement of truancy laws. Student attendance has not garnered the same level of research as other major talking points of education reform, specifically pertaining to the level of student achievement goals from high stakes testing. This study placed a heavy emphasis on exploring the importance of daily student attendance, and the correlation to familial support as it specifically related to the family structure of the student's home life to middle grades math achievement. Based on Caldas' (1993) research, it would seem that if schools, teachers, administrators, and other mediating factors are present in the classroom, even if they were only moderately effective, this would have a positive learning impact on students who were present to experience them. Conversely, students who were not present would be missing opportunities to learn, and if high stakes testing were an accurate measure of academic achievement, these gaps in learning would become apparent.

There have been many studies focused on the impact of divorce and broken families and the effects this phenomenon has on the children in the family, especially regarding their education (Potter, 2010; Esmaeili and Yaacob, 2011; Amato, 2000). Hampden-Thompson (2009), after reviewing multiple studies, pronounced there is strong evidence that indicates that children who reside in single parent families may be at an educational disadvantage.

Understandably, circumstances are often outside the control of a single parent, especially in situations that have resulted from the death of a parent, abuse from one parent where exiting the home is the most viable option, and other severe cases including abandonment, illness, and incarceration. The purpose of reviewing family structure in this report was solely to better understand how a student's family situation might impact his or her learning.

Empirical data suggesting that two parent children perform better suggests multiple explanations for the disparity with the two primary factors being economic resources and parental involvement (Hampden-Thompson, 2009). There are lots of reports in the field of education research that have focused on economic status, so much so that it is a sub-category within the assessment data reported by each state's department of education. Therefore, the concentration herein was more on the parent involvement factor and how it relates to student attendance.

Considering parental involvement and support as a primary focus led to a report by Redford et al. (2009) which showed a positive correlation between traditional families and student achievement via what Lareau (2003) explained as cultural capital. Both researchers based their studies on the overall belief that parental divorce and the broken home negatively impacted student academic achievement. Consequently, students from traditional, binuclear (both biological parents), married, heterosexual homes fared much better, especially those with involved parents who shared the common educational goal of the school for the student.

Based on this foundational belief supported by both Bandura's social learning theory (1977) and Lareau's cultural capital theory (2003), the intent of the literature review was to emphasize the potential impact student school attendance and family structure may have had on a student and highlight the correlations that have already been shown to exist. This, in turn, drives

the purpose of this research to determine the overall significance these causal conditions produced by taking into account school attendance in relation to specific family structure and the impact on individual middle grades math annual growth compared to baseline achievement. To better understand the significance of these external student factors, more information is needed regarding the multiple facets of correlation that have already been theorized and empirically proven between family structure and academic success.

### **Discussion of Key Terms**

Key terminology for this study includes academics and achievement as it related to student content retention. Student content retention is measured by the state mandated criterion referenced competency test (CRCT) in mathematics, which is administered each spring in all public K-12 Georgia schools. Attendance is the measurement of how many days a student was either present from school or absent from school. Within the attendance definition, there is additional discussion around the concept of excused absences, those being generally accepted by the school system as acceptable such as death in the family, illness, court appearances, or religious holidays. Unexcused absences are other types of unacceptable absences or the omission of a reason by the parent to substantiate the absence. Fractured family refers to a non-traditional family unit (one not consisting of both the biological mother and father), which could be the result of divorce, death, abandonment, or other factors that created family structures identified as a single parent home, step family home (one biological parent and one non-biological parent), or guardian home (non-biological or extended family).

Emphasis was placed on compiling research concerning a student's emotional and psychological wellbeing resultant from being in a "broken" home. In addition, student self-efficacy was explored, as well as student resilience to overcome any obstacles to academic

achievement. Other noteworthy factors included the socioeconomic impact of a broken family structure and how attendance has been proven to affect student learning outcomes.

### **Importance of the Study**

It is important to better understand how student absences coupled with familial structure are correlated to absence type (excused compared with unexcused) and academic achievement resultant from excessive school absences in middle school students' mathematics achievement. Educational studies have shown that absenteeism correlates with student academic achievement (Chang & Romero 2008; Roby, 2004). Research also indicated the same type of correlation when academic achievement was compared with student family support (Belfanz & Byrnes, 2012; Lareau, 2003; Redford et al., 2009). By combining the two independent variables, attendance and family structure, while comparing achievement results from state mandated mathematics testing, a better understanding of the impact of the combination of these variables could possibly be better understood. Lareau (2003) stated the importance of all stakeholders working together to best help the student succeed academically, which in turn supports the need to better understand variables that impact this outcome and for families, school boards, schools, and teachers to bridge these gaps as they become apparent.

Roby (2004) found a significant relationship between student attendance and academic achievement of fourth, sixth, ninth, and twelfth grade students in Ohio. In fact, Roby found a strong correlation, suggesting that attendance directly influenced achievement. This study focused on attendance, attendance type, and family structure specifically as they related to mathematics achievement measured by high stakes testing for the middle grade years of sixth, seventh, and eighth grade.



Lareau (2003) explained how family involvement in the student's education was important, thus the reason family structure was included in this study along with attendance. By including family structure in this study, one might better understand the impact it may have had on attendance, which will be denoted as "excused" or "unexcused" and illustrated if the two combined (attendance and family structure) were interrelated as variables that impact achievement. Additionally, the study attempted to better understand if parent involvement was diminished somehow by family structure, which, in turn, could have shown a significant correlation to either high student absences or absence type.

The role of parenting is significant to individual student success. Evans (2005) stated that for most children, the nature of their schooling was not nearly as significant as the nature of the parenting they received, socioeconomic status, or the media culture that surrounded them. In other words, the family structure played an enormous role in the student's readiness to learn while at school. Furthermore, Evans (2005) says,

Nearly ninety percent of the variance in student's math scores on some tests can be predicted without knowing anything about their schools; one only needs to know the number of parents in the home, the level of the parent's education, the type of community in which the family lives, and the states poverty rate (page 587).

Based on such bold statements regarding family structure, parent education, community support and poverty level (Evans, 2005), the student's family structure would seem likely to impact overall attendance and academic achievement. Yet research is limited that helps educators better understand if students with high absence rates of an unexcused nature experience less academic achievement levels than those students who have excused absences

considering family structure as a causal factor to this trend. This study was an attempt to determine if family structure somehow contributed to overall familial support independently and combined with student attendance and the impact this had on school level achievement.

The role of parenting has proven to be a significant factor regarding student achievement (Lareau, 2003). Empirical data suggesting that children in two parent homes perform better suggests multiple explanations for the disparity. The two primary factors impacting this disparity are economic resources and parental involvement (Hampden-Thompson, 2009). Furthermore, Redford et al. (2009) revealed a positive correlation between traditional families and student achievement via what Lareau (2003) explained as cultural capital. Both researchers based their studies on the overall belief that parental divorce and the broken home negatively impact student academic achievement.

This research did not attempt to redefine the correlation between family structure and attendance or achievement, but rather to determine the impact that family structure and student attendance, either independently or combined, has on achievement specifically in middle grades (grades six, seven, and eight) mathematics. Educators must use their resources in the most effective manner possible to reach students. The ability to more accurately determine the impact of the family unit and student attendance by educators may assist educational systems to better understand the phenomena driving poor attendance and achievement. By better understanding how the family unit affects attendance and the combined differences in academic performance, perhaps the education system could better assist these students if in fact they could be determined to be high risk from this and similar studies.

### **Importance of Attendance**

Belfanz and Byrnes (2012) stated the assumption of the public education system was that students would regularly attend school with compulsory education laws to back up the assumption. However, chronic absenteeism was and continues to be a common concern in schools across the nation. It would seem logical that if students learn in school, then being absent would hinder their academic progress. According to the Georgia Department of Education's Report on Student Attendance and Student Achievement (2011), more than 164,000 students (8.8%) missed more than fifteen days of school in 2009 and more than 180,000 students (9.7%) were absent in 2010. Their report continued that the majority of those students with chronic absenteeism reside in low socioeconomic households, which suggests an economic connection to absenteeism. Another key element of the study showed that while student absences began as early as kindergarten, they tend to drop, hitting the lowest levels around third and fourth grade, only to rise again in the middle grades and spike late in high school. No particular demographic subgroup stood out in the Georgia report, but it was worth noting that those students with special education needs reported the highest absences by a slight margin.

According to Chang and Romero (2008), attending school matters. Chang and Romero (2008) found that students with chronic absences in kindergarten performed lower academically in the first grade than their counterparts, with the results being twice as great for those from low-income families. The same students acquired between 12% and 15% fewer literacy and math skills in the same time period. Sixth grade students in Baltimore with fewer than ten absences per year retained a 70% graduation rate, while those students with 10 to 20 absences achieved a 51% graduation rate. Students with 20 to 39 absences had a 36% graduation rate, and finally, students missing more than 40 days declined to only a 13% graduation rate (Baltimore Education Research Consortium, 2011). It would appear attendance is directly correlated with the prospect

of students not only learning required annual skills and content, but also whether or not they were likely to finish their K-12 education.

Yet, while school attendance may be directly related to academic achievement, students continue to miss school. There are many legitimate reasons (district approved conditions for an excused absence) to forego attending a school day such as illness, family emergency, religious obligations, court matters, and any number of other important engagements. However, according to Belfanz and Byrnes (2012), these are not the primary purposes for a student absence. Instead, they found students decided not to attend because they preferred to be elsewhere or simply did not want to make the effort to go to school. According to the same study, a primary reason students choose not to attend school was housing instability including homelessness, movement, temporary dislocation, inability to pay rent, and lack of parental support. The latter could be the result of the parent being so busy that they failed to encourage their student in school, or the fact they did not see the value of education due to their own circumstances. In many cases, these parents were raising children in broken family homes and were coping with the responsibilities of being a single or stepparent, attempting to piece together the remnants of two broken units into one. More often the resultant broken family was due to divorce, which will be discussed in detail later in this chapter. Regardless of the reasoning for the broken family unit, if a correlation does exist between family structure, attendance, and academic achievement, then educators needed to develop a better understanding of just how significant these factors were, and what strategies could be implemented to offset the condition.

### **Attitude, Attendance and Math Achievement**

Sheldon and Epstein (2005) identified several explanations for why students in the United States struggle in mathematics. These reasons included the curriculum and instruction models

within the American classroom, the overall student attitude towards math, the degree to which students were prepared or ready for the given level of instruction based on previous achievement, background experiences, and finally, the overall level of support from home. The final reason for struggling math students was overall level of support from home, which was a primary consideration in this study. Perhaps one way to attempt to better understand support at home and the possible correlation to the overall student's ability to learn in math would be to consider the family structure. Many research efforts have focused on how to improve the organization, the curriculum, the school, the teacher, and the creation of new methods and programs along with the dismantling of others, but what about family support has not garnered as much research. One could argue that any effort that improved a child's ability to learn was not vain, and every facet of education reform should seek to enhance achievement. However, there are factors yet to be fully explained including family support, which would logically dictate attitude toward learning.

