

Psychological capital, mobility, and the academic performance of military-connected elementary
school students

by

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B.S., Kansas State University, 1998
M.A., Baker University, 2003
M.A., Benedictine College, 2008

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

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Abstract

The purpose of this study was to examine military mobility as it relates to the education and academic performance of elementary school children of active-duty military service members. There are an estimated 1.5 million military dependents from ages 0-18. Nearly 35% of these dependents (521,930) are elementary-aged students between six and eleven years old. Military-connected students will move an estimated six to nine times during their K-12 educational careers. These moves will most likely be to different states and, possibly, different countries. Due to this frequent movement and different educational standards and curriculum from place to place, these students are at-risk of possibly developing academic gaps. The population of military-connected elementary school students is an understudied population in the existing published research. This study was divided into three articles for publication in peer-reviewed journals.

The first article is a content analysis of peer-reviewed journals since 2001. Peer-reviewed journals were examined for content related to the academic performance of military-connected elementary students. These results show this population of students is grossly underrepresented. Thus, creating research space for the next two articles. The second article makes use of the psychological capital (PsyCap) theory to examine the possible correlations between overall PsyCap levels and levels of self-efficacy, hope, resiliency, and optimism (the four areas that make up PsyCap) and mobility levels in parents of military-connected elementary school students in kindergarten through 5th grade. Parents were also interviewed to determine if there were common structures, strategies, supports, and processes among families to facilitate successful transitions. The final article makes use of student assessment data from district (percentile rankings) and state (scaled scores) standardized assessments in the areas of

reading/English language arts and mathematics. This article examines the correlations between assessment data and student stability levels.

The findings of this study discovered minor correlations between parent mobility and levels of PsyCap. The areas of communication/records, community, school choice, and resources were found as categories of parental focus as families transition between duty stations. The study also determined a slight negative correlation between levels of stability and student academic performance on standardized assessments. Future research in this area should expand on the data collected in this study to include longitudinal data to examine possible effects of mobility on academics along with the possible social, emotional, and behavioral impacts.

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Chapter 1 - Introduction

The purpose of public education has been debated since its inception. (Kliebard, 2004). During the 1980s, a greater focus on student achievement and school accountability at the state, district and school levels by the federal government began. This is still evident today when the phrases, student achievement and educational excellence, are found when examining mission statements from the United States Department of Education to any chosen school district (U. S. Department of Education, n.d.). A student's academic achievement (e.g., grades, scores on local and standardized assessments, high school graduation rates) can be affected by a myriad of factors. One factor that is relevant to this study is that of mobility, and more specifically, the mobility of military-connected students.

Goldhaber and colleagues (2022) shared that nonstructural school mobility has been shown to be highly correlated with putting students at-risk for poorer academic achievement and higher rates of not graduating from high school. Nonstructural moves are those that do not align to the structure created by a school or district. For example, moving from elementary to middle school or middle school to high school is considered a structural move. Therefore, any moves made not due to these reasons would be nonstructural (e.g., family economic instability, parental job promotion) (Goldhaber et al., 2022; Welsch, 2017). Nonstructural moves experienced by elementary-aged military-connected students will be the primary focus of this study as academic performance of these students is examined as well as the supports and strategies families utilize as they experience these moves.

It is important to understand some basic demographics of the military population when looking into frequent mobility to understand the scope of how many students may be affected by frequent nonstructural school moves. According to the most recent military demographic

information, as reported in 2021, there are approximately 1.34 million active-duty service members in the United States military (U. S. Department of Defense, 2021). Exploring this group even further, roughly 82% of the 1.34 million service members fell within the enlisted ranks and 18% were considered officers. Examining the educational levels of this group, approximately 66% of the total active-duty military members' highest educational level consists of a high school diploma, GED, or some college with no degree earned and 22% have earned a bachelor's or advanced college degree. Thirty-five percent of the active-duty service members have children. This study will focus on military-connected children that are considered elementary-aged and fall within the 6- to 11-year-old age range. As reported in the 2021 demographics report, there were just over 310,000 children in this range, which was 32.7% of the total number of children of active-duty service members. Roughly one-third of these service members will transition from one duty station to another each year potentially causing a school change for their children (Tong et al., 2018).

