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## The Impact Of Homelessness And Remaining In School Of Origin On The Academic Achievement Of Fourth Through Eighth Grade Students In Brevard County Public Schools

Richard Dunkel  
*University of Central Florida*



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THE IMPACT OF HOMELESSNESS AND REMAINING IN SCHOOL OF ORIGIN ON THE  
ACADEMIC ACHIEVEMENT OF FOURTH THROUGH EIGHTH GRADE STUDENTS IN  
BREVARD COUNTY PUBLIC SCHOOLS

by

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A dissertation submitted in partial fulfillment of the requirements  
for the degree of Doctor of Education  
in the Department of Educational Research, Technology and Leadership  
in the College of Education  
at the University of Central Florida  
Orlando, Florida

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2012

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## **ABSTRACT**

This study examined the impact of homelessness and the ability of homeless students to remain in their school of origin on the academic achievement of fourth through eighth grade students in Brevard County, Florida. To determine effects of homelessness, homeless students were compared to non-homeless students who qualified for free lunch utilizing developmental scale scores and learning gains from 2011 FCAT Reading and Mathematics. To determine effects of remaining in school of origin, homeless students who changed schools were compared to homeless students who did not change schools utilizing the same assessment data. Independent t-tests and chi-square tests of association were used with .05 significance levels.

Findings showed that homeless and non-homeless students had no significant differences in reading scores, and homeless students had significantly higher mathematics scores. However, significantly fewer homeless students made an annual learning gain in reading and math learning gains were statistically equal. Remaining in school of origin also had no significant impact on reading and math developmental scale scores, but a significantly lower percentage of homeless students who changed schools made annual learning gains in reading and mathematics.

These results led the researcher to develop a theory called the Weighted Saddle Effect, caused by homeless mobility, to describe the difficulty homeless students had in making annual learning gains commensurate with their developmental scale scores.

Recommendations for policy included school districts ensuring transportation to school of origin was available for all homeless students as mandated by the McKinney-Vento Act.

Dedicated to  
Michelle, Rachel, Mom, Dad

I love you all very much.  
You each make me happy and proud in so many ways.  
I hope I do the same for you.

I miss you, Dad.

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## **LIST OF ACRONYMS/ABBREVIATIONS**

|        |  |
|--------|--|
| AFC    | Advocates for Children of New York   |
| ARRA   | American Recovery and Reinvestment Act   |
| DISD   | Dallas Independent School District   |
| EHCY   | Education for Homeless Children and Youth (a component of the Stewart B. McKinney Homeless Assistance Act) |
| FCAT   | Florida Comprehensive Assessment Test  |
| FTE    | Full-time Equivalent   |
| HAC    | Homeless Advisory Committee  |
| IASA   | Improve America's Schools Act  |
| LEA    | Local Education Agency   |
| LGBQ   | Lesbian, Gay, Bisexual, and Questioning  |
| NAEHCY | National Association for the Education of Homeless Children and Youth                                      |
| NCH    | National Coalition for the Homeless  |
| NCHE   | National Center for Homeless Education   |
| SPSS   | Statistical Package for the Social Sciences  |

WASL Washington Assessment of Student Learning

## CHAPTER ONE: INTRODUCTION

According to the National Bureau of Economic Research (2010), the United States' most recent recession began in December 2007 and ended in June 2009. The recession lasted 18 months, making it the longest lasting recession since World War II. In fact, with many measures indicating it was the worst downturn in the economy since the Great Depression, some economists have referred to it as the Great Recession of 2007-09 (Ireland, 2011).

While the trough of the recession may have occurred in 2009, recovery was slow and the economy continued to lag, particularly in Florida. Based on the Bureau of Labor Statistics, Florida's unemployment rate as of December 2010 was 12.0%, ranking it 48<sup>th</sup> among the 50 states, with only California and Nevada registering higher unemployment rates. As unemployment was on the rise, property values continued to plummet. In Brevard County, Florida, the median sale price for all houses in 2010 was \$120,000, down from \$125,500 in 2009, with one in four homes sold being in foreclosure (McCarthy, 2011).

Nationally, the numbers were not much better. The Bureau of Labor Statistics showed the national unemployment rate peaked at 10.1% in October, 2009, yet had been slow to improve and as of April, 2011, unemployment settled at 9%. According to a report by the Center on Budget and Policy Priorities (2011), as of April 2011, the United States had experienced a net loss of 7 million jobs since the start of the recession over three years ago. The National Coalition for the Homeless (NCH) (2009a) reported a 32% increase in the number of foreclosures between April 2008 and April 2009. Renters made up as many as 40% of the households affected by foreclosure.



The inevitable result of this economic turmoil was a significant rise in the number of homeless in the United States. The NCH (2009) reported recent estimates of homeless in the United States between 1.6 million and 3.5 million, with approximately a third of homeless being children. Results from a recent survey showed the number of requests for food assistance increased by an average of 26% from 2008 to 2009, the largest average increase in the last 18 years (United States Conference of Mayors, 2009). The number of identified homeless children in preK-12 public schools in the U.S. went from 679,724 in 2006-2007 to 956,914 in 2008-2009, an increase of 41%. In Florida, the increase was 34%. The number of homeless and in-transition students in Brevard County increased dramatically from 90 in 2006-2007 to 964 in 2009-2010, an increase of over 1000%.

Research has shown consistently a negative effect of homelessness on student achievement. Homeless students have been found to score significantly lower on reading and mathematics achievement tests when compared to their housed peers (Masten et al., 1997). These differences in achievement exist even when controlled for socioeconomic status (Rafferty, Shinn, & Weitzman, 2004). While most research has utilized achievement test scores to measure achievement, teachers' perceptions have also been found to show that homeless students have significant adjustment problems in the classroom (Masten et al., 1997). Homeless students have also been found to have greater at-risk behaviors than their non-homeless peers (Massachusetts Department of Education, 2007).

Many of the academic and non-academic troubles of homeless youth can be traced to higher mobility rates experienced by this group. Tanner-McBrien (2010) found that school moves had a strong negative correlation with academic achievement, meaning that when the

number of school moves increased, academic achievement declined. School mobility rates often were found to be higher for students who had been homeless (Rafferty et al., 2004; Buckner, Bassuk, & Weinreb, 2001) and higher rates of mobility were associated with lower academic achievement and higher rates of grade retention (Rafferty et al., 2004). Achievement gaps between homeless, highly mobile students and their non-homeless peers can appear as early as second grade (Obradovic et al., 2009).

Increased school moves also were associated to increased suspensions (Tanner-McBrien, 2010). After controlling for variables, Tanner-McBrien (2010) found 77% of the students who moved frequently were found to have either academic or behavioral difficulties at school. Behavioral difficulties were not always displayed in external ways. Homelessness also has been found to be associated with internalizing problem behaviors, the result of experiencing significantly more stressful events in their lives than their housed peers (Buckner, Bassuk, Weinreb, & Brooks, 1999). Despite statistics showing increased academic and behavioral troubles for homeless students, parents of homeless youth have been hesitant to associate the problems with their housing situation, demonstrating a state of denial and abdication of responsibility (Morris & Butt, 2003).

With research showing strong correlations between homelessness, mobility, and poor student performance, and parents unable or unwilling to address the problem, it is more important than ever for schools to take full advantage of the McKinney-Vento Act. The McKinney-Vento Education for Homeless Children and Youth (EHCY) program was created in 1987 by Congress as part of the Stewart B. McKinney Homeless Assistance Act with further amendments in 1990, 1994, and reauthorized in 2002 by No Child Left Behind. To limit the

negative effects of residential instability, the McKinney-Vento EHCY had three primary aims: (1) identification of homeless children, (2) removal of barriers to school enrollment and attendance, and (3) the provision of services to support success in school (Cunningham, Harwood, & Hall, 2010).

McKinney-Vento defined homeless students as those:

- Living in emergency or transitional shelters
- Sharing housing of others due to loss of housing or economic hardship
- Living in cars, parks, campgrounds, public spaces, abandoned buildings or similar settings
- Living in hotels or motels due to economic hardship
- Awaiting foster care

McKinney-Vento's inclusive definition of homelessness captured the multiple locations where the homeless youth of today seek shelter, including couch surfers and families doubling up (Tierney, Gupton, & Hallett, 2008). By clarifying the definition of homeless youth, schools can better identify students eligible for protections under the McKinney-Vento Act. Protections available for homeless students can include:

- Remaining in school of origin during the period of homelessness, regardless of residential mobility
- Transportation to school of origin, regardless of school boundaries
- Enrollment without delay despite lack of necessary documentation or immunization records
- Enrollment of unaccompanied homeless youth without parent or legal guardian

- Provision of required school supplies
- Non-segregation from peers as a result of residential status (Tierney et al., 2008)

McKinney-Vento also provided that each state have a state coordinator and each district have a staff person serve as a local homeless liaison. These liaisons work closely with schools and local agencies, such as homeless service providers, to ensure proper identification of homeless students. Unfortunately, identification of homeless students has proved difficult for a number of reasons (Cunningham et al., 2010). For instance, parents may not be aware of the law and available services. Fear may also be a factor. Parents may try to avoid the stigma attached with homelessness or the involvement of child protective services. In addition, district liaisons are often part-time or have other responsibilities, limiting the amount of time available for identifying homeless students. Finally, identification in rural and suburban areas has proven difficult, as they usually have fewer shelters and services which can assist schools in the identification of homeless students (Cunningham et al., 2010).

The Massachusetts Department of Education (2007) estimated that for every one student identified by schools as being homeless, there were approximately six or seven homeless students who had not been identified. While many districts struggle with identifying homeless students, some consider the rise in the number of homeless students to be partially attributable to improved identification efforts. In a 2010 survey conducted by the National Association for the Education of Homeless Children and Youth (NAEHCY), a third of the respondents felt that improved identification efforts were a factor for increased enrollment of students experiencing homelessness since 2007-2008.

With research supporting the correlation between homelessness and low academic achievement, it is essential for homeless students to be properly identified so as to receive the appropriate services available under the McKinney-Vento Act. Specifically, with research also showing a correlation between high school mobility rates and poor student performance, efforts to keep homeless students in their school of origin are imperative.

### Purpose of the Study

The purpose of this study was to determine whether homelessness had an impact on reading and mathematics achievement of fourth through eighth grade students in Brevard County Public Schools. Furthermore, it sought to determine whether the ability of homeless students to remain in their school of origin had an impact on reading and mathematics achievement on fourth through eighth grade students in Brevard County Public Schools. The desired outcome was to generate information regarding the impact of homelessness and the utilization of transportation services, as made available through the McKinney-Vento Act to the school of origin, so that school officials at the school and district level would be able to make sound decisions in the best interest of homeless students within Brevard County.

### Statement of the Problem

The problem addressed in this study was the potential impact homelessness may have on the academic achievement of homeless students. As the number of homeless students in schools continue to increase, the extent of the potential impact increases. Furthermore, to date, little if any research has been conducted addressing the effects on academic achievement of homeless students remaining in their school of origin.

## Research Questions and Hypotheses

The study was guided by the following research questions and hypotheses:

1. To what extent, if any, is there a statistically significant difference in the reading achievement of fourth through eighth grade homeless students in Brevard County, as measured by developmental scale scores on FCAT Reading, and fourth through eighth grade non-homeless students in Brevard County who qualify for the free lunch program?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Reading between homeless students and non-homeless students in Brevard County who qualify for the free lunch program.

2. Does the proportion of fourth through eighth grade students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Reading vary depending on whether or not they are homeless?

H<sub>0</sub>: There is no statistically significant variance in the proportion of fourth through eighth grade homeless and non-homeless students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Reading.

3. To what extent, if any, is there a statistically significant difference in the mathematics achievement of fourth through eighth grade homeless students in Brevard County, as measured by developmental scale scores on FCAT Mathematics, and fourth through eighth grade non-homeless students in Brevard County who qualify for the free lunch program?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Mathematics between homeless students and non-homeless students in Brevard County who qualify for the free lunch program.

4. Does the proportion of fourth through eighth grade students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Mathematics vary depending on whether or not they are homeless?

H<sub>0</sub>: There is no statistically significant variance in the proportion of fourth through eighth grade homeless and non-homeless students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Mathematics.

5. To what extent, if any, is there a statistically significant difference in the reading achievement of fourth through eighth grade homeless students in Brevard County who have remained in their school of origin, as measured by developmental scale scores on

FCAT Reading, and fourth through eighth grade homeless students in Brevard County who have not remained in their school of origin?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Reading between homeless students who have remained in their school of origin and homeless students who have not remained in their school of origin in Brevard County.

6. Does the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain on FCAT Reading vary depending on whether or not they stay in their school of origin?

H<sub>0</sub>: There is no statistically significant variance in the proportion of fourth through eighth grade homeless students in Brevard County who stay in their school of origin making a learning gain on FCAT Reading and fourth through eighth grade homeless students in Brevard County who do not stay in their school of origin making a learning gain on FCAT Reading.

7. To what extent, if any, is there a statistically significant difference in the mathematics achievement of fourth through eighth grade homeless students in Brevard County who have remained in their school of origin, as measured by developmental scale scores on FCAT Mathematics, and fourth through eighth grade homeless students in Brevard County who have not remained in their school of origin?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Mathematics between homeless students who have remained in their school of origin and homeless students who have not remained in their school of origin in Brevard County.

8. Does the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain on FCAT Mathematics vary depending on whether or not they stay in their school of origin?

H<sub>0</sub>: There is no statistically significant variance in the proportion of fourth through eighth grade homeless students in Brevard County who stay in their school of origin making a learning gain on FCAT Mathematics and fourth through eighth grade homeless students in Brevard County who do not stay in their school of origin making a learning gain on FCAT Mathematics.

### Delimitations

For this study, the following delimitations have been identified:

- Academic achievement of fourth through eighth grade students in Brevard County were analyzed, limiting the ability to generalize findings beyond the established range of grades and the boundaries of the district.
- While two measures of academic achievement were used, developmental scale scores and annual learning gains, both measures were connected to performance on the FCAT. Other academic indicators, such as report card grades and performance on classroom and district assessments, were not taken into consideration.
- By analyzing the effects of remaining in school of origin, possible effects of other elements of McKinney-Vento, such as tutoring, were ignored.
- Homeless students were considered to have stayed in their school of origin if they did not change schools from the end of the 2009-2010 school year to the start of FCAT testing in April, 2011. Whether or not the change of schools occurred before, after, or was even related to becoming homeless was not known.
- By utilizing annual learning gains for analysis, it was necessary for subjects to have available FCAT data for 2010 and 2011. Of the 375 homeless fourth through eighth grade students initially identified in the population, only 244 (65.1%) had the available data needed for this study.

### Limitations

For this study, the following limitations have been identified:



- The lack of consistency between schools in Brevard County regarding the availability of services, such as Supplemental Educational Services, which promote academic achievement.
- Schools were likely to vary in their level of identification of homeless students.
- There may not have been consistency in the provision of transportation to school of origin for homeless students throughout the county.

#### Definition of Terms

- Academic Achievement – a student’s developmental scale score on the Reading and Mathematics portion of the 2011 FCAT
- Barriers to Enrollment – the problems which hinder students from registering in school
- Couch Surfing – the practice of homeless children and youth traveling from house to house of friends and sleeping on their couches, never staying in one home for too long
- Doubled-up – a scenario in which homeless families, children or youth are living with other families due to financial hardships
- Florida Comprehensive Assessment Test (FCAT) – a statewide summative assessment given every spring in the state of Florida
- Homeless – one who, due to financial difficulty, is: (a) living in emergency or transitional shelters; (b) sharing housing of others due to loss of housing or economic hardship; (c) living in cars, parks, campgrounds, public spaces, abandoned buildings or similar settings; (d) living in hotels or motels due to economic hardship; or (e) awaiting foster care

- Homeless Liaison – a representative for local school districts who assists homeless students and families
- Learning Gain – according to the Florida Department of Education (2011), a learning gain can be demonstrated in one of three ways. They are
  - Improve achievement levels from 1-2, 2-3, 3-4, or 4-5; or
  - Maintain within relatively higher levels of 3, 4, or 5; or
  - Demonstrate more than one year’s growth within achievement levels 1 or 2 (does not include retained students)
- Local Education Agency (LEA) – the local school district/system
- Mobility – the change from one school to another
- School of Origin – the most recent school a student was attending prior to becoming homeless or the last school of attendance
- Weighted Saddle Effect – caused by school mobility, the difficulty for homeless students to make annual learning gains commensurate to their developmental scale scores

### Theoretical Framework

Abraham H. Maslow (1954) developed a theory of motivational behavior known commonly as the Hierarchy of Needs. The needs, starting with the most basic, were: (a) physiological needs, (b) safety needs, (c) belongingness and love needs, (d) esteem needs, and (e) self-actualization needs. A person’s behavior can be understood as an effort to satisfy one of these five levels of needs, with the more basic needs having to be satisfied before a higher need may become a significant influence on an individual’s behavior (Hughes, Ginnet, & Curphy, 1995).

Maslow's theory is applicable to this study, for students who are experiencing homelessness are also experiencing severe threats to their basic needs as outlined by Maslow. If students are not able to satisfy physiological needs and are experiencing hunger, little else will motivate them and their minds will be focused on nothing but food.

All capacities are put into the service of hunger-satisfaction, and the organization of these capacities is almost entirely determined by the one purpose of satisfying hunger. The receptors and effectors, the intelligence, memory, habits, all may now be defined simply as hunger-gratifying tools. Capacities that are not useful for this purpose lie dormant, or are pushed into the background. (Maslow, 1954, p. 37)

It is the concept of the individual as an integrated whole which is an important preface to Maslow's Hierarchy of Needs theory, for it is the element of his theory which suggests an unmet need can become all encompassing. When one is hungry, it is not just a function of the stomach. Hunger then becomes an element of other functions as well, including perceptions, memories, emotions, and thinking (Maslow, 1954). "In other words, when John Smith is hungry, he is hungry all over; he is different as an individual from what he is at other times (Maslow, 1954, p. 20).

This all-consuming effect is equally prevalent when an individual's safety needs are not met (Maslow, 1954). Maslow (1954) lists these needs as: (a) security; (b) stability; (c) dependency; (d) protection; (e) freedom from fear, anxiety and chaos; (f) need for structure, order, law, and limits; and (g) strength in the protector. One such example of a threat to safety needs was findings of increased levels of internalized behavior problems of children living in homeless shelters (Buckner et al., 1999). The unstable and often chaotic nature of homelessness

has significantly adverse effects on students' educational, emotional, and social well-being (Tierney et al., 2008). Similar to when the physiological need of hunger is not met, when one of the safety needs is threatened, all other systems of one's self can become consumed with satisfying this need (Maslow, 1954). So, when students go hungry, do not have a consistent home, are in and out of shelters, are sleeping in strange places with people they do not know, and are regularly adjusting to new schools, their ability to maintain focus on academics can be strongly impacted due to the lack of meeting their basic needs. Figure 1 illustrates the linkage of homelessness to academic and behavioral problems at school through not satisfying the basic needs outlined by Maslow.