Sheldon and Epstein (2005) added value to this thought by citing previous research that children's home environments affected their attitudes toward mathematics, and that parental beliefs and expectations for their children in math to some degree predicted student achievement in the elementary and middle grade levels. This was further supported by multiple studies (Balli, 1998; Parson, Adler, & Kaczala, 1982; Entwisle & Alexander, 1996; Gill & Reynolds, 1999; Halle, Kurtz-Costes, & Mahoney, 1997; Holloway, 1986). In other words, what parents communicated to their children as important in school was what students placed an emphasis upon. When parents became involved in their child's education and positively engaged the student about what they were learning with support for the content, teacher, and school, the student perceived achievement as important and therefore developed an attitude of achievement. Whereas, the parent who was not engaged or did not positively support the education process

may, in turn, may foster an antagonistic attitude toward achievement in the child. This attitude manifested via attendance issues, delinquent behavior, and overall poor academic performance in the student. Based on these premises, one could surmise that a wholesome family environment with a joint effort from both parents would lead to a more conducive environment of support for the student. This would, in turn, generate a more academic, friendly situation, resultant in enhanced learning potential for the child.

This theory was further supported by extensive research performed by Sheldon and Epstein (2005) regarding improving student attendance with partnerships. While high quality teaching, positive student and teacher relationships, and a safe and engaging school climate are important, Sheldon contended student attendance along with school, family, and community partnerships were integral to overall positive effect. He found by helping students maintain good attendance or even to improve their attendance, students performed better on standardized tests while decreasing the dropout rate and reducing substance abuse including tobacco, alcohol, and illegal drugs. The effects of attitude toward school and learning appeared to be far-reaching and included more than simply test scores but an entire mindset about the education process as a whole. Family and community involvement in the student's school attendance matters, not just from the standpoint of simply being at school, but more importantly having the "right" attitude while being at school. This research seemed to place a heavy emphasis on students being in the classroom with a readiness to learn that was first communicated from their primary caregivers or families. So, while students being in attendance was important academically, perhaps more important for achievement was that students are present in a state of preparedness, which constituted being able to learn. It was too much to ask students to deal with the emotional, psychological, behavioral, and mental aspects of a dysfunctional home life while assuming they

would be able to cast off their worries and trials upon entering a classroom and be able to function at a high level.

### **Student Attendance in Detail**

Paredes and Ugarte (2011) agreed that good attendance had a positive effect on learning but were curious about the overall significance of this variable. Using data from public primary schools in Chile, they found two distinct results regarding attendance and educational performance. First, their study produced results consistent with claims that poor attendance does in fact have a relevant and significant correlation with educational performance. Secondly, they concluded the existence of a threshold where once a student crosses over a certain number of absences, further decline in performance did not appear to occur. In other words, the overall impact of student absences seemed, at least in their study, to “cap” or maximize at thirteen missed school days. Beyond the 13-day threshold, academic decline flat lined. Considering the 13-day threshold, this study in a North Georgia middle school reviewed students who had missed ten or more days in an academic year, which should have included the most severely impacted students.

Further analysis by Paredes and Ugarte (2011) revealed students who were absent at least nine days led to a reduction in performance on their SIMCE (a Chilean high stakes assessment) math test of at least 23%. This study went on to suggest that attendance did in fact have a significant and measureable impact on standardized test scores, and perhaps American schools should give more credence and conduct their own studies to determine the magnitude of this phenomenon in our school systems. Consequently, attendance is not an American issue but a world issue that impacts students in school systems in communities on a global scale. Within this same study, were other tidbits that ring out the same family structure concerns from other

research, such as how socioeconomic status as measured by free or reduced lunch impacts achievement, but it also listed those students who did not have a home, thus lacking support and cohesion from a family unit.

Most attendance research focused on either elementary grades or the complete public education grading system of kindergarten through high school. Specific research regarding middle school grades six through eight was limited. However, Benner and Wang (2014) found that middle school students with decreasing rates of attendance were at an increased disadvantage in high school. Their research found that students already struggling with attendance issues experienced difficulty with the transition to high school. This became an increased educational stressor, further disrupting their educational future measured by graduation rates and academic achievement. This was evident by the significant drops in attendance between the eighth and ninth grade years of those students with already decreasing rates of attendance in the middle grade school years. The study warned that some students (those already exhibiting decreasing attendance) struggled with the transition from middle to high school by linking attendance issues with increased school disengagement signaled by 38% of students shifting to poorer attendance. Only 18% of students experienced improved attendance. On a positive note, Benner and Wang (2014) found students with good overall attendance behaviors seemed to continue the trend throughout high school.

Roby (2004) found many factors that play a direct and indirect role in overall student achievement. Some variables are more difficult to control and to determine to what level of effect they impacted learning; however, the goal was to better understand the relationship of attendance with student achievement. The Ohio study found that not only were proficiency test averages higher, but also the annual attendance averages of the students in school buildings had



higher test averages. This suggested a strong, positive relationship between student achievement measured by Ohio Proficiency Tests and annual school building averages (Roby, 2004). Rather than reviewing individual student attendance and absence rates, Roby (2004) instead compared overall achievement results from the Ohio state tests with the overall building level student attendance. Roby's approach to identify the relationship of attendance to achievement was unique considering the exclusion of the individual student component and focus on the building level data. Being absent from school subtracts instructional hours, which from the basic premise that students are at school to learn and if they are not present would not learn, was the fundamental element of Bandura (1977)'s social learning theory.

Lamdin (1996) also found a strong, significant relationship between student attendance and standardized achievement test performance. Using the input-output approach, with the output or dependent variable being student performance on the California Achievement Test in reading and math and the input, or independent variables, being identified as teacher to pupil ratio, professional (administrators and counselors) to pupil ratio, expenditure per pupil, percent no free lunch, percent minority, and attendance a regression analysis was conducted to determine correlations. Lamdin (1996) concluded the coefficient on attendance was significant at the 5% level for reading and math achievement when the other inputs were held at constant, but Lamdin continued by warning that such a positive relationship should not be considered absent of the fact that student motivation and parent concern along with overall teacher ability to engage the student academically might be overstated. According to Lamdin, such results were typical and determining the magnitude of all the latent variables was a difficult task. Yet again, family support and attendance appeared to be intertwined and should be researched as input variables that directly impact student learning and achievement. The determination from the literature was

that attendance and family support played a vital role in children's education but all students were not present every day, and students did not receive the same levels of family support.

### **Impact of Parenting**

Hampden-Thompson (2009) conducted a study of two biological parent families compared with single parent families across eighteen countries and found the most significant academic performance gap existed in the United States. According to the same study, this could be attributed to decreased family resources because two parent families have higher academic and cultural involvement and increased parental involvement. Lareau (2003) determined that parenting practices had profound effects on academic success and continued by defining concerted cultivation as the parenting practices that align with school or educational systems and goals, thus offering an academic advantage to the student. When parents were involved with schools and both parents and the school were supporting the learning of the student with a combined effort communicating mutual goals for the student academically, the student responded favorably by sharing this vision for the success, and positive results followed.

Hampden-Thompson (2009) and Lareau's (2003) data showed a significant concern with fractured families and the academic achievement of students in the United States. Furthermore, it could be theorized from this research that the parent-child relationship was instrumental when attempting to emphasize to the student the importance of educational goals and outcomes. Considering concerted cultivation consist of factors including parent involvement, the student's involvement in extra school activities, and reading materials at home, one of the more profound factors and the only predictor of the student's grade point average was how often the parent and child discussed the expectations for grades (Lareau, 2003). This illustrates the significance of

shared expectations and communication within the relationship of parent and child in a shared academic construct.

Dumais (2002) and Lareau (2003) both referred to habitus, which is one's view of the world and place within it, as imperative to student educational expectations. Another study by Davis-Kean (2005) found that parental expectations had a positive correlation between parent education and student achievement. The home life and feeling of belonging in the family was evidence to solidify the importance of the parent and child relationship on reinforcing the self-determination to succeed. Children model the behaviors and expectations given to them by their parents by acting similarly, in other words, if parents exhibited a strong work ethic and drive to succeed, then the child was more prone to do the same. When parents communicated the expectation of their student performing well at school and then backed this message up with actions of care, concern, and support, studies showed an overall positive correlation to improved and sustained academic achievement.

### **Patterns of Achievement**

Kim (2011) concluded that children experience an academic setback, specifically in math scores, as a result of divorce; however, this effect did not hold true for reading scores in the same report. Hixson (2012) revealed no significant correlation between family structure, absenteeism, and reading achievement. He did, however, state that reading was an activity many students perform independently from school, which is not usually the case with mathematics. .

Hixson (2012) then suggested that there might be a statistical effect of family structure and attendance on math achievement, as well as potentially in science and social studies. Based on this belief, Hixson suggested future research should consider family structure and attendance specific to mathematics achievement since math concepts often build on previously acquired

knowledge. The consideration that math concepts build on previously mastered concepts might suggest math would be much more adversely affected by both family structure and attendance than reading.

Christenson, Rounds and Gorney (1992) identified five family factors that affect student achievement but that could be altered through intervention: parent expectations, learning structure, home environment, discipline, and parent involvement. As the family unit disintegrates, so do these five factors and the potential for achievement. Therefore, a pattern of achievement that schools should consider is the family structure and subsequent home life of the child and, ultimately, the learning potential in the school. However, there is little emphasis given to these dynamics in educational reform, considering most legislation is simply earmarked money to testing and teacher accountability. Moreover, these factors are difficult to identify and address given the personal nature associated with understanding family support and student determination.

### **Implications of Family Structure**

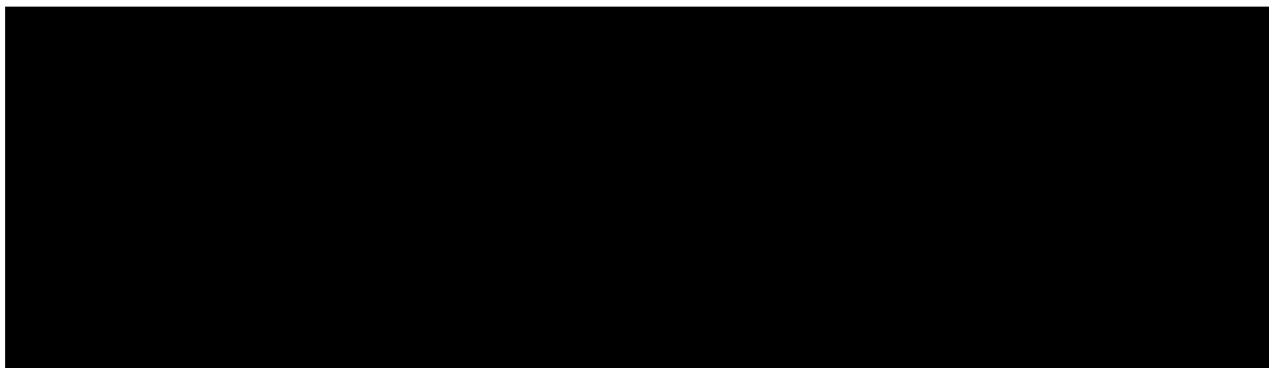
Literature suggested that the breakdown of the family unit has a significant impact on the lives of children. This impact has manifested itself in many different areas of the child's life including emotionally, mentally, psychologically, and in overall resilience. Children cope with conflict very similarly as adults; they internalize the conflict, which in turn can produce emotional and behavior issues that often manifest themselves in the classroom. Additionally, the child's ability to process these emotions has a pronounced effect on their academic efforts and behavior both in and out of school. There are both short-term and long-term effects associated with divorce, as well, and some research suggests conflict is a central component conducive to how far this impact reached. Beyond divorce, there are multiple other scenarios that result in a

broken or fractured family unit that could have an equally complex negative correlation for student academic achievement. Whether these situations included the death of a parent, the inability for parents to raise their children so the responsibility falls on other family members, or the student is removed from the home as a ward of the state, children are impacted and so are their academics. By addressing these difficult to understand and personal issues, perhaps educators could attempt to better prepare themselves to meet the needs of students who were not fortunate enough to have the same level of support and safety nets in their academic pursuits as fellow students in the same classroom.

