

**Military Children as a Mobile Population: Effects on Achievement**

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## **Abstract**

Children of military families face many obstacles during their lives with the major challenge being mobility throughout their academic careers. With mobility comes separation when parents are deployed and removed from their families for extended periods of time. These separations can cause added stress to an already difficult childhood and adolescence. Children can be affected by academic achievement, attendance in schools, and emotional well-being. This study was conducted to focus on how student achievement is affected by the mobility of military families. Students in sixth grade who had parents that were active duty military were compared with their non-military peers in the areas of reading and mathematics to determine if there was a correlation in academic achievement and gender.

Research questions were addressed using STAR Reading and Mathematics data and addressed four main areas: (1) The change in math achievement between sixth grade students whose parents were active duty members of the military and those students whose parents were not members of the military; (2) The difference in the change in math achievement between sixth grade students whose parents were active duty members of the military and those students whose parents were not members of the military separated by gender; (3) The difference in the change in reading achievement between sixth grade students whose parents were active duty members of the military and those students whose parents were not members of the military; (4) The difference in the change in reading achievement between sixth grade students whose parents were active duty members of the military and those students whose parents were not members of the military separated by gender. The sample included data from 135 students in sixth grade

from District XYZ during the 2013-2014 school year. A two-factor analysis of variance was conducted to test the hypotheses regarding achievement.

The results of the study indicate there was a statistically significant interaction effect of military status and gender on mathematics achievement, as measured by the STAR. However, there was not a statistical significance between students who had parents that were active duty military compared to students who had parents that were non-military in reading or compared to gender in reading.

## **Dedication**

This work is dedicated to my family who has been with me throughout this journey. My wife, Heidi, thank you for your patience and understanding as I spent many nights away from you and the kids. Joseph and Carlie, thank you for understanding when I needed to spend time working on my paper and not playing ball, reading, or watching a show with you. My time is now yours; I love you! Thank you to my parents Jim and Kathy for instilling the value of education in me as I grew up and always encouraging me to continue my education. I will never forget your quote dad, "People can take your things, but they can never take away your education"

I am blessed to have such a loving and caring family to support me throughout my life and educational pursuits!

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I am grateful to my beautiful children, Joseph and Carlie, you are the center of my world. I love you with all my heart and soul.

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## **Chapter One**

### **Introduction**

A perception exists within the educational community that students who move from one school to another several times during their academic careers are at a disadvantage academically (Heinlein & Shinn, 2000). The students may miss valuable instruction and consistency both in and out of school. Also, students who move have a higher likelihood of coming from single parent homes and are more likely to be poor (Long, 1992). These disadvantages may be the case for children of lower socioeconomic situations, but may not necessarily be the case with most of the children raised on military posts given the benefits afforded military members and their families (Siegfried, 2012).

Students of military families are likely to attend some different schools across the country and even in foreign countries. “Frequent moves that cause both home and school transitions limit the formation of support networks that assist parents in the time when they feel the most isolated” (Making a Local Difference: Schools and Communities, 2012, p. 29). Frequent moves cause teachers to take a more in-depth look at instructional practices. In the era of test scores and the push for academic achievement, education is leaving a void in an important part of education; personal connections between teacher and student (Weisberg, 2013). According to Marzano (2006), successful students need positive exchanges with staff members to overcome some of the challenges they face. The military family and, subsequently, children in those families, are confronted with deployments, transfers, and separation.

Military-connected children can be affected academically by transitions and separation the same way non-military children are affected. According to Winerip (2011), a writer for the *New York Times*, “schools on the nation's military bases have outperformed public schools on both reading and math tests for fourth and eighth graders” (p. 15). “Of the more than 1.2 million school-aged children of service men and women, more than 80 percent attend public schools” (United States Department of Education, 2014, para. 1). Students enrolled in Department of Defense (DOD) schools are educated mostly on military installations (Hooker, 2011). In the military setting, schools expect and accommodate mobile students by being prepared to operate with a high turnover rate from year to year. A military school differs from a non-military school in that a student often moves quickly and with little warning to another school. The military gives families with school-age children the opportunity to finish out a school year. However, if a family would choose to move together there is a chance the child could be taken out of school before the end of the year or semester. In schools operated outside of the military base, children who are highly mobile may not have the same safeguards in place to accommodate their needs.

When students move frequently, academics can suffer the most. “Any move during childhood is associated with nearly a half-year loss in academic attainment (Ziol-Guest, & Kalil, 2014, p. 2). Military children move more frequently throughout their academic careers than non-military children. In the setting for this study, students attending District XYZ schools often move after one to two years. This factor is important to help understand how military children compare to non-military children academically. As America continues to experience international conflict, the likelihood

that families will continue to experience mobility grows. Achieving a high level of academic success for children of military parents must be addressed with solutions for the challenges faced by students.

### **Background**

District XYZ is located within a military post. The Post is one of the smaller posts in the United States, totaling only 8 square miles. The student population of District XYZ is comprised of several groups. The groups include dependents of active-duty military personnel, active-duty military personnel attending one of the military's advanced officer training schools, dependents of the Military Police, dependents of retired military personnel, dependents of DOD civilians, and families attached to District XYZ schools. Officers include personnel from all of the military branches, which include the Army, Navy, Air Force, and Marines. Also, officers from foreign nations come to the Post to take part in the advanced officer training program. When officers from foreign countries come to the Post for the advanced officer training program, the majority of their family accompanies them to attend District XYZ schools. The Army considers the Post to be the premier training and education facility for America's best and brightest soldiers and officers from nations around the world.

The Post was established in 1827 and is the oldest active military post west of the Mississippi River. When the military post was first established, it was one of the gateways to the western frontier (History of the Post, n.d.). The school district, which began operation in 1901, serves students in grades K-9. The total school population was 1,775 in grades K-9 during the 2014-2015 school year (State Department of Education, 2015). District XYZ operates only K-9 schools as state regulations prohibit the

establishment of high school programs. Students in military families of high school age attend public and parochial schools in neighboring districts.

District XYZ schools encompass a more unique dynamic than most military schools. Operating as a Unified School District (USD) in the state, the district is not a DOD school. District XYZ also has a school board with a structure unlike other districts in the state. Other USD schools commonly have seven board positions elected by the patrons of the school district; however, the Commanding General of the Post appoints individuals to serve in the three District XYZ Board of Education positions.

The student population in District XYZ is a highly mobile population in which students move every one to three years due to military orders that assign parents to new duty stations. “The district has an annual turnover rate of 70%. With a population change this dramatic, only 30% of the students are retained from year to year” (Hunter-Boyce, 2009, p. 8). A later turnover rate of 50% was noted by the superintendent of District XYZ (personal communication, December 15, 2015). According to Lester and Flake (2013), since the 9/11 tragedy, military families have become less stable due to the deployment of family members in wartime situations. Deployments and their aftereffects have caused an increase in the number of cases of violence and domestic disturbances, raising the number and severity challenges for children, families, and educators (Lester & Flake, 2013).

### **Statement of the Problem**

Throughout the long history of the United States military very few studies have been conducted to compare the academic relationship between military and non-military academic achievement. United States military personnel are moved from location to

location on a regular basis. Children of military families move three times more often than those of civilian families during their middle school and high school years (Easterbrooks, Ginsburg, & Lerner, 2013). The change of duty stations for military personnel causes changes for dependents as well. This mobility makes it difficult for children of those families to fit in and gain consistency in their social lives as well as in their academic lives. In many areas in which there is a military installation, the DOD provides schools for the families. However, parents can opt to take their children off the military installation and enroll them in public, private, or parochial schools within the community in which the military facility exists. “More than 70 percent of military families live outside military installations” (Boys and Girls Clubs of America, 2012, p. 2). This can cause some anxiety among children from military families (Military Spouse A, personal communication, April 18, 2015). Many of the children who attend community schools live in neighborhoods and have known each other for much of their lives. When new families move into a neighborhood, it can be difficult for children to become a part of a new social group (Military Spouse A, personal communication, April 18, 2015).

For non-military families, many students who experience a higher level of mobility have unique educational needs. It is important that teachers and parents effectively work together, feel good about themselves, and learn to trust other adults and peers (Helping kids adjust to school: Useful tips for parents and educators, 2015). This amount of mobility causes schools to have very little background knowledge or ability to build on achievements from the previous year. The only information available for the schools includes permanent records provided when students are being enrolled. This lack

of information often causes teachers to spend the first part of the school year becoming knowledgeable about students' learning needs.

### **Purpose Statement**

The purpose of this study was to analyze the differences in the academic achievement of military and non-military students. This study was designed to investigate to determine if students with a military background or non-military background had an advantage educationally. Based on the results the study will be used to provide information to help students, educators, and families determine the best course of action academically for student success.

### **Significance of the Study**

The results of this study may provide valuable information to school districts concerning the importance of mobility in public education. Districts would be able to determine how mobility affects each child and school differently depending on the demographics of the school and district. Secondly, the analysis of military and non-military children may provide quality data on student achievement. The data will help DOD schools, military-based schools, and public schools. The data can be used to assess what, if any, professional development may need to be provided so that teachers can best serve children of different backgrounds. The current study represented one small district in the state of Kansas, but the results could have a global effect on the way the military addresses the needs of soldiers with families.

### **Delimitations**

“Delimitations are self-imposed boundaries set by the researcher on the purpose and scope of the study” (Lunenburg & Irby, 2008, p. 134). The sample for this study was



limited to students in the sixth grade of District XYZ, during the academic year 2013-2014. Sixth grade students were chosen as these students were the oldest in the school; therefore, these were the most likely to have experienced mobility. The study included data from a small number of students that included those with military and non-military parents.

The source of data for the 2013-2014 school year is another delimiting factor. The source of data was obtained from the STAR standardized tests in reading and mathematics of sixth grade students. This test is a national test used by districts in the state as well as in other states across the country.

### **Assumptions**

One assumption made was that teachers used the diagnostic information provided to them by the STAR standardized tests to help the teacher determine where the student is deficient. Another assumption was that teachers collaborated in their grade level Professional Learning Communities to help each other provide quality instruction so students would have the best opportunity to learn. A third assumption was that all students were given a favorable testing environment.

### **Research Questions**

Research questions are used to create and focus on the critical components and provide a directional guide for the study (Lunenburg & Irby, 2008). The research questions were formulated to compare students based on whether their parents were military or non-military.

**RQ1.** To what extent is there a difference in mathematics achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military?

**RQ2.** To what extent is the difference in mathematics achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military affected by gender?

**RQ3.** To what extent is there a difference in reading achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military?

**RQ4.** To what extent is the difference in reading achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military affected by gender?

### **Definition of Terms**

Terminology of assessments and military terms can include similar concepts that include different titles and acronyms. The following section includes definitions that are based on application components of assessment measures and military terms specific to this study.

**Student achievement.** Student achievement is defined as “boosting individuals’ knowledge and increase children’s preparedness for future endeavors.” (Student achievement, 2013, p. 1)

**Department of Defense (DOD).** DOD is the governmental agency established to manage the national security of the United States (Department of Defense, 2013).

**Mobility.** “A quality or capability of military forces which permits them to move from place to place while retaining the ability to fulfill their primary mission” (Joint Chiefs of Staff, 2015, p. 156).

**Non-military.** For the purpose of this study, non-military are described as a member of society who is not directly connected to the Armed Forces as a member.

**Permanent Change of Station (PCS).** In the military community, Permanent Change of Station is considered moving from one location of residence to another (U.S. Department of Veterans Affairs, 2015).

### **Overview of the Methodology**

This quantitative study provided data from sixth grade students across the district in mathematics and reading using STAR standardized tests. Academic achievement was studied using pre- and post-tests for the 2013-2014 school year. Scores from the STAR Reading and Mathematics Test were compared and included in the study. This researcher analyzed the difference between gender of students and student achievement as well as military or non-military status. The dependent variables were student growth on the STAR standardized tests in reading and mathematics. The independent variables were student gender and whether the student lived with a military or non-military family.

### **Organization of the Study**

Introduced in this chapter was the study’s background information, the statement of the problem, the purpose of the study, significance, assumptions, delimitations, research questions, and an overview of the research methodology. Chapter two includes a review of the literature on the History of Military Family Mobility, Conditions of Military Service, Mobility of Military Personnel and Families, School Response to

Military Mobility, and School Responses to Military Mobility and Student Achievement.