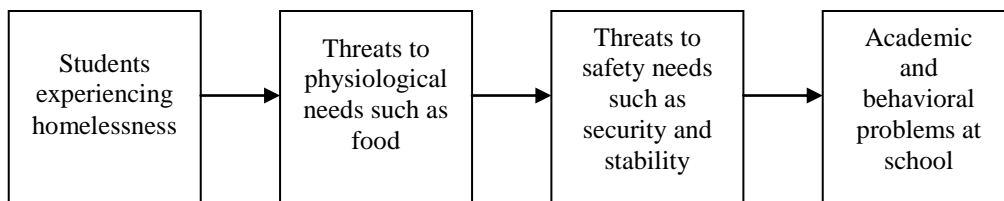


Figure 1: Linkage of Student Homelessness to Academic and Behavioral Problems at School Through Not Satisfying the Basic Needs Outlined By Maslow.

Sheldon (2011) also made the link between the needs of homeless students and Maslow's Hierarchy of Needs.

Homeless student populations in our school are growing and it does not appear to showing signs of abating. Our school staffs must essentially prepare themselves to meet the unique physical, emotional and academic needs of our homeless students. We must walk up the steps of Maslow's Hierarchy of Needs with our homeless children. A hungry

child, a child who does not know where they might sleep could be extremely difficult to teach on a high and/or engaging level. District homeless coordinators can help teachers in meeting these physical needs. Students' emotional needs can be met by a kind, caring and loving teacher who presents a stable and predictable environment for our students to learn. It takes a village to raise a child and for some homeless students it might require the entire district (Sheldon, 2011, p. 1).

### Overview of Methodology

#### Research Design

For this study, a non-experimental, ex-post facto, quantitative design was utilized to determine the impact of homelessness and remaining in school of origin on academic achievement. FCAT data from 2010 and 2011 were used for analysis. When analyzing reading and mathematics developmental scale scores, 2011 FCAT data was utilized. When analyzing reading and mathematics learning gains, 2011 FCAT scores were compared to 2010 FCAT scores to determine whether a learning gain had been made.

#### Population

The population included fourth through eighth grade students in Brevard County who were coded as homeless as of February 7, 2011. These students met one of the following criteria for qualifying as homeless in Brevard County. If, due to loss of housing, they were living: (a) in a shelter, motel, vehicle, or campground; (b) on the street; (c) in abandoned buildings; (d) doubled-up with relatives or friends; or (e) awaiting foster care. To be included in the study, 2010 and 2011 FCAT data needed to be available for each student.

## Sample

From the population of homeless students in Brevard County, a stratified random sample was selected in an effort to provide internal validity. For research questions 1-4, a proactive random sample of equal size from each grade level was selected from the population of students who qualified for free lunch in Brevard County for comparison on the dependent variable of academic achievement. It was necessary to have equal numbers from each grade level in both groups due to the use of developmental scale scores, which increase through the grade levels. For research questions 5-8, the population of homeless students was divided into two groups, those who remained in their school of origin and those who had changed schools. For the purposes of this study, students were considered to have remained in their school of origin if they did not change schools from the end of the 2009-2010 school year to the start of FCAT testing on April 11, 2011. Again, a stratified random sample was selected from each grade level with equal numbers from each grade level for both groups.

## Data Collection and Analysis

A request for access to population and sample data was submitted to the Office of Testing and Accountability Department of Brevard County Public Schools. For students in the population and samples, 2010 and 2011 FCAT Reading and Mathematics developmental scale scores and learning gains were obtained. Demographic information regarding the students' gender, race, disability status, ELL status, free/reduced lunch status and homeless status were obtained. Differences between reading and mathematics developmental scale scores were measured with Independent *t*-Tests, and the percentages of students making learning gains were

analyzed using the Chi-square Test of Association. Significance levels of differences were set at .05.

### Summary

While the recession of 2007-2009 may be officially over, economic recovery has been slow, resulting in continued high unemployment numbers and foreclosures. As a result, many school districts across the country have experienced a sharp increase in the number of homeless students. Given their situation, these students are among the most vulnerable to increased school mobility, at-risk behaviors, and poor academic achievement. While schools may not be able to solve all of their problems, they can certainly help to mitigate them with the effective implementation of services available through the McKinney-Vento Act. “School is a refuge for homeless children and youth, providing safety, structure, and services; education is also their surest path to economic security and stable housing in adulthood” (NAEHCY, 2010, p.2).

One of the most significant services available through the McKinney-Vento Act is the ability of homeless students to remain in their school of origin. For students experiencing homelessness, a myriad of factors impact their daily lives, from hunger to continual changes in shelter and schools. With the ability to utilize transportation to at least keep consistency in the school environment, districts may be able to stabilize one element of Maslow’s Hierarchy of Needs and allow students to focus more on their academic achievement.

### Organization of the Study

Chapter One provides an introduction to the topic, the purpose of the study and statement of the problem, guiding research questions with hypotheses, delimitations and limitations,

definitions of key terms, theoretical framework for the study, and an overview of the methodology used. Chapter Two provides a thorough review of the literature as it relates the effects of homelessness and homeless mobility on student performance in school as well as the McKinney-Vento Act. Chapter Three details the research methodology used during the study. Chapter Four includes a thorough reporting of the results of data analysis including descriptive statistics and results of tests for each research question. Chapter Five reports key findings and recommendations.



## CHAPTER TWO: LITERATURE REVIEW

### Homelessness

Homelessness, and the identification of how many people experience homelessness, are difficult concepts to define despite their increasing impact on today's society. According to the Stewart B. McKinney Act, persons are considered homeless who lack regular and adequate night-time residence and those whose primary night-time residence include: (a) public and private shelters designed for temporary living accommodations, (b) institutions which provide temporary residence, or (c) public or private places not designed or normally used for human beings to sleep (NCH, 2009c). A more comprehensive definition of homelessness can be found in the education subtitle of the McKinney-Vento Act and adds to the previous definition: (a) those living with others due to loss of housing or economic hardship, (b) those living in motels, hotels, trailer parks, or campgrounds due to lack of alternative adequate housing, (c) those living in emergency or transitional shelters, and (d) those awaiting foster care placement (NCH, 2009c). However, not all agencies embrace the broader definition. For instance, the Department of Housing and Urban Development interprets homelessness as living on the streets, in shelters, or facing imminent eviction from a private dwelling or institution and not having resources to obtain housing (NCH, 2009c).

In addition to different definitions of homelessness, methodology of counting homeless persons is difficult, as most only experience periods of homelessness. "In most cases, homelessness is a temporary circumstance – not a permanent condition. A more appropriate measure of the magnitude of homelessness is the number of people who experience

homelessness over time, not the number of ‘homeless people’” (NCH, 2009b, p. 1). Restrictions of methodology and finances often limit measures of counting homeless to those living in shelters and on the streets. One method called the point-in-time count attempts to actually count all of the people who are homeless on a given day or during a given week. Another method called the period prevalence count attempts to count the number of people who are homeless over a given period of time. Regardless the method, it is impossible to measure the true number of homeless with 100% accuracy (NCH, 2009b).

In its 2009 Annual Homeless Assessment Report to Congress, the U. S. Department of Housing and Urban Development reported estimates of nearly 1.56 million people spending at least one night in an emergency shelter or transitional housing program between October 2008 and September 2009. Since 2007, they found a 30 percent increase in the number of sheltered families. In 2009, 52% of responding cities reported that shelters had to turn away homeless due to a lack of available beds (United States Conference of Mayors, 2009). The NCH (2009a) reported recent estimates of homeless in the United States between 1.6 million and 3.5 million, with approximately a third of homeless being children. Families with children are the fastest growing segment of the homeless population and tend to take shelter in permanent supportive housing or transition housing as opposed to emergency shelters or living on the streets (NCH, 2009a). According to the National Law Center on Homelessness & Poverty (2011), over 1.35 million children and youth experience homelessness every year. In a recent survey, 76% of responding cities reported an increase in family homelessness, attributing the increase to the recession and lack of affordable housing (United States Conference of Mayors, 2009).

Many of the homeless are not counted because they are living in places researchers cannot easily find, such as cars or campgrounds (Link et al., 1994). People living in doubled-up situations are also less likely to be counted. The NCH (2009b) indicated that, of the children identified as homeless by the Department of Education in 2000, 35% lived in shelters, while 34% lived doubled-up with family or friends, and 23% were living in motels or other locations. “Yet, these children and youth may not immediately be recognized as homeless and are sometimes denied access to shelter or the protections and services of the McKinney-Vento Act” (NCH, 2009b, p. 2).

Most doubled-up households consist of either merged-residence households or separate households (Hallett, 2009). Merged-residence households function as a single unit in which one person usually takes the lead on providing childcare for all the youth in the residence, including managing educational issues. In separate households, households tend to split financial issues such as rent and utility bills and each family is responsible for meeting the educational needs of their family members only. In Hallett’s (2009) qualitative study of students living in doubled-up situations, the youth in the study did not identify with the term homeless and none of the families realized they qualified as homeless under the McKinney-Vento Homeless Assistance Act, as they had a roof over their head. “If, as the federal government has determined, these youth warrant the protections outlined in McKinney-Vento, new terms need to be used to attract the attention of those who the law is designed to support” (Hallett, 2009, p. 215).

Despite some confusion with who qualifies as homeless, an increase in homeless children and youth has been documented in the schools. The number of identified homeless children in preK-12 public schools in the U.S. went from 679,724 in 2006-2007 to 956,914 in 2008-2009, an

increase of 41% (NCH, 2009). According to a survey conducted in the fall of 2008 by the NAEHCY and First Focus, 330 school districts had identified an equal number or more homeless students in the first few months of school than they had the entire previous year. For instance, Vista Unified School District in San Diego County, California, had identified twice as many homeless students in its district by December 2008 than it had for the entire 2007-2008 school year. Additionally, 459 school districts had an increase of at least 25 percent in the number of homeless students identified between the 2006-2007 and 2007-2008 school years (NAEHCY, 2008).

To accommodate the increased number of homeless students, some cities have established schools specifically designed to serve its homeless students. One such school is the Monarch School in San Diego, California. First established in 1987 by the San Diego County Office of Education as a drop-in center for homeless youth, the Monarch School now serves 170 homeless students and has seen a 74% increase in enrollment in the past three years. According to the San Diego County Office of Education, during the 2009-2010 school year there were 13,204 homeless students countywide. Busting at the seams, the Monarch School is currently beginning work on a new facility designed to accommodate 350 students (Anderson, 2011).

### The Effect of Homelessness on Students

#### Academic Achievement

The day-to-day social traumas faced by children living a life of homelessness, whether on the street or in a shelter, are inextricably intertwined with their educational experiences and face multiple risk factors for educational failure (Shankar-Brown, 2008). Maintaining academic

proficiency is one of the challenges faced by homeless children. In a longitudinal study of homeless youth, Obradovic et al. (2009) found that children who were homeless and highly mobile were at greater risk of low academic achievement compared to other low-income students. The gaps in achievement appeared as early as second grade, persisted through elementary school, and were more prevalent among boys. The gaps in achievement were even greater when comparing highly mobile homeless students to the general population as the students aged. “As children transitioned into older grades and faced increasingly demanding reading curricula, the gaps between the reading abilities of disadvantaged and advantaged students widened” (Obradovic et al., 2009, p. 513).

Rafferty et al. (2004) examined the academic achievement and related outcomes of adolescents who had been homeless compared to adolescents from poor families who had never experienced homelessness. The researchers found that formerly homeless students had been retained more often and had a poorer overall school experience. While there was no significant difference in cognitive ability between the groups, both groups scored lower than norm averages for intelligence. Short-term effects on academic achievement were more negative for homeless students. The effects differed significantly in reading from non-homeless poor students and the difference in math was near significance ( $p < .06$ ). For both reading and math, the difference in score amounted to about one-third of a standard deviation of achievement scores.

Rafferty, Rollins, and Advocates for Children of New York (AFC) (1989), analyzed educational statistics of 9,659 children in temporary housing in New York City. Researchers found that 26% fewer homeless students demonstrated proficiency in reading and 29% fewer demonstrated proficiency in mathematics on standardized assessments when compared to the

general population. Homeless students were also more likely to have been retained. Similar findings were reported by Masten et al. (1997) following their study of homeless African American youth in a Minneapolis shelter. Researchers found African American homeless students scored significantly lower in reading, math, and spelling compared to normative groups, with 80% falling within the bottom quartile. Twenty percent of the group studied had repeated a grade.

One factor affecting the academic achievement of homeless students may be the quality of parenting. Herbers et al., (2011) analyzed structured interview data of 58 parents in a homeless shelter and rated parents on five parenting items. The items were: (a) how close were the parent and child, (b) how warmly the parent spoke of the child, (c) how positively the parent spoke of the child, (d) the quality of the parent-child relationship, and (e) how hostile the parent was in describing the child. Data were further gathered through observations of parent-child interactions and completion of an IQ assessment and behavioral tasks by the child. Results indicated that parenting quality was related to intellectual ability and executive functioning, cognitive abilities used in planning, problem solving, and other goal-directed behaviors of homeless children. Homeless children with higher quality parenting scored significantly higher on academic functioning than children with low quality parents, illustrating the importance of high-quality parenting for children facing the challenges of homelessness. “For these children, the demands on developing self-regulatory capacities are especially great in the face of residential instability and inconsistent access to essential resources such as adequate food and proper health care” (Herbers et al., 2011, p. 95).

Morris and Butt (2003) utilized qualitative research methods to analyze parents' perspectives on homelessness and the effects it had on their children's education. Morris and Butt (2003) found each family interviewed to have at least one child who was having difficulties in school. The parents tended to be aware of the difficulties, yet felt the current living situations had little to do with their child's problems in school. This reaction was consistent with an underlying theme of denial and abdication of responsibility found in the parents. "They perceived their child's difficulties at school as the result of poor teaching and did not attribute their child's academic performance to their homelessness or recent changes in lifestyle" (Morris & Butt, 2003, p. 48). Of the 60 school-age children involved in the study, over half had been in three or more schools during their school career, with 15% attending seven or more. Also, over a third of the students had been retained at least one year. While many of the children living in shelters did not attend school regularly, absenteeism was not perceived to be a concern to the parents. Despite these statistics, of all the families interviewed by Morris and Butt (2003), none perceived their homelessness to attribute to their child's problems at school.

### Mobility

Many of the academic troubles of homeless youth can be traced to higher mobility rates often experienced by this group (Rosenfeld, 2003).

Homeless families move frequently due to limits to length of shelter stays, search for safe and affordable housing or employment, or to escape abusive family members. Too often, homeless children have to change schools because shelters or other temporary accommodations are not located within their school district. Homeless children and

youth frequently transfer schools multiple times in a single year because of these conditions. (NCH, 2009)

Rafferty et al. (1989) found that 76% of school-aged children had changed schools at least once since becoming homeless, 33% had changed schools twice, and 11% had changed schools three or more times. Researchers found increased school moves to be strongly associated with the number of shelters or hotels in which the family had stayed. Of the children who had lived in only one shelter, 13% had transferred schools two or more times compared to 52% of the children who had lived in three or more facilities.

Buckner et al. (2001) found no significant differences in academic achievement between homeless and low-income housed children. However, both groups performed significantly lower than the non-poor students in the general population. After controlling for race, age, and gender, it was school mobility which associated significantly with academic achievement. Rafferty et al. (2004) found that homeless students attended about a third more schools than their low-income peers who had never been homeless. The increased mobility associated strongly with higher rates of retention.

Tanner-McBrien (2010) evaluated data of homeless, foster, and high-poverty students in a large urban district to evaluate the impact of school mobility on academic achievement. The researcher found that school moves had a strong negative correlation with academic achievement. Increased school moves were also associated to increased suspensions. After controlling for variables, 77% of the students who moved frequently were found to have either academic or behavioral difficulties at school.



While much of the research focused on children living in shelters, Hallett (2009) found similar results while qualitatively studying doubled-up youth. High rates of mobility led to disrupted formation of relationships with peers, educators and mentors as well as a discontinuity of educational services. While all the students did not move, the fear of moving was prevalent in all the children studied. Additionally, there were also high rates of mobility within the home. During the seven month period of the study, the number of people living in the residence of one of the children studied ranged from 5 to 13. “Each adjustment in households required renegotiating space and financial obligations. Whether or not movement occurred, uncertainty about residential stability was an aspect of the youth’s social environment” (Hallett, 2009, p. 199).

The effects of homelessness and high-mobility on children often are more than just academic. Children with frequent moves also may be at greater risk of adverse childhood experiences such as abuse, neglect, household dysfunction, domestic violence, mental health problems, substance abuse, or the presence of a criminal within the household (Dong, Anda & Felitti, 2006). An analysis of data on 9,915 six to 17-year-old children of families responding to the 1988 National Health Interview Survey showed a significantly negative impact of family relocation on children (Wood, Halfon, Scarlata, Newacheck, & Nessim, 1993). Researchers found 23% of children who moved frequently repeated a grade compared to just 12% of children who never moved or moved infrequently. Eighteen percent of children who moved frequently had four or more behavioral problems compared to 7% of children who never or infrequently moved. Regression analysis showed that students who moved frequently were 77% more likely to have four or more behavioral problems and 33% more likely to have repeated a grade.

A family move, regardless of its reason, disrupts the living environment of the child and can require important adjustments for the child and family. Children in families with fewer resources are probably more at risk for experiencing psychological or behavioral problems due to the stress of a move, especially when a move is compounded by other negative family events such as divorce, eviction from the home, or parental job loss (Wood et al., 1993, p. 1334).

Not all researchers have found a direct relationship between mobility and lower academic achievement. Strand and Demie (2006) analyzed data of 2,279 primary school students in England to determine the impact of school mobility on academic achievement. Initially, the researchers found a strong association between mobility and poor student performance on national tests in English, mathematics and science. However, this relationship was cut in half when other factors such as gender, disability status, English fluency, and socio-economic status were considered. The relationship then lost significance when prior levels of achievement were considered. “When the relative impact of mobility was considered alongside these variables the difference between the stable and mobile groups disappeared” (Strand & Demie, 2006, p. 563).

#### Attendance

School attendance also has been found to have a significant association with homelessness and mobility. According to the U. S. Department of Education (2002), approximately 87% of homeless students are enrolled in school, but only about 77% attend school regularly. Rafferty et al. (1989) found that the attendance rate of homeless elementary students was 15% lower than the general population, homeless junior high students was 22% lower, and homeless high school students was 33% lower. Every time a homeless student

changed schools, an average of five days was missed from school. Hyman, Aubry, and Klodawsky (2010) conducted a year-long study and followed 82 youths who had previously been homeless to identify predictors of participating in school. Only 28% of the participants reported participating in school at the end of the year. Male students had a significantly higher dropout rate than females. Female students were four times more likely to still be in school. Also significant was re-housing. The longer a student had found stable housing, the greater the likelihood of participating in school (Hyman et al., 2010).