Statement of the Problem

Mobility experienced by military-connected students is a unique phenomenon as nearly all of their moves are considered nonstructural. Along with these moves, military-connected students also experience both normative and context-specific stressors (Kaeppler & Lucier-Greer, 2020). *Normative stressors* that military-connected students experience are similar to their civilian peers. These stressors could be related to one's family status (e.g., divorced or separated parents, being raised by a single parent) or discrimination due to the student's race. However, *context-specific stressors* (e.g., frequent residential and school transitions, parental deployments) for military-connected students are not similar to that of their civilian peers, as these students experience stressors from having a parent, or parents, as a military service member.

The context-specific stressors associated with being connected to the military are worth noting. Military-connected students experience frequent transitions, possible parental deployments and living outside the continental United States. Frequent transitions come about as part of a permanent change of station (PCS). However, a PCS does not always mean long lasting. As reported by Ruff and Keim (2014) military-connected students in 2010 had reported moving schools six to nine times, on average, roughly triple the number of moves as their civilian peers. The fact that military students move across districts, state lines, and even across the world creates multiple issues for students and their families (Esqueda, Astor, & De Pedro, 2012). Tong and colleagues (2018) described first-order and second-order disruptions resulting from a PCS. First-order disruptions come about as a direct consequence of the PCS move (e.g., residential and school transitions). In order to create a more level playing field and to allow for easier transition from one school to another, military families and organizations began to work with policy makers to create an interstate compact to bridge the gap between differing state laws related to students transitioning between states. In 2006, the Interstate Commission on Educational Opportunity for Military Children (ICEOMC) was established to address some of the barriers that accompany first-order disruptions related to school transitions (e.g., school enrollment qualifications, course and program placement, graduation requirements, eligibility for extra-curricular activities). In 2008, the Interstate Compact was adopted by 11 states, with Kansas being the first, and as of 2014, all 50 states, Washington, D.C., and the Department of Defense Education Activity (DoDEA) schools have adopted the Interstate Compact. The creation and adoption of the Interstate Compact have put in place policies that create consistency between states and school districts in areas that include enrollment, placement, attendance, eligibility, and graduation. While the adoption of the Interstate Compact has been wide, according to Wykes

(2015) there must be pronounced effort to raise the awareness level of the Interstate Compact among service members and district and school administrators, as well as with guardians that may have to provide care for a child whose parent(s) are deployed.

Military-connected students also experience second-order disruptions, or indirect consequences, related to a PCS (Tong et al., 2018). At the forefront of second-order disruptions are the possible negative effects associated with frequent nonstructural moves (e.g., lower academic performance, disruptive behavior, lack of peer support). However, these negative effects are not as prevalent in the research on military-connected mobility. The National Academies of Sciences, Engineering, and Medicine (2019), suggest that the effects of multiple transitions are mediated by the relationship between children and their parents/caregivers. Another possible explanation for the negative effects of mobility seen with civilian students not being as present in the research on military-connected students is due to the structures in place within the military-connected family and community that may mitigate negative effects. These include authority, control, structure, continuity, and expectations common in military communities (Brendel et al., 2010). When focused on the importance of parent-child relationships in general, Carmona-Halty and colleagues (2022), in their study of high school aged students found that quality parent-child relationships are key to higher levels of student achievement. Additionally, related to military-connected students specifically, it is suggested that schools in the DoDEA system have school staff members that are knowledgeable and understanding of the stressors of military families and a curriculum that is aligned to standards and assessments (Smrekar & Owens, 2003).