Chapter three contains methodology used for the research including population and sample, sampling procedures, instrumentation, data collection procedures, data analysis and hypothesis testing, and limitations. Chapter four includes the findings, descriptive statistics and the emerging themes from the study. Chapter five contains the study summary, the findings related to the literature, the implications for action and recommendations for future research.

## **Chapter Two**

### **Review of Literature**

The conceptual framework for this review provides the factors affecting the lifestyle of students who are part of military families. This review focuses on a broad array of issues facing families including mobility, resilience, achievement, education, and the adaptation of schools to students. The focus of this research was to learn how students, schools, and families adapt situations to improve student achievement among military children. Over the past twenty years, the conversation regarding the effect of student achievement within the military has become increasingly prevalent. As time passes, the effects of how children and families have been impacted by military deployment and wartime situations are becoming more evident.

#### **History of Military Family Mobility**

As long as there has been a military there has been mobility of military families. As soldiers are assigned and reassigned, families are uprooted, moving from one location to another. During wartime, and as the needs for armed forces increases, even more families are affected. Depending on the time in America's history and the nature of the conflict, changes have occurred that have had direct effects on families.

The American Revolution was, perhaps, a starting point for this phenomenon. Before the Revolutionary War, colonies maintained their militias. These militias were made up mostly of farmers who defended threats from outsiders to their property. Given that transportation in these earlier times was extremely limited, the presence of militias within or near communities was a reality. Part-time soldiers traded pitch forks for muskets at a moment's notice and were commonly referred to as "citizen soldiers"

(Higginbotham, 1983).

As the nation grew, and independence became a shared goal, the Continental Army grew from a small collection of soldiers to a larger force. The armies were often bound together if not in reality at least in mutually supported directions. Many men who fought in militias did not want to join the Continental Army due to the mobility that soldiers would endure by being moved from battleground to battleground. Joining the army would force them to leave their families and farms. The typical Continental soldier was usually within the age range of 18-24 and generally from poor and less educated families (Klingler, 2008). The army used incentives of cash bounties or land once the war was over to attract these men to join the army. Even though the militia and Continental Army were fighting for the same purpose, there were two different perspectives and commitment to the cause. Many times when the militia was called in to support the Continental Army, and conditions became difficult, the militia would retreat instead of staying and holding the line. American generals preferred to go to battle with soldiers with professional military training.

Throughout the Civil War during the 1860s, citizen soldiers were necessary and, thus, generated the problems associated with the presence or near presence of soldiers' families (Higginbotham, 1983). During that conflict, the presence of family members who followed battles from one place to another may not have been as prevalent as with militias. The practice continued in part, as a necessity, for supplies and food were often a part of the tasks assumed by these traveling encampments (Winter encampments, 2014).

As war evolved, battle and confrontation locations changed because of the advances of the Industrial Age and America's role in global affairs. War moved from

American soil to foreign lands thousands of miles away. World War I was unlike any war the United States had seen at that point in history. The biggest change was due to the fact the war was being fought on the foreign ground. Throughout the country, every farm, town, and the city was mobilized for the war effort. Millions of citizens joined voluntary organizations such as the Red Cross, and many women took jobs in factories that had been previously dominated by men. Women entering the workforce in large numbers brought about changes in society with lasting effects. Until this time, with the exception mostly in the nursing ranks, women's role was to stay at home and take care of children. However, as large numbers of men were shipped to war, women were needed in the work force in factories and offices (Greenwald, 1990). The women who were now moved into the workforce affected children the most as there was less time devoted to nurturing and raising children than in earlier times.

The separation of families not only caused problems on the home front; it also impacted education as well. The United States was only involved in World War I for 19 months, but there was a strong push to change the educational philosophy to portray a strong sense of patriotism. President Woodrow Wilson and the United States government funded a series of posters, pamphlets and bulletins to promote strong nationalism and anti-German sentiments (Spring, 1992). These pamphlets focused on students growing to adulthood and becoming involved in the duties of a patriotic citizen. The other goal of the pamphlets was to promote a nationalized system that would keep curriculums across the country similar to promote continuity among students (Spring, 1992).

The United States changed dramatically after the conclusion of World War I. Women demonstrated their importance to American society by filling critical roles in the

workforce, thereby helping fuel the push for women's rights (Dowswell, 2007). The children of World War I grew up to be the soldiers of World War II. With patriotic spirit well-engrained in the generation, family devotion to duty was strengthened as World War II loomed.

As the nation was fully engulfed in the Great Depression of the 1930s and an isolationist foreign policy prevailed, the United States was dealt a huge blow to an already fragile nation. On December 7, 1941, when the Japanese bombed the naval base at Pearl Harbor, great concern arose as America found itself in the midst of an ongoing economic crisis. What the country did not know at this time was this plan of putting so much money into the defense budget and taking it out of so many other programs did more to stimulate the economy than any of the programs Roosevelt put together with the New Deal (Dowswell, 2007).

The new defense initiative set forth by President Roosevelt again relied heavily on women. With so many men in the war there was a great demand for women to go back into the workforce as happened during World War I. As the war progressed, the unemployment rate dropped an astounding 10 percent due to the high demands for military equipment, guns, vehicles, and ammunition (Shmoop, 2008). The high demand for this type of equipment caused changes in other economic areas. The government asked manufacturers to discontinue the production of everyday goods and focus on items that would help soldiers fight the war effectively and keep the home front safe from further invasions, which forced Americans to conserve. Many items became scarce. "Gasoline, rubber, coffee, butter, oil, and meat were rationed in order to prevent shortages and to ensure the availability of these items to all citizens, not just the very rich



by the use of ration stamps” (Shmoop, 2008). Family mobility witnessed its level of stress as families were left behind while fathers were shipped off to war, all the while being forced to ration, reduce, and often rearrange their housing procedures.

World War II is considered the “good war” due to the fact it singlehandedly brought the country out of the Great Depression (Pavalko & Elder, 1990). The war provided millions of jobs during this time, including those in segments of society with typically higher unemployment, in particular, women and African Americans. The increased levels of expectation brought about by wages and new opportunities sparked a post-war economic boom. Again, family mobility was affected, especially as soldiers returned to civilian life and spending power allowed upward mobility (Pavalko & Elder, 1990).

If World War II brought a unified and patriotic spirit to America, the Vietnam War of the 1960s was its polar opposite. There was a negative perception of the Vietnam War from Americans. A country that had pulled together during the first and second World Wars was now being torn apart by protests and demonstrations. The Vietnam War was further fueled by social unrest and changes in the cultural fabric of the country. As the United States fell deeper into the war, many citizens rejected the reason for the war itself. As the war raged on during the summer of 1965, President Lyndon Johnson determined there was a need for more soldiers. An order for the increase of soldiers from 17,000 to 35,000 per month was made (Graham, 2003). In 1967, the Universal Draft was now calling 40,000 soldiers per month. According to (Graham, 2003), the draft tended to favor the exclusion of middle-class white men, which caused poor and economically disadvantaged African Americans to be drafted at a higher rate. In 1967,

even though Black men comprised a smaller field of those who were draft eligible—29% versus 63% of draft eligible White men—64% were drafted, compared to only 31% of eligible White men (Graham, p. 16, 2003). These forms of inequality brought about a lottery system, instituted in 1969. On December 1, 1969, the first draft lottery occurred since World War II. This lottery used birth dates to determine the person's risk of being chosen. Although there was a change in the system, many men were fleeing the country to Canada, Mexico, or Sweden. Other men tried to get deferments by staying in college until they were 26 years old or became married to avoid being drafted (Anderson & Ernst, 2007).

Protests against the Vietnam War continued to take place. Many Americans, mostly college students, held protests that shut down schools. Some of the largest protests took place at Brown University, Kent State University, and University of Massachusetts (Zinn, 2003). Many of these protests happened largely in part to the growing number of students enrolled in college. Also, students wanted to voice their opinions about free speech and student input in the curriculum that in turn led to even more heated debates and protests about the war. The soldiers that returned from the war were met with hatred and disdain for their roles in the war. Although many of them did not have a choice due to the draft, they had to bear the brunt of this disdain for the military. This contempt maintained a virtual black cloud over the United States military until the attacks of 9/11 when soldiers were sent overseas to protect our freedom from terrorists that attacked American citizens on our soil. Once again, and, perhaps for decades since World War II, American patriotism fueled a resurgence of military recruitment. In the meantime, not only were members of America's armed forces subject

to ill feelings about them, so too were their families (Zinn, 2003).

Turmoil dominated the military during the 1960s and 1970s regarding the Vietnam War and the draft. President Richard Nixon signed into law in January 1973 an end to the draft, thus making the United States military an all-volunteer force. This began to change the perception of how the military was looked at professionally. Job performance is raised when workers desire to engage in certain employment. That same philosophy is evident with the military. Individuals now in the military are there by choice. The emphasis the military has placed on quality has helped attract a higher level of quality in terms of education and led to an increase in professionalism (Rostker, 2006). This slowly began to help change the perception of the military as young men and women were choosing to join the military (Rostker, 2006).

As for military families, dramatic changes took place over the decades. Society's views of women shifted from largely a "stay-at-home-and-raise-the-children" attitude to one of the importance of women in the workplace. Roemhildt (2008) noted that "the idea of the traditional military wife was fading" (p. 40). Employment, however, remained a handicapping condition due mostly to the mobility of the parent serving within the military system. Many spouses, especially wives, turned to volunteering (p. 45). The stress on families eased little and, often, was evidenced by children's status.

In its current state, the United States military forces are comprised of an all-volunteer collection of officers and enlisted personnel, all who chose to make a commitment to serve their country. Unlike earlier times when conscription was in place, more individuals joined to access benefits, training, and for many, to initiate a career. Because of these factors, there is a greater likelihood that there will be more families and,

therefore, more challenges because of their presence (MCFP Demographics Report, 2005).

### **Conditions of Military Service**

The professionalism of the American military is changing not only among those who enlist for service but also with those who seek leadership positions. United States military academies exist within four branches: Army, Navy, and Air Force (under the DOD); and that of the Coast Guard (under the Department of Homeland Security). Admission to U.S. service academies is highly competitive. The U.S. Military Academy at West Point, the U.S. Naval Academy at Annapolis, and the U.S. Air Force Academy at Colorado Spring all require applicants to submit on-line files and proceed through pre-candidate qualifications before an application is offered to the applicant (Korte & Schouten, 2014). Also, candidates must be nominated by a member of Congress or the Vice President. During most years, each member of Congress will have one slot to fill and can nominate up to 10 potential candidates. Once they have made their nominations, the institutions determine the best candidates for selection. This type of selection process is a necessary step to ensure the country is training the best and brightest for leadership of fighting forces. These are the young men and women that may become generals that will help defend and keep America safe. While members of the military, these individuals also grow and mature as members of families.

As the draft became a part of history, the size of the country's military force has grown smaller. The U. S. Army reduced the size of its forces from 550,000 in 2012 to a projected 420,000 by the close of FY 2015 (Tice, 2014). During the time of involvement in conflicts in Iraq and Afghanistan, soldiers were required to complete more than one

deployment. One of the major concerns of the military command became retention rate. Soldiers were less likely to remain in service when asked to deploy to combat zones more than one time. For many, involuntary repeated deployments increase the dropout rate.

Extra deployments put a strain on the families. According to the spouse of one soldier,

My husband has been on four year long deployments. Some even lasted over a year. Although we could send mostly letters the first deployment, with emails read occasionally and a 15-minute phone call now and then, over the four deployments communication accessibility advanced. However, phone calls and emails aren't enough to truly grow a marriage in an effective way. We sent boxes and pictures and arts/crafts the kids made. When my husband would return home, things were different. He had to learn what the kids' current needs and responsibilities were. He had to learn their interests and ways. He was often thrown off by the demands of being a husband and father full time while working. It caused tension and strain in the marriage and family. In many ways we still connected, on children's issues and military requirements with the family or him. It still seems like we never got back to the center. Deployments can and have reaped havoc on many a military marriage in up and down trends.