#### At-risk Behavior

Research indicated that homeless and runaway youth have higher rates of substance abuse. Thompson (2005) analyzed data from the 1997 Runaway/Homeless Youth Management Information System and found that less than half attended school regularly, 20% had dropped out of school or been expelled, 78% had smoked cigarettes, 76% had drunk alcohol, and 99% had smoked marijuana. Additionally, 17% reported having sold drugs. A national study by Johnson (1995) for the Administration for Children and Families indicated runaway, throwaway, and homeless youth have a significantly high rate of at-risk behaviors. Surveys of youth in shelters, youth on the street, and youth in households revealed that sheltered youth and youth on the street had significantly higher rates of marijuana and cocaine use than housed youth. In some cases, the likelihood of drug use more than doubled once the youth left home. A strong association was also found between youth substance abuse and suicidal behavior. Sheltered youth using sedatives were six times more likely than those who did not to have attempted suicide (Johnson, 1995).

Votta and Manion (2004) had similar findings from their analysis of data from 100 male homeless youth accessing an emergency shelter. Homeless youth were more likely to report drug, alcohol, and tobacco use than non-homeless youth. Homeless youth also had higher rates of legal problems, academic difficulties, mental health problems, depression, suicidal ideation, past suicidal attempts, and internalization and externalization behavior problems.

The Massachusetts Department of Education (2007) found that at-risk behaviors of high school students identified as homeless were alarmingly significant. Among their findings were:

- 48% of homeless students started drinking before the age of 13, compared to 21% for non-homeless students
- 23% of homeless students had used marijuana at school with the past month, compared to 4% of non-homeless students
- 15% of homeless students had used heroin, compared to 2% of non-homeless students
- 28% of homeless students had been involved in a fight within the past year, compared to 10% of non-homeless students
- 27% of homeless students had planned a suicide within the past year, compared to 11% of non-homeless students

Shillington, Bousman and Clapp (2011) surveyed 96 homeless youth at two youth drop-in centers in Southern California, one which served at-risk youth in general and another which targeted serving at-risk lesbian, gay, bisexual, and questioning (LGBQ) youth. There were 48 homeless youth from each center sampled for the study. Over half the youth had been kicked out of their home and more than a fourth had run away from home. Less than half of all the students

attended school, with 72.9% of the homeless students at the general drop-in center reporting still being in school, yet only 18.8% of the homeless youth at the LGBTQ drop-in were still in school. Rates of sexual activity, alcohol and drug use were very high among all homeless youth. More than 85% reported lifetime vaginal sex. Over 90% had reported lifetime alcohol use and 80.6% of recent drinkers reported binge drinking. Lifetime marijuana use was reported by 80% of respondents and almost half had used methamphetamine.

Hayes-Whigham (2006) found that school personnel often did not feel properly trained to handle the behavioral needs of homeless students. “The respondents really emphasized that homeless children display a great deal of insecurity that they are not equipped to handle” (Hayes-Whigham, 2006, p. 110). Powers-Costello and Swick (2011) provided the following recommendations to empower teachers and other school personnel to better meet the unique needs of homeless students:

- Creating school environments which are sensitive to the needs of homeless students through effective training.
- Promoting increased awareness within the school community of the needs of homeless students.
- Educating teachers about the lives of homeless students.
- Providing teachers with the necessary resources and support to meet the needs of homeless students.
- Engaging teachers in meaningful relationships with homeless students and families.

- Encouraging and supporting teacher involvement in mentoring and tutoring homeless students.
- Involving teachers in community efforts assisting the homeless.
- Supporting teacher collaboration with shelters and other community groups which assist the homeless.
- Providing continued training for teachers on skills to support homeless students.
- Encouraging a school-wide focus on the positive ways everyone can assist meeting the needs of the homeless (Powers-Costello & Swick, 2011).

#### Abuse

Research indicated homeless youth may experience higher rates of physical and sexual abuse than their non-homeless peers. In their survey of 64 homeless youth in Salt Lake City, Utah, Keeshin and Campbell (2011) utilized a modified version of the Adverse Childhood Experiences questionnaire and interviews to screen participants regarding possible past abuse. The researchers found that 84% of the participants screened positive for having experienced either physical or sexual abuse prior to turning 18. Thirty-one percent reported a history of physical abuse, 11% reported a history of sexual abuse, and 42% screened positive for both physical and sexual abuse. Females were more likely to report a history of abuse than males. Of the students who had been abused, 72% reported they were still affected by the abuse and 62% of these participants were interested in treatment. “From a clinical perspective, awareness by providers that homeless youth continue to be impacted by their abuse and are often interested in community based treatment option may prompt more screening and case finding for abuse histories” (Keeshin & Campbell, 2011, p. 406).

Tyler and Beal (2010) surveyed 127 homeless young adults who were on their own and found that being homeless increased the likelihood of being the victim of physical or sexual abuse. Of the sample, 94% reported experiencing some type of physical victimization during their period of homelessness and 32% had been sexually victimized. Researchers found that panhandling often led to physical and sexual victimization. “It is likely that engaging in survival strategies such as panhandling exposes these youth to a wide variety of people. If homeless youth panhandle on a regular basis, they are easily visible and accessible to potential offenders, thereby increasing their chances of being a victim of sexual assault” (Tyler & Beal, 2010, p. 111).

#### Access to Educational Services

Finally, a denial of access to education has been shown to be a challenge faced by homeless youth. Rafferty et al. (1989) cited five major barriers confronting homeless children’s attempts to access educational services. These barriers were (a) residency requirements, (b) inability to obtain school records, (c) special education requirements, (d) guardianship requirements, and (e) lack of transportation. Zima, Bussing, Forness, and Benjamin (1997) found homeless students were less likely to receive special education services despite higher rates of need. “Compared with children in the general population, sheltered homeless children in our study were four times more likely to test positive for a behavioral disorder, three times more likely to have signs of a learning disability, and eight times more likely to screen positive for mental retardation” (Zima et al., 1997, p. 239). In their study, less than a third of the students with probable behavioral disorders, 17% of those with signs of a learning disability, 36% of

those in the lower range of mental functioning, and 23% of those with indicators of a behavior or learning problem received a special education evaluation or placement.

According to the National Center for Homeless Education (NCHE) (2010), access to extra-curricular activities can also be a challenge for homeless students. Activities such as band, theater and athletics provide opportunities for students to engage with their school. “They can provide students with a sense of belonging, stability, pride, and responsibility and strengthen a student’s applications for higher education admission and scholarships” (National Center for Homeless Education, 2010, p. 1). The NCHE offered seven strategies which districts could utilize to help ensure homeless students have equal access to extra-curricular activities. School districts can

- build an awareness in the district about homelessness;
- educate the school community regarding the definition of homelessness under the McKinney-Vento Act;
- advocate for policies, both local and state, which expedite participation of homeless students in extra-curricular activities;
- develop resources and ways to assist homeless students with costs associated with participation in extra-curricular activities;
- develop strategies to deal with limited access to documents such as birth certificates
- work with local health care providers so homeless students may obtain necessary health insurance and examination; and
- contact local and state homeless liaisons for assistance (NCHE, 2010).



Use of these strategies can help school districts “ensure that they are complying with federal law and are affording valuable opportunities to students especially in need of the stability and sense of belonging that full participation in school can provide” (NCHE, 2010, p. 3).

In their analysis of information about school enrollment and attendance of 607 school-age children in the San Francisco area, Shaver and Dornbusch (1993) found 42 % of the parents reported increased difficulty in getting their children to school since becoming homeless. When students did miss school, 29% of the parents reported transportation difficulties as the reason. Enrollment in school for homeless youth was significantly related to increased housing moves. Adams (2008) analyzed barriers faced by homeless students and found the most significant to be transportation, lack of school records, and concerns over meeting residency requirements. They are just the type of barriers which the McKinney-Vento Act was designed to address.

#### The McKinney-Vento Act

The McKinney-Vento EHCY program was created in 1987 by congress as part of the Stewart B. McKinney Homeless Assistance Act as a response to reports that only 57% of homeless students were enrolled in school (NCH, 2009). It was reauthorized in 1994 as part of the Improve America’s Schools Act (IASA). This reauthorization allowed greater flexibility for districts to use funding for training and educational programs such as tutoring to assist homeless children (John, Salomon, Elliott, Tallarita, & Reed, 2004). It again was reauthorized in 2002 by No Child Left Behind and required all school districts to appoint a local homeless liaison. In Section 721, it stated the policy of Congress as:

(1) Each State educational agency shall ensure that each child of a homeless individual and each homeless youth has equal access to the same free, appropriate public education, including a public preschool education, as provided to other children and youths.

(2) In any State that has a compulsory residency requirement as a component of the State's compulsory school attendance laws or other laws, regulations, practices, or policies that may act as a barrier to the enrollment, attendance, or success in school of homeless children and youths, the State will review and undertake steps to revise such laws, regulations, practices, or policies to ensure that homeless children and youths are afforded the same free, appropriate public education as provided to other children and youths.

(3) Homelessness alone is not sufficient reason to separate students from the mainstream school environment.

(4) Homeless children and youths should have access to the education and other services that such children and youths need to ensure that such children and youths have an opportunity to meet the same challenging State student academic achievement standards to which all students are held. (McKinney-Vento Homeless Assistance Act of 1987)

To limit the negative effects of residential instability, the McKinney-Vento EHCY has three primary aims: identification of homeless children, removal of barriers to school enrollment and attendance, and the provision of services to support success in school (Cunningham et al., 2010).

McKinney-Vento defines homeless students as those:

- Living in emergency or transitional shelters

- Sharing housing of others due to loss of housing or economic hardship
- Living in cars, parks, campgrounds, public spaces, abandoned buildings or similar settings
- Living in hotels or motels due to economic hardship
- Awaiting foster care

By clarifying the definition of homeless youth, schools can better identify students eligible for services. Services available for homeless students can include expedited enrollment in school, free lunch, school supplies, tutoring services, and transportation to the student's school of origin.

#### Barriers to Identification

Difficulty in properly identifying homeless students, combined with a high mobility rate, has limited their ability to receive needed services. A lack of a uniform method of identification by schools often hinders proper identification of homeless students (Rosenfeld, 2003).

According to a study of the implementation of McKinney-Vento in the Dallas Independent School District (DISD), most homeless youth were identified by parents, shelter workers, or personnel in homeless programs (Hayes-Whigham, 2006). Despite efforts by DISD personnel, several homeless students who met the requirements under McKinney-Vento went unidentified. One reason found was that parents may try to avoid the stigma attached with homelessness. Also, parents unfamiliar with the law may not realize they are considered homeless under McKinney-Vento. They simply viewed staying with friends or relatives as a temporary fix to their housing needs. Finally, parents also viewed their housing status as a personal matter and were unwilling to share it with the schools (Hayes-Whigham, 2006).

In addition to a lack of awareness by parents regarding qualifications for homeless, they are often unaware of the services such qualifications allow. Transportation to school of origin is one of those services. In their study of homeless youth in New York City, Rafferty et al. (1989) found that 33% of the parents who should have been given the choice of keeping their child in their school or origin were not given the choice. Of those parents who were given the option, 42% opted for their child to be transported to their school of origin. Other times, homeless parents choose to enroll their children in whichever school zone they are currently staying in (Egan, 2002).

Hayes-Whigham (2006) also found that the number of homeless youth in a school impacted the principal's awareness of the qualification requirements of homelessness under McKinney-Vento and identification procedures in the school. For instance, principals with higher rates of homelessness were more likely to use investigative questioning to determine homelessness status and eligibility when students attempted to register without documentation such as a birth certificate or proof of residency. Principals with lower rates of homeless students in their school were less able to cite methods of homeless identification. Hayes-Whigham (2006) identified the need for greater communication to principals across the district of identification procedures of homeless youth.

In light of the fact that the identification of homeless children is one method to eliminate the barrier of non-school attendance or enrollment, one might assume that information given to principals concerning the identification process of homeless children and youth needs to be consistent among the district at all levels – elementary, middle, and high schools. (Hayes-Whigham, 2006, p. 106)

Finally, identification in rural and suburban areas has proven difficult, as they usually have fewer shelters and services which can assist schools in the identification of homeless students (Cunningham et al., 2010).

Without mechanisms to identify and enroll homeless youths in doubled-up situations, or homeless youths in unaccompanied situations that do not utilize shelters, or homeless youths in rural areas where there are no shelters, districts remain convinced that they have identified and enrolled all the homeless school-age youths in their districts.

(Rosenfeld, 2003)

The Massachusetts Department of Education (2007) estimated that for every one student identified by schools as being homeless, there were approximately six or seven homeless students who had not been identified. Rosenfeld (2003) found that local education agencies tended to positively self-assess their identification and enrollment of homeless youths despite the fact that, in the sample, the reported number of homeless students was approximately 25% of the estimated number of homeless youth by the Department of Education. While many districts struggle with identifying homeless students, some consider the rise in the number of homeless students to be partially attributable to improved identification efforts. In a 2010 survey conducted by the NAEHCY, a third of the respondents felt that improved identification efforts were a factor for increased enrollment of students experiencing homelessness since 2007-2008.

Hayes-Whigham (2006) recommended the establishment of a Homeless Advisory Committee (HAC) for each homeless student. Similar to students identified as Limited English Speakers or qualifying for special education services, students identified as being homeless would be assigned to a HAC which would ensure needed services were in place and monitor the

student's progress. With such a program in place, homeless student data would more easily be tracked and transportable via electronic database to the next school (Hayes-Whigham, 2006).

While identification of homeless students is vital for providing necessary services, the NCHE (2007) warned that schools and liaisons should not overstep their bounds and potentially violate a family's privacy rights or rights under the McKinney-Vento Act. Such actions may include contacting landlords or housing agencies regarding a family's residency, conducting invasive surveillance of students or families, using police officers to conduct home visits, requiring documents such as utility bills, forcing caregivers to obtain legal custody to enroll a student, and requiring families be in shelters or on the streets as a prerequisite for services under McKinney-Vento. "In sum, a school district's attempts to verify a student's eligibility for McKinney-Vento services must be governed by respect, sensitivity, and reasonable limits. When in doubt, the district must always enroll the student immediately and should seek support from the local liaison or State Coordinator for Homeless Education" (NCHE, 2007, p.4).

### Liaisons

McKinney-Vento provided that each state have a state coordinator and each district have a staff person serve as a local homeless liaison. Responsibilities of state homeless education coordinators include: (a) developing a state homeless education plan, (b) working with local districts on law mandate implementation, (c) communicating with local and state officials regarding McKinney-Vento, (d) providing training, (e) coordinating homeless education with other state agencies, and (f) managing EHCY funds and sub-grants to local school districts (John et al., 2004). Local district liaisons work closely with schools and local agencies, such as homeless service providers, to ensure proper identification of homeless students, distribution of

funding received from the state, providing training, and resolving issues that may arise between homeless families and schools regarding enrollment, transportation, or receiving other services as allowed under McKinney-Vento (Tierney et al, 2008). However, district liaisons are often part-time or have other responsibilities, limiting the amount of time available for identifying homeless students (Cunningham et al., 2010). Rosenfeld (2003) found working with district liaisons to be a struggle. In her research on the implementation of the McKinney-Vento Act in New Jersey, only 20 of the 115 (17%) liaisons responded to her survey, suggesting the non-existence of a homeless liaison or liaisons that are overworked, under-trained, or not in a full-time position. Furthermore, of the liaisons that did respond, the average length of time the district employed a homeless liaison was seven years, a short period of time considering the McKinney-Vento Act had passed 16 years prior to the study. Results of the research also indicated that little time was spent by the liaisons on what the researcher considered the most important functions of the position: conducting workshops, identifying and estimating the number of homeless youth, visiting local homeless shelters, resolving disputes, communicating with federal and state agencies, and increasing awareness and collaborating with outside organizations (Rosenfeld, 2003).

### Funding

When passed in 1987, the McKinney Homeless Act authorized annual appropriations up to \$50 million in EHCY grants for states and local school districts. However, it was not until 2002 that the \$50 million funding level was actually reached. According to U.S. Department of Education statistics, total federal allocation for EHCY for fiscal year 2011 was \$65 million.

“While the McKinney-Vento Homeless Assistance Act is comprehensive in scope and far

reaching in promise, the actual funding allocated to states has fallen far short of what is needed for homeless education” (John et al., 2004). Utilizing the 2003 federal allocation of \$55 million, John et al. (2004) estimated McKinney-Vento appropriations provided approximately \$20 to \$30 per homeless child or youth.

Rosenfeld (2003) found lack of access to McKinney fund sub-grants by districts to be a significant barrier to successful implementation of the McKinney-Vento Act. Of the 47 high poverty school districts analyzed in the study, only two had applied for McKinney funding. Respondents reported the complex requirements of the application process to be a major obstacle with the difficulty of obtaining the necessary data to prove eligibility to be of primary concern. Funding was based on the number of homeless students enrolled. However, without adequate funding to support identification efforts, the amount awarded would be minimal at best or denied. Furthermore, while districts were allowed to utilize Title I funds to support homeless programs, none of the researched districts reported doing so (Rosenfeld, 2003).

Lack of sufficient funding also has been cited by the NCH and the NAEHCY as a significant barrier to effective implementation of the McKinney-Vento Act. According to the NCH (2009), “One of the greatest obstacles is the scarcity of resources available to implement the McKinney Act. Appropriations for the EHCY program have not kept up with inflation or demand for services” (p. 3). Recognizing the impact of the economic crisis on homeless youth, Congress provided \$70 million through the American Recovery and Reinvestment Act (ARRA) for the McKinney-Vento Act’s EHCY program, more than doubling the EHCY program’s appropriations. According to the NAEHCY, while this additional funding more than doubled the number of school districts receiving assistance through the EHCY program, less than one in five



school districts nationally received any support for homeless youth through either ARRA or McKinney-Vento funding.

### Impact on Achievement

Research of the effectiveness of the McKinney-Vento Act has primarily focused on the ability of districts to follow the law, rather than the effectiveness of the law to improve the academic achievement of homeless students. Stronge (1997) wrote of the need for evidence of which intervention efforts work since the implementation of the McKinney-Vento Act.

Almost ten years into the enactment of the McKinney Act, answers to questions of effectiveness must be addressed in a systematic and comprehensive fashion. And, most importantly, the most fundamental of questions begs attention: Are homeless students succeeding in school and breaking the grip of homelessness? (Stronge, 1997, p. 26)

Hendricks (2010) studied the effect of McKinney-Vento programs in North Carolina on the academic achievement of sixth grade students in reading and math. While homeless students scored significantly lower than housed students in both reading and math, no significant differences were found between sixth grade students in districts receiving McKinney-Vento funding and those not receiving funding.

An analysis of successful McKinney-Vento programs in San Diego found the engagement of homeless students in enrichment activities during summer school as well as the provision of socio-emotional support along with academic support had a significantly positive impact on achievement (Einspar, 2010). Also, schools which highlighted positive family involvement and effectively engaged parents in workshops had a positive impact on the achievement of homeless students.