The current family models to be included in this study are best represented by Angel and Torres (2008) who in their report on the lack of academic achievement showed students to be at an increased disadvantage if one of the parents was missing altogether but widowed parents showing the best of the categories within the fractured home. Their conclusion of this phenomenon was the lack of conflict and overall more stability in the widowed home compared with the divorced family. They also found that cohabitating partners did not offer the same advantages to the children in the family as a married couple. Stepfamilies were also at a distinct disadvantage since some 60% will likely end in divorce according to Angel and Torres (2008). Interestingly, they found that children of parents in same sex partnerships exhibit almost identical characteristics as heterosexual divorced families. It appears that outside the traditional nuclear bi-parental model, children are at an academic disadvantage, as the level of severity is linked directly to the family structure in which they are living. Table 1 shows the family types and subsequent family type characteristics identified and used in the Angel and Torres (2008) study. This table is important because it helps to redefine the current alternative family models,

or those other than the binuclear two biological parents, in the home in the United States and served as a guide for this research, as well.

Table 1



Source: <http://www.redalyc.org/pdf/647/64770208>.

### **The Changing Family**

Of all the changes in family life during the 20th century, perhaps the most dramatic and the far-reaching in its implications is the increase in the rate of divorce. Slightly more than half of all divorces involve children under the age of eighteen (Amato, 2000). This type of familial change in a young person's life is inseparable to changes in emotional well-being, academic ability, and behavior. However, in extreme examples of abusive home situations, one possible advantage may have been the dissolution of the dysfunctional family unit, which could promote restoration of a peaceful home-life. Kelly (2003) stated that low parental conflict was a protective factor for children following divorce. Nevertheless, the effects of a fractured family deserve exploration to determine the impact both on the student and academics.

As divorce becomes increasingly commonplace in society, children will be impacted. Potter (2010) discussed psychosocial well-being as an important predictor of academic achievement in children. His study revealed that while the single event of divorce may not be the mechanism that caused a negative impact, it was in fact the combination of events leading up

to, during, and after the family dissolution that affected the well-being of the child. These factors compounded over time, creating psychological and emotional issues that need to be addressed in order to overcome them. The breakdown of the family unit is stressful for all people involved, and this in no way precludes children.

The breakdown of the family unit does not occur without some level of conflict that lasts well beyond the initial action resulting in the change of family structure. Esmaeili (2011) studied the effects of divorce that included economic hardship and subsequent student achievement and found that parental quality was adversely affected, which in turn led to a poor parent child relationship. In other words, as the parent relationship breaks down, so did the parent child relationship, which was pertinent to adolescent functioning. This was true even for the non-violent parental separation or divorce. In addition, multiple theorists in the field suggest that an unhappy home environment with parent conflict has a drastic negative impact on children and their academic achievement. Furthermore, the fractured family resulted often times in fewer resources for the child as they transitioned to a single parent environment. Beyond the emotional and psychological unrest, this results in a loss of economic support, which places additional stress on the family unit.

### **Effective Parenting and Self-Efficacy**

So, even as the family unit breaks down and relationships are strained the role of effective parenting still remains a significant and important aspect in the life of the child? Amidst a broken family situation, parents must still effectively parent their children and attempt to overcome any negative correlations in the child's education. According to Baharudin, Hong, Lim, and Zulkefly (2010), parent involvement and specifically academic achievement goals still play a major role in the life of the student. If single parents stay involved and communicate

expectations with their children, at least some of the negative impact of divorce and parent absence may be overcome. By default, this provides a strong argument for the intact family of two parents, and the idea that children from a two parent home have an advantage. This study in no way assumes that children currently living in a binuclear, two-parent, biological home are completely protected from any of the negative circumstances associated with a broken home. It is fully understood the family home life is under constant strain given economic and time constraints, among other external dynamics affecting a family's ability to function in the twenty-first century. However, given the research and statistics available concerning stepfamilies, single parent families, and guardian family environments, children from these homes are at a higher level of risk as a whole compared with the same children from a traditionally intact home.

Weiser and Riggio (2010) stated that children from broken homes can and do still succeed. Based on their findings, neither this literature review nor the study in general attempts to imply children from broken homes cannot achieve or exceed their classmates who come from a two-parent home. Weiser and Riggio (2010) continued by suggesting self-efficacy played an enormous role in academic achievement and may actually offset some of the parenting deficiencies as a result of the student's overall feeling of competence and positive feelings about school. This, in turn, leads to better grades and expectations of achievement. Accordingly, these positive feelings regarding themselves and their abilities bridged the gaps created by home life and socioeconomic status. Self-resiliency and efficacy can produce a determined ability to perform positively even in the most negative of conditions, and children are profound.

In other words, while studies have shown a negative correlation comparing two biological parent families to fractured families, these obstacles can be overcome by effective parenting. While schools struggle to improve academic achievement annually, perhaps one of



the answers can be found by looking at the home and assisting parents. However, it would take a delicate approach to address such complex and emotional issues, but if the goal was to help each student succeed, educators should attend to as many aspects of the child's life that impact learning as possible. To better understand the impact the family units had on student academics and the significance this structure may evoke on potential learning better equips the school system to meet the needs of the children served.

Educators have most often relegated themselves to the role of practitioners rather than researchers and perhaps have missed opportunities to better understand their students. Multiple studies have been conducted that showcase the significance of two parent homes that included socioeconomic and relationship support for the children regarding education. Redford et al. (2009) emphasized the importance of a concerted effort between parents and children. Their substantial study (Redford et al., 2009) was quantitative in nature, and, after reviewing 24,599 eighth graders' standardized test scores with family background, the results showed a significant correlation between family background and achievement.

Gaps in reading literacy have far reaching effects for students' overall academic abilities. This foundational component cannot be overlooked when students' perceived learning is reviewed. A study conducted by Hampden-Thompson (2009) showed a significant correlation between lower reading scores and students being raised by single mothers. The phenomenon of single parents and the far reaching effects for children needs to be further explored to determine just how significant the impact really can be for students.

Students have mixed reactions to the divorce and resultant breakdown of their family unit. Many factors must be considered regarding the impact divorce plays in their lives. Bojuwoye and Akpan (2009) cited the child's perception of the divorce dependent upon age,

gender, socio-economic status, relationship with the parents before or after the divorce, degree to which the child was immersed into the parental conflict, and loss resultant from the family break-up. These factors dictated, at least in the child's mind, the significance of the loss and the resultant emotional turmoil through which they must navigate.

As children deal emotionally, mentally, and spiritually with these factors of divorce, various areas of development are affected. Kim (2011) conducted a study entitled, "Consequence of Parental Divorce for Child Development" and reported the following results: setbacks in math test scores, negative impact on personal interpersonal skills, and a pronounced behavior dimension. The same study revealed no significant impact on reading test scores or child resiliency. Nevertheless, the immediate impact was significant, as it related to achievement and inner personal abilities to cope with the associated stresses. These factors may have impacted self-efficacy immediately or later in life for the children. In addition, Kim's study showed a reduction in math scores but no significant change in reading, which gave some merit to Hixson's (2012) statement that mathematics achievement might be more affected by family structure and attendance than reading.

Long-term effects of divorce can impact children throughout their adult lives, as well. Many studies discussed the "good divorce" and the "bad divorce," with the overall dichotomy being measured by the level of conflict. While some might read the research regarding marriage dissolution and take a hard line approach that all divorces are bad for the child, this broad a statement cannot be supported fully because of negative influences in a home that could be worse for the child if divorce was not a choice. However, one study conducted by Ahrons (2007) found that divorces where the parents remained involved in the lives of the children had a far less negative effect than those where conflict excluded one or both parents. The well-being

of the child had a direct correlation with their perceived personal experience as it related to their parent's divorce.

### **Single Parent Families**

The increase in marital dissolution has had major implications for the settings in which children are nurtured and socialized (Amato, 2000). Parent-child relationships are fundamental to the happiness and security of the child (Batool, Naureen, & Kanwal, 2010). Beyond happiness, there are other effects that must also be considered.

Family income theorists assert that homes with an absent parent have lower family income for several reasons. The primary reason is that a broken family resulted in wage earners by default being removed and family resources thus declining (Jeynes, 2002). However, theorists asserted that homes with an absent parent had lower family income for multiple reasons (Jeynes, 2002). The foremost would be, as stated previously, the removal of a wage earner, but there were also other considerations such as educational level attained and previous socio-economic positioning. This may be, in part, due to a reduced risk of divorce for those persons with more material, (i.e., financial) assets who would have easier access to other resources that could prevent a marriage from dissolving in a troublesome time, such as marital counseling (Holley, Yobiku, & Benin, 2006).

Given the fact that single parent families have fewer family resources, as measured by the number of books and the number of items or possession at home (Pong et al., 2003), it can be inferred that these variables affected the student's state of being. But the effects go deeper psychologically, as reported by Johnson, Thorngren, & Smith (2001), who found results that indicate young adults from divorced families were more emotionally cut off from significant

others than were young adults from intact families. As children felt detached from broken families and also experienced reduced family resources, academics seemed certain to falter.

### **Academics and Family Structure**

According to Pong et al. (2003), single parenthood is associated with lower math and science achievement among young children. Since family resources cannot account solely for this significant achievement gap, and the achievement gap was greater in countries where single-parent families were more common, more factors had to be considered pertinent to this trend. Batool et al. (2010), argued that academic achievement at all levels depended upon numerous factors ranging from talent, intelligence, child training, parent-child relationships, child to child relationships, and socio-economic status of the parents. However, Batool et al. (2010) indicated that adults and children from divorced families, as a group, did score lower than their counterparts, married-couple families, on a variety of indicators of well-being (Amato 2000).

The relationship between intelligence and divorce could be attributed to parental background factors that affected the respondent's intelligence and the risk of divorce. Thus, the relationship between intelligence and divorce may primarily be attributable to parental education and income (Holley et al., 2006). However, theorists for the parental absence school of thought assert that due to the psychological and practical effects of losing a parent, the academic achievement of the child tends to decrease (Jeynes, 2002).

Kelly (2003) found that children in divorced families have lowered academic performance and achievement test scores compared to children in married families. The differences were modest and decreased, but do not disappear, when income and socioeconomic status were controlled. Children from divorced families were two to three times more likely to drop out of or be expelled from school than children of married families, and the risk of teenage

childbearing was doubled. Recent research indicated, however, that these youngsters were already at risk well before separation, perhaps due to the lessened support from the family in trouble before divorce or separation.

Pong (1997) reported that growing proportions of children in the United States resided with a single biological parent, and that there were also more children attending schools where the majority of students were from single-parent families or stepfamilies. Beyond the single student effects, analysis of eighth-grade math and reading achievement scores showed that schools that predominately consisted of students from single-parent families and stepfamilies negatively affected their students' achievement, even after individual demographic characteristics and family background were controlled. The negative effect of single-parent families and stepfamilies was partly explained by the relatively low socioeconomic status of children in these schools. In other words, attending a school with a high concentration of students from single-parent families and stepfamilies was, on average, more detrimental to a student's eighth-grade achievement than was his or her living in a single-parent family or stepfamily.