(Military Spouse B, personal communication, December 12, 2014)

These are the battles that military families face when deployments occur. The challenges not only occur when the spouse is away but when the spouse returns home from being gone for long periods of time. There is an adjustment period for everyone even though they know one another. The government has increased pay and benefits for our military which help keep soldiers coming back, but there has also been an increased sense of

patriotism since the 9/11 attacks and being part of the military is no longer viewed as a negative, but something of which to be proud (DoD releases 2015 military pay and compensation rates, 2014).

Chandra, Burns, Tanilelian, Jaycox, & Scott (2008) conducted a study involving mobile children. Chandra testified before Congress in March 2010, concerning the well-being of the military child. During this time, military deployment was at an all-time high after Operation Enduring Freedom and Operation Iraqi Freedom. Chandra et al. cited research to Congress that focused on the findings related to two significant questions: “How are military children fairing across important domains, such as school and social life? Secondly, what types of challenges face youth specifically related to deployment?” (p. 7). Chandra, Burns, Tanilelian, & Scott (2008) Findings concluded that the study provided important data on the well-being of military children and quantitatively demonstrated the differential experiences of children of deployed personnel based on the total months of parental deployment.

However, even if average military children are similar to civilian children, we know very little about the impact of deployment on children or whether the impact of this stress is similar to what is observed in civilian children exposed to stress. Further, we have no information on the general health and well-being of these children from children contemporary military families. (Chandra et al., 2008 p. 14)

Studies such as that undertaken by Chandra, Bruns, Tanilelian, Jaycox, and Scott as well as others are guiding future research to help assess the impact of deployments on military families and their children.

Most consider that the all-voluntary force has been a step in the right direction since its implementation in 1973. Forces have demonstrated that the all-voluntary concept can work in both times of war and peace. The challenges of multiple deployments and constant conflicts around the world will always be challenging, but the current system has proven to be an effective one.

### **Mobility in America**

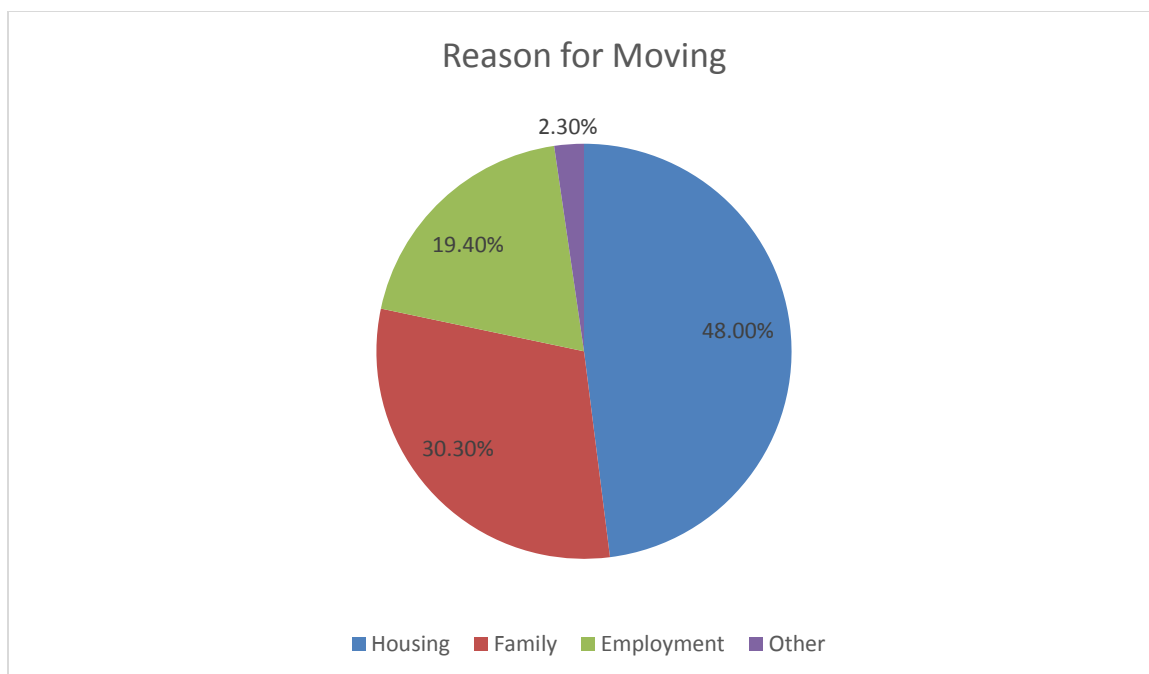
The United States has one of the highest rates of mobility and, subsequently, school mobility in the world. As benchmarked in 2007-2008, 1 in 8 Americans changed residences, amounting to more than 35 million people (U.S. Bureau of the Census, 2009). Annual mobility rates have typically exceeded 14% over the past two decades (U.S. Bureau of the Census, 2009). School-age children between the ages of 5-19, amounting to 8.8 million or 14%, changed residence between 2002 and 2003 (Schachter, 2004).

Mobility for any student can become a negative factor. Moves can be associated with numerous other risk factors such as poverty, stressful life events such as divorce, poor initial school performance, and a tendency to make additional enrollment changes during subsequent school years (Kerbow, 1996, p. 6). Mobility is closely linked to low-SES families that cause them to move on a regular basis. Children in low-SES families' move even more frequently, changing schools several times and disrupting their education. A study of mobility was conducted by the U.S. Government Accountability Office reporting the course of a child's academic career. The report noted that "31% changed schools once, 34% changed schools twice, 18% changed schools three times, and 13% changed schools four or more times before entering high school" (Fiel, Haskins, & Lopez Turley, 2013). Changing schools can cause anxiety, leading to acting out and

poor academic performance. The poor academic performance often stems from parents' negative experiences while they were students. Also, students may be missing vital curricula as the new classrooms may be at different places in the curriculum, leaving potential gaps in the child's education. The gaps may not be significant at the time, but could have harmful effects as time passes and the curriculum advances in difficulty.

The United States as a whole is a very mobile country. As a country 35.9 million people moved between the years 2012 and 2013 to a new residence (Ihrke, 2014). People move for three major reasons; housing related reasons 48%, family related reasons 30.3%, and job-related reasons 19.4% (Ihrke, 2014). The educational level of an individual plays a significant role as to the reason a person decides to move from one location to another. Individuals who have a higher educational level were more likely to move for job-related reasons compared to peers with a lower educational level. Married people were least likely to move for family reasons and moves within the United States were due to job-related issues. People who moved did so within a short distance (Ihrke, 2014).





*Figure 1.* Adapted from U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, 2013.

As noted in Figure 1, for most family moves, the housing comprises the greatest reason followed by family issues, then employment.

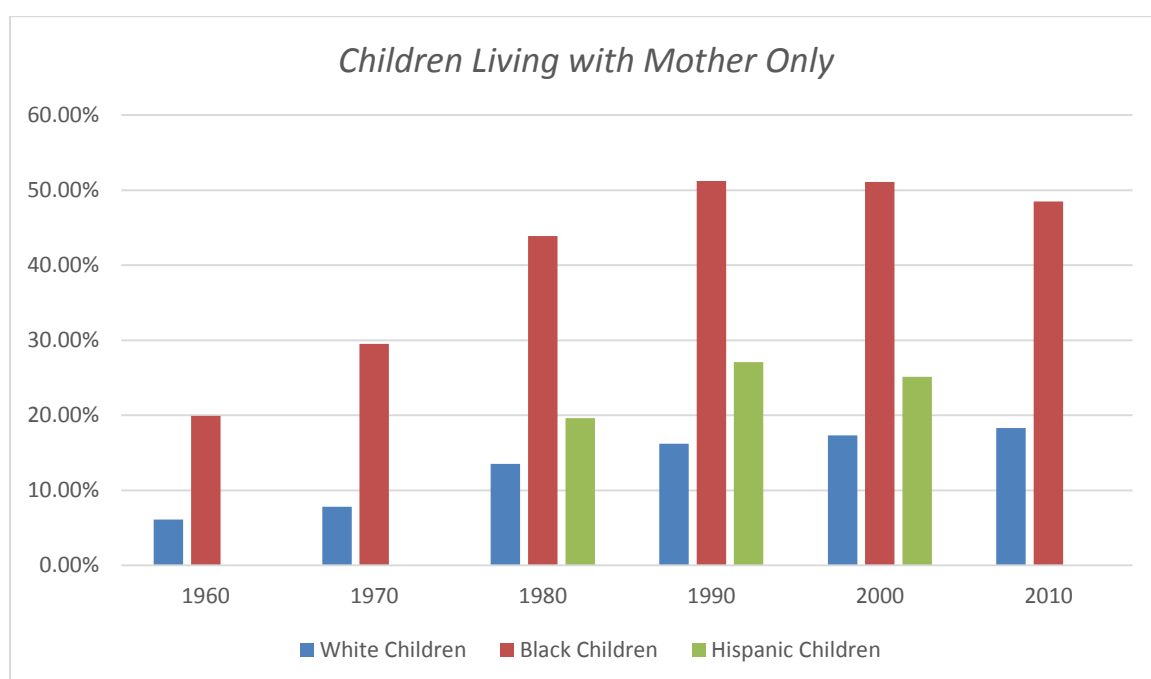
Children that move with a higher than average frequency are more susceptible to becoming poor, live in a single parent home, and have a higher probability to be in a household where the householder is unemployed or failed to graduate from high school. (Heinlein & Shinn, 2000)

Families that are poor move 50% more frequently than families who are not poor.

Frequently, families who are at or below the poverty line move locations based on the cheapest housing. This can place a great deal of stress on the children living in those homes. The children are faced with the reality of changing schools on a regular basis (U.S. Bureau of Census, 2009).

The number of children living in single-parent homes has almost doubled since 1960 (Anderson, 2013). However, in the majority of single parent homes, the mother

acts as the single parent. According to the (U.S. Census Bureau, 2012) Figure 2 shows White children born in the 1960s spent only 6% of their childhood with just their mother parent and Black children only 20%. As the years passed the rates of mother-only families increased considerably. By 1990, White children living with their mother had risen to 16%, Black children to 51%, and Hispanics at 27%. By 2012 children living with their mother only had jumped to 18% for Whites, 26% for Hispanics, and 48% for Blacks.



*Figure 2.* Children Living with Mother Only. Adapted from US Census Bureau, “Living Arrangements of Children Under 18”: 1960 – Present: U.S. Census Bureau July 1, 2012.

This trend has had a negative effect on the social and emotional needs of the children throughout the United States. Unfortunately, being a single parent has become the norm and accepted across the country. Many television shows are portraying single family homes like “Two and a Half Men,” “Reba,” and “Friends” as a normal way of life. This has not always been the case. Television shows like “Leave it to Beaver” and “The Cosby Show” were pillars of the social framework and modeled how family life should

look. These shows more often portrayed the importance of family values and teamwork when raising children. Some consider that today's shows rebuke the importance of teamwork when raising a child.

Children that have a positive role model in their life are less likely to encounter trouble with the law. A Canadian study showed that kids whose fathers were active parents in early and middle childhood had fewer behavior problems and higher intellectual abilities as they grew older, even in socio-economically at-risk families. (Anderson, 2013, p. 1)

As society moves deeper into the 21<sup>st</sup> century, some argue the importance for the country to look back and embrace a culture that once brought harmony into the home and portrayed family and the teamwork of raising children in a positive light. While that is not likely to happen, addressing issues that affect children may be possible, including how schools can meet the needs of single family homes and mobility of students. The next section will touch on some of the risk factors involved when children are raised by a single parent.

Coping skills are a vital part of the success of a mobile child. These habits are developed at an early age. By the age of 11 or 12, the human brain is almost fully developed (Coping skills for kids, n. d.). Once the brain begins to develop fully, the brain begins to prepare for teenage years. During this time, children begin to learn appropriate coping skills they will use for the rest of their life. These essential coping skills prepare children for changes they will face throughout their teen years as well as throughout their adult life. For a child to be successful in school, children must be able to cope with difficult situations. The lack of appropriate skills to cope with difficult

situations can cause problems with memory, attention, and learning skills (For pre-teens, 2015). Children need to be taught appropriate learning skills at both home and school. The partnership between home and school is essential to a child's success in school as well as in social situations in and out of school. Even though coping skills are important there are other factors that are key components of mobility.