Since approximately 80% of the military-connected students that reside in the United States attend public schools (National Academies of Science, Engineering, and Medicine, 2019),

it is pertinent to examine the relationship between public schools and school-aged military-connected students overtime, particularly as greater emphasis on student achievement has come to the forefront. In 1966, the Coleman Report identified inequities in public education in hopes of reforming the system and changed the lens through which we view and assess schools (Hanushek, 2016). The Coleman Report shifted the focus of evaluation from inputs, such as expenditures per pupil and resources available per student, to the outputs of the school, such as student achievement and future success. In 1983, *A Nation at Risk* was released, which again called for educational reform as it pointed out the failures in the American educational system. One of the outcomes of this report was to increase the rigor of educational standards in schools. This led to states creating and adopting educational standards and the eventual creation of the Common Core State Standards in 2009. The federal government has produced other reforms and acts relating to student achievement. Most notably are the No Child Left Behind Act of 2002 and the current iteration of this act called the Every Student Succeeds Act, established in 2015. Prior to the Every Student Succeeds Act, military-connected students were not taken into account as a subset of students when examining state, district, or school demographics. Included in the Every Student Succeeds Act of 2015 is the Military Student Identifier (MSI). The MSI was included as a way to hold states, districts, and schools accountable for reporting the academic progress of military-connected students. As the U.S. Department of Education mission statement mentioned at the beginning of this chapter exhibits, student achievement and proficiency continue to be areas of focus at the local, state, and national levels. Due to the limited research on the extent to which frequent nonstructural mobility affects the academic performance of elementary school students in grades kindergarten through fifth, these students will be the units of analysis for this research study.

Purpose of the Study

Esqueda and colleagues (2012) cite the need for representative and descriptive research to accurately document and bring greater awareness to the strengths and challenges experienced by military-connected students. Such research could assist in identifying supports and structures a school and district should provide for these students and their families, as well as the characteristics of families and students that allow for more streamlined school transitions. This study will use the same definition of military mobility used by Semelroth (2005), who described military mobility as a change in a parent's duty station that results in a student changing schools. Through this study, research on mobility and its effects on elementary-aged military-connected students, an underrepresented group in educational research, as it relates to academic achievement will be investigated. The study will also examine the psychological capital (PsyCap) theory and the structures in place within the community, school, and family unit that affect students' abilities to cope with frequent mobility.

Research Questions

Questions that guide my research are as follows. (1) Since 2001, to what extent have peer-reviewed research journals published articles regarding the academic effects, if any, resulting from high-frequency mobility, of military-connected elementary school students in kindergarten through fifth grade? (2) To what extent does the level of psychological capital (PsyCap) of the parents of military-connected school-aged students in kindergarten through fifth grades correlate with the mobility levels of these parents? (3) What common structures, strategies, supports, and processes are used by mobile military families as they transition between duty stations? (4) To what extent do stability levels experienced by military-connected school-aged students in the third through fifth grades correlate with the educational achievement

levels in reading and mathematics as determined by nationally normed computer-adaptive assessments from Renaissance Learning company, the Star assessments, and the Kansas State Assessments (KSAs), of these students?

This study will examine parental levels of PsyCap in relation to mobility levels, strategies and supports parents use to facilitate smooth transitions, and the academic performance of military-connected third through fifth graders on district and state standardized assessments compared to the stability levels of these students in order to bring forward the context-specific stressor of frequent school transitions unique to the military-connected student. This study will be divided into three articles for publication in peer-reviewed educational journals. The first article will examine the extant research published in peer-reviewed journals since 2001 on the academic effects of frequent mobility on military-connected elementary school students. Examining what is and is not present in the existing published research will serve as a content analysis and a means to situate this study within the current research. A mixed-methods approach will be used with the next article as both quantitative and qualitative data will be analyzed. Data will be collected from parents of military-connected elementary school children attending a school district located on a military installation in the Midwest region of the United States, Midwest Military School District (MMSD) through an electronic survey containing questions adapted from Luthans and colleagues (2007) Psychological Capital Questionnaire (PCQ) to gain insight on possible correlations between levels of mobility and self-efficacy, hope, resiliency, and optimism, the four areas that make up PsyCap, and overall levels of PsyCap. Semi-structured interviews with parents of military-connected elementary school children will also be used to focus on the types of structures, strategies, supports, and processes families utilize before, during and after transitions. The final article will focus on a quantitative research study as percentile