### **Long Term Effects**

Obviously, the academic and emotional effects of fractured families impacted children daily but the longer term and more profound results from a broken home may be more difficult to measure. With regard to children, divorce could result in less effective parenting from the custodial parent, a decrease in involvement with the non-custodial parent, exposure to continuing inter-parental discord, a decline in economic resources, and other disruptive life events such as moving, changing schools, and additional parental marriages and divorces (Amato, 2000). The existing literature found that children from divorced families experienced varied effects due to divorce (Johnson et al., 2001). In addition to psychosocial adjustment difficulties, the literature

indicated that young adults from divorced families perceived parent-child relationships differently than young adults from intact families (Johnson et al., 2001).

Kelly (2003) suggested that children from divorced families have a two- to three-fold increased risk of problems compared to children of two-parent non-divorced families. They are more likely to have behavioral, internalizing, social, and academic problems, when compared to children from married families (Kelly, 2003). These negative attributes may have even longer reaching outputs because schooling affected children's eventual fortune in the labor force. Students from single-parent families or stepfamilies are more prone to lower socioeconomic status as adults compared with the likely status of children living in biological, two-parent families (Pong, 1997). Nevertheless, some researchers have found just how resilient children are and how they may be adjusting to this family crisis. Despite the greater risks reported for children from divorced families, some studies now provide evidence that in the longer term, the majority of these children do not continue to have psychological adjustment problems (Kelly 2003). Research regarding the impact of family structure on children seemed in some regards to be contradictory, thus providing a sound reason to continue researching how children and adults adapt to their changing family environments.

### **Educators and Community Support**

Throughout the review of literature, many articles reported on the positive impact extra familial support has on children from broken families and how they offset the negative impact the different fractured family units had on students. According to a study conducted by Knabb, Brokaw, Reimer, and Welsh (2009), the most common positive support recalled by the participants during the divorce years was extra familial support. Johnson et al. (2001) also

maintained that there is a need for a comprehensive assessment of the family variables that might influence developmental task attainment for young adults from divorced families.

Lee and Kushner (2008) reported that teachers, counselors, social workers, and administrators can make great strides in providing students of single parents with the opportunity to become connected to their school community by enlisting the advocacy of all stakeholders in the dialogue about their children's future academic development. For example, in the early grades teachers, school counselors, and administrators need to be involved in the discussion with parents about long-term educational goals, and in the later years, school personnel should connect students with information and strategies for success and graduation from high school while ensuring that students make plans for post-secondary education or entry into a professional career.

The public education message may not have done enough to incorporate the lessons learned from several decades of empirical research that identify factors regarding increased children's risk following divorce, and equally as important, protective factors that promoted resiliency in children and adolescents. This information can help parents who wish to minimize the damage of divorce and should form a basis for developing and promoting policies, programs, and services to help mitigate the family conditions that lead to more adjustment problems among children from divorced families (Kelly, 2003). By teachers and local school systems offering support for these families, it would seem logical from this research that the negative effects could be limited.

Beyond local school systems stepping up to fill the gap, other government programs might possibly be able to serve a valuable service.

Pong, Dronkers, and Hampden-Thompson (2003) contributed, what seems apparent from our investigation is that the detriment of single parenthood on children's education, so widely noted in the United States and elsewhere, is not a necessary consequence of single parenthood. Economic assistance to the children in single-parent homes, in the form of family or child allowances or parental leave, can partially offset these detrimental consequences. Public welfare policies can make a difference for children, especially those in difficult situations (p. 696).

### **Assessment and Achievement**

According to McMillan (2011), three powerful influences shape public education policy: politics, research, and assessment. McMillan described these as the perfect storm. With 14 billion dollars of federal Title 1 funding tied to the No Child Left Behind requirements and another 4.35 billion dollars in the Race to the Top competition, the stakes are high, which makes student assessment a hot topic. Based on these trends in education, educator success is now immediately tied to student academic performance as new teacher evaluation systems are rolled out across the nation, such as the new Georgia Teacher Keys Effectiveness System (TKES). Beyond these concerns, most educators want to perform at their best possible level and see their students do the same. Educators must develop a better understanding of the factors that influenced standardized test scores but more importantly, determine the best ways to combat outside variables that might hinder individual student achievement.

Until recent reforms, teaching, assessment, and curriculum were primarily controlled by local school districts (Denaux, Eichler & Stevenson, 2012), but the No Child Left Behind legislation enacted under the Bush administration, and more recently the Obama administration's Race to the Top initiative, has placed greater emphasis on a national curriculum and testing as a



measure of academic achievement. This shift in decision-making has placed school systems under more scrutiny as under-performing institutions were now placed under “needs improvement” status while other schools were heralded as achieving based on state and federal annual tests. The criteria to determine whether schools perform adequately or fall to an improvement list revolved around the creation of subgroups of students based on identifying students with learning disabilities, students who were economically disadvantaged, English language learners, and national origin and ethnicity (Denaux et al., 2012). The assumption is that certain groups would not perform as well as others, and this allowed the school to show improvement within the academic year within each defined category. This might be the first red flag that even legislators understood that factors outside of school had a profound impact on learning and assessment.

In response to these external factors, McMillan (2011) considered the probability of the introduction of value added research models to judge teacher and school performance. In other words, schools determine a teacher’s effectiveness based on the level of improvement in the academic year and on the surface, this seemed not only logical, but also practical. In Georgia, the newly implemented teacher evaluation system, referred to as the Teacher Keys Effectiveness System, uses a value added process based on state content testing in grades four through eight. The evaluation takes the previous two years achievement scores and compares them to current year scores with this acting as an indicator for teacher performance. After reviewing the published material for the new Georgia Teacher Keys Effectiveness System (2013), it is unclear just how these calculations will be performed and what the actual validity and reliability of this system would be.

The 2011 Annual Yearly Progress report from the Georgia Department of Education showed 613 (27.3%) schools that did not meet annual progress based on academic achievement from the annual CRCT. The report also identified 15.3% or 113,459 students who did not meet the basic score on the mathematics portion of the state test. Students with disabilities posted the lowest overall percentile below the base score with 36 % failing to meet minimum standards while the Asian ethnic subgroup consisted of only 4.9% that did not meet the minimum. As evidenced by the facts that one fourth of the schools in the state of Georgia did not meet AYP, over 15% of students did not meet the minimum score requirements in grades K-12, and billions of dollars were earmarked for NCLB and Race to the Top, it is clear that schools must focus on improving test scores. McMillan (2011) considered the upcoming modifications, including the value added model, and reiterated the factors outside the control of the classroom teacher such as general ability, native language, friendships, parental support, siblings, previous achievement, attendance, summer experiences, curriculum, and district testing policies, which left little for teachers to influence. McMillan continued by citing Schochet and Chiangs' (2010) research supporting that 90% of the variability in student achievement resulted from student factors outside the teacher's control. However, many would argue that conversely, the teacher is the single most prolific factor related to student performance. Regardless of which theory one assumed correct, it might seem plausible to any person focused on the education reform initiative there is more to come in the form of increased testing, higher stakes, and greater standardization across states (McMillan, 2011).

### **Summary**

Multiple researchers have illustrated the importance of students being present at school. Lamdin (1996) concluded that a positive correlation existed between students who were present

and their resultant academic achievement, as opposed to those who were not, when all other input variables were held constant. Roby (2004) found that schools with higher attendance levels attained higher standardized test scores, while schools in the same geographic area with lower attendance averages exhibited lower achievement. Within each of the attendance studies, the same question regarding family structure also prevailed. It was not clear how attendance was impacted by family structure. This, in turn, suggested that one must take a closer look at family structure models, specifically those contrary to the traditional, binuclear, two-parent, biological model. This closer examination is not an adversarial negative attack on one family model over the other. Rather, the purpose of this examination is to determine which model provided the best support for students in their academic pursuits.

The traditional family unit of one biological father and one biological mother to all the children of the household is no longer the norm. There are many reasons for the collapse of the family unit, and the effects of single family and broken homes on children are varied and complicated. Society may never know the overall impact, both on the person and on the community at large, that broken families has on individual academic achievement within the school setting. Educators should search out best practices to offset the negative effects on student achievement even though the problem may not be fully understood. While the measurement of such issues may not be fully accurate, Ricciuti (2004) noted evidence of issues that called for the need for parental support in education. Ricciuti (2004) stated in his conclusion,

From a research perspective, a continuing need exists for increased understanding of the variations in particular features of the family and childcare environments in various types

of single families and in the ways in which such variations may lead to different child outcomes (p. 205).

Attendance and family structure continue to be integral components that can either positively or negatively affect academic achievement of students. There are numerous reports that show their individual significance, especially regarding standardized testing results in mathematics. However, there are also concerns that this same data would be overgeneralized and overstated given other input variables. The purpose of this study is specific; the goal was to attempt to identify how attendance, in combination with family structure, equated to student support that resulted in better mathematics achievement for middle grade students.

## CHAPTER THREE: METHODOLOGY

This quantitative study was designed to determine the impact of student attendance and family structure on middle grades mathematics achievement as measured by state standardized testing. This chapter includes the methodology components used to conduct this study. Included in this chapter are the design, methodology, site, data, and analysis methods.

### Design

This ex-post facto, causal comparative, quantitative study compared the impact of three independent variables (attendance, absence type and familial structure) on middle grade students' mathematics achievement. Utilizing a combination of *t*-tests and analysis of variance (ANOVA), the researcher attempted to address four specific research questions regarding the impact of student attendance and family structure.

### Research Questions

**RQ1:** Is there a difference in cumulative mathematics achievement between high absence and low absence students?

**RQ2:** Is there a difference in cumulative mathematics achievement of students based on their parental family structure?

**RQ3:** Is there a difference in cumulative mathematics achievement of high absence students based on the proportion of their absences, which are unexcused?

**RQ4:** Is there a difference between the cumulative mathematics achievement of high absence students who exhibited two risk factors, a non-nuclear family structure combined with mostly unexcused absences, compared to those who exhibited either one or no risk factors?

### Null Hypotheses

**H<sub>0</sub>1:** There is no statistically significant difference in middle grade students' cumulative mathematics achievement of high absence compared with low absence students.

**H<sub>0</sub>2:** There is no statistically significant difference in middle grade students' mathematics CRCT scores based on their family structure type (two parent binuclear compared to single parent, step parent, and guardian family home).

**H<sub>0</sub>3:** There is no statistically significant difference in middle grade students' mathematics CRCT scores when comparing those students with a higher proportion of unexcused absences to those with excused absences.

**H<sub>0</sub>4:** There is no statistically significant difference between the cumulative mathematics achievement of high absence students who exhibit two risk factors of non-nuclear family type along with mostly unexcused absence types, as compared with those students with only one or none of these risk factors.

### **Participants**

The school district data for the participants in this study consisted of 503 students, 79% Caucasian non-Hispanic, 15% Hispanic, and 6% as two or more races, enrolled in a Northwest Georgia district middle school. About 25.3% of students in this school in the 2012-2013 school year, or 118 students, were absent ten or more days. The school was typical of a Georgia middle school with over 53% of the students receiving free or reduced lunch, which qualified this school as a Title 1 school. While more than half of the students qualified as economically challenged, this fact was irrelevant to this study with only absences, absence type, and family structure as the four categories of concern. Student names and any other identifying information were excluded from this study, so anonymity was secured.

Of particular interest to this study was the fact the school was located within a close proximity to a city in Georgia that had been recently named one of the poorest in the United States. According to a Wall Street Journal article by Hess, Frohlich, and Sauter (2013) that utilized data from the U. S. Census Bureau, Dalton, Georgia has an average household income of \$32,858, a 11.5% unemployment rate, and a poverty rate of 21.6%. This positioned Dalton as the second poorest city in the nation. While the school is not located in the city limits of Dalton, it is positioned closely enough that many, if not most, parents from the school sought employment in the Dalton job market.