Research results indicate student mobility not only poses a serious problem for children who are moving, but for the school, teachers, and their non-mobile peers (Fleming, Harachi, Catalano, Haggerty, & Abbott, 2001). Children are uprooted and taken out of their home and school, often with little or no warning. This makes it more difficult for children to build continuity with other students or teachers, thus potentially putting them at a disadvantage both socially and academically.

Mobile students are a unique group in comparison to their non-mobile peers. Table 1 provides a profile of the background of students that have mobile characteristics. White students and those with greater numbers of advantages are more likely to continue stable school connections. White students make up the highest percentage of students who have attended only one school, and 6% of these students went to four or more schools. Black students represent 53% of stable students but represent 75% of those who experience frequent moves. Other minorities resemble a closer trend to the White students. Hispanic and Asians are a smaller percentage of the frequent movers than they are of the stable students (Kerbow, 1996).

Table 1

*Characteristics of Mobile Students as a Percentage*

Schools Attended	White	African American	Latino	Mother Father	Parent Step-Parent	Mother Only
1	15.0	52.6	28.6	48.8	10.3	33.5
2	12.0	54.7	30.2	38.4	11.6	35.9
3	8.6	66.2	23.9	30.0	11.5	39.3
4 or more	6.1	74.9	17.6	21.8	15.1	39.9

*Note.* Adapted from “Patterns of Urban Mobility and Local School Reform,” by David Kerbow, 1996.

Increased emphasis on student achievement places pressure on schools, in particular on schools that serve lower SES children. Mobility rates can serve as predictors of school success or lack thereof. According to (Reynolds, Chen, & Herbers, 2009), children who moved three or more times had significantly lower math and reading achievement scores than children who moved less. The more children move, the more significant the drop in achievement beginning at an early age. The impact of mobility is significant beginning as early as Kindergarten. Children who moved ended up being further behind in literacy as compared to the children who did not move. The strongest effect was evidenced in children with low-SES status (Student mobility, 2010).

Table 2 includes data regarding mobility by age cohort of elementary children. From this data, it is apparent that many young children face issues of mobility. As education and society as a whole move forward and plan for the future it is imperative that children are moving more frequently during the school year and over the summer are considered. Educators must work together to ensure that students who are mobile are not falling behind and eventually getting lost in the system.

Table 2

*School Mobility at the National Level*

Frequency of School Change	Percentage
During kindergarten (n = 17,745)	
Remain in same school	93.0
Change schools (family reasons)	7.0
End of kindergarten to end of first grade (n = 14, 943)	
Remain in same school	77.1
Change schools (structural reason)	5.2
Change schools (family reasons)	17.7
End of first grade to end of third grade (n = 11,975)	
Remain in same school	72.5
Change schools (structural reason)	3.1
Change schools (family reasons)	24.4
Beginning of Kindergarten to end of third grade	
Remain in same school	55.7
Change schools once	35.9
Change schools twice	8.1
Change schools three times	0.3

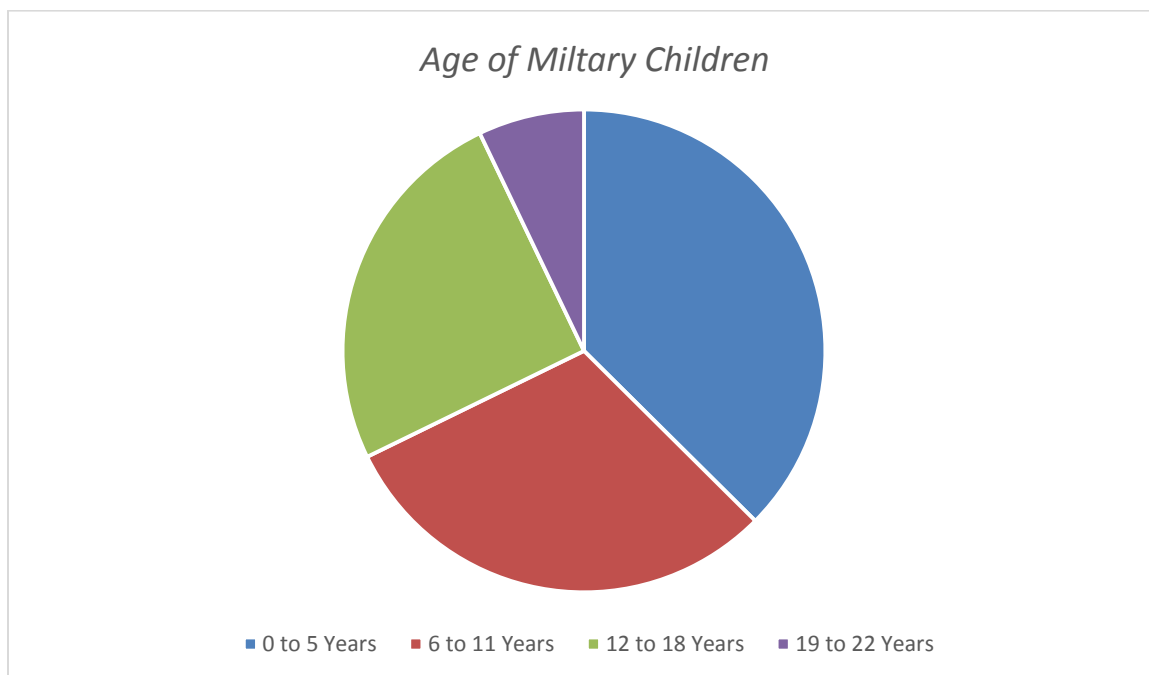
*Note.* “School Mobility in the Early Elementary Grades: Frequency and Impact From Nationally-Representative Data,”Burkham, Lee, and Dwyer (2009)

### **Mobility of Military Personnel and Families**

“Throughout history, military children and families have shown great capacity for adaptation and resilience. However, in recent years, unprecedented lengthy and multiple combat deployments of service members have posed multiple challenges for U.S. military children and families” (Park, 2011, p.65). Military personnel experience many transitions during their careers that have an effect on their personal lives as well as their careers. Military families move more often than civilian families. “Members of the military usually have little choice about where they are stationed, which means that spouses and children cannot decide where to live and when to move” (Cozza, Haskins, & Lerner, 2013, p. 4). Children who are connected to the military in middle school and

high school move three times as often as a civilian youth (Easterbrook et al.'s 2013). Most studies indicate this is a factor, but mobility under the right circumstances can be a factor for some students that need a fresh start. The fresh start allows children to do things they may not have had the opportunity to do previously such as a greater variety of extra-curricular and co-curricular activities and experiences. Another positive factor is that moving allows some students the opportunity to live overseas. Living overseas provides students with an advanced cultural awareness that may not have been possible and which civilian students seldom have an opportunity to experience.

With duty stations spread throughout the world, many children are impacted due to the fact their parents are in the military. "There are 2,204,837 military personnel and 2,978,341 family members that include spouses, children, and adult dependents" (Department of Defense, 2013, p. vi). Throughout the years, the number of military personnel with families has continued to increase. Military personnel that have children increased from 39.9% in 2000 to 43.9% in 2011. Of these children, 37.4% are from birth to 5 years, 6 to 11 years of age 30.3% and 12 to 18 years of age 25.1%. Only 7.1% of children are between the ages of 19 to 22 years of age. Children ages 21 to 22 must be enrolled as full-time students to qualify as dependents (Department of Defense, 2013).



*Figure 3.* Adapted from Analysis of 2011 Demographics: Profile of the Military Community. Updated November 2012.

Also, the age of soldiers having their first child (25.6 years of age) (Department of Defense, 2013) is extremely comparable to the civilian population (25.1 years of age). This lack of discrepancy in the age of the children could be largely in part to the number of military personnel who hold high school diplomas or bachelor degrees. Officers have the highest percentage of bachelor or higher degrees at 83.2% while only 5.3% of enlisted personnel have bachelor degrees or higher. However, 93.4% have a high school diploma or some college experience (Department of Defense, 2013).

A major constant and often negative factor connected to the military is mobility. Military servicemen and women often are temporarily stationed away from their families, which could include an isolated location, going to another base for training, or being deployed without their families for six to eighteen months at a time. Even though the



children of these men and women may not be moving with their parent, the world of each is turned upside down due to the constant movement and extended absences from everyday life. Research indicates families that experience members being gone are affected not only at home but with school performance as well. There is not a true understanding for reasons behind these findings (Military Child Education Coalition, 2005). As the military continues to deploy soldiers and conflicts overseas continue to arise, continued investigations provide helpful pieces to the puzzle so the entire picture of military students can be seen.

Many areas in the research remain. In the school setting with children, society views mobility as a negative factor. However, there are some indications that families with parents that are permanently or temporarily absent do not show any residual effects. “In a study of spouses post-Gulf War, 65% reported little change, whereas 30% indicated improvement in their marriage and family life upon the service members return” (Britt, Adler, & Castro, 2006, p. 238). Researchers of mobility have disproved the theory that if parents are absent, the effects are destined to be harmful to the family as well as those that are detrimental (Weber, 2005).

Women have also become more prevalent in the military. Currently, 14.5% of the military is comprised of women compared to 47.5% of the civilian workforce (Clever & Segal, 2013). The large discrepancy does not take into effect how difficult it is to be a mother in the military compared to a mother in the normal workforce. A typical working mother is a home on a nightly basis. “Women handle about 70% of all housework. On any given week, women spend 33 hours on household tasks while men spent 14” (Sussman, Steinmetz, & Peterson, 2009, p. 277). This discrepancy in time spent on

household chores could have the potential to cause animosity among spouses especially when both are working a full-time job thus causing more stress on families that may be fragile or at their breaking point. However, a military mother may not be home for weeks or months at a time. This could be a major contributor to the lack of women in the military. While some men have embraced the non-working male parent trend, this is still not considered the norm in America.

Traditionally, parents who are absent negatively impact family dynamics; however, recent research has shown opposite effects. The Military Family Research Institute (MFRI) at Purdue University compiled evidence to support this concept. Their research analyzed civilian and military settings and provided insight about individual and family resilience in light of deployments. Resilience is defined as “sustained competence or positive adjustment in the face of adversity” (Easterbrooks, et al., 2013, p. 100). Resilient children often have similar characteristics. Some of these characteristics include a sense of humor, social temperament, optimism, and good health. Although these characteristics form vital elements of a child’s being, it is believed that family and the community in which a child lives is of equal importance.

Studies related to absentee parents are varied and often give different reasons for separations. These may include jobs, divorce, death, and military. Military children respond in different ways. Some military children succeed while others fail. These reasons may include but are not limited to mental or emotional influences in their life. Children that grow up in a military family may better understand the sacrifices that need to be made to keep the family functioning while their parent is away. While the family member is away the family works together to make sure that everyone is taken care of

and have the understanding that the parent will be returning home. That understanding may be different with children of non-military families.

Military families face more issues than just mobility. Deployments over time have adverse effects on family members. The recurring deployments place a strain on families due to the lack of support when the service member returns from the wartime deployment (Wilson, Wilkum, Chernichky, MacDermid Wadsworth, & Broniarczyk, 2011). Results from a study, developed from responses of 1,083 Army and Air Force personnel, confirm that psychological and emotional well-being of military families is directly affected by mobility. Many children in the military are very young. About 40% of children in active duty military families are five years of age or younger, 30% are age 6 to 11, and 25% are 12 to 18 (Department of Defense, 2011). This is due in large part to the age of the military soldier. Nearly 50 percent of the military families are 30 years old or younger which is about the time many couples begin to start families (Department of Defense, 2011). Relinquishing friendships as children grow older can become increasingly more difficult when families move. Children find it harder to relinquish as friends as they move from one location to another. Nearly one-third of military children face a higher risk for psychological stressors when a parent is deployed (Flake, Beth, Johnson, & Middleton, 2009). Once children begin school the bond they form with peers becomes even stronger and students become less willing to be uprooted. Often when families are moved, they have some connection to families at the new location. However, in certain locations families choose to live off the military post. The reasoning for this could be the reputation of the schools on a post or that the family is looking to put down roots permanently. When a military family chooses to live off the post, there is less

of a bond between neighbors and children. This lack of a bond can cause additional stressors to the children and parents as they try to fit into a new neighborhood. Not only does research support family programs to incorporate civilian and military support systems, but the solution to developing a support system is the willingness of communities to form partnerships of support (Huebner, A., Mancini, J., Bowen G., & Orthner, D., 2009).