The success of any program relies heavily on the leadership within the school. MacGillivray, Ardell and Curwen (2010) interviewed the principal of an elementary school in which the majority of students were homeless. Despite being given leniency by the district on test scores due to the challenging population, the principal developed a plan to meet the needs of the homeless students. Elements of the plan included (a) intake meetings with every new family, (b) immediately administering academic assessments for each new student, (c) developing relationships with community resources, and (d) maintaining high expectations for all students regardless of their homeless status. Test scores rose and the school received recognition of excellence from the state. “The key in these situations was to address social issues such as homelessness within the context of the regular curriculum, to be prepared with knowledge of community resources, and to be well-informed of families’ fundamental rights should children identify themselves as homeless” (MacGillivray, Ardell, & Curwen, 2010, p. 388).

### Transportation

Despite the availability of transportation to school of origin under McKinney-Vento, transportation to and from school remains a significant barrier to homeless children enrolling and remaining in school (U.S. Department of Education, 2002). Limited funding of McKinney-Vento has meant transportation costs getting passed down to local school districts, most of which are struggling with their own budget shortfalls. “Without adequate funding assistance for transportation, a homeless child’s right to remain in his or her school of origin may be an empty promise” (John et al., 2004). Despite the financial and logistical challenges, the U.S. Department of Education (2002) illustrated how some states and districts were able to meet the transportation needs of homeless students, including:

- Between 1994 and 1998, 10 states created laws, enforced laws, or relaxed laws, or provided additional funding to make transportation less of a barrier.
- Chicago spent \$2.1 million to bus homeless students.
- In Fort Wayne, Indiana, homeless students were picked up first and dropped off last to reduce the stigma of homelessness.

Carlson, Reder, Jones, and Lee (2006) conducted a study for the Washington State Department of Transportation on the cost and effectiveness of transporting homeless students to their school of origin. Researchers found school districts utilized a variety of transportation methods to transport homeless students, including: school busses, public transport, vans, taxis, private vehicles, fuel vouchers, mileage reimbursement, and transportation brokerage systems. School busses accounted for 38% of the trips. Costs were equally varied, ranging from a low of \$0.14 per one-way trip to a high of \$50.00 per one-way trip. Public bus service was the least expensive, but was mostly limited to older students in certain areas. Costs of school bus trips ranged from \$4.50 to \$50.00 per one-way trip, compared to an average cost of about \$0.67 for the general student population. Staying in one's school of origin was positively associated with performance on the Washington Assessment of Student Learning (WASL). Homeless students who stayed in their school of origin achieved better WASL scores and better grades in high school than homeless students who left their school of origin (Carlson et al., 2006).

Bowman and Barksdale (2004) interviewed local homeless liaisons and pupil transportation directors from eight school districts as part of a study for the National Center for Homeless Education to provide ideas for districts struggling to implement mandated transportation for homeless students to their school of origin. Researchers found inadequate

funding to be a significant barrier to providing transportation. LEAs who participated in interviews indicated that district funds were relied upon primarily to support the transportation of homeless children to their school of origin. Intra-district logistics and coordination was another challenge. Varying needs of the families, mobility, school bus availability, schedules, and geographical distances made arranging transportation of homeless students to be logistically complex. Inter-district coordination also was cited as a challenge faced by LEAs needing to arrange transportation to and from other districts. Bowman and Barksdale (2004) provided the following recommendations to school districts for providing transportation for homeless children to attend their school of origin: (a) establish strong networks of community support, (b) develop a strong partnership between the homeless education program and the department of pupil transportation, (c) establish inter-district collaboration, (d) establish formal procedures for equity, transparency, and consistency, (e) establish policies to support federal legislation, (f) establish a database and system for data collection, (g) seek economical and creative solutions, (h) keep in mind the safety of the child or youth, and (i) inform policymakers of the need for school stability for highly mobile children.

Making the decision of whether to transport a student to the school of origin may not always be easy, as there are many factors to consider such as programs available at a school, connections to the school of origin, and distances to be traveled. According to language used in the McKinney-Vento law, the LEA shall, “to the extent feasible”, keep the homeless child in the school of origin for the duration of homelessness and that the final decision should be based on what is in the child’s best interest. The NCHE (2006) provided the following nine key questions

which local liaisons, school staff and parents should consider when trying to determine school placement that is in the best interest of homeless students:

1. How permanent does the family's living arrangement appear to be?
2. How deep are the child's ties to his or her current school?
3. How anxious is the child about his or her family's upcoming or recent move?
4. How strong is the child academically?
5. To what extent are the programs and activities at the potential new school comparable to or better than those at the current school?
6. Does one school have programs and activities that address the unique needs or interests of the student that the other school does not have?
7. Would the timing of the school transfer coincide with a logical juncture such as after testing, after an event that is significant to the child, or at the end of the school year?
8. How would the length of the commute to the school of origin impact the child?
9. Are there any safety issues to consider? (NCHE, 2006, p. 3)

Decisions should be informed and made on a case-by-case basis with the school and district providing accurate and detailed information to parents about school programs and potential impact to school stability and educational continuity (NCHE, 2006).

There have been cases which have gone to court involving parents suing districts to provide transportation to school of origin. Courts have supported the need for districts to provide transportation, provided homelessness is proven as defined by McKinney-Vento. Given the rather broad definition, this has often been the case.

*Lampkin v. District of Columbia* (1994) concluded that McKinney-Vento provided enforceable rights and beneficiaries of those rights may invoke section 1983 of the Civil Rights Act of 1871 to enforce those rights. In *N. J. v. New York* (2011), N. J. and A. J. had been provided transportation from a neighboring district for half a year after a fire caused them to become homeless. They found temporary housing in a neighboring district. At the start of the next school year, the original district removed N. J. and A. J. from its rolls, reasoning that N. J. and A. J. were no longer homeless. The U.S. District Court for the Eastern District of New York found in favor of the plaintiffs, ordering the district to reenroll N. J. and A. J. and arrange transportation to their respective schools. Similar findings were found in *L.R. v. Steelton-Highspire School District* (2010). L. R. and L. R.'s grandmother were rendered homeless following a fire and were forced to find temporary housing in a neighboring district. From January 2009 to June 2009, the district recognized L. R. to be homeless and provided transportation to L. R.'s school of origin. The following school year, the district took L. R. off its rolls, stating L. R. no longer qualified as homeless. The District Court found in favor of the plaintiff and ordered the school district to immediately re-enroll L. R.

### Summary

Research showed homelessness has a negative effect on student academic achievement and a relationship exists between homeless youth, school mobility and attendance, access to educational services and at-risk behaviors. Figure 2 illustrates the potential impact of homelessness on students.

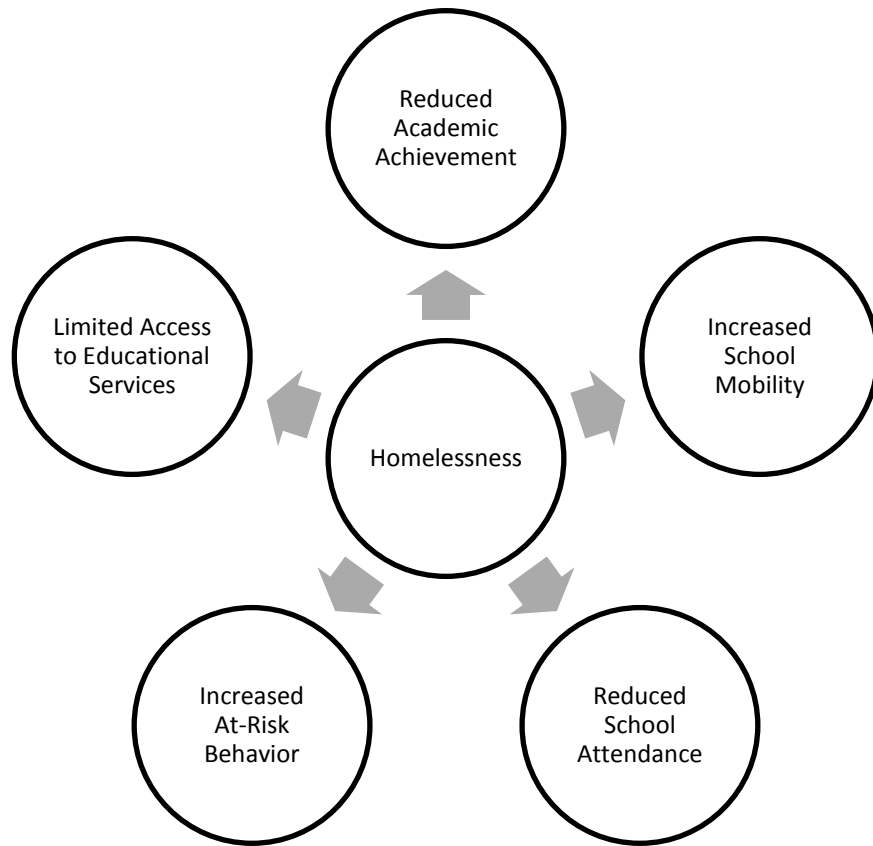


Figure 2: The Effect of Homelessness on Students

In an effort to mitigate these effects of homelessness on students, Congress passed the McKinney-Vento Act. The primary aims of the McKinney-Vento Act are the identification of homeless students, removal of barriers to school enrollment and attendance, and the provision of services to support success in school (Cunningham et al., 2010). Implementation of the Act has been slow and inconsistent, largely due to inadequate funding. Yet, as the number of homeless youth continues to increase, effective implementation of the McKinney-Vento Act is more important than ever.

Homelessness is no longer just a problem of urban street people and welfare recipients that America can try to put out of sight and out of mind. Rather, it is a problem for a significant and growing number of our children and youths, America's next generation, and one that we cannot afford to leave unsolved (John et al., 2004, p. 318).



## CHAPTER THREE: METHODOLOGY

The purpose of this study was to determine whether homelessness had an impact on reading and mathematics achievement of fourth through eighth grade students in Brevard County Public Schools. Furthermore, it sought to determine whether the ability of homeless students to remain in or receive transportation to their school of origin following becoming homeless had an impact on reading and mathematics achievement of fourth through eighth grade students in Brevard County Public Schools. This was determined for reading and mathematics using results from the 2011 Florida Comprehensive Assessment Test (FCAT). The desired outcome was to generate information regarding the impact of homelessness and the utilization of transportation services, as made available through the McKinney-Vento Act to the school of origin, so that school officials at the school and district level would be able to make sound decisions in the best interest of homeless students within Brevard County.

### Research Questions and Hypotheses

This study attempted to answer the question “To what extent does homelessness affect the reading and math achievement of students and does remaining in their school of origin make a difference in their academic achievement?” The study was guided by the following research questions:

1. To what extent, if any, is there a statistically significant difference in the reading achievement of fourth through eighth grade homeless students in Brevard County, as measured by developmental scale scores on FCAT Reading, and fourth through eighth grade non-homeless students in Brevard County who qualify for the free lunch program?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Reading between homeless students and non-homeless students in Brevard County who qualify for the free lunch program.

2. Does the proportion of fourth through eighth grade students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Reading vary depending on whether or not they are homeless?

H<sub>0</sub>: There is no statistically significant variance in the proportion of fourth through eighth grade homeless and non-homeless students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Reading.

3. To what extent, if any, is there a statistically significant difference in the mathematics achievement of fourth through eighth grade homeless students in Brevard County, as measured by developmental scale scores on FCAT Mathematics, and fourth through eighth grade non-homeless students in Brevard County who qualify for the free lunch program?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Mathematics between homeless students and non-homeless students in Brevard County who qualify for the free lunch program.

4. Does the proportion of fourth through eighth grade students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Mathematics vary depending on whether or not they are homeless?

H<sub>0</sub>: There is no statistically significant variance in the proportion of fourth through eighth grade homeless and non-homeless students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Mathematics.

5. To what extent, if any, is there a statistically significant difference in the reading achievement of fourth through eighth grade homeless students in Brevard County who have remained in their school of origin, as measured by developmental scale scores on FCAT Reading, and fourth through eighth grade homeless students in Brevard County who have not remained in their school of origin?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Reading between homeless students who have remained in their school of origin and homeless students who have not remained in their school of origin in Brevard County.

6. Does the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain on FCAT Reading vary depending on whether or not they stay in their school of origin?

H<sub>0</sub>: There is no statistically significant variance in the proportion of fourth through eighth grade homeless students in Brevard County who stay in their school of origin making a learning gain on FCAT Reading and fourth through eighth grade homeless students in Brevard County who do not stay in their school of origin making a learning gain on FCAT Reading.

7. To what extent, if any, is there a statistically significant difference in the mathematics achievement of fourth through eighth grade homeless students in Brevard County who have remained in their school of origin, as measured by developmental scale scores on FCAT Mathematics, and fourth through eighth grade homeless students in Brevard County who have not remained in their school of origin?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Mathematics between homeless students who have remained in their school of origin and homeless students who have not remained in their school of origin in Brevard County.

8. Does the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain on FCAT Mathematics vary depending on whether or not they stay in their school of origin?

H<sub>0</sub>: There is no statistically significant variance in the proportion of fourth through eighth grade homeless students in Brevard County who stay in their school of origin making a learning gain on FCAT Mathematics and fourth through eighth grade homeless students in Brevard County who do not stay in their school of origin making a learning gain on FCAT Mathematics.

### Research Design

For this study, a quantitative, non-experimental, ex-post facto design was utilized to determine the impact of homelessness and remaining in school of origin on academic achievement. It was a quantitative study based on

- the purpose being to study relationships;
- the design being developed prior to the study;
- the approach being deductive, rather than inductive in nature; and

- the statistical analysis of numeric data (Ary, Jacobs, & Sorenson, 2010).

It was non-experimental, as variables were pre-identified and not manipulated. The research was ex-post facto in that events had already occurred and, again, the independent variable was not manipulated. Dependent variables for this study were 2011 FCAT Reading developmental scale scores, whether or not a student made a learning gain on the reading portion of the 2011 FCAT, 2011 FCAT Mathematics developmental scale scores, and whether or not a student made a learning gain on the math portion of the 2011 FCAT. Independent variables were homelessness and whether or not a homeless student remained in his/her school of origin. Figure 3 illustrates the research conducted in this study.

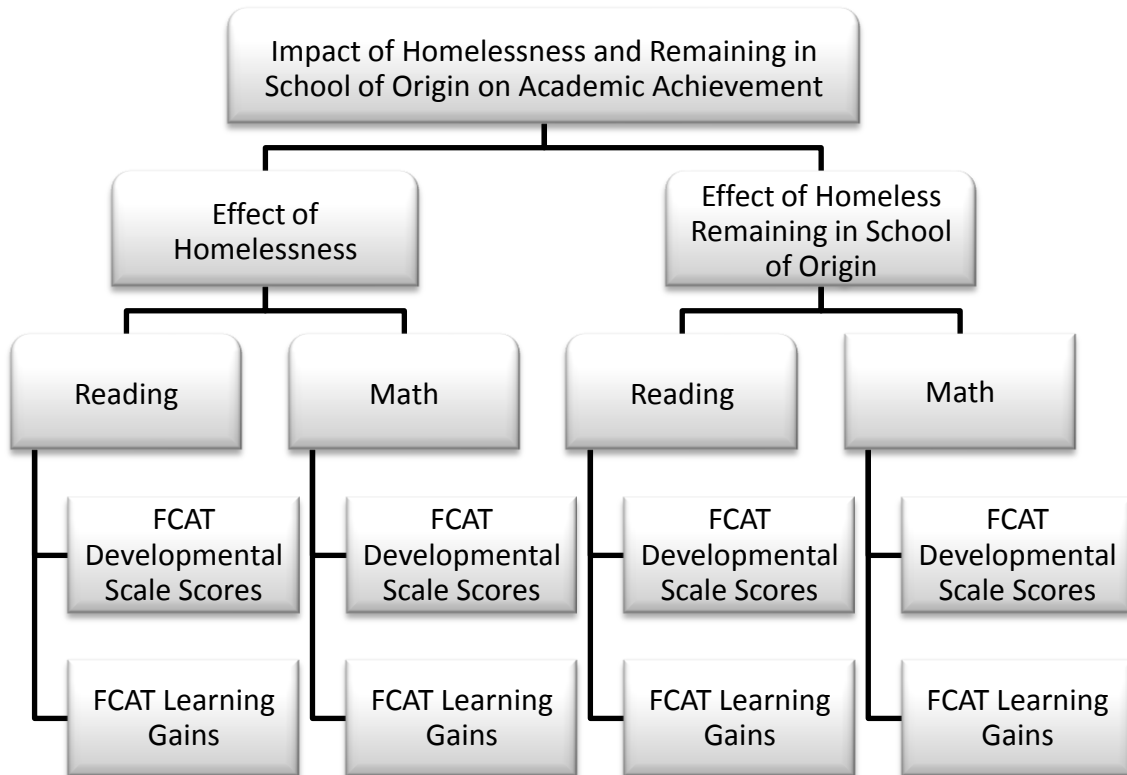


Figure 3: Graphic Layout of Research Conducted

## Population

The population included fourth through eighth grade students who were enrolled in a Brevard County public school and coded as homeless as of February 7, 2011. These students met one of the following criteria for qualifying as homeless in Brevard County. If, due to loss of housing, they were living: (a) in a shelter, motel, vehicle, or campground; (b) on the street; (c) in abandoned buildings; (d) doubled-up with relatives or friends; or (e) awaiting foster care. Students meeting these criteria enrolled in any Brevard County charter school were also included in the population.

The total population was identified through the district office of Brevard County, Florida and totaled 375 students. The population was limited to fourth through eighth grade students due to availability of dependent variable data. The state of Florida does not start administering FCAT until third grade. Therefore, fourth grade would be the first year that a learning gain would be available. In 2011, eighth grade was the highest grade for which FCAT mathematics data were available. To be included in this study, it was necessary for subjects to have also taken the FCAT in 2010 so learning gains could be measured. Of the 375 homeless students, 244 had the necessary data available to be included in this study.

For the purpose of comparison on research questions 1 through 4, academic achievement data of homeless students were compared to academic achievement data of fourth through eighth grade non-homeless students who qualified for the free lunch program. The comparison group was limited to students who qualified for free lunch in an effort to minimize the impact of socioeconomic status on results. There were 9,105 students in the comparison group population.

For research questions 5-8, the population of 244 fourth through eighth grade homeless students was divided into two groups, those who remained in their school of origin and those who changed schools. For the purpose of this study, it was determined if a student did not change schools from the end of the 2009-2010 school year to the start of 2011 FCAT testing on April 11, 2011, the student was considered to have remained in the school of origin. If a student had changed schools any time during that period, they were considered to have not remained in the school of origin. All seventh grade students were eliminated from the population for research questions 5-8, as they all would have experienced a change in schools transitioning from elementary to middle school. Furthermore, school enrollment data was not available for 43 other students. This left 158 homeless students remaining in the population for research questions 5-8, 89 (56.3%) who remained in their school of origin and 69 (43.7%) who did not remain in their school of origin.