### **Setting**

The school district was located in Northwest Georgia, with twenty-three schools and approximately 13,000 students. Students were enrolled in kindergarten through grade 12 with 13 elementary schools, five middle schools, and five high schools in addition to an alternative school for students requiring additional behavior management. The school where data was collected was a middle grades institution including grades six through eight with enrollment fluctuating throughout the year near the 500-student level. The final student population that participated in the CRCT that was used for achievement in this study was 503 students. While 25.3% of the students in the absentee report for the 2012-2013 school year showed having missed more than ten days in the academic year, it should be noted that many missed significantly more days with no serious illnesses reported.

The principal for the 2012-2013 academic year had been at the school for twelve years. He supported this study and was interested to determine if a correlation existed between high absence students and their familial structure to their subsequent mathematics achievement scores for the annual state CRCT. During his tenure, he had been instrumentally involved in a

philosophical shift of the school from one focused on test scores to a more project-based approach. In his approach, test scores are not the primary focus, but rather the development of meaningful and engaging work for the students is the emphasis. He has since departed to another assignment, and the current principal has restored a level of balance regarding engaging work and the desired outcome of achievement for the students based on their individual and combined school efforts on high stakes testing.

### **Instrumentation**

The first independent variable in this study was the student's attendance and absence report as measured by the local school board according to the state of Georgia policies, as well as family structure, which was identified from the student/family contact data collected at the beginning of each school year. Information regarding the second independent variable of absence type was accessed via the attendance records that were maintained using Infinite Campus software, which records the student's reasons for being absent as either excused or unexcused based on board policy. Absences were considered excused if the parent provided a written note within three days of the absence(s), documenting the reason for being absent. The most common excuses were illness, court appearance, religious holiday, or the death of a family member.

The third independent variable in this study was the parent and family status of the student regarding whether the student lived with both natural parents, a single parent, in a stepparent household, or in a guardian family. This information was acquired using the student contact data sheet that was completed either at the beginning of the school year or upon enrollment by the parent for submittal to the school and then loaded into Infinite Campus. Based



on the living arrangements listed on this contact data sheet, high absence students were then classified into one of the family categories.

The dependent variable for this study was the 2013 academic year student math scores from the CRCT. Georgia schools were ranked state wide based on the achievement level exhibited from these scores. The test was designed to measure student retention of material specific to the Georgia Performance Standards. According to the Georgia Department of Education, the Georgia CRCT was deemed valid and reliable, measured by Cronbach's alpha with internal consistency scores for the math portions in sixth, seventh, and eighth grade ranging from 0.858 to 0.932 (within a range of 0 to 1), thus providing a strong level of validity for this research.

### **Procedures**

The school's principal supported the research and was interested in the results of the study. Liberty University's Institutional Review Board (IRB) approval was secured along with approval from the school district's Chief Officer of Assessment and Accountability prior to any data compilation or analysis. In addition to school administrators being able to access school and system CRCT data, student CRCT math scores were maintained from year to year in hard copy format in the school vault by the school's data clerk. A copy of these scores for each grade six, seven, and eight was attained from the Chief Officer of Assessment of the school system in electronic form. The scores were then inputted into a spreadsheet at the school with name and any other identifying information deleted. Each line item data was given a random alphanumeric code to protect anonymity prior to analysis. In addition, student attendance data from a generated Infinite Campus report was also input including number of days absent, number of days excused, and number of days unexcused. The final input data included a family structure

code of 1) a traditional family, 2) a single parent family, 3) a step family (one biological parent with a step parent), or 4) a guardian family (no biological parent in the home). The resultant data file was stored on a single, secured computer. The file was password protected with access limited to the researcher and data clerk. After student names and any other identifying data were removed, the spreadsheet was then integrated into the statistical processing software (IBM SPSS) for the prescribed analyses outlined in the analysis section. At no point during the data collection or analysis was any information presented that would identify an individual student, but rather the results focused on the trends of the group and subgroups identified by the data.

### **Data Collection**

Data collection included reviewing attendance records from Infinite Campus, the school system's student information data system, of students who were absent 10 or more days with absences being tallied as either excused or unexcused. The family data sheets of the students were studied to determine the parent and family composition to group students into one of the four family type units. Finally, the CRCT math scores were obtained as an electronic copy from the district's Chief Officer of Assessment and Accountability. These were incorporated into the data to determine how the independent variables (attendance, absence type, and family unit) impacted the dependent variable (CRCT mathematics score). All data collection efforts were conducted at the school using school level technology with all identifying information removed prior to the researcher accessing the data. Materials (electronic and hard copy) used to compile the anonymous data file were kept securely in the school vault, and only the principal and school data clerk had access to the files. Furthermore, the researcher, with support from the school principal and the Chief Officer of Assessment and Accountability, completed anonymous data compilation.

### Data Analysis

The first null hypothesis stated that there would be no statistically significant difference in middle grade students' mathematics achievement as measured by the state CRCT between high and low absence students. Utilizing a two tailed independent samples *t*-test, the results were analyzed to determine if a difference in the means exists at the  $p < .05$  level. This level was appropriate since it represented the results as accurate at the 95 percentile or higher (Gall, Gall, & Borg, 2007).

The second null hypothesis stated that there would be no statistical difference in high absence students' middle grades mathematics CRCT scores based on family structure. Based on initial reports for the school year that brought attention warranting this study, the number of students missing ten or more days of school was predicted to be within the range of 120 and 140 students. The actual number that was used within this category was 118 students. Based on this information, the appropriate test was an ANOVA test, which compared the amount of variance between groups according to Gall et al. (2010). The significance level for this analysis was  $p < .05$  and if such an indicator existed, a post-hoc study would be conducted to determine where the difference existed.

The third null hypothesis stated that there would be no statistically significant difference in cumulative math scores of high absence students based on the level of absences that were deemed unexcused. Since the high absence students were categorized into four groups (0-24%, 25-49%, 50-74%, and 75-100%) based on the percentage of absences determined to be unexcused, the use of a one way ANOVA was appropriate to compare the means of the groups. As in previous analyses, the significance level was set at  $p < .05$  with a post hoc analysis to be conducted to determine where the difference existed.

The fourth null hypothesis sought to address the combination of the two main independent variables of family structure with unexcused absences and the effect thereof to mathematics achievement. This more in-depth analysis required the use of a two way factorial ANOVA to determine if and to what extent these two variables interacted with student math achievement. According to Gall et al. (2010), SPSS data was used to determine the main effect for each on math achievement. The interaction impact was then determined using a combination of *t*-tests between the eight variables (four categories of family structures and four categories of percentile unexcused absences).

## CHAPTER FOUR: FINDINGS

The purpose of this causal comparative, quantitative study was to explore the impact student attendance and family structure had on academic achievement as measured by Georgia's Criterion Referenced Competency Test (CRCT) in middle grades mathematics. Data from a Georgia Title 1 one middle school, grades six through eight, was collected and analyzed according to the methods prescribed in the Chapter Three. Data was kept in a secure location with all individual identifiers removed to ensure anonymity. In this chapter, specific data analysis is presented in response to the study's four research questions that focused on mathematics achievement as it correlates to the individual student's attendance and family structure model.

### Null Hypotheses

**H<sub>0</sub>1:** There is no statistically significant difference in middle grade students' cumulative mathematics achievement of high absence compared with low absence students.

**H<sub>0</sub>2:** There is no statistically significant difference in middle grade students' mathematics CRCT scores based on their family structure type (two parent binuclear compared to single parent, step parent, and guardian family home).

**H<sub>0</sub>3:** There is no statistically significant difference in middle grade students' mathematics CRCT scores when comparing those students with a higher proportion of unexcused absences to those with excused absences.

**H<sub>0</sub>4:** There is no statistically significant difference between the cumulative mathematics achievement of high absence students who exhibit two risk factors of non-nuclear family type along with mostly unexcused absence types, as compared with those students with only one or none of these risk factors.

The research questions posed, rest on the framework from Bandura's social learning theory and Lareau's cultivated capital theory. The social learning theory posits that for a child to learn, they must be present in the classroom. Therefore, the attendance component for this research rests on the concept that those students who exhibit poor attendance would experience less academic success than those who exhibit good attendance. The cultivated capital theory suggests that parental influence, in conjunction with teachers and other school representatives who share and communicate the importance for learning, positively influence within the child a desire to attain mutually agreed upon academic success. Thus, the parental structure is a component of the study.

Institutional Review Board approval was received along with approval from the local school system to conduct this research. The principal of the school approved this study and assisted as necessary in support of the effort. All student information was kept secure in the school vault.

### **Descriptive Statistics**

First, student data including family structure (binuclear home, single parent home, step family, and guardian family), attendance (excused and unexcused absences), and math scores from the CRCT were organized into an Excel spreadsheet. A column was added to calculate the percentage of unexcused absences for students who missed ten or more days during the academic school year. The spreadsheet was then used to sort the data by family structure, overall attendance with percentage of unexcused absences, and math score to better understand the study group. Preliminary review of the spreadsheet revealed: (a) The sample group consisted of 503 students, 148 in sixth grade, 177 in seventh grade and 178 in eighth grade; (b) there were 242 (48.1 %) students who lived in a traditional binuclear family structure, 141 (28%) students who

lived in a single parent family structure, 86 (17.1%) students who lived in a step family structure, and 34 (6.8%) students who lived in a guardian home structure; and (c) there were 118 (23.5%) students who missed ten or more days during the academic year.

The Georgia Department of Education determines a passing score on the CRCT to be 800 or better, and any student who scores 850 or better is considered to have exceeded expectations. Of the 503 students in this study, 95 students (18.9%) scored below 800 and were considered not passing or not meeting grade level expectations, 273 students (54.3%) met expectations with a score between 800 and 849, and the remaining 135 students (26.8%) exceeded expectations with a score of 850 or greater.

## **Results**

### **Null Hypothesis One**

The first null hypothesis stated that there is no statistically significant difference in middle grade students' cumulative math achievement of high absence students compared with low absence students. This statement directly relates to the first research question of whether there was a difference in cumulative mathematics achievement between high absence and low absence students. To determine if there was an effect on math scores of those students who were absent fewer than ten academic days compared with the scores of those students who had ten or more absences throughout the school year, all 503 students were included in this calculation without consideration of any other independent variables. Before conducting the test, the data was subjected to an examination of assumptions to verify the accuracy of the results. IBM's SPSS statistical software version 22 was used for all tests.

The first test, when comparing the scores of high absence students to those of low absence students, was the Levene's test for equality of variances. Since this value was calculated

at 0.158, which is greater than 0.05, equal variances between the data sets could be assumed. Once equal variances were assumed, the two-tailed  $p$  value calculation was reviewed to determine if there was a significant difference in the mean scores of high absence to low absence students. The two-tailed  $p$  value was 0.000, which was less than the 0.05 value, thus showing the mean scores of high absence to low absence students showed a significant difference. Table 2 includes the results of the Levene's test including the mean difference value of high absence to low absence students equal to a -15.706 point overall difference, respectively, in math CRCT scores.

Table 2

*Levene's Test for Equality of Variances*

	<i>F</i>	Sig.	<i>t</i>	<i>df</i>	<i>p</i> *	<i>M</i> Difference	<i>SE</i> Difference
Equal Variances Assumed	1.995	.158	-4.510	501	.000	-15.706	3.482

Note. \* indicates two-tailed.