It has been such a tough transition from living on post to living off the post. I miss our friends and neighborhood at Fort Leavenworth. Not living on post is so different. A challenge when we move to a new location, but now we had to make a decision about schools with a son that has Asperger's. Our son is doing well and adapting to the new charter school and environment. Change is never a good situation for children but even worse for a child with autism. Our daughter is doing well. She is involved in school recreation volleyball that keeps her involved and helps her meet new friends. (Military Spouse B, personal communication, November 2, 2014)

School is a major factor in the development of resiliency in children. During a typical school week, teachers have contact with children 30 plus hours per week (Masten & Reed, 2005). Teachers can fill the void of children who live far away from their extended families. "Only parents have more impact on young people than supportive teachers and coaches do" (Easterbrooks et al., 2013, p. 105). Researchers and scientists have "declared that one cannot be deemed resilient in the absence of significant stressors." (MacDermid, Schwartz, Nishida, & Nyaronga, 2008, p. 3). According Heubner and Mancini (2005), adjustment among adolescents in military families, the

adolescents were able to adjust and demonstrate resilience because of their personal coping skills being complemented by family and community support.

Active service members, spouses, and children participated in a survey that shed additional clarity on the psychological effects on families. Pre-move and post-move data demonstrated that resilience and risk were measured on three levels: (1) the individual, (2) the family, and (3) the community. This study concluded that members that sought to move were more resilient in the transition than those who viewed the move as non-voluntary and undesirable (Chartrand, Frank, White, & Shope, 2008). The level of resiliency in children can be affected by the age of the children, gender of the parent in the military, and the timing of the move. "Moving with older children is more difficult than moving with younger children; moving during the summer was easier for the children while more difficult for adults;" (Chartrand, Frank, White, & Shope, 2008, p. 17) and outcomes for stressors were different for the service members as compared to those of the spouses.

When we would move from post to post when Justin and I were first married and when the children were not in school yet, I couldn't wait for them to get older so it wouldn't be so hard. I thought if they could just help instead of being in the way it would make the move so much easier. Well, I was wrong. When they got in school, they could help more, so it made the move easier, but now we had to enroll in school. The challenging part of enrollment was with our son who is diagnosed with Asperger's. We could not just drop the records off and be done, but we had to advocate for him and his needs that took several meetings to make sure he was receiving the necessary accommodations. (Military Spouse B,

personal communication, November 2, 2014)

As children grow older, there are many factors that enter into the social equation. Children are faced with the challenge of making a new friend and being accepted into the social hierarchy of the new neighborhood and school. These social systems include schools, neighborhoods, support programs, and even extended family. “More family support programs that address strengths, as well as problems, are needed. Existing programs need not be replaced but expanded” (Park, 2011, p. 4). “Attitudes, resilience, and coping skills were measured and the results show firsthand that parental absence, length of absence, age of the child, and purpose and timing of the moves determine the degree of positivism of military family members” (Hillenbrand, 1976, p. 453). Children who come from homes and families that are positive, upbeat, and caring show a true sense of compassion and positive attitude. It is easy to see when families are having a difficult time coping with the absence of a loved one. Children can go through forms of rebellion as well and periods of depression and separation from friends as well. Many times children take on the attitude of the parent who is at home to care for the family. Children of all ages can show rebellion, or they can show a positive, loving attitude. There are also other factors that determine how a family copes with the absence. These can include support from immediate family and the spouse (Coza, Haskins, & Lerner, 2013).

Some aspects of military life and its effects on families are positive. One example is the Army’s advanced officer training program, which has a high concentration of officers. The purpose for including it in this review is that this program is different in many ways from other posts where military personnel and their families are stationed.

The concentration of officers at this Post contributes to a higher socioeconomic and social class standing throughout the post. The advanced officer training program trains soldiers with the rank of Major to become division leaders who usually takes place upon their promotion to Lieutenant Colonel. All of these soldiers that participate in this college are career soldiers with aspirations of becoming promoted to Colonel if not General. This program is a ten-month assignment during which time the soldier becomes a full-time student. Although the workload of school is intense, there is a lot of time to spend with family. This allows the family a chance to act as a family, and the military member can act like a normal parent without being deployed and separated from the family. This study took place at this Post, and results may be skewed for student achievement as they do not reflect those of other non-military populations, in particular, those of poverty or single parent homes.

Routines are important for everyone and especially children of military families. When a child has been uprooted from a familiar situation, it is important to bring a child back to what is most familiar. The first few weeks of school at any level are spent going over routines and procedures to ensure staff and students feel comfortable and safe. As children begin to break their routine for extended breaks and holidays, it can be detrimental to their achievement. As reported by a researcher who is also a Special Education Teacher, Military Spouse, and Military Child Education Coalition Specialist, “Research has proven that students take at least one week to get back into thinking like a student” (Hulsey, 2013, p. 12). It is also important for students to do some academic activity like read a book, puzzles, or word problems (Hulsey, 2013). This extra time spent can help a child maintain the normal mental growth of a child. Lack of academic

stimulation can cause a child to begin losing skills achieved up to the point of the routine's break. When a familiar piece of the puzzle is missing such as in the absence of a parent, routines often are broken. At these times, the structure and routine of schools can be an even more important to the well-being of the child. "The predictability of the classroom helps to cushion the impact of deployment" (Wong, UCLA, & Duke University, 2014). After a parent deploys, children that can keep structure and routine have a better opportunity to have less anxiety and experience psychological issues. Routines will help the family cope with the absence of a parent in their lives.

During deployments, children are asked to take on extra responsibilities at home that the service member would normally perform (McFarlane, 2009). This in turn can hurt student motivation at school. The ability to have a conversation with a parent that is deployed can make a huge difference in achievement in school. A survey conducted by the Department of Defense found that more than half of spouses of deployed soldiers reported their children had a drop in grades while their parent was deployed. These same students had a higher likelihood of not completing their homework on time and had more frequent absences (Lester & Flake, 2013).

When the parent returns home, the responsibilities tend to work themselves out, and the family can re-stabilize. According to McFarlane's study, there are two particular times of stress for the military family. The critical times are when a child's schoolwork is affected by the parental deployment because the primary caregiver is busy with other children and responsibilities. Second is when the service member returns home to his or her family (McFarlane, 2009). There are many stressors that negatively affect children of military families. When parents are deployed there becomes an



increased number of visits to mental health and behavioral specialists. In addition, “parental deployments were positively associated with a greater incidence of juvenile depression among younger military children and those whose remaining parent reported higher levels of depression and stress” (Esqueda, Astor, De Pedro, Estrada, & Benbenishty, 2011).

Military families are constantly in flux concerning their living arrangements. In many situations, families are unaware of their orders until about three months before their next duty assignment. Military families are accustomed to being away from one another on a regular short term 3-6-month basis. Jensen, Martin, and Watanabe (1996) found that military spouses and children are not phased when they are single parents during this time, because it is unclear if deployments during peace time cause any undue stress to families. However, when a soldier is training in isolated locations and during wartime where the mission may put them in danger, a new variable is added to the situation.

Military families are a tight knit group who support one another during the best and worst of times. They look to their adopted families for guidance and support to help them along the way. For many families, the military is the only family they may have to turn to when a helping hand is needed. When a family member is deployed for one reason or another many families will choose to stay at their current duty station where the people and surroundings are familiar instead of uprooting their family for a new location.

Through years of studying military families, research indicates that populations of children are affected differently than others during deployment. “A study of children aged 4 to 17 years during Operation Desert Storm (1990-1991) found that boys and early school-aged children were particularly susceptible to deployment stress” (Jensen, Martin,

& Watanabe, 1996). This is due in large part to not knowing about the well-being of family members. During Desert Storm and Operation Iraqi Freedom, lines of communication were not readily available to soldiers and their families. During the initial insurgency, soldiers on the front lines would go for days and or weeks without having correspondence with their families. For children and families of service members, the lack of contact caused high anxiety.

There were times I would go for a week or two before I would hear from my husband. During Operation Iraq Freedom when the first wave of troops went in, I did not hear from Kenneth for about a week. I did not know if he was alive or dead; you just had to assume no news is good news. It was not until I was on the computer surfing the web trying to find out any news I could when I came across the Chicago Times and on the front page was Kenneth helping a wounded soldier that I knew he was alive. I immediately called my parents and his parents so our family could breathe a little bit easier. (Military Spouse C, personal communication, February 6, 2014)

Many families early on in the war did not know if their loved one was safe, but with the Allied Forces taking control of the war early on there was less need for ground forces to invade and thus to reduce the risk for our troops. This in turn allowed soldiers to have more contact with their families on a regular basis.

It was so nice to have our kids be able to say good morning to their father before they left for school. It helped our child with her outlook on the day and helped her to relax during school knowing her father was doing just fine. I feel so lucky that we did not have any children when he was deployed the first time. I don't

know how Langley would have handled it is not able to talk to her dad every day.  
(Military Spouse C, personal communication, February 6, 2014)

Family functions are also affected during deployment. Families that consist of young parents have the highest risk of neglecting their children during this time. These families have an increased tendency for abuse and marital problems (Lester and Flack, 2013). All of these characteristics and tendencies can contribute to how a child develops. However, these are just a few possibilities. There are other factors that can positively affect how a child develops, such as family support from grandparents, aunts, uncles, nieces, and nephews. Influence from these outside sources can limit negatives that are normally caused by deployment.

### **School Responses to Military Mobility and Student Achievement**

So that the effects of mobility on student achievement can be more fully understood, achievement can be viewed in its broadest sense. In that view, achievement can be linked to three major elements: curriculum and how it translates to instruction; student response to assessment; and what a student can demonstrate being able to know and do. One of the many issues facing children today is that the standards upon which curriculum and instruction rest often differs from school to school and state to state. To level the playing field for all children the National Governors Association Center for Best Practices introduced the Common Core State Standards (CCSS) (National Governors Association, 2011). These standards are grade by grade specific that can level the playing field for all students no matter where a child lives and no matter what the child's background might be. In the past when students moved from place to place and state to state they often faced the uncertainty of not knowing if they would be ahead of the other

students or behind. To lessen concerns about achievement gaps, CCSS has been adopted by 45 states and the District of Columbia at the point of this study. Students in Arkansas, for instance, should be learning the same content as students in New York. This should benefit students whose families move continuously (Meador, 2013). Throughout military installations across the country and around the world military students in Department of Defense (DoDEA) schools are also making the switch to CCSS. This will likely make a positive impact on achievement for military children. Now students that are switching from DoDEA schools to state-funded schools will be learning the same curriculum at the same time, preventing achievement gaps among children.

The second-factor regarding student achievement is that of assessment. In the push to demonstrate that students are achieving, the assessment of a student's knowledge and skills has produced a large number of standardized tests, most produced by for-profit companies. Schools usually adopt testing systems that align with state requirements. The intent of more frequent assessment is that teachers can use the data to determine if the curriculum is on target and if the instruction is aligned with the curriculum. Principals can use the data to formulate needed professional development with the intent of making adjustments for improved outcomes. Ovando & Cavazos (2004) noted that principals perform broad scope leadership by implementing goals, attending to matters of school culture, and managing the school to enhance learning. That management includes the oversight of testing and assessment practices. Another view of assessment's role in student achievement comes from a meta-analysis completed by Marzano, Waters, and McNulty (2005). Of the 21 practices of principals found to be essential to successful leadership, two were of particular importance to student achievement. The first,

Involvement in Curriculum, Instruction, and Assessment describes the need for effective professional development to connect these three elements. The second, Knowledge of Curriculum, Instruction, and Assessment are defined by Waters and Cameron (2007) “the extent to which the leader is aware of best practices in these domains” (p. 7).

The third element to be considered in student achievement is a detailed and extensive list of what it is a student is to know and can do. To consider this element, it is best to turn to the vocabulary associated with each curricular discipline. When a student can successfully understand the content in each discipline, the student can read, write, and speak using the specific vocabulary used in texts and assessment instruments. The Mid-Continent Research in Education Laboratory (McREL), one of nine federally funded resource and support agencies, commissioned the development of a list of vocabulary from each discipline and asked that it be organized by school levels. Working with Robert Marzano, McREL developed an intensive set of instructional strategies focusing on teaching vocabulary (Stone & Urquhart, 2008). The strategies are based on McREL’s belief that “vocabulary is a pivotal component of a student’s background knowledge, and the research indicates that vocabulary instruction can be effective means for increasing it (p. 1).