### Sample

From the population of 244 homeless students in grades fourth through eighth meeting the criteria for the study, a stratified random sample of 200 was included for data analysis for research questions 1-4, 40 students from each grade. A proactive stratified sample of equal size was selected from the population of students who qualified for free lunch in Brevard County for comparison on the dependent variables. It was necessary to have an equal number of students in each grade in the comparison group as were in the homeless group due to the use of developmental scale scores. The range for developmental scale scores increase for each grade, allowing the state to measure growth. This proactive stratified sample was selected to attempt to

reduce potential threat to internal validity based on differences by grade of developmental scale score ranges and of socioeconomic status between the groups being compared.

For research questions 5-8, it was necessary to obtain an equal number of students in each grade level for both groups, homeless students who remained in their school of origin and homeless students who changed schools. This was done based on whichever group had the least number of students at each grade level. An equal number of students was then randomly selected from the other group. This resulted in each group having 22 fourth grade students, 17 fifth grade students, 18 sixth grade students, and 10 eighth grade students, for a total of 67 students in the sample for each group.

#### Data Analysis

A request for access to population and sample data was submitted to the Office of Testing and Accountability Department of Brevard County Public Schools. For students in the population and samples, 2010 and 2011 FCAT Reading and Mathematics developmental scale scores and whether or not a learning gain was made in reading and mathematics from 2010 to 2011 were obtained. Also, demographic information regarding the students' gender, race, disability status, ELL status, free/reduced lunch status and their homeless status was obtained.

The dependent variable for research questions 1 and 5 was developmental scale score on 2011 FCAT Reading, and for research questions 3 and 7 the dependent variable was developmental scale score on 2011 FCAT Mathematics. The independent variable for research questions 1 and 3 is homeless status, and the independent variable for research questions 5 and 7 is whether a student stayed in his/her school of origin. To answer research questions 1, 3, 5, and 7, differences between the means of reading and mathematics developmental scale scores were

tested using two-tailed independent *t*-tests. The independent *t*-test produces the test statistic *t* which results from dividing the difference between two means by the standard error of the difference between the two means. The standard error is “the standard deviation of the sampling distribution of the difference between two means” (Lomax, 2007, p. 122). Significance levels of difference were set at .05. Assumptions of the test are that the scores for the dependent variable are normally distributed, have equal population variances, and are independent (Lomax, 2007). Tests for normality included an analysis of skewness, kurtosis, Q-Q plots, boxplots, and the Shapiro-Wilk test of normality. SPSS was used to run all independent *t*-tests. Effect size was calculated utilizing eta square to determine if the findings had practical significance as well.

Research questions 2, 4, 6, and 8 involved relationships of the dependent variable, percentage of students demonstrating learning gains. According to the Florida Department of Education (2011), a learning gain can be demonstrated in one of three ways. They are

- Improve achievement levels from 1-2, 2-3, 3-4, or 4-5; or
- Maintain within the relatively higher levels of 3, 4, or 5; or
- Demonstrate more than one year’s growth within achievement levels 1 or 2.

The final method of demonstrating a learning gain is not applicable to students who had been retained the previous year and requires students to improve their developmental scale score a certain number of points based on their tested grade level.

Research questions 2 and 4 looked at the relationship between the dependent variable and the independent variable of homelessness. Specifically, was there a significant difference in the proportion of homeless students making learning gains compared to the proportion of non-



homeless students making learning gains? Research questions 6 and 8 looked at the relationship between the dependent variable and the independent variable of staying in one's school of origin. Was there a significant difference in the proportion of homeless students making learning gains who stayed in their school of origin compared to the proportion of homeless students making learning gains who changed schools?

The extent of these relationships was tested using the chi-square test of association. The chi-square test of association is effective to determine whether there is an association between two or more categorical variables when expected proportions are not known prior to testing (Lomax, 2007). SPSS was used to run all chi-square tests of association. The significance level for each chi-square test was .05. Effect size was calculated utilizing Cramer's V to determine practical significance as well.

### Summary

Chapter three presented the research questions, hypotheses, research design, population, sample, and data analysis used in finding whether homelessness and remaining in school of origin impacts student achievement. A summary of the dependent variable, independent variable, and method of data analysis for each research question can be seen in Table 1.

Table 1: Summary of Variables and Statistical Analysis by Research Question

| <b>Research Question</b>   | <b>Dependent Variable</b>  | <b>Independent Variable</b>  | <b>Statistical Analysis</b>    |
|--|--|--|--------------------------------|
| To what extent, if any, is there a statistically significant difference in the reading achievement of fourth through eighth grade homeless students in Brevard County, as measured by developmental scale scores on FCAT Reading, and fourth through eighth grade non-homeless students in Brevard County who qualify for the free lunch program?  | Developmental Scale Score on FCAT Reading                        | Whether or not a student is homeless                                   | Independent <i>t</i> -test     |
| Does the proportion of fourth through eighth grade students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Reading vary depending on whether or not they are homeless?  | Percentage of students making learning gains on FCAT Reading     | Whether or not a student is homeless                                   | Chi-square test of association |
| To what extent, if any, is there a statistically significant difference in the mathematics achievement of fourth through eighth grade homeless students in Brevard County, as measured by developmental scale scores on FCAT Mathematics, and fourth through eighth grade non-homeless students in Brevard County who qualify for the free lunch program?  | Developmental Scale Score on FCAT Mathematics                    | Whether or not a student is homeless                                   | Independent <i>t</i> -test     |
| Does the proportion of fourth through eighth grade students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Mathematics vary depending on whether or not they are homeless?  | Percentage of students making learning gains on FCAT Mathematics | Whether or not a student is homeless                                   | Chi-square test of association |
| To what extent, if any, is there a statistically significant difference in the reading achievement of fourth through eighth grade homeless students in Brevard County who have remained in their school of origin, as measured by developmental scale scores on FCAT Reading, and fourth through eighth grade homeless students in Brevard County who have not remained in their school of origin? | Developmental Scale Score on FCAT Reading                        | Whether or not a homeless student remained in his/her school of origin | Independent <i>t</i> -test     |
| Does the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain on FCAT Reading vary depending on whether or not they stay in their school of origin?  | Percentage of students making learning gains on FCAT Reading     | Whether or not a homeless student remained in his/her school of origin | Chi-square test of association |

| <b>Research Question</b>   | <b>Dependent Variable</b>  | <b>Independent Variable</b>  | <b>Statistical Analysis</b>    |
|--|--|--|--------------------------------|
| To what extent, if any, is there a statistically significant difference in the mathematics achievement of fourth through eighth grade homeless students in Brevard County who have remained in their school of origin, as measured by developmental scale scores on FCAT Mathematics, and fourth through eighth grade homeless students in Brevard County who have not remained in their school of origin? | Developmental Scale Score on FCAT Mathematics                    | Whether or not a homeless student remained in his/her school of origin | Independent <i>t</i> -test     |
| Does the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain on FCAT Mathematics vary depending on whether or not they stay in their school of origin?  | Percentage of students making learning gains on FCAT Mathematics | Whether or not a homeless student remained in his/her school of origin | Chi-square test of association |

## CHAPTER FOUR: ANALYSIS OF DATA

This study explored the impact of homelessness and remaining in school of origin on the academic achievement of fourth through eighth grade students in Brevard County Public Schools. For this study, academic achievement was measured utilizing the developmental scale scores on the 2011 FCAT Reading and Mathematics as well as the ability to make an annual learning gain from the 2010 FCAT Reading and Mathematics to the 2011 FCAT Reading and Mathematics. FCAT developmental scale scores range from 0 to 3000 from grade 3 to grade 10. Developmental scale scores allow student progress to be tracked from year to year and scores should increase through the years (Florida Department of Education, 2008).

### Impact of Homelessness

To measure the impact of homelessness on academic achievement, 2011 FCAT Reading and Mathematics data were used to compare the achievement of homeless students to non-homeless students who qualified for the free lunch program. Students who qualified for the free lunch program were used as the comparison group to reduce the effect socioeconomic status may have on academic achievement. Independent *t*-tests were used to measure the significance of difference between the mean developmental scale scores of the homeless and non-homeless students for reading and mathematics. Chi-square tests of association were used to measure whether the proportion of homeless students making a learning gain in reading and mathematics varied significantly from the proportion of non-homeless students making a learning gain.

## Descriptive Statistics

As of February 7, 2011, there were 375 fourth through eighth grade students in Brevard County Public Schools who were coded as homeless. Of those 375 students, there was 2011 FCAT data available for 336 of the students. Since learning gains were also used as a measure of academic achievement, students would also need data from the 2010 FCAT. A total of 244 homeless students had the necessary data available to be included in this study. As the range for developmental scale scores vary from grade to grade, it was necessary to do a stratified random sampling to ensure there was an equal sized sample from each grade. Forty students were randomly selected from each grade, fourth through eighth, resulting in a total sample of 200 homeless students selected for data analysis in research questions 1-4.

For the comparison group, necessary FCAT data were available for 9,105 students in Brevard County Public Schools who qualified for the free lunch program. Forty students were randomly selected from each grade, fourth through eighth, resulting in a total sample of 200 non-homeless students who qualified for the free lunch program selected for data analysis in research questions 1-4.

Table 2 displays descriptive statistics of the homeless sample and the non-homeless sample who qualified for the free lunch program.

Table 2: Descriptive Statistics of Homeless and Non-Homeless Samples for Research Questions 1-4

|                          | Homeless (n=200) |                   | Non-Homeless (n=200) |                   |
|--------------------------|------------------|-------------------|----------------------|-------------------|
|                          | <u>Frequency</u> | <u>Percentage</u> | <u>Frequency</u>     | <u>Percentage</u> |
| <b><u>Gender</u></b>     |                  |                   |                      |                   |
| Male                     | 110              | 55%               | 89                   | 44.5%             |
| Female                   | 90               | 45%               | 111                  | 55.5%             |
| <b><u>Race</u></b>       |                  |                   |                      |                   |
| White                    | 106              | 53%               | 84                   | 42%               |
| Black                    | 37               | 18.5%             | 64                   | 32%               |
| Hispanic                 | 32               | 16%               | 32                   | 16%               |
| Asian                    | 4                | 4%                | 1                    | 0.5%              |
| Multi-Racial             | 21               | 10.5%             | 19                   | 9.5%              |
| <b><u>SWD Status</u></b> |                  |                   |                      |                   |
| Disability               | 50               | 25%               | 55                   | 27.5%             |
| No Disability            | 150              | 75%               | 145                  | 72.5%             |
| <b><u>ELL Status</u></b> |                  |                   |                      |                   |
| ELL                      | 8                | 4%                | 8                    | 4%                |
| Non ELL                  | 192              | 96%               | 192                  | 96%               |

## Findings

### Research Question #1

To what extent, if any, is there a statistically significant difference in the reading achievement of fourth through eighth grade homeless students in Brevard County, as measured by developmental scale scores on FCAT Reading, and fourth through eighth grade non-homeless students in Brevard County who qualify for the free lunch program?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Reading between homeless students and non-homeless students in Brevard County who qualify for the free lunch program.

An independent *t*-test was conducted to determine if fourth through eighth grade homeless students in Brevard County scored significantly different on the 2011 FCAT Reading

than non-homeless students in Brevard County who qualified for the free lunch program. The test was conducted utilizing the developmental scale scores from the 2011 FCAT Reading.

The assumption of normality was tested and met for the distributional shape of the dependent variable for the homeless student group. Review of the Shapiro-Wilk's test for normality ( $W = .987$ ,  $p = .07$ ), skewness ( $-.387$ ) and kurtosis ( $.426$ ) statistics indicated that normality was a reasonable assumption for the homeless group. A review of the Q-Q plots and boxplot did not indicate any significant outliers.

The assumption of normality was tested for the distributional shape of the dependent variable for the non-homeless group. Although skewness ( $-.875$ ) and kurtosis ( $1.297$ ) statistics were within the normal range, review of the Shapiro-Wilk's test for normality ( $W = .953$ ,  $p = .000$ ) suggested some non-normality. In addition, the Q-Q plots and boxplot indicated three potential outliers which were more than three standard deviations from the mean. These three cases were deemed to be outliers and removed. The analysis that follows excludes these outliers.

After removal of the three outliers, normality indicators improved. The skewness ( $-.626$ ) and kurtosis ( $.762$ ) statistics indicated that normality was a reasonable assumption for the distributional shape of the dependent variable for the non-homeless group. Although the Shapiro-Wilk's test for normality was still statistically significant after the outliers were removed ( $W = .972$ ,  $p = .001$ ), independent  $t$ -tests are relatively robust to violations of normality assumption with samples of 10 or more (Lomax, 2001). Therefore, it was determined appropriate to continue with the analysis.

Levene's test indicated that the assumption of homogeneity of variances was met ( $F = .026$ ,  $p = .871$ ).

The test was not statistically significant, ( $t(395) = .961, p = .337$ ). Students in the homeless group, on average, had higher developmental scale scores on the 2011 FCAT Reading ( $n = 200, M = 1683.37, SD = 296.588$ ) than students in the non-homeless group ( $n = 197, M = 1654.48, SD = 302.340$ ). However, the difference was not statistically significant, resulting in a failure to reject the null hypothesis. Table 3 displays the group statistics and Table 4 displays the independent  $t$ -test results.

Table 3: Group Statistics for Independent  $t$ -test Comparing 2011 FCAT Reading Developmental Scale Scores of Homeless and Non-Homeless Students

| <b>Homeless Status</b> | <b>N</b> | <b>M</b> | <b>SD</b> |
|------------------------|----------|----------|-----------|
| <b>Homeless</b>        | 200      | 1683.37  | 296.588   |
| <b>Not Homeless</b>    | 197      | 1654.48  | 302.340   |

Table 4: Independent  $t$ -test Results for 2011 FCAT Reading Developmental Scale Scores of Homeless and Non-Homeless Students

| <b><i>t</i> value</b> | <b><i>df</i></b> | <b><i>p</i></b> | <b>Mean Difference</b> | <b>Std. Error Difference</b> |
|-----------------------|------------------|-----------------|------------------------|------------------------------|
| .961                  | 395              | .337            | 28.883                 | 30.059                       |

The effect size was calculated to determine whether there was any practical significance to the difference between the groups. The effect size was calculated by eta squared and found to



be .002, indicating that less than one percent of the difference could be accounted for whether or not the student was homeless and showing no practical significance as well.

### Research Question #2

Does the proportion of fourth through eighth grade students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Reading vary depending on whether or not they are homeless?

H<sub>0</sub>: There is no statistically significant variance in the proportion of fourth through eighth grade homeless and non-homeless students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Reading.

A chi-square test of association was conducted to evaluate whether the proportion of fourth through eighth grade students in Brevard County who qualified for free lunch making a learning gain from the 2010 FCAT Reading to the 2011 FCAT Reading varied depending on whether or not they were homeless. The test was conducted using an alpha of .05.

Whether or not a student who qualified for free lunch made a learning gain on the 2011 FCAT Reading was statistically significantly related to whether or not the student was homeless, resulting in a rejection of the null hypothesis. Pearson  $\chi^2 (1, n = 400) = 10.903, p = .001$ , Cramer's  $V = .165$ . A significantly greater percentage of non-homeless students (56.5%) made a learning gain on the 2011 FCAT Reading than homeless students (40.0%). The Cramer's  $V$  statistic shows the effect size and indicated that over 16 percent of the variance could be attributed to whether or not the student was homeless. Results of the chi-square crosstab table with column frequencies and percentages are shown in Table 5.

Table 5: Crosstabulation of Homeless Status and Learning Gains on 2011 FCAT Reading

|                         | Homeless     | Not Homeless | Total        |
|-------------------------|--------------|--------------|--------------|
| <b>Learning Gain</b>    | 80 (40.0%)   | 113 (56.5%)  | 193 (48.2%)  |
| <b>No Learning Gain</b> | 120 (60.0%)  | 87 (43.5%)   | 207 (51.8%)  |
| <b>Total</b>            | 200 (100.0%) | 200 (100.0%) | 400 (100.0%) |

Research Question #3

To what extent, if any, is there a statistically significant difference in the mathematics achievement of fourth through eighth grade homeless students in Brevard County, as measured by developmental scale scores on FCAT Mathematics, and fourth through eighth grade non-homeless students in Brevard County who qualify for the free lunch program?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Mathematics between homeless students and non-homeless students in Brevard County who qualify for the free lunch program.

An independent *t*-test was conducted to determine if fourth through eighth grade homeless students in Brevard County scored significantly different on the 2011 FCAT Mathematics than non-homeless students in Brevard County who qualified for the free lunch program. The test was conducted utilizing the developmental scale scores from the 2011 FCAT Mathematics.

The assumption of normality was tested for the distributional shape of the dependent variable for the homeless student group. Review of the Shapiro-Wilk's test for normality ( $W = .937, p = .000$ ) indicated non-normality. While the test for skewness (-1.171) fell within an

acceptable range, a test of kurtosis (2.848) also indicated non-normality. A review of the Q-Q plots and boxplot indicated a potential outlier greater than three standard deviations from the mean. This case was deemed an outlier and removed. The analysis that follows excludes this outlier.

After removal of the outlier, normality indicators improved. The skewness (-.875) and kurtosis (1.508) statistics indicated that normality was a reasonable assumption for the distributional shape of the dependent variable for the homeless group. Although the Shapiro-Wilk's test for normality was still statistically significant after the outlier was removed ( $W = .957, p = .000$ ), independent  $t$ -tests are relatively robust to violations of normality assumption with samples of 10 or more (Lomax, 2001). Therefore, it was determined appropriate to continue with the analysis.

The assumption of normality was tested for the distributional shape of the dependent variable for the non-homeless group. Although skewness (-1.111) and kurtosis (1.853) statistics were within the normal range, review of the Shapiro-Wilk's test for normality ( $W = .934, p = .000$ ) suggested some non-normality. In addition, the Q-Q plots and boxplot indicated two potential outliers which were more than three standard deviations from the mean. These two cases were deemed to be outliers and removed. The analysis that follows excludes these outliers.

After removal of the two outliers, normality indicators improved. The skewness (-.748) and kurtosis (.342) statistics indicated that normality was a reasonable assumption for the distributional shape of the dependent variable for the non-homeless group. Although the Shapiro-Wilk's test for normality was still statistically significant after the outliers were removed ( $W = .957, p = .000$ ), independent  $t$ -tests are relatively robust to violations of normality

assumption with samples of 10 or more (Lomax, 2001). Therefore, it was determined appropriate to continue with the analysis.

Levene’s test indicated that the assumption of homogeneity of variances was met ( $F = 1.488, p = .223$ ).

The test was statistically significant, ( $t(395) = 2.154, p = .032$ ). Students in the homeless group scored significantly higher on the 2011 FCAT Mathematics ( $n = 199, M = 1709.92, SD = 234.131$ ) than students in the non-homeless group ( $n = 198, M = 1657.70, SD = 248.786$ ), resulting in a rejection of the null hypothesis. The results suggested that homeless students were able to outperform their non-homeless peers who qualified for free lunch on the 2011 FCAT Mathematics. Table 6 displays the group statistics and Table 7 displays the independent  $t$ -test results.