As a result of the above findings, an independent samples  $t$ -test was performed to compare the mathematics achievement scores as measured by the Georgia CRCT of high absence students (ten or more absences in an academic year) to low absence students (fewer than ten absences). There was a significant difference in scores for high absence students ( $M = 817.042$ ,  $SD = 30.839$ ) and low absence students ( $M = 832.748$ ,  $SD = 33.753$ ) with  $t(501) = -4.510$ ,  $p = 0.000$ . The magnitude of the difference in the means ( $M$  difference = -15.706, 95%  $CI = -22.548$  to  $-8.864$ ) was small to moderate with eta squared = 0.039.

The overall mean score for all students was 829.064 with a standard deviation of 33.727 and a range of scores from the low of 749 to a high score of 990 (all questions answered



correctly). A simple comparison of the overall mean score (829.064) to that of the low absence group (832.748) resulted in a mean positive difference of 3.684, while the same comparison with the high absence group showed a mean negative difference of -12.022. Additionally, when reviewing the number of students who did not meet expectations, 29.7% (35 of 118) of the high absence students failed to score the minimum 800 compared to a much lower 15.6% (60 of 385) of the low absence students. Table 3 shows the mean results of the analysis.

Table 3

*High Absence to Low Absence Means*

Absences	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE</i>
10 or more	118	817.04	30.839	2.839
Fewer than 10	385	832.75	33.753	1.720

Following the independent *t*-test comparing the means of low absence to high absence student's math scores, a Mann-Whitney Test was conducted, which compares medians. The Mann-Whitney test revealed a significant difference in math CRCT achievement scores of low absence students ( $\underline{U} = 830.00$ ,  $n = 385$ ) and high absence students ( $U = 815.5$ ,  $n = 118$ ), with a *p*-value of 0.000, which was less than the 0.05 level.

Based on the results of the independent *t*-test, along with the subsequent supporting analyses, the null hypothesis was rejected. Students who exhibit 10 or more absences during an academic year showed less academic achievement than their counterparts who were absent fewer than ten days with a reduction in achievement score of more than fifteen points.

**Null Hypothesis Two**

Null hypothesis two stated that there is no statistically significant difference in middle grade students' mathematics CRCT scores based on their family structure type (two parent

binuclear compared to single parent, step parent, and guardian family home). This statement was in response to Research Question Two, is there a difference in cumulative mathematics achievement of students based on their parental family structure? Attendance data was not a consideration in the analysis for this question. The family structure data for each of the 503 students was coded from the most recent information the school received from students, which was the emergency contact data form. Since this information was kept and updated when parent contact changes occurred in the system's Infinite Campus software, it was the most up to date record of student parental status.

Using this information, a column was added to the data file to incorporate a classification code based on the review of each student record. There were 242, or 48.1% of students, who received a code of 1 based on both natural parents residing in the home, 141 or 28% of students, were coded with 2 since there was only one parent living in the home, 86, or 17.1% of students, received a code of 3 since there was a biological parent residing in the home with a stepparent noted as an emergency contact with the same address, and 34, or 6.8% of students, received a code of 4 when a guardian parent was identified on their contact information.

Since this analysis required the comparing of mean scores for four groups, a one way ANOVA was used. The first test was Levene's test for homogeneity of variances to determine if the scores were the same for each of the four groups. The homogeneity of variance  $p$ -value was 0.075, which is greater than the required 0.05, thus concluding no violation of this assumption.

Accordingly, the one-way ANOVA was conducted to determine the impact family structure had on overall mathematics achievement as measured by the Georgia math CRCT. Students from a traditional, binuclear family home reported a mean score of 839.136, which was significantly higher than the scores of students from all other student home types. The students

from single parent home attained an average score of 822.738. Students from stepfamily homes had an even lower mean score of 817.779, followed by those students from a guardian home structure attaining the overall lowest average of 812.147. All results are listed below in Table 4.

Table 4

*CRCT Math Means by Family Structure*

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE</i>	95% CI*	95% CI**	Min	Max
Traditional	242	839.14	35.102	2.256	834.69	843.58	749	990
Single	141	822.74	29.526	2.487	817.82	827.65	758	898
Step	86	817.78	29.234	3.152	811.51	824.05	771	898
Guardian	34	812.15	29.399	5.042	801.89	822.40	759	880
Total	503	829.06	33.727	1.504	826.11	832.02	749	990

*Note.* \* = Lower bound. \*\* = Upper bound.

There was a statistically significant difference at the  $p < .05$  level in student scores based on their individual family structure profiles,  $F(3, 499) = 16.2, p = .000$ . Eta squared was used to determine the overall effect size of the results with the calculation being performed as  $\eta^2 = SS_{\text{effect}} / SS_{\text{total}}$ . The eta squared calculation resulted in a value of  $\eta^2 = 0.089$ , which according to Cohen (Gall, Gall, & Borg, 2010), would be considered a medium effect. Further analysis of the means, specifically the differences between the highest and lowest means, highlighted the 26.989 point variance between students from a traditional family structure compared to a guardian family home. The differences between traditional homes compared to both single and step homes were less at 16.398 points and 21.357 points, respectively. The net result indicated the traditional family student average score was higher than all of the other three family type categories, with a medium effect size but with generally lower overall net score differences. As a result of this analysis, the null hypothesis was rejected based on the data that supported that family structure does impact the middle grades student mathematics achievement.

Further analysis of pass/fail data yielded interesting results. When the data for students who did not meet the minimum required passing score of 800 was reviewed, it was discovered that only 11.6%, or 28 of 242, of the students from a two-parent, binuclear home did not meet expectations. This is significant considering that 22%, or 31 of 141, of students from single parent homes did not meet expectations along with 27.9%, or 24 of 86, of students from stepfamily homes and 35.3%, or 12 of 34, students from guardian homes. From this data, the failure rate doubled when a single parent was absent from the home and tripled when both biological parents were not present.

### **Null Hypothesis Three**

Null hypothesis three proposed that there is no statistically significant difference in middle grade students' mathematic CRCT scores when comparing those students with a higher proportion of unexcused absences to those with excused absences. The purpose was to determine if there was a difference between cumulative mathematic' achievement of high absence students based on the proportion of their absences, which were unexcused. For this analysis, only those students who had missed ten or more days were included, and their absences were categorized based on the percentage of unexcused absences. Once total unexcused absences were entered, these were compared with overall total days absent with a resulting percent of unexcused absences (unexcused total days absent divided by overall total days absent). The results were then grouped into four groups. Students with low unexcused absences were coded as 1, which were students with unexcused absences lower than 25%, students with moderate absences were coded as 2, which were students with between 25 and 49% of their absences considered unexcused, students with more unexcused absences were coded as 3, which were students with between 50 and 74% of their absences being unexcused, and students with

high unexcused absences coded as 4, which were students with 75% or more of their absences considered unexcused. It is important to note that family structure was not a consideration in these calculations, and only students with 10 or more absences were included.

There were 118 students who missed ten or more academic days in the studied school year. Of these students, five were considered low excused absence students with less than 25% of their days being unexcused. There were 34 students categorized as moderate unexcused with between 25% and 49% of their absences being recorded as unexcused. There were 38 students with 50% to 74% of their absences considered unexcused and reported in the more unexcused category. The remaining 41 students were considered high unexcused with more than 75% of their days absent being unexcused.

It was determined the best way to compare data from the four prescribed groups was to conduct a one-way ANOVA. The first test was Levene's test for homogeneity of variances to determine if the variance of the scores for each group were the same. The test for homogeneity of variances was conducted with a resulting sig. value of 0.138, which was more than the required 0.05 and confirmed there was no violation of the assumptions. With no violations of assumptions between means, the one-way ANOVA was performed with the following results.

There was no statistically significant difference found at the  $p < .05$  level in scores based on students absence type,  $F(3, 114) = 2.5, p = .062$ . While this test did not reach statistical significance, it was very close, so the eta square value was calculated to be 0.062, which according to Cohen (Gall, Gall & Borg, 2010), is considered a medium effect between groups even though differences were low. Despite not reaching statistical significance, it would appear at least when comparing the means within high absence students that as unexcused absences increase, the average math score achieved diminishes to some extent. In this sample group, the

overall difference in the low absence group compared with the high absence group was 22.82 points fewer for those with a high percentage of unexcused absences throughout the school year. Considering there were only five students in the low group, a similar comparison of the moderate or more categories to that of the high group showed a decrease of 15.43 or 15.06 fewer points, respectively. Nevertheless, statistical significance was not attained, and as a result the null hypothesis could not be rejected. Table 5 below shows the results by absence category.

Table 5

*CRCT Math Means by Unexcused Absence Category*

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE</i>	95% CI*	95% CI**	Min	Max
Low	5	829.60	28.369	12.687	794.38	864.82	798	865
Moderate	34	822.21	37.802	6.483	809.02	835.40	749	912
More	38	821.84	26.904	4.364	813.00	830.69	770	887
High	41	806.78	26.089	4.074	798.55	815.02	759	880
Total	118	817.04	30.839	2.839	811.42	822.66	749	912

*Note.* \* = Lower bound. \*\* = Upper bound.

**Null Hypothesis Four**

The fourth and final null hypothesis combined both attendance and family structure, stating that there is no statistically significant difference between the cumulative mathematics achievement of high absence students who exhibited two risk factors of non-nuclear family type along with mostly unexcused absence types as compared with those students with only one or none of these risk factors. Since this analysis incorporated two independent variables between groups (family structure and attendance type) and comparisons to the dependent variable (math scores), a two-way ANOVA was advantageous to explore both the main effect and the interaction of effect. This method allowed the determination of if there was a difference between the cumulative mathematics achievement of high absence students who exhibited two risk

factors, a non-nuclear family structure combined with mostly unexcused absences, compared to those who exhibited either one or no risk factors.

The two-way ANOVA was conducted to explore the impact of family structure and students' unexcused absences on math CRCT scores in middle grades mathematics. Subjects were already divided into four groups based on their reported family structure (Group 1: traditional binuclear home; Group 2: single parent home; Group 3: step family home; Group 4: guardian home). Subjects were also already divided into four groups based on their absence type. Since all students were considered high absence students, the groups consisted of a ranking based on their percentage of unexcused absences (low absence: less than 25% unexcused absences; moderate: 25 to 49% of absences unexcused; more: 50 to 74% of absences unexcused; high: more than 75% of absences unexcused). The interactive effect between family structure and the percent of unexcused absences (absence type) was  $F(7, 104) = 0.479, p = .848$ , which was more than the .05 level, thus indicating no significant effect existed between the two independent variables when combined. Based on these results, the null hypothesis was not rejected.

### **Summary**

The results of this study indicated that a statistically significant difference in mathematics achievement scores existed between students who were absent ten or more days compared to those students who were absent fewer than ten days. The statistical significance of research question one was measured at  $p = .000$ , thus rejecting the null hypothesis and determining from this data that student attendance does impact mathematics achievement. Analysis for research question two found that student family structure had a statistical significance at  $p = .000$  with medium level effect or eta value of 0.089 with the overall mathematic achievement of students

from a traditional family structured home outperforming the other three measured family structures. Based on the results from research question two, the null hypothesis could be rejected with the conclusion that family structure does significantly impact overall student mathematics achievement. The findings for research question three determined that the absence type, excused compared to unexcused, did not reach statistical significance at  $p = .062$ , thus the null hypothesis could not be rejected. However, data did show the higher the percentage of unexcused absences of those students with ten or more days absent from school, the lower the overall mean achievement scores. The final research question, research question four, combined family structure with attendance type and determined there was no evidence that the combination of these variables significantly affected math scores, thus resulting in the inability to reject the null hypothesis for research question four.