### **Summary**

In conclusion, schools that are more successful with students who experience mobility are better able to modify appropriately practices that can overcome the challenges these students face. This review focused on a broad array of issues facing families, including mobility, resiliency, the adaptation of schools to students, and achievement. In the following chapter, the methods of the research will be discussed as

well as the data analysis and hypothesis of the problem.

## **Chapter Three**

### **Methods**

This study was designed to explore whether the military status of students affects achievement as measured by the STAR Reading and Mathematics Test. This chapter includes a discussion of the research method used in the current study including the research design, data collection procedures, and method of data analysis. The chapter also includes the researcher's role and limitations of the study as a way to impede any misinterpretation of the findings.

#### **Research Design**

A quantitative non-experimental research design was utilized in this study to determine the extent of any differences in student achievement between students with active duty military parents and students with non-military parents. Data from the STAR Reading and Mathematics Tests were used; each is administered two times per year in the District XYZ. Changes in scores from fall to spring administrations in the 2013-2014 academic year were used to measure sixth grade student growth in reading and mathematics. The status of students' parents, active duty military or non-military, and gender were independent variables.

#### **Population and Sample**

The population of the study was all sixth grade students in District XYZ who were enrolled during the 2013-2014 school year. The military Post is located adjacent to a city of moderate size. The sample of the study focused on the three elementary schools: Elementary School A, Elementary School B, and Elementary School C and the 135 sixth grade students in District XYZ during the 2013-2014 school year.

## **Sampling Procedures**

This researcher used a purposive sample. Lunenburg and Irby (2008) validate this sampling method in research when “selecting a sample based on the researcher’s experience or knowledge of the group to be sampled” is necessary (p. 175).

Students considered in the active duty military group had to have at least one parent (e.g., father, mother, stepmother, stepfather, or grandparent) who was active duty military during the 2013-2014 school year to be considered for inclusion in this study. The groups of students in the non-active duty category had parents who were retired military, individuals who worked on the military post in a civilian capacity, or employees of District XYZ. Students in both groups must have had at least two test scores for both reading and math through the Renaissance Learning Company’s database to be included in the study. A baseline score from fall 2013 and a final score from the spring 2014 test administration included students of non-active military and military families who fit all criteria were included in the study.

## **Instrumentation**

Renaissance Learning Company is the producer of the STAR Reading and Mathematics Tests, administered as computer-based standardized tests. The STAR Tests can be used for large and small groups of students depending on the need of the teacher or school. Both the STAR Reading and Mathematics Tests are used to measure knowledge, skill, and competency.

The STAR Reading and Mathematics Tests were developed to provide the best advantages for students by providing detailed, comprehensive reports for teachers. By computerizing the test it can be individualized for each student. The computerized test is



administered at the student's level based on individual answers. This is unlike a paper and pencil test in which each student must answer all of the same questions (Renaissance Learning, 2012a).

STAR Reading and Mathematics Tests are multiple-choice and designed to be grade-level appropriate for each student. Both the STAR Reading and Mathematics Tests can be used as formative and summative tests. Teachers can use the test to help determine the best course of action for a student, either not meeting or exceeding expectations. Tests can be given twice a year, once at the beginning of the year and at the end of the year, or as often as every two weeks to monitor a student's progress.

The STAR Reading and Mathematics Tests adapt to the student's ability which will increase student motivation due to the fact that "test time is minimized, and test content is neither too difficult nor too easy" (Renaissance Learning, 2012b, p. 4). Adaptive branching guides the student in a positive direction and allows the student to feel success by tailoring the test to student ability level and how questions are answered. This computer-adaptive test takes away the need for the student to answer unnecessary questions that may be too easy or hard for particular students (Renaissance Learning, 2012b, p. 5).

**STAR Reading Test.** The STAR Reading Test serves three purposes for students with at least a 100-word sight vocabulary (Renaissance Learning, 2012b, p.5). According to the *STAR Reading Technical Manual* (2012b), the test provides "educators with a quick and accurate estimate of reading comprehension, it assesses reading achievement to national norms, and it tracks student growth" (p. 2). The STAR Reading Test is not used as a high-stakes test, but as a tool to improve classroom instruction before a high-stakes

assessment. STAR Reading provides “challenging, interactive, and brief tests that help build confidence in student’s reading ability” (Renaissance Learning, 2012b, p. 2).

The STAR Reading Test is a layered approach to help determine a student’s ability. The pre-test includes 20 vocabulary items. After the vocabulary items, the second section includes five text passages in a multiple-choice format (Renaissance Learning, 2012b, p.5). A student’s ability to comprehend written material has a strong relationship to the student’s level of vocabulary knowledge (Renaissance Learning, 2012b, p.5). To gather information, the students are exposed to a large amount of text. “Students will read, use context clues, interpret the meaning of, and attempt to answer 20 to 25 cloze sentences across these levels, generally totaling more than 300 words” (Renaissance Learning, 2012b, p.5). A cloze test removes words from a portion of the sentence. The participant is then asked to replace the missing word. This type of test requires the student to comprehend and understand the material. The students must have a high level of comprehension to have the ability to answer the questions (Renaissance Learning, 2012b).

**STAR Mathematics Test.** The STAR Mathematics Test is used to help teachers assess student math abilities in a 20-35 minute testing format. This short test allows teachers to provide immediate feedback to the student and allows school personnel to access results. As a progress monitor tool, “STAR Mathematics Test serves two primary purposes. First, the test provides educators with quick and accurate instructional levels, and second, it tracks growth over long periods of time” (Renaissance Learning, 2012a, p. 2).

The STAR Mathematics Test consists of 24 items that measure general knowledge in math, generated from 2,000 items and 200 objectives. The test items are divided into eight strands and two parts: items 1-8 are generated from Numeration Concepts and items 9-16 are from Computation Process (Renaissance Learning, 2012a, p. 3). “Questions 17-24, which are considered the second part of the test, includes items from the following six strands: Word Problems, Estimation, Data Analysis and Statistics Geometry, Measurement, and Algebra” (Renaissance Learning, 2012a, p. 4). The final eight items are based on the level of the student, so each child is being challenged at their instructional level.

The STAR Mathematics Test allows students three minutes on each item before the test moves to the next question. Renaissance Learning (2012a) adopted a time limit per item to “avoid the complexity and confusion associated with a variable time-out period” (p. 8). The questions were designed to take one minute if the student knew how to complete the problem. When the test was being normed the “mean item response time was 27 seconds with a standard deviation of 25 seconds” (Renaissance Learning, 2012a, p. 8).

**Measurement.** Items in the STAR Reading and Mathematics Test begin with material that is on grade level for the student taking the test. The test content was intended to reflect commonly taught concepts throughout the United States, which was based on the Common Core Standards (Renaissance Learning, 2012b, p. 17). As the student takes the test and correctly or incorrectly answers the questions, the preceding questions get more difficult or easier. STAR Reading and Mathematics programs create a multitude of test forms as it interacts with the students taking the test. In order to make

the results of all tests comparable, and in order to provide a basis for deriving the norm-referenced scores for STAR Reading and Mathematics, it is necessary to convert all the results of STAR Reading and Mathematics Tests to scores on a common scale (Renaissance Learning, 2012b,). STAR Reading and Mathematics software does this in two steps. First, maximum likelihood is used to estimate where each student falls on the Rasch ability scale, determined by the difficulty of the items administered and the pattern of right and wrong answers Renaissance Learning, 2012b). Second, the Rasch ability scores are converted to STAR Reading and Mathematics Scaled Scores, using the conversion table specifically designed to provide accurate conversions (Renaissance Learning, 2012b). STAR Reading and Mathematics Scaled Scores range from 0 to 1400. The STAR Reading and Mathematics provide a scaled score for students from first through twelfth grade.

“A student is given a Grade Equivalent score that indicated the normal grade placement of students whom a particular score is typical.” (Renaissance Learning, 2012a, p. 101) Grade Equivalent scores in STAR Reading and Mathematics range from 0.0 to 12.9+. Grade Equivalents are expressed individual months in tenths it does not include the summer (Renaissance Learning, 2012a). Grade Equivalence is not an equal-interval scale due to student growth in academic areas occurs at a faster rate in lower grades compared to upper grades.

**Validity and reliability.** “Validity is the degree to which an instrument measures what it purports to measure” (Lunenburg & Irby, 2008, p. 181). A major concept in the accuracy of a test is determined by validity. Determining the validity of a test involves the use of data and other information both internal and external to the test instrument

itself (Renaissance Learning, 2012b, p. 60). According to Benicoff-Nan (2002), data from the STAR test showed a moderately strong to very strong relationship with the Stanford 9 Achievement Test (SAT) and California Standards Test (CST). In analyzing the three tests, the strongest relationship was in 6<sup>th</sup> grade with a .86 for the SAT and .83 for the CST (Benicoff-Nan, 2002).

Renaissance Learning (2012b) determined the validity of the STAR Reading Test using both content and construct validity. “Content validity is the relevance of the test questions to the supposed to be measured by the test, namely reading comprehension and reading achievement” (Renaissance Learning, 2012b, p. 60). Construct validity “deals with what the instrument is measuring” (Lunenburg & Irby, 2008, p. 181). Criteria were established for desired content development. “The content had to cover a range broad enough to test students in K-12 and had to be large enough so that students could test up to five times per year without being given the same items twice” (Renaissance Learning, 2012b, p. 16). The broad content is vital to the validity to ensure unique questions each time a student take the test. “The reading bank for STAR Reading Test 4.4 contains a total of 2,048 items: 1,620 vocabulary in-text items and 428 authentic text passage items” (Renaissance Learning, 2012b, p. 16). One approach Renaissance Learning (2012b) used was to conduct a study linking the STAR Reading and the Degrees of Reading Power comprehension assessments. It was determined there was a correlation of .89 between the two tests. “Adjusting that correlation for attenuation due to unreliability yielded a corrected correlation of .96, indicating that the constructs (i.e., reading comprehension) measured by STAR Reading Test and Degrees of Reading Power are almost indistinguishable” Renaissance Learning, 2012b, p. 60).

According to Renaissance Learning (2012a), finding the construct validity must include data from the STAR Mathematics Test along with external factors such as grade-level achievement in mathematics. Other factors include “students’ scores should correlate highly with their scores on other established tests of mathematic proficiency and achievement. Additionally, these scores should be highly related to teachers’ assessments of their students’ proficiency in mathematics” (Renaissance Learning, 2012a, p. 50). The measure of academic achievement on other tests of mathematic proficiency and another source of evidence for construct validity is how well the STAR Mathematics scores correlate with other accepted mathematical tests of achievement (Renaissance Learning, 2012a). “Mathematical ability varies significantly within and across grade levels and improves as a student’s grade level increases” Renaissance Learning, 2012a, p. 50). “Validation of the STAR Mathematics Test is an ongoing activity, with the goal of establishing evidence of the test’s validity for a variety of settings and students” (Renaissance Learning, 2012a, p. 52). Validity coefficients for grades 1-6 range from .63-.71, with an overall average of .67 (Renaissance Learning, 2012a, p. 52). As the number of tests is given, the range and overall average will be continually moving. This is based on the larger sample size as more students take the test. Institutions that collect relevant data are encouraged to provide the data to Renaissance Learning. (Renaissance Learning, 2012a). “Where data could not be verified and when the sample size was very small those data were omitted from the tabulations” (Renaissance Learning, 2012a, p. 52). The information solidifies that the STAR Mathematics Test as a valid instrument to demonstrate mathematics achievement.

Reliability is defined as the “degree to which an instrument consistently measures whatever it is measuring” (Lunenburg & Irby, 2008, p. 182). The STAR Reading Test uses three types of reliability coefficients: generic reliability, split-half reliability, and alternate forms reliability (Renaissance Learning, 2012b). “Results indicated that the overall reliability of the scores was .956. Coefficients ranged from a low of .89 in grades 3 and 4 to a high of .93 in grades 10, 11, and 12” (Renaissance Learning, 2012, p. 53). The information solidifies the STAR Reading Test as a reliable instrument to demonstrate reading achievement.