Table 6: Group Statistics for Independent  $t$ -test Comparing 2011 FCAT Mathematics Developmental Scale Scores of Homeless and Non-Homeless Students

| <b>Homeless Status</b> | <b>N</b> | <b><i>M</i></b> | <b><i>SD</i></b> |
|------------------------|----------|-----------------|------------------|
| <b>Homeless</b>        | 199      | 1709.92         | 234.131          |
| <b>Not Homeless</b>    | 198      | 1657.70         | 248.786          |

Table 7: Independent *t*-test Results for 2011 FCAT Mathematics Developmental Scale Scores of Homeless and Non-Homeless Students

| <i>t</i> value | <i>df</i> | <i>p</i> | Mean Difference | Std. Error<br>Difference |
|----------------|-----------|----------|-----------------|--------------------------|
| 2.154          | 395       | .032     | 52.228          | 24.246                   |

The effect size was calculated to determine whether there was any practical significance to the difference between the groups. The effect size was calculated by eta squared and found to be .012, indicating that a little over one percent of the difference could be accounted for by whether or not the student was homeless. This would suggest that, while the *t*-test indicated statistical significance, the small effect size would suggest little practical significance.

Research Question #4

Does the proportion of fourth through eighth grade students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Mathematics vary depending on whether or not they are homeless?

H<sub>0</sub>: There is no statistically significant variance in the proportion of fourth through eighth grade homeless and non-homeless students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Mathematics.

A chi-square test of association was conducted to evaluate whether the proportion of fourth through eighth grade students in Brevard County who qualified for free lunch making a learning gain from the 2010 FCAT Mathematics to the 2011 FCAT Mathematics varied depending on whether or not they were homeless. The test was conducted using an alpha of .05.

Whether or not a student who qualified for free lunch made a learning gain on the 2011 FCAT Mathematics was not statistically significantly related to whether or not the student was homeless. Pearson  $\chi^2$  (1, n = 400) = 2.566,  $p = .109$ , Cramer's V = .080. A greater percentage of non-homeless students (56.5%) made a learning gain on the 2011 FCAT Mathematics than homeless students (48.5%). However, the variance was not statistically significant, resulting in a failure to reject the null hypothesis. The Cramer's V statistic shows the effect size and indicated that eight percent of the variance could be attributed to whether or not the student was homeless. Results of the chi-square crosstab table with column frequencies and percentages are shown in Table 8.

Table 8: Crosstabulation of Homeless Status and Learning Gains of 2011 FCAT Mathematics

|                         | <b>Homeless</b> | <b>Not Homeless</b> | <b>Total</b> |
|-------------------------|-----------------|---------------------|--------------|
| <b>Learning Gain</b>    | 97 (48.5%)      | 113 (56.5%)         | 210 (52.5%)  |
| <b>No Learning Gain</b> | 103 (51.5%)     | 87 (43.5%)          | 190 (47.5%)  |
| <b>Total</b>            | 200 (100.0%)    | 200 (100.0%)        | 400 (100.0%) |

#### Impact of Staying in School of Origin

To measure the impact of homeless students staying in their school of origin on academic achievement, 2011 FCAT Reading and Mathematics data were used to compare the achievement of homeless students who stayed in their school of origin to homeless students who changed schools. Independent  $t$ -tests were used to measure the significance of difference between the

developmental scale scores of the homeless students who stayed in their school of origin and homeless students who moved for reading and mathematics. Chi-square tests of association were used to measure whether the proportion of homeless students who did not move making a learning gain in reading and mathematics differed significantly from the proportion of homeless students who changed schools making a learning gain.

### Descriptive Statistics

To measure the impact of staying in school of origin on the academic achievement of homeless students, it was necessary to separate the homeless population of students into two groups, those who changed schools and those who did not change schools. For the purposes of this study, it was determined if students changed schools any time from the end of the 2009-2010 school year to the beginning of 2011 FCAT testing on April 11, 2011, they were included in the group who did not remain in their school of origin. If students did not change schools any time from the end of the 2009-2010 school year to the beginning of 2011 FCAT testing on April 11, 2011, they were included in the group who remained in their school of origin. From the 244 homeless student who had the necessary FCAT data for this study, 43 seventh grade students were eliminated from this portion of the study, as they all would have experienced a change of schools transitioning from elementary school to middle school. Additionally, school enrollment data was not available for 43 of the remaining homeless students, leaving 158 homeless students to make up the population of students for research questions 5-8. Of the 158 homeless students in the population, 89 (56.3%) had remained in their school of origin while 69 (43.7%) had changed schools at least once from the end of the 2009-2010 school year to the start of 2011 FCAT testing on April 11, 2011.

As developmental scale scores were used to measure academic achievement, it was necessary to obtain an equal number of students in each grade level for each group. To do this, the number of subjects in each grade level for each group was found. The smallest number of subjects from the two groups for each grade level was utilized for this study. A random sample of an equal number of subjects was selected from the other group. The result was 22 fourth grade students, 17 fifth grade students, 18 sixth grade students, and 10 eighth grade students composed the sample of 67 for each group, totaling 134 students for the sample used for this portion of the study. Of the 67 students who changed schools, 41 (61.2%) changed schools one time, 19 (28.4%) changed schools two times, 4 (6%) changed schools three times, and 3 (4.5%) changed schools four times.

Table 9 displays descriptive statistics of the sample of homeless students who remained in their school of origin and those who changed schools.

Table 9: Descriptive Statistics of Homeless Remaining in School of Origin and Homeless Who Changed Schools Samples for Research Questions 5-8

|                          | <b>Homeless Remaining in School of Origin (n=67)</b> |                   | <b>Homeless Who Changed Schools (n=67)</b> |                   |
|--------------------------|--|-------------------|--|-------------------|
|                          | <u>Frequency</u>                                     | <u>Percentage</u> | <u>Frequency</u>                           | <u>Percentage</u> |
| <b><u>Gender</u></b>     |  |                   |  |                   |
| Male                     | 36   | 53.7%             | 36   | 53.7%             |
| Female                   | 31   | 46.3%             | 31   | 46.3%             |
| <b><u>Race</u></b>       |  |                   |  |                   |
| White                    | 38   | 56.7%             | 31   | 46.3%             |
| Black                    | 12   | 17.9%             | 21   | 31.3%             |
| Hispanic                 | 12   | 17.9%             | 8  | 11.9%             |
| Asian                    | 1  | 1.5%              | 2  | 3.0%              |
| Multi-Racial             | 4  | 6.0%              | 5  | 7.5%              |
| <b><u>SWD Status</u></b> |  |                   |  |                   |
| Disability               | 17   | 25.4%             | 18   | 26.9%             |



|                          | Homeless Remaining in School of Origin (n=67) |            | Homeless Who Changed Schools (n=67) |            |
|--------------------------|---|------------|-------------------------------------|------------|
|                          | Frequency                                     | Percentage | Frequency                           | Percentage |
| No Disability            | 50  | 74.6%      | 49                                  | 73.1%      |
| <b><u>ELL Status</u></b> |   |            |                                     |            |
| ELL                      | 7   | 10.4%      | 3                                   | 4.5%       |
| Non ELL                  | 60  | 89.6%      | 64                                  | 95.5%      |

## Findings

### Research Question #5

To what extent, if any, is there a statistically significant difference in the reading achievement of fourth through eighth grade homeless students in Brevard County who have remained in their school of origin, as measured by developmental scale scores on FCAT Reading, and fourth through eighth grade homeless students in Brevard County who have not remained in their school of origin?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Reading between homeless students who have remained in their school of origin and homeless students who have not remained in their school of origin in Brevard County.

An independent *t*-test was conducted to determine if fourth through eighth grade homeless students in Brevard County who stayed in their school of origin scored significantly different on the 2011 FCAT Reading than homeless students in Brevard County who did not remain in their school of origin. The test was conducted utilizing the developmental scale scores from the 2011 FCAT Reading.

The assumption of normality was tested and met for the distributional shape of the dependent variable for the homeless group who remained in their school of origin. Review of the Shapiro-Wilk's test for normality ( $W = .991, p = .919$ ), skewness (-.181) and kurtosis (.225)

statistics indicated that normality was a reasonable assumption for the homeless group who remained in their school of origin. A review of the Q-Q plots and boxplot did not indicate any significant outliers.

The assumption of normality was tested for the distributional shape of the dependent variable for the homeless student group who had not remained in their school of origin. Although skewness (-.898) and kurtosis (1.011) statistics were within the normal range, review of the Shapiro-Wilk's test for normality ( $W = .947, p = .007$ ) suggested some non-normality. A review of the Q-Q plots and boxplot indicated a potential outlier. As this outlier was more than three standard deviations from the mean, it was deemed to be an outlier and removed. The analysis that follows excludes this outlier.

After removal of the outlier, normality indicators improved. The skewness (-.739) and kurtosis (.712) statistics indicated that normality was a reasonable assumption for the distributional shape of the dependent variable for the homeless group who did not remain in their school of origin. Although the Shapiro-Wilk's test for normality was still close to statistically significant after the outlier was removed ( $W = .964, p = .05$ ), independent *t*-tests are relatively robust to violations of normality assumption with samples of 10 or more (Lomax, 2001). Therefore, it was determined appropriate to continue with the analysis.

Levene's test indicated that the assumption of homogeneity of variances was met ( $F = 1.916, p = .169$ ).

The test was not statistically significant, ( $t(131) = .941, p = .348$ ). Students in the homeless group who remained in their school or origin scored higher on the 2011 FCAT Reading ( $n = 67, M = 1661.36, SD = 322.851$ ) than students in the homeless group who did not remain in

their school of origin ( $n = 66$ ,  $M = 1613.32$ ,  $SD = 262.189$ ). However, the difference was not statistically significant, resulting in a failure to reject the null hypothesis. Table 10 displays the group statistics and Table 11 displays the independent  $t$ -test results.

Table 10: Group Statistics for Independent  $t$ -test of 2011 FCAT Reading Developmental Scale Scores Comparing Homeless Students Who Remained in School of Origin and Homeless Students Who Did Not Remain in School of Origin

| <b>Mobility Status</b>   | <b>N</b> | <b><i>M</i></b> | <b><i>SD</i></b> |
|--------------------------|----------|-----------------|------------------|
| <b>Remained in</b>       | 67       | 1661.36         | 322.851          |
| <b>School of Origin</b>  |          |                 |                  |
| <b>Did Not Remain in</b> | 66       | 1613.32         | 262.189          |
| <b>School of Origin</b>  |          |                 |                  |

Table 11: Independent  $t$ -test Results for 2011 FCAT Reading Developmental Scale Scores of Homeless Students Who Remained in School of Origin and Homeless Students Who Did Not Remain in School of Origin

| <b><i>t</i> value</b> | <b><i>df</i></b> | <b><i>p</i></b> | <b>Mean Difference</b> | <b>Std. Error<br/>Difference</b> |
|-----------------------|------------------|-----------------|------------------------|----------------------------------|
| .941                  | 131              | .348            | 48.040                 | 51.043                           |

The effect size was calculated to determine whether there was any practical significance to the difference between the groups. The effect size was calculated by eta squared and found to

be .007, indicating that less than one percent of the difference could be accounted for whether or not the student moved and showing no practical significance as well.

#### Research Question #6

Does the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain on FCAT Reading vary depending on whether or not they stay in their school of origin?

$H_0$ : There is no statistically significant variance in the proportion of fourth through eighth grade homeless students in Brevard County who stay in their school of origin making a learning gain on FCAT Reading and fourth through eighth grade homeless students in Brevard County who do not stay in their school of origin making a learning gain on FCAT Reading.

A chi-square test of association was conducted to evaluate whether the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain from the 2010 FCAT Reading to the 2011 FCAT Reading varied depending on whether or not they remained in their school of origin. The test was conducted using an alpha of .05.

Whether or not a homeless student made a learning gain on the 2011 FCAT Reading was statistically significantly related to whether or not the student remained in the school of origin. Pearson  $\chi^2$  (1, n = 134) = 7.941,  $p = .005$ , Cramer's V = .243. A significantly greater percentage of homeless students who remained in their school of origin made a learning gain on the 2011 FCAT Reading (52.2%) than homeless students who did not remain in their school of origin (28.4%), resulting in a rejection of the null hypothesis. The Cramer's V statistic shows the effect size and indicated that over 24 percent of the variance could be attributed to whether or not the student remained in the school of origin. Results of the chi-square crosstab table with column frequencies and percentages are shown in Table 12.

Table 12: Crosstabulation of Homeless Mobility and Learning Gains on 2011 FCAT Reading

|                         | <b>Remained in</b>      | <b>Did Not Remain in</b> | <b>Total</b> |
|-------------------------|-------------------------|--------------------------|--------------|
|                         | <b>School of Origin</b> | <b>School of Origin</b>  |              |
| <b>Learning Gain</b>    | 35 (52.2%)              | 19 (28.4%)               | 54 (40.3%)   |
| <b>No Learning Gain</b> | 32 (47.8%)              | 48 (71.6%)               | 80 (59.7%)   |
| <b>Total</b>            | 67 (100.0%)             | 67 (100.0%)              | 134 (100.0%) |

Research Question #7

To what extent, if any, is there a statistically significant difference in the mathematics achievement of fourth through eighth grade homeless students in Brevard County who have remained in their school of origin, as measured by developmental scale scores on FCAT Mathematics, and fourth through eighth grade homeless students in Brevard County who have not remained in their school of origin?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Mathematics between homeless students who have remained in their school of origin and homeless students who have not remained in their school of origin in Brevard County.

An independent *t*-test was conducted to determine if fourth through eighth grade homeless students in Brevard County who stayed in their school of origin scored significantly different on the 2011 FCAT Mathematics than homeless students in Brevard County who did not remain in their school of origin. The test was conducted utilizing the developmental scale scores from the 2011 FCAT Mathematics.

The assumption of normality was tested and met for the distributional shape of the dependent variable for the homeless group who remained in their school of origin. Review of

the Shapiro-Wilk's test for normality ( $W = .989, p = .828$ ), skewness ( $-.257$ ) and kurtosis ( $-.111$ ) statistics indicated that normality was a reasonable assumption for the homeless group who remained in their school of origin. A review of the Q-Q plots and boxplot did not indicate any significant outliers.

The assumption of normality was tested for the distributional shape of the dependent variable for the homeless student group who had not remained in their school of origin. Although skewness ( $-1.101$ ) and kurtosis ( $1.177$ ) statistics were within the normal range, review of the Shapiro-Wilk's test for normality ( $W = .920, p = .000$ ) suggested some non-normality. A review of the Q-Q plots and boxplot indicated a potential outlier. As this outlier was more than three standard deviations from the mean, it was deemed to be an outlier and removed. The analysis that follows excludes this outlier.

After removal of the outlier, normality indicators improved. The skewness ( $-.934$ ) and kurtosis ( $.701$ ) statistics indicated that normality was a reasonable assumption for the distributional shape of the dependent variable for the homeless group who did not remain in their school of origin. Although the Shapiro-Wilk's test for normality was still statistically significant after the outlier was removed ( $W = .936, p = .002$ ), independent  $t$ -tests are relatively robust to violations of normality assumption with samples of 10 or more (Lomax, 2001). Therefore, it was determined appropriate to continue with the analysis.

Levene's test indicated that the assumption of homogeneity of variances was met ( $F = .523, p = .471$ ).

The test was not statistically significant, ( $t(131) = 1.550, p = .124$ ). Students in the homeless group who remained in their school or origin scored higher on the 2011 FCAT

Mathematics ( $n = 67$ ,  $M = 1692.87$ ,  $SD = 233.174$ ) than students in the homeless group who did not remain in their school of origin ( $n = 66$ ,  $M = 1631.76$ ,  $SD = 221.209$ ). However, the difference was not statistically significant, resulting in a failure to reject the null hypothesis.

Table 13 displays the group statistics and Table 14 displays the independent  $t$ -test results.

Table 13: Group Statistics for Independent  $t$ -test of 2011 FCAT Mathematics Developmental Scale Scores Comparing Homeless Students Who Remained in School of Origin and Homeless Students Who Did Not Remain in School of Origin

| <b>Mobility Status</b>   | <b>N</b> | <b><i>M</i></b> | <b><i>SD</i></b> |
|--------------------------|----------|-----------------|------------------|
| <b>Remained in</b>       | 67       | 1692.87         | 233.174          |
| <b>School of Origin</b>  |          |                 |                  |
| <b>Did Not Remain in</b> | 66       | 1631.76         | 221.209          |
| <b>School of Origin</b>  |          |                 |                  |

Table 14: Independent  $t$ -test Results for 2011 FCAT Mathematics Developmental Scale Scores of Homeless Students Who Remained in School of Origin and Homeless Students Who Did Not Remain in School of Origin

| <b><i>t</i> value</b> | <b><i>df</i></b> | <b><i>p</i></b> | <b>Mean Difference</b> | <b>Std. Error<br/>Difference</b> |
|-----------------------|------------------|-----------------|------------------------|----------------------------------|
| 1.550                 | 131              | .124            | 61.108                 | 39.423                           |

The effect size was calculated to determine whether there was any practical significance to the difference between the groups. The effect size was calculated by eta squared and found to

be .018, indicating that less than two percent of the difference could be accounted for whether or not the student moved and showing little practical significance as well.

### Research Question #8

Does the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain on FCAT Mathematics vary depending on whether or not they stay in their school of origin?

H<sub>0</sub>: There is no statistically significant variance in the proportion of fourth through eighth grade homeless students in Brevard County who stay in their school of origin making a learning gain on FCAT Mathematics and fourth through eighth grade homeless students in Brevard County who do not stay in their school of origin making a learning gain on FCAT Mathematics.

A chi-square test of association was conducted to evaluate whether the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain from the 2010 FCAT Mathematics to the 2011 FCAT Mathematics varied depending on whether or not they remained in their school of origin. The test was conducted using an alpha of .05.

Whether or not a homeless student made a learning gain on the 2011 FCAT Mathematics was statistically significantly related to whether or not the student remained in the school of origin, resulting in a rejection of the null hypothesis. Pearson  $\chi^2 (1, n = 134) = 28.789, p = .000$ , Cramer's  $V = .464$ . A significantly greater percentage of homeless students who remained in their school of origin (76.1%) made a learning gain on the 2011 FCAT Mathematics than homeless students who did not remain in their school of origin (29.9%). The Cramer's  $V$  statistic shows the effect size and indicates that over 46 percent of the variance could be attributed to whether or not the student remained in the school of origin. Results of the chi-square crosstab table with column frequencies and percentages are shown in Table 15.