ranking on district administered standardized assessments in reading and mathematics and scaled scores on state administered standardized assessments in English language arts (ELA) and mathematics of students in third through fifth grades attending (MMSD), will be examined. This study will make use of multiple regression analysis to examine the correlation of the stability levels of these students, defined as the number of years enrolled in the same school district, and their academic performance. Both reading and mathematics assessments will be examined to determine if one, both, or neither of these subject areas are correlated with low (one to two years), medium (three to four years), or high (five or more years) stability levels.

The research questions will be addressed through three different journal articles. The first question will be addressed with a content analysis article that I would like to have published in Kansas State University's *Educational Considerations* journal published by the College of Education. I believe this will highlight the importance of research conducted with military-connected students to those in the field of preparing pre-service teachers and other educators. The second and third research questions will be addressed in a mixed methods article I would like to have published in the American Educational Research Associations' journal, *Educational Researcher*, published by SAGE publishing. This journal was chosen because this article presents the importance of supporting military-connected students as they transition. In addition, adapting the PCQ to focus on personal PsyCap, the correlation between parental levels of PsyCap and levels of mobility and the common themes for successful transitions that are presented in the article may be generalized to other at-risk mobile populations. *Educational Researcher* is a widely read and accepted journal in educational research, and I believe this article will help to gather attention on the military-connected student. The fourth research question will be addressed in a quantitative article I would like to see published in the *Journal of*

Teacher Education, published by SAGE publishing. I believe this is a good fit for this article in order to bring a student group that is scarcely featured in educational research to the forefront in a forum designed to reach those that help prepare teachers for the profession and to bring a greater awareness of the military-connected student population.

For more than 20 years, I have worked with military-connected students in some capacity. It is an honor to be a part of the educational journey of the children of those who serve and protect the United States. An important phrase that I have seen printed on t-shirts and other materials created to support military-connected students is, “kids serve, too”. The intention of this research is to shed more light on the military-connected student population and to add to the extant literature surrounding this important group.

Chapter 2 - A content analysis of peer-reviewed journal articles over the last 20 years: To what extent does contemporary research focus on the effects of frequent relocation on the academic performance of military-connected students?

Introduction

Since September 11, 2001, the United States military has been involved in the war on terror. In August 2021, the last of the American troops stationed in Afghanistan withdrew ending this 20-year long war. Before, during and now after this military conflict, military families have experienced frequent relocation through the permanent change of station (PCS) process as they move at least every three years from one duty station to the next. These moves are oftentimes to different states or countries. Therefore, school-aged military-connected children experience school changes along with this relocation process.

Recently, the Federal Government has put an emphasis on the education of the military child as part of the Joining Forces initiative (The White House, n.d.). The mission of Joining Forces is “to support those who also serve: military and veteran families, caregivers and survivors” (The White House, n.d.). One area this organization focuses on is military child education. According to the Joining Forces website, the intent is to “advance programming to support military-connected children in their classrooms and help ease the burdens created by the highly mobile military lifestyle” (The White House, n.d.). Another mission statement of notice is that of the United States Department of Education, which states, “Our mission is to promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access” (U.S. Department of Education, n.d.). Taking the missions of both organizations into consideration, this content analysis addresses the question, since 2001, to what extent have relevant research journals published articles regarding the effects, if any, of

high-frequency mobility, caused by being military-connected, has on the academic performance levels of elementary-aged students in the first through fifth grades?