Renaissance Learning (2012a) found that the overall reliability of the STAR Mathematics Test was .94 based on 29,228 students.

Participating schools were asked to administer two norming tests, each on a different day, to about one-fourth of the overall sample. This resulted in an alternate forms reliability subsample of more than 7,000 students who took different forms of the 24-item STAR Math 2.0 norming test. The interval between the first and second tests averaged four days. For example, in some cases both tests were given on the same day; in other cases, the interval ranged from one to as many as 40 days. (Renaissance Learning, 2012a, p. 54)

### **Data Collection Procedures**

Prior to conducting the study, approval was sought from the Fort Leavenworth School District by contacting the deputy superintendent. The deputy superintendent placed the proposal on the board of education agenda for approval. Next, a request for research was written and presented to obtain permission from the board of education during the September 2012 District XYZ Board of Education meeting. This request was

approved by the Board of Education with a 2-0 vote on September 27, 2012 (see Appendix A).

A request was submitted to the Baker University Institutional Review Board (IRB) on August 21, 2014. After approval was received from Baker University (see Appendix B), the District XYZ Technology Department was contacted to collect the data necessary for the study. Archival data were requested for each group of students identified for the study. The data were gathered by the technology department of the District XYZ schools. The student data included gender and military status from the District XYZ Core Data Department. The STAR test results for the students' included reading and mathematics in the fall of 2013 and the spring of 2014. The Curriculum Intervention Specialist (CIS) provided the students' gender, scores, and if the student was from a military or non-military family.

### **Data Analysis and Hypothesis Testing**

The study examined the following research questions to determine which combination provided the basis for data analysis.

**RQ1.** To what extent is there a difference in mathematics achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military?

**H1.** There is a difference in STAR mathematics achievement between sixth grade students whose parents were active duty military and those students whose parents were non-military.



**RQ2.** To what extent is the difference in mathematics achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military affected by gender?

**H2.** The difference in STAR mathematics achievement between sixth grade students whose parents were active duty military and those students whose parents were non-military was affected by gender.

**RQ3.** To what extent is there a difference in reading achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military?

**H3.** There is a difference in STAR reading achievement between sixth grade students whose parents were active duty military and those students whose parents were non-military.

**RQ4.** To what extent is the difference in reading achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military affected by gender?

**H4.** The difference in STAR reading achievement between sixth grade students whose parents were active duty military and those students whose parents were non-military was affected by gender.

A two-way analysis of variance (ANOVA) was conducted to address the four research questions. The alpha level was set at 0.10. The two categorical variables used to group the dependent variables (changes in mathematics and reading scores) were parent status (active duty military and non-military) and gender (male and female). The main effect for parent status was used to test hypotheses 1 and 3. The interaction effect

between parent status and gender was used to test hypotheses 2 and 4. The level of significance was set at 0.01.

### **Limitations**

“The limitations of a study are not under the control of the researcher” (Lunenburg & Irby, 2008, p. 133). Using the STAR assessment as an indicator of academic growth may be an incomplete representation of what the student knows. Outside factors may include, but are not limited to, teacher effectiveness, family influence, and modifications that may have been provided to the student during the test. Factors such as test preparation and expectations of a student are limitations.

### **Summary**

Provided in this chapter was an overview of the quantitative study. This chapter included a review of the study’s research design, population and sample, sampling procedures, STAR reading and mathematics Instrumentation, measurement, validity, and reliability of the instrumentation, data collection procedures, data analysis and hypothesis testing, and limitations. Chapter four includes the results of the study that came forth from the completed surveys of the purposive sample.

## Chapter Four

### Results

The purpose of this study was to analyze the differences in the academic achievement of military and non-military students. This study was designed to investigate if students of parents with a military background or non-military background had an advantage educationally. Presented in this chapter are the results of the data analysis for each hypothesis associated with the research questions posed for this study.

#### Descriptive Statistics

The population of the study was all sixth grade students at Fort Leavenworth, who were enrolled during the 2013-2014 school year. The sample included 135 students; 24 males and 20 females who had parents who were non-military, and 50 male and 41 female students who had parents who were active duty military.

#### Hypothesis Testing

The section contains the results from data analysis to determine if there were differences in student achievement.

**RQ1.** To what extent is there a difference in mathematics achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military?

**H1.** There is a difference in STAR mathematics achievement between sixth grade students whose parents were active duty military and those students whose parents were non-military.

The results of the analysis, as shown in Tables 3 and 4, indicated there was not a statistically significant main effect of military status on mathematics achievement, as measured by the STAR,  $F = 1.13$ ,  $df = 1, 131$ ,  $p = .29$ . The mean loss for military students ( $M = -3.93$ ,  $SE = 1.57$ ) was higher than the mean for students whose parents were non-military ( $M = -0.26$ ,  $SE = 2.26$ ). The military students had a greater loss than non-military students.

**RQ2.** To what extent is the difference in mathematics achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military affected by gender?

**H2.** The difference in STAR mathematics achievement between sixth grade students whose parents were active duty military and those students whose parents were non-military was affected by gender.

The results of the analysis, as shown in Tables 3 and 4, indicated there was a statistically significant main effect of females on mathematic achievement, as measured by the STAR,  $F = .20$ ,  $df = 1, 131$ ,  $p = .66$ . The mean loss for female students ( $M = -2.71$ ,  $SE = 2.03$ ) which was lower than the male loss of ( $M = -1.48$ ,  $SE = 1.85$ ). The male students outgained the female students.

There was significant interaction, as shown in Tables 3 and 4, between military and gender, on STAR Mathematics,  $F = 4.85$ ,  $df = 1, 131$ ,  $p < 0.03$ . Non-military females students showed a gain of ( $M = 0.45$ ,  $SE = 2.93$ ) less than the gain of non-military male students ( $M = 0.92$ ,  $SE = -2.72$ ).

The military female students had a greater loss than military males. Non-military males gained a greater rate than non-military females.

Military students had a negative gain compared to the non-military which had a positive gain.

There was significant interaction, as shown in Tables 3 and 4, between military and gender, on STAR Mathematics,  $F = 0.12$ ,  $df = 1, 131$ ,  $p = 0.73$ . Military female students ( $M = -3.00$ ,  $SE = 1.88$ ) performed worse than military male students ( $M = -0.80$ ,  $SE = 1.88$ )

Table 3

*Summary of ANOVA Test of Significance Results for Mathematics*

Source of Error	<i>SS</i>	<i>F</i>	<i>sig.</i>
Military	394.60	1.78	0.29
Gender	44.02	.20	0.59
Military*Gender	1076.59	4.85	0.03

Table 4

*Descriptive Statistics for the Results of the Test in Mathematics*

Military Status		<i>M</i>	<i>SE</i>	<i>n</i>
Military	Male	6.34	2.11	50
	Female	1.51	2.33	41
Non-Military	Male	-3.38	3.04	24
	Female	3.90	3.33	20

**RQ3.** To what extent is there a difference in reading achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military?

**H3.** There is a difference in STAR reading achievement between sixth grade students whose parents were active duty military and those students whose parents were non-military.

The results of the analysis, as shown in Tables 5 and 6, indicated there was not a statistically significant main effect of military status on reading achievement, as measured by the STAR,  $F = 1.13$   $df = 1, 131$ ,  $p = .291$ . The mean loss for military students ( $M = -1.92$ ,  $SE = 1.40$ ) was lower than the mean for non-military students ( $M = -0.26$ ,  $SE = 2.26$ ). The military students had a greater loss than non-military students.

**RQ4.** To what extent is the difference in reading achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military affected by gender?

**H4.** The difference in STAR Reading achievement between sixth grade students whose parents were active duty military and those students whose parents were non-military was affected by gender.

The results of the analysis, as shown in Tables 5 and 6, indicated there was not a statistically significant main effect of females on reading achievement, as measured by the STAR,  $F = 0.29$   $df = 1, 131$ ,  $p = 0.59$ . The mean loss for female students ( $M = -1.28$ ,  $SE = 1.81$ ) which was lower than the mean gain for male students whose parents were non-military ( $M = 0.03$ ,  $SE = 1.65$ ). The male students outperformed the female students.

There was a significant interaction as shown in Table 5 and 6 between military and gender, on STAR Reading Score Gain  $F = 4.85$ ,  $df = 1, 131$ ,  $p = < 0.03$ . Military female students ( $M = -1.51$ ,  $SE = 2.33$ ) performed better than military male students ( $M = -6.34$ ,  $SE = 2.11$ ).

There was no significant interaction as shown in Tables 5 and 6 between military and gender on STAR Reading Score Gain  $F = 0.12$ ,  $df = 1, 131$ ,  $p = 0.73$ . Non-military females showed a loss of ( $M = -3.90$ ,  $SE = 3.33$ ) while the non-military male students showed a gain ( $M = 3.38$ ,  $SE = 3.04$ ).

The military females outperformed the males but both lost in reading achievement.

The non-military male students outperformed the females.

Table 5

*Summary of ANOVA Test of Significance Results for Reading*

Source of Error	<i>SS</i>	<i>F</i>	<i>sig.</i>
Military	199.25	1.13	0.29
Gender	50.71	0.29	0.59
Military*Reading	21.08	0.12	0.73

Table 6

*Descriptive Statistics for the Results of the Test in Reading*

Military Status		<i>M</i>	<i>SE</i>	<i>n</i>
Military	Male	0.84	1.88	50
	Female	3.00	2.08	41
Non-Military	Male	-0.92	2.72	24
	Female	0.45	2.97	20

### Summary

Provided in chapter four were the findings of the ANOVA to determine if statistically significant differences in the STAR sixth grade mathematics and reading

scores existed among the students in District XYZ Schools included in this study. The results of the analysis indicated there was a statistically significant interaction effect of a military status and gender on mathematics achievement, as measured by the STAR.

Chapter five includes a discussion of the results.



## Chapter Five

### Interpretation and Recommendations

Included in chapter five is a summary of the study and an overview of the problem, purpose statement, and research questions. Chapter five continues with a connection of the study's results to the literature review. A review of the major findings from the study as well as recommendations for future research is also described. Chapter five ends with concluding remarks.

#### Study Summary

The purpose of this study was to identify the extent of the impact on students' academic achievement who had parents that were active duty military and those students whose parents were non-military. The study included scores from the STAR Reading and Mathematics Test by Renaissance Learning Company. Scores were analyzed for each student based on any changes from fall to spring. The study was focused on student achievement scores for students in sixth grade in District XYZ.

**Overview of the problem.** Students in schools across the country move at an alarming rate. This is particularly true of the children of service men and women of the United States. Schools across the country are faced with a dilemma of ensuring a quality education for all students including the ones that move from school to school many times throughout their educational careers. Common Core has made an impact and helped students achieve on a more consistent basis when moving from school to school due to an aligned curriculum in each grade level. If schools are teaching the same thing at each grade level across the country, then students should not have learning gaps.

**Purpose statement and research questions.** The purpose of this study was to investigate the achievement of students whose parents served in the military and were stationed at Fort Leavenworth and students whose parents were non-military, but worked at Fort Leavenworth. Scores from the STAR Reading and Mathematics Test were used to measure student achievement. Four research questions were developed to gather information to address the purpose of this study: (1) To what extent is there a difference in mathematics achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military?; (2) To what extent is the difference in mathematics achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military affected by gender?; (3) To what extent is there a difference in reading achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military?; and (4) To what extent is the difference in reading achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military affected by gender?

**Review of the methodology.** Using a quantitative research design, sixth grade students' reading and mathematics data were gathered from the STAR assessment database. The statistical analysis used to test hypotheses for the research was an ANOVA, which was conducted to determine the extent of any main effects or interactions between any combinations of the independent variables on the dependent variables. The sample included all sixth grade students during the year of 2013-2014

attending the District XYZ. The sample consisted of 135 students in sixth grade between August 2013 and March 2014.

**Major findings.** Results from this study indicated:

- The military students had a greater loss than non-military students in mathematics.
- The male students outgained the female students in mathematics
- In mathematics, the military female students had a greater loss than military males. Non-military males gained a greater rate than non-military females.
- Military students had a negative gain compared to the non-military which had a positive gain in mathematics
- The military students had a greater loss than non-military students in reading.
- The male students outperformed the female students in reading.
- The military females outperformed the males but both lost in reading.
- The non-military male students outperformed the females in reading.