## CHAPTER FIVE: DISCUSSION

### Discussion

This causal comparative, quantitative research sought to answer four research questions regarding the impact attendance and family structure have on student mathematics achievement as measured by the Georgia Criterion Referenced Competency Test. The statistical results pertinent to the four research questions/null hypotheses were given in the previous chapter. In the following pages, the resultant data from the analysis of these questions will be discussed in further detail with limitations, implications and recommendations for future research.

#### Null Hypothesis One

**H<sub>0</sub>1:** There is no statistically significant difference in middle grade students' cumulative math achievement of high absence compared with low absence students.

Prior to analyzing the impact of attendance with specific emphasis on absence type, research question one sought to determine if there was a significant difference in students' mathematics achievement scores based on general attendance. Using an independent samples *t*-test, student scores of those who missed 10 or more days within the academic year were compared to student scores who missed fewer than ten days. The result of the *t*-test confirmed the reviewed literature that students with high absences performed lower on the mathematics section of the CRCT than those students with low absence rates ( $p = .000$ ). Based on these results, the null hypothesis was rejected with the conclusion that student attendance does significantly impact mathematics achievement.

There have been numerous studies (Chang & Romero, 2008; Roby, 2004; Caldas, 1993) which have indicated the importance of student attendance to academic achievement. The results of this study were no similar. Roby (2004) studied building level attendance in Ohio schools and

found those schools with better attendance outperformed schools with poor attendance on state level proficiency tests. This study analyzed a single North Georgia middle school but focused on the individual performances and found the results to be supportive of Roby's claims that attendance impacts learning. This research found that the fail rate nearly doubled from 15.6% to 29.7% when attendance crossed the 10-day absent threshold, thus supporting Lamdin (1996) who said that a positive correlation must exist between achievement and attendance when all other input variables are held constant.

Perhaps most important were the statements made by the Georgia Department of Education regarding attendance in the state (Georgia Schools Report Card Data, 2011). In 2010, roughly 9.7% of Georgia students missed 15 or more days. The state's report went on to say that an improvement of attendance by just five days, or just three percent, would have resulted in an additional 17,000 middle grades Georgia students that either met or exceeded on the state mandated CRCT. While this may have been an accurate estimate and would be an improvement for Georgia schools, this research indicated reducing the absentee level from 15 to 10 days still left a measureable gap in achievement.

### **Null Hypothesis Two**

**H<sub>0</sub>2:** There is no statistically significant difference in middle grade students' mathematics CRCT scores based on their family structure type (two-parent binuclear compared to single parent, step-parent, and guardian family home).

The second research question focused on student family structure, which included all students (both high and low absence). The purpose was to identify if family structure, independent of attendance, significantly affected student mathematics achievement scores. A one-way ANOVA was conducted to determine if mathematics achievement scores were

significantly different based on family structure. The four family structures included the traditional binuclear home, single parent home, stepfamily home, and guardianship home. The results of the one-way ANOVA indicated that family structure did significantly impact student achievement in mathematics ( $p = .000$ ) with an eta squared value of 0.089, suggesting this impact was more than nominal based on Cohen's scale (Gall, Gall, & Borg, 2010). The null hypothesis was not rejected based on the statistical analysis, and the conclusion was that family structure does significantly impact student mathematics achievement.

Much of the literature review focused on the role the family unit plays on the student's ability to achieve academically. Sheldon and Epstein (2005) noted that classroom environment, student attitude, student preparedness to learn based on previous achievement, background experiences or schema, and the overall level of support from home all contributed to the child's ability and propensity to achieve academically. As noted by numerous studies, patterns of achievement have been demonstrated to rely on parental expectations and support (Balli, 1998; Parsons, Adler & Kaczala, 1982; Entwisle & Alexander, 1996; Gill & Reynolds, 1999; Halle, Kurtz-Costes & Mahoney, 1997; Holloway, 1986). The data in response to research question two of this study supports this claim that family structure plays a significant role in the student's ability to achieve academically in middle grades math. Not only was there a moderate decline in overall score averages based on family structures other than the two parent home, but perhaps, more significant were the sharp increases in the non-pass percentages of those students from an alternate home environment.

While Hixson (2012) did not find a correlation between family structure and reading achievement, Kim (2011) concluded that children did experience an academic decline regarding math scores as a result of the dissolution of their natural parents marriage. Yet, other studies

(Weiser and Riggio, 2010) have noted that children from broken homes can and do succeed. Whether this success is a result of self-efficacy or intervention as mentioned by Christenson et al. (1992), it becomes more apparent from the results herein that efforts to better understand and intervene are necessary.

Lareau (2003) discussed the importance of family and the resulting support to students' ability to learn. The results are evident considering the students from the traditional family home averaged a score of 839 points when 850 points were considered exceeding. Lower math and science achievement among young children is often associated with single parenthood (Pong et al., 2003). In support of this claim, the averages declined by 17 points for single parent homes, almost 22 points for stepfamily homes, and 27 points for guardian homes. In other words, while the student with a traditional family unit scored an average of eleven points from exceeding expectations, in contrast, the student from a guardian home scored an average of only twelve points higher than the pass/fail score.

### **Null Hypothesis Three**

**H<sub>03</sub>:** There is no statistically significant difference in middle grade students' mathematics CRCT scores when comparing those students with a higher proportion of unexcused absences to those with excused absences.

To answer question three, a one-way ANOVA was conducted to compare the means of high absence students categorized by their percentage of unexcused absences to determine if achievement scores differed based on the students absence type. The results of the one-way ANOVA determined that absence type did not significantly impact achievement scores ( $p = .062$ ). Based on these results, the null hypothesis could not be rejected.

While the null hypothesis could not be rejected, there is still much to be considered from this analysis. The significance achieved was very close to the  $p=0.05$  level and deserves to be studied additionally at other locations. It should be noted that within this report, the first three unexcused groups identified as low (under 25% unexcused), moderate (25 – 49% unexcused), and more (50-74% unexcused) reported mean scores of 829.6, 822.2, and 821.8, respectively, while the highest unexcused category (75% or greater unexcused) dropped to a barely passing mean of 806.78.

However, the results herein support the Georgia Department of Education's report that attendance type, excused compared to unexcused, did not show a correlation to achievement in mathematics (Georgia Schools Report Card Data, 2011). So while attendance does significantly impact the overall achievement of middle grades students in mathematics, the absence type did not. With attendance type not proving to be an additional multiplier to student absences, the next consideration was absence type and family structure.

#### **Null Hypothesis Four**

**H<sub>0</sub>4:** There is no statistically significant difference between the cumulative mathematics achievement of high absence students who exhibit two risk factors of non-nuclear family type along with mostly unexcused absence types, as compared with those students with only one or none of these risk factors. The final research question sought to determine if the combination of high absences, including absence type and family structure, significantly affected student mathematics achievement on the CRCT. To address this question, a 4 x 4 two-way ANOVA was conducted with the results determining there was no interaction between the two independent variables ( $p = .848$ ). As a result, the null hypothesis for this question could not be rejected.

It would appear that attendance and family structure are considerable independent variables that moderately effect overall middle grade students' ability to achieve in mathematics, but the combination of these variables did not prove this. These results suggest that these variables should continue to be studied, and that perhaps there are contributing factors specific to each that further magnify their effect but the combination thereof, at least from this data, is not supportive.

### **Conclusions**

Whether attendance is being considered at the building level or individual student level, the research and this study demonstrate the importance for middle school students to be in school to successfully learn. Research has indicated that students with chronic absenteeism perform at lower levels than their counterparts who have good attendance. Graduation rates, annual academic achievement, and overall student growth have all shown to be impacted negatively by absenteeism. Since mathematics scaffolds each year on previously taught content, it would seem obvious that lower academic gains from a single year could have long reaching effects for the student into upcoming school years. It would also seem important to consider absence type as this relates to overall achievement. While this report did not achieve statistical significance, there was a marked degradation of overall mathematical mean scores as unexcused absence percentages increased.

It is important to consider the immediate impact of a typical middle school student that is not present for a day's instruction of school. Beyond the obvious of missing the day's lesson and getting behind on assignments, they have also missed the interaction of friends, teachers, and building administrators regarding the importance of learning. Depending upon the reason for the absence, they may also have perceived the lack of importance for attending school from their

parent or guardian. No doubt, there are numerous legitimate reasons for not attending a day or series of days of school, including sickness, death, court appearances, and other required life events, but these are not always the reasons that students miss school. If the aforementioned reasons were the student's situation, normally, parents would submit notes explaining these events so the absence would at least be considered excused. In this study, a large percentage of those students who missed 10 or more days also had a significant percentage of those absences recorded as unexcused. This could be considered evidence that the student absences were, in fact, not legitimate reasons and could have been avoided.

The long-term effects of chronic absenteeism may include students getting behind, not only in the current yearly academic curriculum, but also in future academic progress from gaps in the student's understanding of key concepts. Students from this study showed a decline in achievement beginning with only 10 days of absence. The students who missed 10 or more days were twice as likely to not meet expectations. Students can take this type of failure and become disengaged in the educational process and lose sight of their own personal goals.

Similar to attendance, when considering students absent from school miss more than just content, it should also be noted that when parents are absent from the home, students miss the vital relationship that promotes encouragement and support integral to the student's success. Research and this study show the importance of family structure. The students from a two-parent, binuclear home exceeded all other family types in regards to student mathematics achievement. Not only was the overall student mean score higher, but also the percentage of students who failed was significantly lower. It can be concluded that families are important for students.

Research and this study also indicated that the family unit is much more important than simply providing basic needs. Within the family unit, the student develops his or her own character, self-efficacy, and attitude regarding personal goals. The parent relationship provides necessary support for the student to persevere and achieve. Federal legislation such as Goals 2000 and Race to the Top attempts to govern parenting by regulating somehow that a student will attend school ready to learn. Yet, whether the student attends school prepared or not still depends upon a supportive family unit that gives the student the advantage to succeed academically. Simply passing a law or posting a mandate does little to help students in non-supportive family environments. Less than one-half the students within this report lived in the traditional, binuclear home and more than one-fourth resided in a single-parent home. Broken homes often result in a reduction of resources from which the student can no longer gain support. Beyond the socioeconomic impact of a broken family, time resources are reduced, as more demands of the family are placed on a single parent as opposed to being shared by two. This study indicated the significant impact of the family unit on student mathematics achievement.

### **Implications**

Attendance and family structure do impact the mathematics achievement of middle grade students based on the results of this study. Programs to improve attendance by motivating students to attend school could serve as a preliminary starting point to ensure absences are minimalized. Until systems see major improvements in the areas of family support and student attendance, safety nets must be developed. The results of this research serve to support what educators have already known; students need to be at school for learning to take place. However, the question remains about what steps should be taken when students are not at school. Compulsory attendance laws have not eradicated the situation, and students are still the ones who



suffer. Middle school students do not drive themselves to school or, for the most part, make the decision not to attend school on their own. Surely, educators can do more than simply give students their missed work upon their return. No doubt, there are numerous teachers, administrators, and school systems that have employed methods to overcome student absenteeism with success. Based on the impact of attendance on mathematics achievement, best practices should be uncovered to assist students with chronic absenteeism.