Background

There is one thing for certain in the life of a military-connected student and that is change. Change typically comes for a military-connected family due to either the service member's PCS, where the service member is assigned to a new location, or due to the service member being deployed. A PCS will bring about a school transition for the school-aged children in the family. According to a 2021 report released by the U. S. Government Accountability Office (GAO), there are approximately 650,000 K-12 military-connected students that attend schools within the United States and 80% of these students attend public schools (National Academies of Science, Engineering, and Medicine, 2019). Due to the range of military and national security needs, these students' parents will move every few years causing the students to experience a school change up to nine times before they graduate from high school (U.S. GAO, 2021). Military families experience residential and school relocation approximately every two to three years. This is roughly 2.9 times as often as non-military, or civilian, families (De Pedro et al., 2018; Esqueda et al., 2012). Service members are able to give input into where they'd prefer to move, however, the ultimate decision as to where the military-connected parent is assigned is determined by the needs of the military (Farmer et al., 2014). Therefore, there is a higher likelihood that military-connected students will move longer distances, between states and to other countries (Clever & Segal, 2013) when compared to their civilian peers who experience school transitions. Deployment is also a source of change within the military family. Due to military combat operations resulting from the terrorist attacks of September 11, 2001, over 2

million service members and their families have been impacted by deployments (NASEM, 2019).

Methodology

The existing research on the connection between academic performance and residential and school relocations experienced by non-military-connected, school-aged students is quite extensive (Choi & Oishi, 2020; Gruman et al., 2008; Kerbow, 1996). There seems to be a growing trend in educational research to investigate the possible effects of residential and school relocation on academic performance as it relates to military-connected students (Muller, et al., 2016; NASEM, 2019; Sheffield, 2017). In order to identify the extent to which published peer-reviewed literature has focused on the effects of frequent relocation on the academic performance of the large, yet understudied, population of military-connected students, a content analysis was conducted.

According to Schreier (2012), qualitative content analysis is a systematic method that is flexible and reduces data. The systematic nature of qualitative content analysis was followed in order to select resources that were related to the research question of this study. A coding frame was developed to deductively identify sources that were more aligned to the study's purpose. This methodology was also flexible in the sense that it was both descriptive and data based as the coding frame was developed to align with the research question and resources. Qualitative content analysis also reduces data. In this study, data was reduced by only focusing on specific search terms and an initial coding frame, mentioned later in this paper, in order to ensure the sources were aligned to the research question.

The collection of resources for this study began with a search of Google Scholar for the terms “mobility”, “military”, “elementary school” and “military-connected” from the year 2001

to the present. This search resulted in 249 sources. These sources were then sorted into the categories of articles, dissertations, books and other research, which included master's theses, whitepapers, reports and briefs not published in peer-reviewed journals. The initial sort resulted in 47 articles from peer-reviewed journals. To ensure the search was more robust, the Kansas State University Library site was used to examine available education databases. Education databases were searched to include ERIC, the psychology and behavioral collection, the military and government collection and the APA PsychInfo database. Within these databases, the search term "military-connected children" was used. This resulted in an additional 51 articles from peer-reviewed journals, totaling 98 articles. An initial coding was done with all 98 articles to determine the unit of analysis for each article. Each article was examined to determine if students, families or schools within the U.S. military were the unit of analysis as diagrammed in Figure 2.1. Those articles with students as the main focus would be the subjects of further coding. Some of the initial articles were excluded from this coding if K-12 military-connected students were not the unit of analysis of the article or if the article was not a research study. For example, the initial search included published articles that were for informational or editorial purposes. This initial coding resulted in a total of 28 articles with students as the unit of analysis and subjects for further coding. These 28 articles were deductively coded for alignment to the research question. This was done by rating the articles on a 5-point scale with four categories. The four categories were the broad concepts of students, military, mobility and academic performance. Articles were given one point for each category if these, or equivalent, terms were used in the title of the article, the abstract, keywords, body and findings, as pictured in Figure 2.2.