### **Findings Related to the Literature**

The goal of this study was to extend the current knowledge of typology instruments as they apply to the field of education. Chapter two provided an extensive description of literature related to this study. This section relates the findings of this study to the literature presented in chapter two.

Research questions one and three stated there were differences in reading and mathematics achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military. The findings did not show statistically significant differences in achievement

between students whose parents were active duty or non-military. Previous studies from Chandra and Kerbow found children of military families face unique challenges throughout their childhood day. With these challenges come questions that need to be answered with continued research such as, “How are military children fairing across important domains, such as school and social life? Secondly, what types of challenges face youth specifically related to deployment?” (Chandra et al., 2008, p. 7). These questions are based on individual differences; however, on a global scale children of military families that move from school to school and base to base fare extremely well. The literature based on Chandra’s findings concluded that the study provided important data on the well-being of military children and quantitatively demonstrates the differential experiences of children of deployed personnel based on the total months of parental deployment. Further, this study offered insight that will guide continued intervention and future research (Chandra, et al., 2008). Moves can be associated with numerous other risk factors such as poverty, stressful life events (e.g., divorce), poor initial school performance, and a tendency to make additional enrollment changes during subsequent school years (Kerbow, 1996). The findings in this study did not support the research of Chandra and Kerbow.

Research question two stated to what extent is the difference in mathematics achievement, as measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military affected by gender. The findings in this study did show a statistically significant difference in achievement between parents who were active duty and non-military. According to Reynolds, Chen, and Herbers, (2009), children who moved three or more times had

significantly lower mathematics and reading achievement scores than children who moved less. The literature rebukes the findings of the researcher. Research results indicate student mobility not only poses a serious problem for children who are moving, but for the school, teachers, and their non-mobile peers (Fleming, Harachi, Catalano, Haggerty, & Abbott, 2001).

Research question four stated to what extent the difference in reading achievement, as is measured by the STAR, between sixth grade students whose parents were active duty military and those students whose parents were non-military affected by gender. The findings in this study did not find a statistically significant difference in achievement between active duty and non-military students. Research results indicate student mobility not only poses a serious problem for children that are moving, but for the school, teachers, and their non-mobile peers (Fleming, Harachi, Catalano, Haggerty, & Abbott, 2001). The literature does not support the findings of this researcher's that there was not a statically significant difference between students with parents who are active duty compared to non-military. The greatest risk factor children may have when moving schools on a regular basis is curriculum not matching from school to school causing children to have gaps in their education. As children move schools more often, the gaps become larger.

## **Conclusions**

Results from the study indicate that military and non-military children did not have a statistically significant impact on student achievement. Many districts have plans in place for students who move into school either at the beginning of the school year or mid-year. The plan and procedures District XYZ has in place appears to be an effective

intervention program for their student population. There needs to be more emphasis placed on any factors related to the student's gender. These findings provide evidence for the needs of students to be taught coping skills they can use as they move from one location to another, which will help with student's achievement.

**Implications for action.** Schools or districts can use this research across Kansas and the United States that have a military population. The study results indicated a significant difference in the achievement scores of the sixth grade males in mathematics who had parents that were active duty. Females with parents who were active duty had a lower change than males. The analysis of the data can be utilized by District XYZ to make positive impacts on students. The population of this military Post will continually change as will the children who attend District XYZ. The Post and the Armed Forces need to work to provide continually training for teachers and administrators about the military and mobility. Many districts face a challenge educating military-connected children. "Seventy-three percent of districts report academic support as a challenge. Additional counseling, use of technology, and flexibility in academic requirements as the strategies that best assist them in serving the unique needs of their Military dependent students" (Supporting service members and their families, 2012, p. 35). In addition to these resources, many communities have additional resources available to support families such as Veterans of Foreign Wars.

**Recommendations for future research.** The present research was unique as the study consisted of 135 students who were attending District XYZ as sixth grade students during the school year 2013-2014. Additional research is necessary to determine if mobility in general affects student achievement across the United States. The first

recommendation is to extend the current study by including school districts from across the state and the United States. Schools could be arranged by military schools, inner-city schools, rural schools, and suburban schools. Students in all grade levels could be assessed and separated based on the number of times they have moved schools throughout their academic career. The second recommendation is to extend the research by conducting a study with a mixed methods research design. A qualitative approach would allow a researcher to survey the perceptions of parents, teachers, and students regarding how the students achieve with constantly moving from school to school. Parents, teachers, and students could be interviewed to compare the different perceptions of mobility based on their firsthand experiences. The results could be analyzed to determine if one area or environment had a greater concern with mobility. These findings could be used by school districts that have a high rate of mobility to help them prepare and increase the effectiveness of classroom instruction.

**Concluding remarks.** School districts are charged with the responsibility of meeting the needs of all learners. As society evolves, so do students and their learning styles. As students learn differently, there will always be a need for school districts to provide students with a quality education no matter from where they move, their background, or socioeconomic status. In spite of global issues concerning many families, it is reassuring to see that all children are performing well and constantly in a mobile and diverse community.

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## Appendices

**Appendix A: Approval for Conducting Study**

## Copy of District XYZ Board of Education meeting minutes

**4. Action Items**

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**4.1 Action to approve dissertation request.**

Mr. John Ernst requested permission to complete his doctoral study with [REDACTED]. Mr. Ernst would like to use the 6th grade STAR reading and math assessment scores to analyze whether the mobile military child's student achievement is affected. COL [REDACTED] inquired about Mr. [REDACTED] use of assessment data regarding mobile military children. Mrs. [REDACTED] explained that she did not believe Mr. [REDACTED] was using assessment scores. MAJ [REDACTED] inquired of Mr. Ernst how he would proceed if he discovered that a mobile military lifestyle did affect student achievement. Mr. Ernst explained that he is not far along enough in his research to be able to provide suggestions. COL [REDACTED] asked Mr. Ernst to return to the Board of Education to discuss his hypothesis and research design. COL [REDACTED] inquired about the use of names. Mr. Ernst confirmed that complete confidentiality would be upheld. A motion was made by MAJ [REDACTED], seconded by COL [REDACTED]. The motion carried a vote in favor 2 - opposed 0 - to approve the dissertation request by Mr. Ernst.

Mrs. [REDACTED] arrived at the Board Meeting at 1840 hours.

**Appendix B: Instructional Review Board Application and Approval**



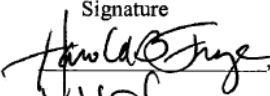

SCHOOL OF EDUCATION  
GRADUATE DEPARTMENT

Date: \_\_\_\_\_  
IRB PROTOCOL NUMBER \_\_\_\_\_  
(IRB USE ONLY)

**IRB REQUEST  
Proposal for Research  
Submitted to the Baker University Institutional Review Board**

**I. Research Investigator(s)** (Students must list faculty sponsor first)

**Department(s)**      School of Education Graduate Department

- | Name                  | Signature   |                             |
|-----------------------|---|-----------------------------|
| 1. Dr. Harold Frye    |  | Major Advisor               |
| 2. Katie Hole         |  | Research Analyst            |
| 3. Dr. Jim Robins     |   | University Committee Member |
| 4. Dr. Jim Karleskint |   | External Committee Member   |

Principal Investigator: John Ernst  
Phone: 913-232-6246  
Email: jernstrr@olatheschools.org  
Mailing address: 12474 S. Sagebrush Dr. Olathe, KS 66061

Faculty sponsor: Dr. Harold Frye  
Phone: 913-344-1220  
Email: hfrye@bakeru.edu

Expected Category of Review: X Exempt    \_\_\_ Expedited    \_\_\_ Full

**II: Protocol:** Military Children as a Mobile Population: Effects on Achievement

### Summary

**In a sentence or two, please describe the background and purpose of the research.**

The purpose of this study is to determine if the mobility of military children has an impact on student achievement. The study will focus on the data of students who attended sixth grade at one of three elementary schools at [REDACTED] public schools.

Transitions affect children both at home and at school. Excessive transitions isolate families because they do not have the opportunity to build relationships with other families.

The purpose of this study will be to determine how students achieved at high levels with the amount of moving they did from year to year, and to investigate the link between students who moved frequently compared to students who were more stable.

**Briefly describe each condition or manipulation to be included within the study.**

No conditions or manipulations will be included in the study.

**What measures or observations will be taken in the study? If any questionnaire or other instruments are used, provide a brief description and attach a copy.**

**Will the subjects encounter the risk of psychological, social, physical or legal risk? If so, please describe the nature of the risk and any measures designed to mitigate that risk.**

No measures or observations will be taken in this study. Subjects will not encounter psychological, social, physical, or legal risk.

**Will any stress to subjects be involved? If so, please describe.**

There will not be any stress involved with any of the participants.

**Will the subjects be deceived or misled in any way? If so, include an outline or script of the debriefing.**

Subjects will not be deceived or misled in any way.

**Will there be a request for information which subjects might consider to be personal or sensitive? If so, please include a description.**

There will not be a request for any information which subjects might consider personal or sensitive.

**Will the subjects be presented with materials which might be considered to be offensive, threatening, or degrading? If so, please describe.**

Archived data will be used; therefore, no material that may be considered offensive, threatening, or degrading will be used.

**Approximately how much time will be demanded of each subject?**

There will not be any time demanded of the subjects since their archival data will be used.

**Who will be the subjects in this study? How will they be solicited or contacted? Provide an outline or script of the information which will be provided to subjects prior to their volunteering to participate. Include a copy of any written solicitation as well as an outline of any oral solicitation.**

Subjects will not be solicited or contacted for this study. Data will be used from students in the sixth grade during the 2011-2012 school year, who attended one of the three elementary schools on post: [REDACTED]. Data from 64 students will be used, which includes 32 students whose parents were either non-active duty military or civilian and 32 students whose parents were active duty.

**What steps will be taken to insure that each subject's participation is voluntary? What if any inducements will be offered to the subjects for their participation?**

There will be no subjects used in this study. No inducements will be offered, as archived student data will be used.

**How will you insure that the subjects give their consent prior to participating? Will a written consent form be used? If so, include the form. If not, explain why not.**

No consent prior to participation will be obtained.

**Will any aspect of the data be made a part of any permanent record that can be identified with the subject? If so, please explain the necessity.**

No data will be made part of any permanent record that could in any way be identified with any subject.

**Will the fact that a subject did or did not participate in a specific experiment or study be made part of any permanent record available to a supervisor, teacher or employer? If so, explain.**

Data will not be made part of any permanent records available to a supervisor, teacher, or employer.



**What steps will be taken to insure the confidentiality of the data? Where will it be stored? How long will it be stored? What will be done with it after the study is completed?**

Student identification data will not be known to the researcher. The data will be maintained by the researcher and stored on a private password-protected computer. Data will be destroyed three years after completion of the study.

**If there are any risks involved in the study, are there any offsetting benefits that might accrue to either the subjects or society?**

There are no risks involved in this study.

**Will any data from files or archival data be used? If so, please describe.**

Data will be obtained from [REDACTED] schools. Once the student has completed the STAR math and reading tests, the data will be compiled to provide a comprehensive picture of the student's achievement in reading and math. The military status of each parent will be gathered from the child's permanent school file.



September 3, 2014

Dear John Ernst and Dr. Frye,

The Baker University IRB has reviewed your research project application and approved this project under Exempt Status Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

Please be aware of the following:

1. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
2. Notify the IRB about any new investigators not named in original application.
3. When signed consent documents are required, the primary investigator must retain the signed consent documents of the research activity.
4. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.
5. If the results of the research are used to prepare papers for publication or oral presentation at professional conferences, manuscripts or abstracts are requested for IRB as part of the project record.

Please inform this Committee or myself when this project is terminated or completed. As noted above, you must also provide IRB with an annual status report and receive approval for maintaining your status. If you have any questions, please contact me at [CTodden@BakerU.edu](mailto:CTodden@BakerU.edu) or 785.594.8440.

Sincerely,

*Chris Todden EdD*  
Chair, Baker University IRB

Baker University IRB Committee  
Verneda Edwards EdD  
Sara Crump PhD  
Molly Anderson  
Scott Crenshaw