Table 15: Crosstabulation of Homeless Mobility and Learning Gains on 2011 FCAT Mathematics

|                         | <b>Remained in<br/>School of Origin</b> | <b>Did Not Remain in<br/>School of Origin</b> | <b>Total</b> |
|-------------------------|---|---|--------------|
| <b>Learning Gain</b>    | 51 (76.1%)                              | 20 (29.9%)                                    | 71 (53.0%)   |
| <b>No Learning Gain</b> | 16 (23.9%)                              | 47 (70.1%)                                    | 63 (47.0%)   |
| <b>Total</b>            | 67 (100.0%)                             | 67 (100.0%)                                   | 134 (100.0%) |

## CHAPTER FIVE: FINDINGS AND RECOMMENDATIONS

The purpose of this study was to determine whether homelessness had an impact on reading and mathematics achievement on fourth through eighth grade students in Brevard County Public Schools. Furthermore, it sought to determine whether the ability of homeless students to remain in their school of origin had an impact on reading and mathematics achievement of fourth through eighth grade students in Brevard County Public Schools. This was determined for reading and mathematics using results from the 2011 Florida Comprehensive Assessment Test (FCAT). The desired outcome was to generate information regarding the impact of homelessness and whether the utilization of transportation services, as made available through the McKinney-Vento Act to the school of origin, would make an impact on the academic achievement of homeless students.

### Findings for Research Questions and Hypotheses

#### Research Question and Hypothesis #1

To what extent, if any, is there a statistically significant difference in the reading achievement of fourth through eighth grade homeless students in Brevard County, as measured by developmental scale scores on FCAT Reading, and fourth through eighth grade non-homeless students in Brevard County who qualify for the free lunch program?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Reading between homeless students and non-homeless students in Brevard County who qualify for the free lunch program.

An independent *t*-test was run to compare the difference in 2011 FCAT Reading developmental scale scores of homeless fourth through eighth grade students to non-homeless

students who qualified for the free lunch program. The difference between the means was not statistically significant, resulting in a failure to reject the null hypothesis. The mean 2011 FCAT Reading developmental scale score for the homeless group ( $M = 1683.37$ ) was slightly higher than their non-homeless peers who qualified for the free lunch program ( $M = 1654.48$ ). Figure 4 displays a comparison of the mean developmental scale scores for the two groups.

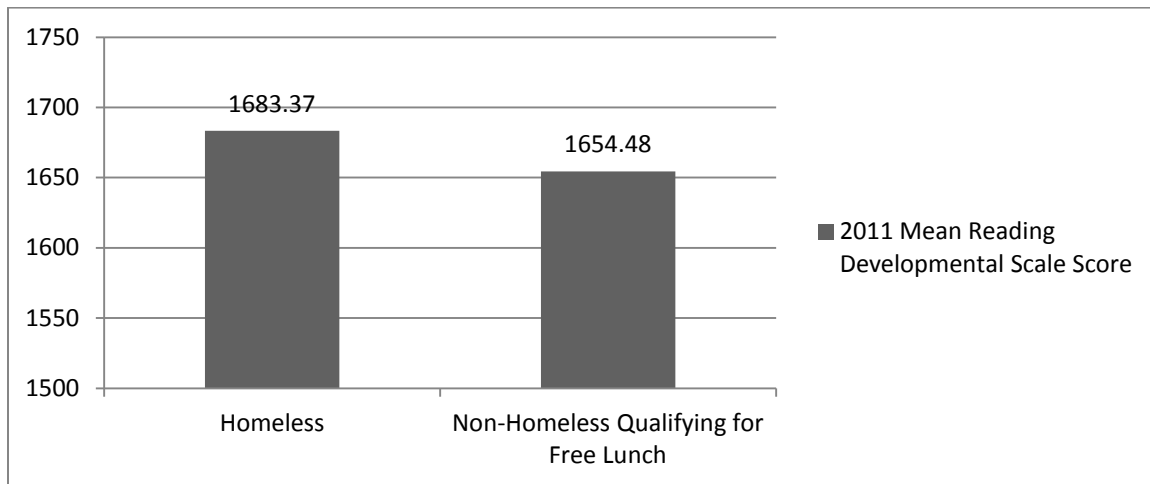


Figure 4: 2011 FCAT Reading Mean Developmental Scale Scores of Homeless Students and Non-Homeless Students Qualifying for Free Lunch

### Research Question and Hypothesis #2

Does the proportion of fourth through eighth grade students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Reading vary depending on whether or not they are homeless?

H<sub>0</sub>: There is no statistically significant variance in the proportion of fourth through eighth grade homeless and non-homeless students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Reading.

A chi-square test of association was run to see if there was any significant variance in the proportion of fourth through eighth grade homeless and non-homeless students who qualify for the free lunch program making a learning gain on the 2011 FCAT Reading. The variance was statistically significant, resulting in a rejection of the null hypothesis. A statistically significant greater percentage of non-homeless students qualifying for free lunch (56.0%) made an annual learning gain on the 2011 FCAT Reading than homeless students (40.0%). Figure 5 displays the percentages of students making learning gains from the two groups.

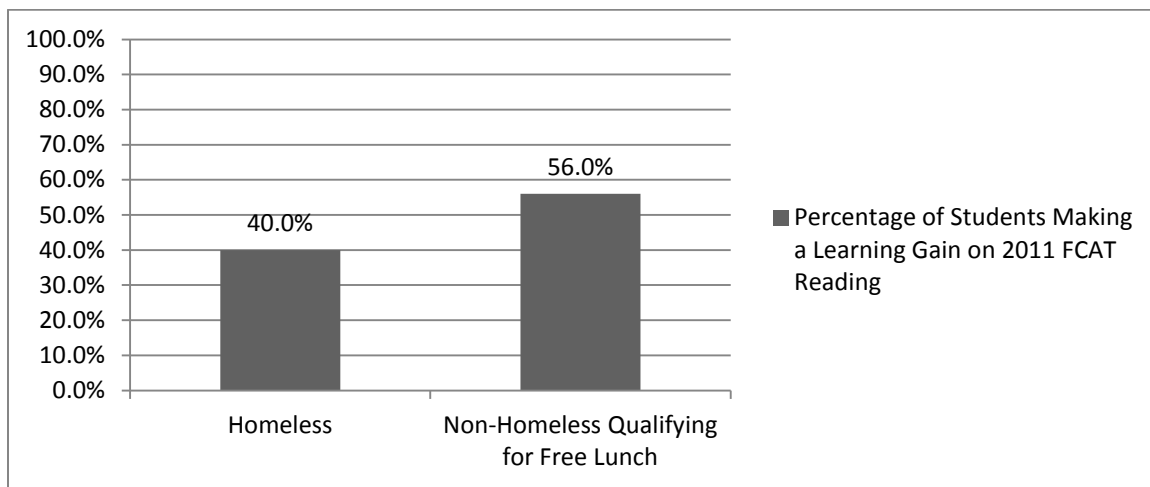


Figure 5: Percentages of Homeless and Non-Homeless Students Making Learning Gains on 2011 FCAT Reading

### Research Question and Hypothesis #3

To what extent, if any, is there a statistically significant difference in the mathematics achievement of fourth through eighth grade homeless students in Brevard County, as measured by developmental scale scores on FCAT Mathematics, and fourth through eighth grade non-homeless students in Brevard County who qualify for the free lunch program?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Mathematics between homeless students and non-homeless students in Brevard County who qualify for the free lunch program.

An independent *t*-test was run to compare the difference in 2011 FCAT Mathematics developmental scale scores of homeless fourth through eighth grade students to non-homeless students who qualified for the free lunch program. The difference between the means was statistically significant, resulting in the null hypothesis being rejected. The mean 2011 FCAT Mathematics developmental scale score for the homeless group ( $M = 1709.92$ ) was statistically significantly higher than their non-homeless peers who qualified for the free lunch program ( $M = 1657.70$ ). Figure 6 displays a comparison of the mean 2011 Mathematics developmental scale scores for the two groups.

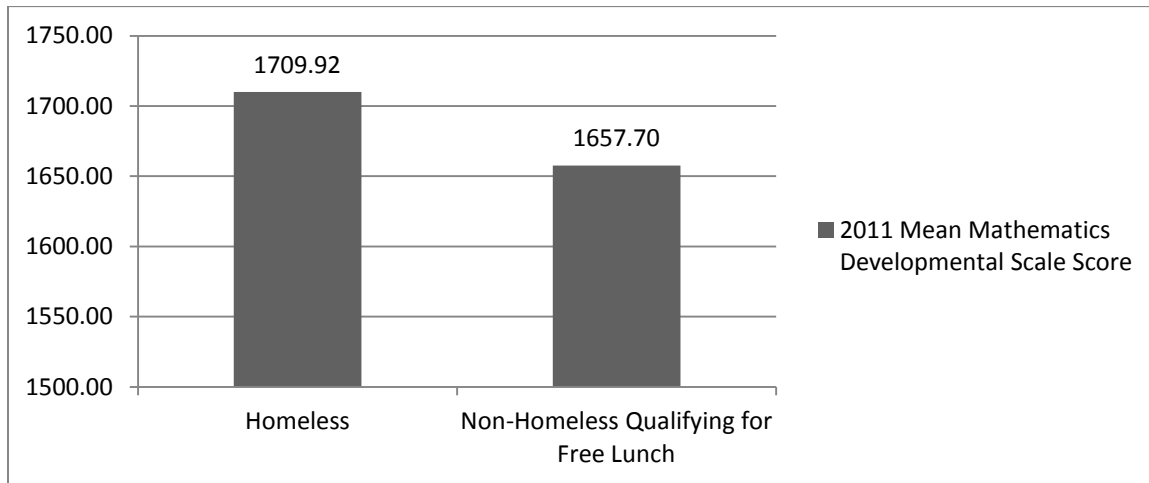


Figure 6: 2011 FCAT Mathematics Mean Developmental Scale Scores of Homeless Students and Non-Homeless Students Qualifying for Free Lunch

#### Research Question and Hypothesis #4

Does the proportion of fourth through eighth grade students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Mathematics vary depending on whether or not they are homeless?

H<sub>0</sub>: There is no statistically significant variance in the proportion of fourth through eighth grade homeless and non-homeless students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Mathematics.

A chi-square test of association was run to see if there was any significant variance in the proportion of fourth through eighth grade homeless and non-homeless students who qualify for the free lunch program making a learning gain on the 2011 FCAT Mathematics. The variance was not statistically significant, resulting in a failure to reject the null hypothesis. A greater percentage of non-homeless students qualifying for free lunch (56.5%) made an annual learning gain on the 2011 FCAT Reading than homeless students (48.5%), but the variance was not statistically significant. Figure 7 displays the percentages of students making learning gains from the two groups.

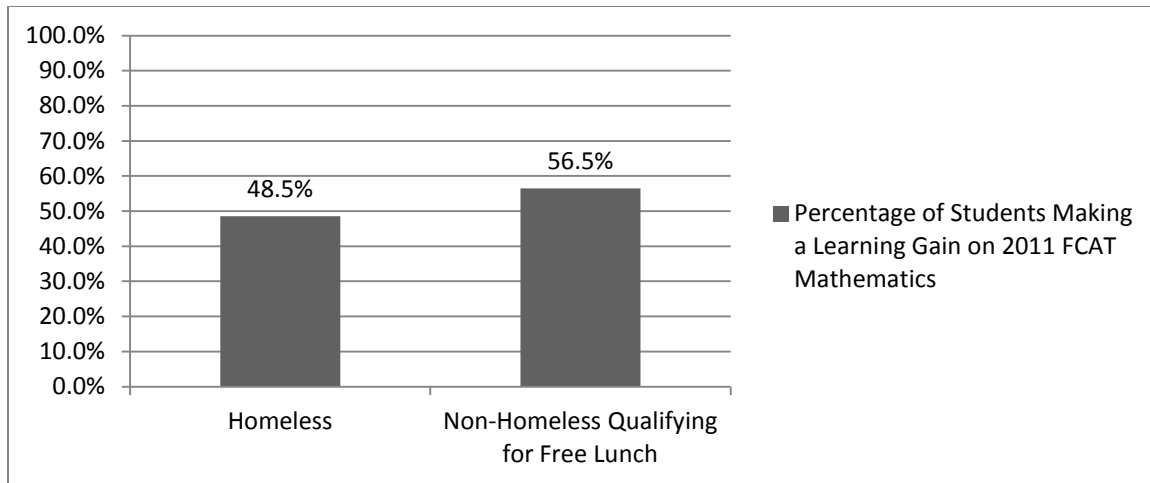


Figure 7: Percentages of Homeless and Non-Homeless Students Making Learning Gains on 2011 FCAT Mathematics

#### Research Question and Hypothesis #5

To what extent, if any, is there a statistically significant difference in the reading achievement of fourth through eighth grade homeless students in Brevard County who have remained in their school of origin, as measured by developmental scale scores on FCAT Reading, and fourth through eighth grade homeless students in Brevard County who have not remained in their school of origin?

$H_0$ : There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Reading between homeless students who have remained in their school of origin and homeless students who have not remained in their school of origin in Brevard County.

An independent *t*-test was run to compare the difference in 2011 FCAT Reading developmental scale scores of fourth through eighth grade homeless students who remained in their school of origin to homeless students who did not remain in their school of origin. The difference between the means was not statistically significant, resulting in a failure to reject the null hypothesis. The mean 2011 FCAT Reading developmental scale score for the homeless

group who changed schools ( $M = 1613.32$ ) was lower than their homeless peers who did not change schools ( $M = 1661.36$ ), but not at a statistically significant level. Figure 8 displays a comparison of the mean 2011 FCAT Reading developmental scale scores for the two groups.

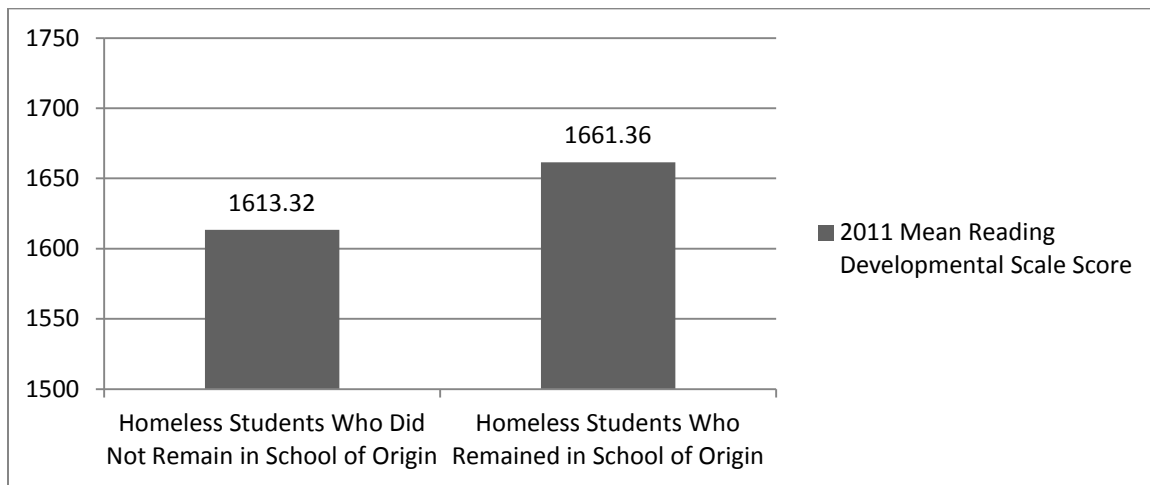


Figure 8: 2011 FCAT Reading Mean Developmental Scale Scores of Homeless Students Who Remained in School of Origin and Homeless Students Who Did Not Remain in School of Origin

#### Research Question and Hypothesis #6

Does the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain on FCAT Reading vary depending on whether or not they stay in their school of origin?

$H_0$ : There is no statistically significant variance in the proportion of fourth through eighth grade homeless students in Brevard County who stay in their school of origin making a learning gain on FCAT Reading and fourth through eighth grade homeless students in Brevard County who do not stay in their school of origin making a learning gain on FCAT Reading.



A chi-square test of association was run to see if there was any significant variance in the proportion of fourth through eighth grade homeless students staying in their school of origin and homeless students who changed schools making a learning gain on the 2011 FCAT Reading. The variance was statistically significant, resulting in a rejection of the null hypothesis. A statistically significant greater percentage of homeless students who did not change schools (52.2%) made an annual learning gain on the 2011 FCAT Reading than homeless students who changed schools. Figure 9 displays the percentages of students making learning gains from the two groups.

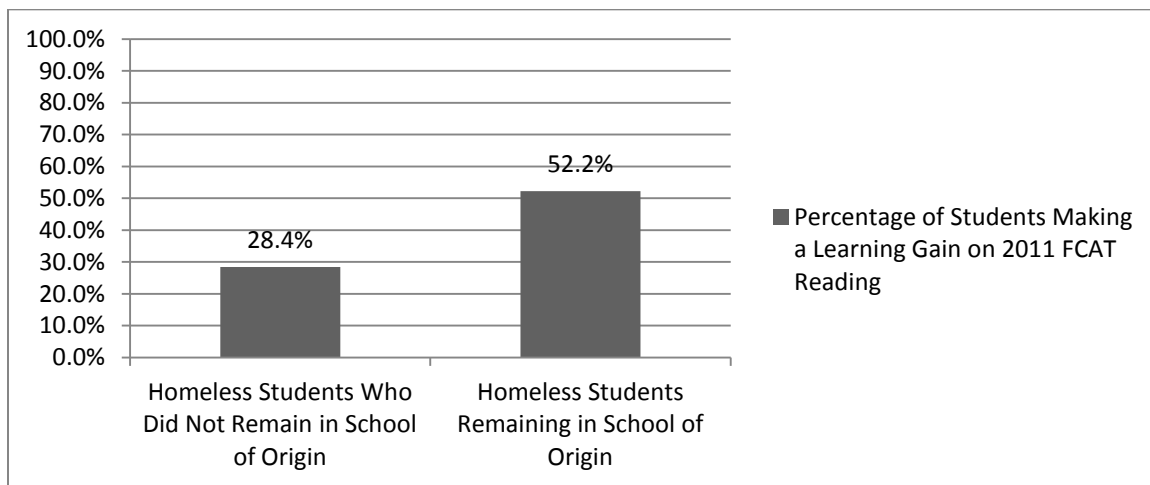


Figure 9: Percentages of Homeless Students Remaining in School of Origin and Homeless Students Not Remaining in School of Origin Making a Learning Gain on the 2011 FCAT Reading

#### Research Question and Hypothesis #7

To what extent, if any, is there a statistically significant difference in the mathematics achievement of fourth through eighth grade homeless students in Brevard County who have remained in their school of origin, as measured by developmental scale scores on

FCAT Mathematics, and fourth through eighth grade homeless students in Brevard County who have not remained in their school of origin?

H<sub>0</sub>: There is no statistically significant difference in fourth through eighth grade developmental scale scores on FCAT Mathematics between homeless students who have remained in their school of origin and homeless students who have not remained in their school of origin in Brevard County.

An independent *t*-test was run to compare the difference in 2011 FCAT Mathematics developmental scale scores of homeless fourth through eighth grade homeless students who remained in their school of origin to homeless students who did not remain in their school of origin. The difference between the means was not statistically significant, resulting in a failure to reject the null hypothesis. The mean 2011 FCAT Mathematics developmental scale score for the homeless group who changed schools ( $M = 1631.76$ ) was lower than their homeless peers who did not change schools ( $M = 1692.87$ ), but not at a statistically significant level. Figure 10 displays a comparison of the mean 2011 FCAT Mathematics developmental scale scores for the two groups.