Additionally, family structure is not the fault of the student, but rather children are the bystanders of broken homes and less than perfect home lives. Much research has focused on the lost resources as a result of a broken home, and efforts have been mobilized to offset these effects. Federal programs such as Title 1 have made efforts to offset some of these inequalities often associated with single parent homes and poverty. However, with more than half of students not being raised in the traditional home, this data highlights the importance of developing interventions for these students. As educators and educational systems focus on current reforms including curriculum, accountability, and best teaching practices, students are in desperate need for relationships that close the gaps left from a family unit that is not meeting their emotional, physical, and mental needs. Perhaps, the most important concept to be gained from this study is the sense of urgency to focus on student needs from homes that lack the necessary parental support integral to success. These systems or interventions cannot be governed into place, so it is the school system's responsibility to take the lead and meet student needs where they are at the present time.

### **Limitations**

The first limitation considered involves the dependent variable identified in this study as student mathematical achievement measured by a high stakes test score. While the Georgia

CRCT has sufficient validity and reliability scores, to place the overall achievement results of a student's annual academic progress on a single test is disconcerting. The assumption with any high stakes test is that all students do their best and are at peak potential regarding their performance for that particular day of testing. In actuality, the math portion of the CRCT is given on the third day of testing, as reading and language arts tests are administered on days one and two, respectively. By the third day of testing, students could be tired or may have simply lost interest if they perceive their previous efforts less than adequate.

The second limitation of this study involves the first independent variable of attendance. While attendance is maintained according to strict truancy laws, and the subsequent attendance reports are submitted to both local and state officials, errors could occur. Perhaps more problematic would be students who were physically present at school but may actually be absent from the classroom. These types of classroom absences could occur if students are involved in counseling on a routine basis or if students were assigned to in-school suspension. The latter occurs when students are removed from the classroom and isolated from their peers from one to 10 days as a punishment. In this case, the student would be counted as present but would not be in the math classroom to receive instruction. While teachers may take work to the student in in-school suspension, the student does not receive the same level of instruction.

A third limitation of this study involves the second independent variable of family structure. Family structure data was taken from the most up to date information available to the school system, which was the family emergency contact form completed at the beginning of the year by parents and updated as parents' contact information changed. However, it would be possible for parents to enter and exit the home and this information not be updated if either

parent did not immediately notify the school and if school officials were not otherwise aware of the change.

Finally, this study included a sample size of 503 students from a single middle school in North Georgia. Since schools are often communities with homogeneous roots of influence and thought, it is possible for the findings of this study to not particularly coincide with another group of dissimilar circumstances. This could include but not be limited to, socioeconomics, family education levels, and personal experiences with education in general. Additionally, this study involved data collected from a single academic year, which would not account for changes over longer periods of time to attendance and family structure.

### **Recommendations for Future Research**

The first recommendation for additional studies would be the need to consider the same type of research with different populations. This study was conducted in a Georgia Title 1 school with predominantly similar demographics. It would be interesting to compare this data with school systems with varied demographics. Perhaps it would be pertinent to consider the impact of attendance, family structure, and absence type on other content areas including science and social studies, as well. In addition, an area of needed study is how attendance and family structure impacts students who are also receiving English for Speakers of Other Languages (ESOL) services.

Of particular interest would be a study of the types of safety nets or programs school systems may have developed to offset attendance issues and family structure. While there is much literature taunting the ill effects of poor attendance, researchers have not collected data regarding best practices that include attention to family structure. The fact that attendance and

family structure correlate to lower test scores also supports the need to develop a better understanding of student relationships that impact learning.

While this study indicates the immediate impact of attendance and structure, there are several long-term questions that remain. Does the achievement gap grow over time if corrections in attendance and family structure relationships remain less supportive? Or, do the achievement losses flat line over time? These long range studies may help to answer the question regarding if educational reform absent of focusing on the educational needs of individual students will continue to be lacking. The most demanding, but possibly the most important recommendation for future research, would be the use of a longitudinal study that monitors high risk students (high absence and non-traditional family structure) throughout their academic careers and tracks their achievement to their counterparts.

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## APPENDIX A

## Liberty University IRB Approval

# LIBERTY UNIVERSITY

## INSTITUTIONAL REVIEW BOARD

July 31, 2014

Bobby Sneed

IRB Exemption 1930.073114: Effects of Student Family Structure and Attendance on Academic Achievement in Middle Grades Mathematics

Dear Bobby,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and that no further IRB oversight is required.

Your study falls under exemption category 46.101 (b)(4), which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:

(4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Please note that this exemption only applies to your current research application, and that any changes to your protocol must be reported to the Liberty IRB for verification of continued exemption status. You may report these changes by submitting a change in protocol form or a new application to the IRB and referencing the above IRB Exemption number.

If you have any questions about this exemption, or need assistance in determining whether possible changes to your protocol would change your exemption status, please email us at [REDACTED]

Sincerely,

[REDACTED]

**Fernando Garzon, Psy.D.**  
Professor, IRB Chair  
Counseling

[REDACTED]

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## APPENDIX B

### Investigator Agreement Page

Liberty University Institutional Review Board | 4  
Application for the Use of Human Research Participants

#### IV. INVESTIGATOR AGREEMENT & SIGNATURE PAGE\*

BY SIGNING THIS DOCUMENT, THE INVESTIGATOR AGREES:

1. That no participants will be recruited or entered under the protocol until the Investigator has received the final approval or exemption email from the chair of the Institutional Review Board.
2. That no participants will be recruited or entered under the protocol until all key personnel for the project have been properly educated on the protocol for the study.
3. That any modifications of the protocol or consent form will not be initiated without prior written approval, by email, from the IRB and the faculty advisor, except when necessary to eliminate immediate hazards to the participants.
4. The PI agrees to carry out the protocol as stated in the approved application; all participants will be recruited and consented as stated in the protocol approved or exempted by the IRB. If written consent is required, all participants will be consented by signing a copy of the approved consent form.
5. That any unanticipated problems involving risks to participants or others participating in the approved protocol, which must be in accordance with the Liberty Way (and/or the Honor Code) and the Confidentiality Statement, will be promptly reported in writing to the IRB.
6. That the IRB office will be notified within 30 days of a change in the PI for the study.
7. That the IRB office will be notified within 30 days of the completion of this study.
8. That the PI will inform the IRB and complete all necessary reports should he/she terminate University Association.
9. To maintain records and keep informed consent documents for **three years** after completion of the project, even if the PI terminates association with the University.
10. That he/she has access to copies of 45 CFR 46 and the Return Report.

[Redacted Signature]

[Redacted Signature]

7/22/14

Date

#### FOR STUDENT PROPOSALS ONLY

BY SIGNING THIS DOCUMENT, THE FACULTY ADVISOR AGREES:

1. To assume responsibility for the oversight of the student's current investigation, as outlined in the approved IRB application.
2. To work with the investigator, and the Institutional Review Board, as needed, in maintaining compliance with this agreement.
3. To monitor email contact between the Institutional Review Board and principle investigator. Faculty advisors are cced on all IRB emails to PIs.
4. That the principal investigator is qualified to perform this study.
5. **That by signing this document you verify you have carefully read this application and approve of the procedures described herein, and also verify that the application complies with all instructions listed above. If you have any questions, please contact our office** [Redacted]

Dr. Shante Austin  
Faculty Advisor (Printed)

[Redacted Signature]


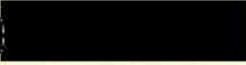
7/22/14

Date

\*The Institutional Review Board reserves the right to terminate this study at any time if, in its opinion, (1) the risks of further experimentation are prohibitive, or (2) the above agreement is breached.


## APPENDIX C

## School System Approval Page



**County Schools**  
 Since 1872 *Where Excellence is a Tradition*

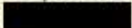

**TO:** Bobby Sneed, Doctoral Student at Liberty University  
**FROM:** Audrey M. Williams, Ed.D., Chief Officer of Assessment, Accountability, & Technology  
**RE:** Effects of Student Family Structure and Attendance on Academic Achievement in Middle Grades Mathematics  
**DATE:** July 22, 2014





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 County Schools is granting permission for Bobby Sneed, the researcher, to explore how student family structure and student attendance separately and together impact middle school student achievement measured by state mandated high stakes testing. The research will attempt to answer four research questions:

1. Is there a difference in cumulative mathematics achievement between high absence and low absence students?
2. Is there a difference in cumulative mathematics achievement of high absence students based on their parental family structure?
3. Is there a difference between cumulative mathematics achievement of high absence students based on their parental family structure?
4. Is there a difference between cumulative mathematics achievement of high absence students based on the proportion of their absences which are unexcused?

The researcher's goal is to attempt to better understand the impact attendance and family structure plays on academic achievement. Perhaps more significant is to better understand students and their independent needs.

Please remember the Family Educational Rights and Privacy (FERPA) and the Protection of Pupil Rights Amendment (PPRA) agreements previously signed as you continue your dissertation at Liberty University. The researcher will ensure appropriate measures are in place to provide appropriate protection of educational confidentiality and privacy of all participants. The location of the physical storage of the data will be located in the researchers' possession. If I can be of any further assistance let me know. I can be reached at  or via email at 

  
 Audrey M. Williams, Ed.D.  
 Chief Officer of Assessment, Accountability, & Technology  
 County Schools  
 Georgia 



County Schools do not discriminate on the basis of sex, race, religion, creed, age, national origin, marital status, or handicapping conditions.



## APPENDIX D

## Student Emergency Contact Page

This box for office use only		E		M		F	
School Yr:	Grade	School	R/Eth:	H:	Y N / AI	As	B W NH
Residence: P W R O Affidavit		OOD	Cust/Non-Parent	W/D	Kinder: BC SS IM EED		
<b>STUDENT INFORMATION</b>							
Student's Legal Name: _____ (Last) (First) (Middle)							
Address: _____		Apt/Lot#	City:	Zip: _____			
Mailing Address (if different): _____			City:	Zip: _____			
Birth date: _____		Birthplace:	Social Security # _____				
Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female		Date first entered US school: _____					
<b>HOUSEHOLD INFORMATION</b>							
Student lives with: <input type="checkbox"/> Both parents <input type="checkbox"/> Mother <input type="checkbox"/> Father <input type="checkbox"/> Step Parent <input type="checkbox"/> Joint Custody <input type="checkbox"/> Foster Parent <input type="checkbox"/> Legal Guardian							
Home Phone: _____							
Name of person enrolling student:				Relationship:			
Circle one: Mother/Step-Mother/Guardian's Name: _____							
Work Phone: _____		Employer: _____					
Cell Phone: _____		Email: _____					
Circle one: Father/Step-Father/Guardian's Name: _____							
Work Phone: _____		Employer: _____					
Cell Phone: _____		Email: _____					
Please list all school age brothers and sisters living in the home.							
<u>Name</u>		<u>Relationship to student</u>			<u>Date of Birth</u>		
_____		_____			_____		
_____		_____			_____		
<b>ENROLLMENT HISTORY</b>							
Student's Previous School: _____			City:	State: _____			
List any Whitfield County Schools attended: _____							
<b>TRANSPORTATION INFORMATION</b>							
Morning Transportation:		<input type="checkbox"/> Car	<input type="checkbox"/> Bus	Afternoon Transportation:		<input type="checkbox"/> Car	<input type="checkbox"/> Bus
<b>SPECIAL PROGRAMS</b>							
Does the student currently receive any of these services? <input type="checkbox"/> Early Intervention (EIP) <input type="checkbox"/> Special Education/IEP							
<input type="checkbox"/> 504 Plan		<input type="checkbox"/> Response to Intervention (RTI)		<input type="checkbox"/> Speech			
Does the student participate in Gifted/ Talented Programs? Yes <input type="checkbox"/> No <input type="checkbox"/>							
Is either parent/ guardian/ step-parent with whom the student resides on full-time military duty status? <input type="checkbox"/> Yes <input type="checkbox"/> No							