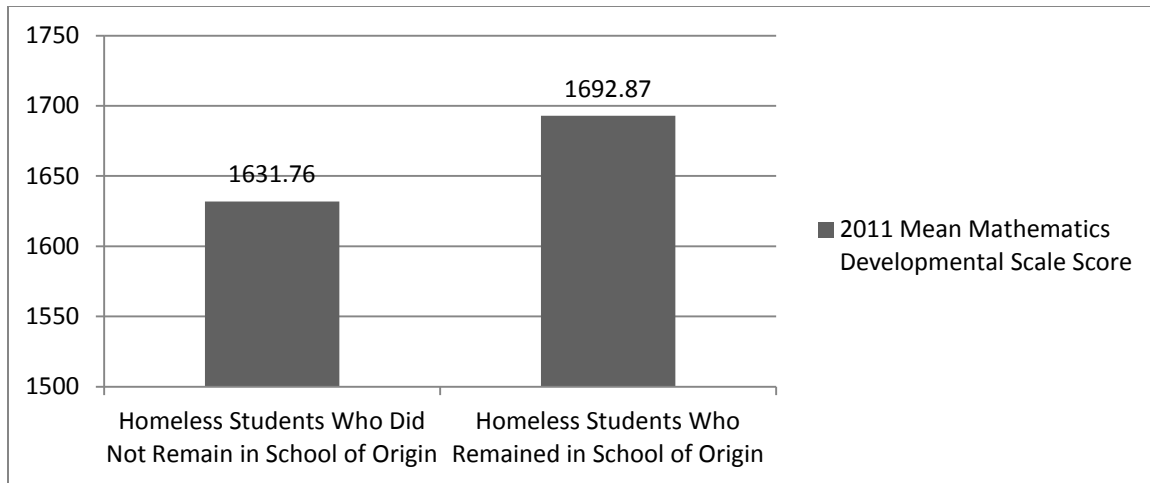


Figure 10: 2011 FCAT Mathematics Mean Developmental Scale Scores of Homeless Students Who Remained in School of Origin and Homeless Students Who Did Not Remain in School of Origin

#### Research Question and Hypothesis #8

Does the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain on FCAT Mathematics vary depending on whether or not they stay in their school of origin?

$H_0$ : There is no statistically significant variance in the proportion of fourth through eighth grade homeless students in Brevard County who stay in their school of origin making a learning gain on FCAT Mathematics and fourth through eighth grade homeless students in Brevard County who do not stay in their school of origin making a learning gain on FCAT Mathematics.

A chi-square test of association was run to see if there was any significant variance in the proportion of fourth through eighth grade homeless students staying in their school of origin and homeless students who changed schools making a learning gain on the 2011 FCAT Mathematics. The variance was statistically significant, resulting in a rejection of the null hypothesis. A statistically significant greater percentage of homeless students who did not change schools

(76.1%) made an annual learning gain on the 2011 FCAT Mathematics than homeless students who changed schools (29.9%). Figure 11 displays the percentages of students making learning gains from the two groups.

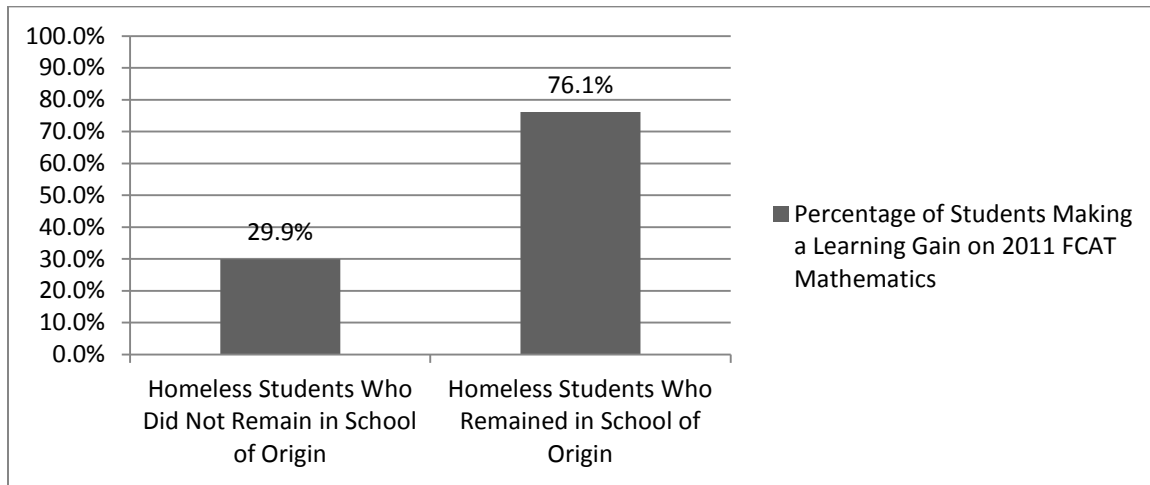


Figure 11: Percentages of Homeless Students Remaining in School of Origin and Homeless Students Not Remaining in School of Origin Making a Learning Gain on the 2011 FCAT Mathematics

### Summary and Discussion

This study found no statistically significant difference in the reading achievement of homeless students compared to non-homeless students who qualify for free lunch when comparing mean developmental scale scores. However, when looking at annual learning gains, the homeless students were not able to maintain their same level of achievement. A statistically significant lower proportion of homeless students were able to make an annual learning gain in reading than their non-homeless peers who qualify for free lunch.

For mathematics, the homeless students scored statistically significantly higher than non-homeless students when comparing mean developmental scale scores. Yet, when comparing annual learning gains, the homeless group was unable to maintain that advantage and no statistically significant difference was found.

These results brought two factors to light. First, when measuring academic achievement, it is important to utilize more than one source of data. When looking at just the FCAT developmental scale scores, which measures achievement level at one point of time, statistically the homeless students scored the same as the non-homeless students in reading and outperformed them in mathematics. However, when looking at annual learning gains, which measure achievement over time, the homeless students were not able to match the same level of achievement. In reading, where the homeless students statistically matched the non-homeless students on mean developmental scale score, a statistically significant lower percentage of homeless students were able to make an annual learning gain. In mathematics, where the homeless students scored significantly higher than non-homeless students on mean developmental scale score, the percentage of homeless students making an annual learning gain was statistically the same.

By analyzing academic achievement from these two different sources, the second factor to consider is that something appeared to be keeping the homeless students from making the type of annual learning gains which their mean developmental scale scores would suggest. For the purpose of this study, this factor is referred to as the Weighted Saddle Effect. In horse racing, lead weights are added to the saddles of some horses to handicap the races. In essence, the weighted saddles limit a horse's ability to perform at its fullest potential for the race. For the

homeless students, the potential for academic achievement was evident by their mean developmental scale scores. However, it appeared that in the short race from the 2010 FCAT to the 2011 FCAT, something was weighting their saddles and their performance on annual learning gains were unable to match their developmental scale scores.

When comparing mean developmental scale scores from the 2011 FCAT Reading and Mathematics, there was no statistically significant difference between homeless students who remained in their school of origin and homeless students who changed schools. However, a statistically significant lower percentage of homeless students who changed schools were able to make an annual learning gain in both reading and mathematics compared to homeless students who remained in their school of origin. These results suggest that it was school mobility of homeless students which created the Weighted Saddle Effect. Based on mean developmental scale scores, the level of ability was statistically the same for both groups in reading and mathematics, yet changing schools significantly hindered the annual learning gains of homeless students.

The essential question resulting from these findings is, “Why are homeless students who change schools able to score similar developmental scale score achievement levels in reading and mathematics as non-mobile homeless students, yet unable to make similar learning gains?” It is the opinion of this researcher that the answer can be found in the theoretical framework of this study, Abraham Maslow’s Hierarchy of Needs. Maslow believed a person’s behavior could be understood as an effort to satisfy five levels of needs: (a) physiological needs, (b) safety needs, (c) belongingness and love needs, (d) esteem needs, and (e) self-actualization needs (Maslow, 1954). The more basic needs have to be satisfied before a higher need can have an

influence on an individual's behavior (Hughes et al., 1995). For the purposes of this study, the implication is that students experiencing homelessness as well as mobility face increased threats to their basic needs, leaving little motivation for their minds to focus on academics.

Granted, many of the threats to needs satisfaction are experienced by both the mobile and non-mobile homeless students. Both groups may be experiencing hunger due to economic hardship. Both groups may be experiencing threats to safety and security due to unstable or chaotic residential situations. Yet, by changing schools, these threats are likely to be magnified because now their "homelessness" has extended to their school as well. Homeless students changing schools are likely to feel a lessened sense of security and stability in their new school environment. Additionally, a sense of belongingness they may have felt at their old school is gone. All that was familiar to them, the teachers, hallways, and friends, have been taken away from them. Where school may have been the one constant in their lives, it is now yet another place where they do not belong and have to adjust to change.

In the big picture, the impact of these heightened threats may not be detectable when looking at achievement level based on developmental scale scores. Academic achievement is cumulative through time and much of the students' knowledge may have been acquired before they moved or even before they were homeless. One developmental scale score, taken at one point in time, may not be able to detect the impact of homeless mobility. However, the analysis of learning gains focuses specifically on academic growth during the period of time the students were experiencing homeless mobility and increased threats to physiological, safety and belongingness needs. It is through this focused lens of annual learning gains that the full impact of homelessness and homeless mobility can be detected.

Table 16 provides a final summary of the statistical analysis results by research question.

Table 16: Final Summary of Statistical Analysis Results by Research Question

| Research Question  | Statistical Analysis           | Results   |
|--|--------------------------------|---|
| To what extent, if any, is there a statistically significant difference in the reading achievement of fourth through eighth grade homeless students in Brevard County, as measured by developmental scale scores on FCAT Reading, and fourth through eighth grade non-homeless students in Brevard County who qualify for the free lunch program?  | Independent <i>t</i> -test     | No statistically significant difference   |
| Does the proportion of fourth through eighth grade students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Reading vary depending on whether or not they are homeless?  | Chi-square test of association | <b>Statistical significance</b> – a lower proportion of homeless students made learning gains on FCAT Reading       |
| To what extent, if any, is there a statistically significant difference in the mathematics achievement of fourth through eighth grade homeless students in Brevard County, as measured by developmental scale scores on FCAT Mathematics, and fourth through eighth grade non-homeless students in Brevard County who qualify for the free lunch program?  | Independent <i>t</i> -test     | <b>Statistical significance</b> – homeless students had a higher mean developmental scale score on FCAT Mathematics |
| Does the proportion of fourth through eighth grade students in Brevard County who qualify for the free lunch program making a learning gain on FCAT Mathematics vary depending on whether or not they are homeless?  | Chi-square test of association | No statistically significant difference   |
| To what extent, if any, is there a statistically significant difference in the reading achievement of fourth through eighth grade homeless students in Brevard County who have remained in their school of origin, as measured by developmental scale scores on FCAT Reading, and fourth through eighth grade homeless students in Brevard County who have not remained in their school of origin? | Independent <i>t</i> -test     | No statistically significant difference   |



| Research Question  | Statistical Analysis           | Results  |
|--|--------------------------------|--|
| Does the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain on FCAT Reading vary depending on whether or not they stay in their school of origin?  | Chi-square test of association | <b>Statistical significance</b> – a higher proportion of homeless students who remained in school of origin made a learning gain on FCAT Reading     |
| To what extent, if any, is there a statistically significant difference in the mathematics achievement of fourth through eighth grade homeless students in Brevard County who have remained in their school of origin, as measured by developmental scale scores on FCAT Mathematics, and fourth through eighth grade homeless students in Brevard County who have not remained in their school of origin? | Independent <i>t</i> -test     | No statistically significant difference  |
| Does the proportion of fourth through eighth grade homeless students in Brevard County making a learning gain on FCAT Mathematics vary depending on whether or not they stay in their school of origin?  | Chi-square test of association | <b>Statistical significance</b> – a higher proportion of homeless students who remained in school of origin made a learning gain on FCAT Mathematics |

These findings support much of the research presented in this study. Obradovic et al. (2009) utilized a longitudinal study to determine the long term effects of homelessness and high mobility and found both factors to significantly limit the academic growth of both groups when compared to low-income housed peers. When examining longitudinal patterns, “children who are homeless or highly mobile are at greater risk for low academic achievement relative to other low-income students” (Obradovic et al., 2009, p. 512). However, Obradovic et al. (2009) also found initial differences in academic achievement for reading and mathematics. Those findings were not supported by this study.

Rafferty et al. (2004) examined the academic achievement of formerly homeless students compared to low-income students who had never experienced homelessness. They found that,

“Underlying ability did not appear to vary between the formerly homeless and never homeless groups” (Rafferty et al., 2004, p. 189). While the underlying ability did not vary, researchers did find homelessness to have significantly negative short-term effects on academic achievement. Yet, when the students were re-housed, the effects were not long-term. The formerly homeless students also experienced greater rates of school mobility which was strongly associated with grade retention. Buckner et al. (2001) found no significant difference in academic achievement between homeless and low-income housed children based on one-time achievement tests, yet found school mobility to associate significantly with academic achievement. Tanner-McBrien (2010) also found school mobility to have a significantly negative impact on the academic achievement of homeless and foster youth.

### Recommendations for Policy and Practice

To limit the negative effects of homelessness, the McKinney-Vento EHCY had three primary aims: identification of homeless children, removal of barriers to school enrollment and attendance, and the provision of services to support success in school (Cunningham et al., 2010). The recent increase of identified homeless students in our nation’s schools can certainly be attributed, in part, to the Great Recession of 2007-2009. It also may be partially attributed to progress in meeting the first two aims of the McKinney-Vento EHCY. In a 2010 survey conducted by the NAEHCY, a third of the respondents felt that improved identification efforts were a factor for increased enrollment of students experiencing homelessness since 2007-2008. However, identification and expedited enrollment of homeless students is not enough. It is the third aim of the McKinney-Vento EHCY, the provision of services to support success in school, which can reverse the negative impact homelessness has on academic achievement.

Specifically, this study illustrated the importance of districts providing transportation to enable homeless students to remain in their school of origin. In a period of ten months, from the end of the 2009-2010 school year until FCAT testing in April of 2011, 43.7% of the homeless students in this study had changed schools at least once. Of the homeless students who moved, 38.8% changed schools two or more times during that period. Statistical analysis suggested the result of this homeless mobility was the Weighted Saddle Effect. In reading and math, the annual learning gains of homeless students were unable to match their developmental scale scores when compared to non-homeless students who qualified for free lunch. Among homeless students, while mean reading and math developmental scale scores did not differ significantly, the percentage of those who did not remain in their school of origin making an annual learning gain was significantly lower than homeless students who remained in their school of origin. By providing transportation to the school of origin, districts can help remove some of the weight added to the saddles of homeless students. By doing so, the annual learning gains of homeless students may rise to the level of achievement suggested by their developmental scale scores.

Crowley's (2003) research review concluded limiting school mobility needs to be the goal of education policy.

Schools are one of the most important influences in children's lives. School is important for a child's intellectual development and where important relationships are established. Schools that are safe, well-run, and welcoming are places where most children can thrive. But for any school to do its job, children must take root there for a while at least, and move on only when it is time. Children who are not allowed to root and who are buffeted from school to school cannot bond with educators or schoolmates. Their emotional

resources are used up just managing change, leaving them depleted of ability to absorb and integrate new learning. School stability – that is, minimal transience of students, especially during the school year – should be a goal of education policy. (Crowley, 2003, p. 35)

In addition, Hayes-Whigham (2006) had recommended the establishment of a Homeless Advisory Committee (HAC) for each homeless student. Results of this study support the need for such a committee in Brevard County. With 43.7% of the homeless students changing schools within a ten month period, it would be naïve to think transportation would be a viable option for all. The ability to fund such an effort would be immense. Also, Brevard is a rather large school district geographically. Should a homeless student move from one end of the county to the other, transporting a homeless student for an hour and a half to school and back may not be a practical solution or in the best interest of the student. With an HAC in place for each homeless student, it could help ensure other services would be available much quicker.

Finally, it is vital for schools and districts throughout the nation to fully embrace and implement the McKinney-Vento Act. The research suggests its implementation has been inadequate in a large part due to ineffective methods of identification, over-worked liaisons, and insufficient funding (Hayes-Whigham, 2006; Cunningham et al., 2010; & NCH, 2009). While these may be reasons for poor implementation of McKinney-Vento, they should certainly not be used as an excuse. The research also suggests that the homeless youth of America cannot afford excuses, nor is the situation going to improve on its own anytime soon.

### Recommendations for Future Research

For future research on the impact of homelessness on academic achievement, it is recommended researchers utilize more than one source of data for academic achievement. Specifically, researchers should not rely on point in time assessments. Rather, this study suggested it is annual learning gains which are significantly impacted by homelessness and the mobility to which it leads. These annual learning gains cannot be seen by analyzing point in time assessments only. By utilizing multiple data sources which include measures of annual learning gains, researchers will gain a broader perspective of the impact homelessness has on academic achievement.

In addition, this research considered remaining in school of origin to be those homeless students who did not move from the end of the 2009-2010 school year to the start of FCAT testing in April, 2011. Of the homeless students who moved, it was not known whether the change of schools occurred before, after, or was even related to becoming homeless. It was not known whether any of the homeless students who did not change schools did so because they received transportation by the district under McKinney-Vento. It was not known if those who changed schools were offered and refused transportation to their school of origin. It is recommended the district take a closer analysis of the academic impact on those students who actually remain in their school of origin utilizing transportation under McKinney-Vento.

In addition to transportation, there are other services available under McKinney-Vento designed to assist the academic achievement of homeless students. For instance, homeless students may be eligible for tutoring services. Future research should analyze the impact of other services available under McKinney-Vento on academic achievement.

Finally, it is recommended researchers study districts which have successfully implemented transportation programs for its homeless students under McKinney-Vento. Transporting homeless students to their school of origin is not easy, and it is not cheap. However, by constantly changing schools, homeless students are carrying a weighted saddle which severely hinders their ability to make annual learning gains. By learning how other districts have done it, and done it well, school districts across the nation may be able to ease the weight on the backs of its homeless youth.

**APPENDIX: IRB APPROVAL LETTER**



University of Central Florida Institutional Review Board  
Office of Research & Commercialization  
12201 Research Parkway, Suite 501  
Orlando, Florida 32826-3246  
Telephone: 407-823-2901 or 407-882-2276  
[www.research.ucf.edu/compliance/irb.html](http://www.research.ucf.edu/compliance/irb.html)

### Approval of Exempt Human Research

From: UCF Institutional Review Board #1  
FWA00000351, IRB00001138

To: Richard Dunkel

Date: April 20, 2012

Dear Researcher:

On 4/20/2012, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review: Exempt Determination  
Project Title: The Impact of Homelessness and Remaining in School of Origin on the Academic Achievement of Fourth Through Eighth Grade Students in Brevard County Public Schools  
Investigator: Richard Dunkel  
IRB Number: SBE-12-08334  
Funding Agency:  
Grant Title:  
Research ID: N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewska, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 04/20/2012 03:26:01 PM EDT

IRB Coordinator



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