Figure 2.1 Initial Coding Frame

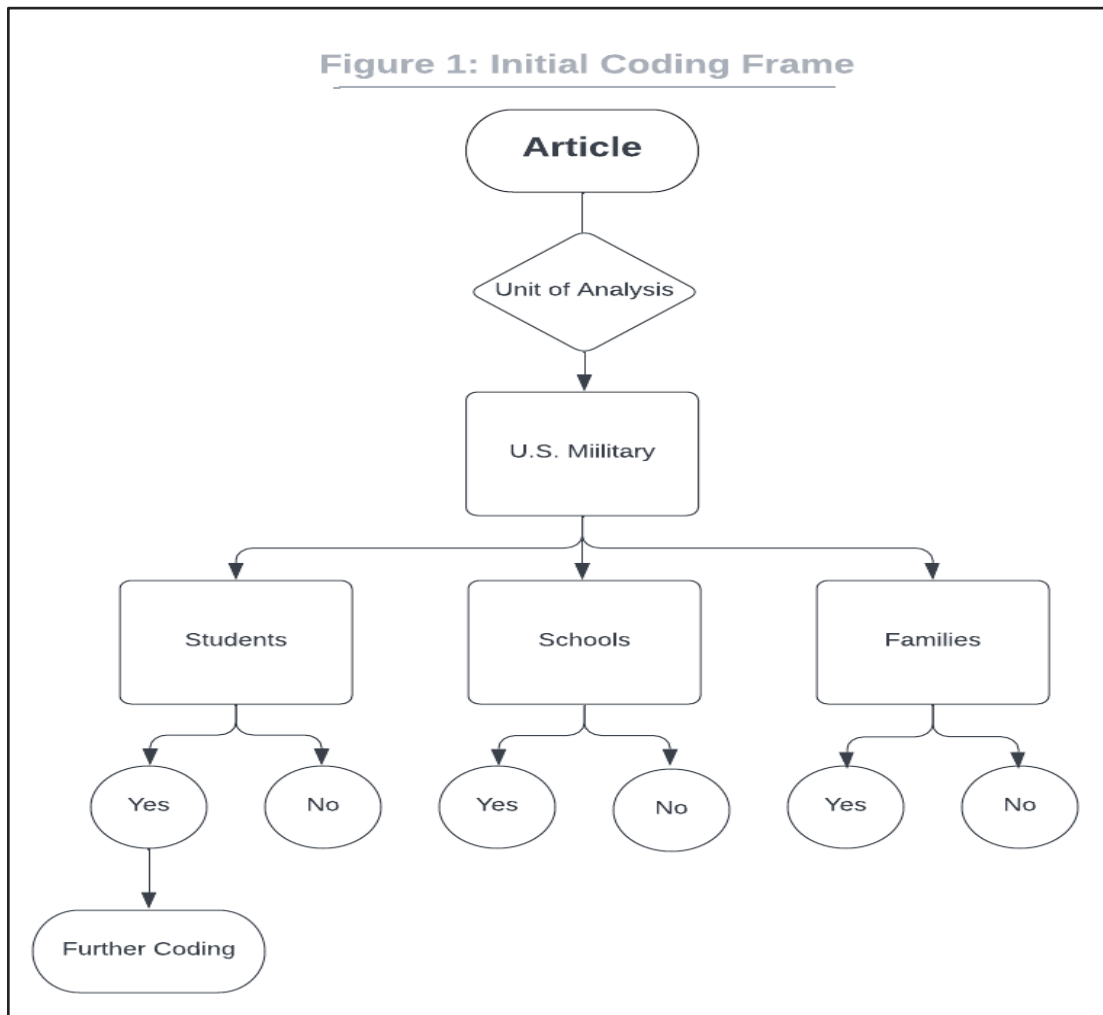
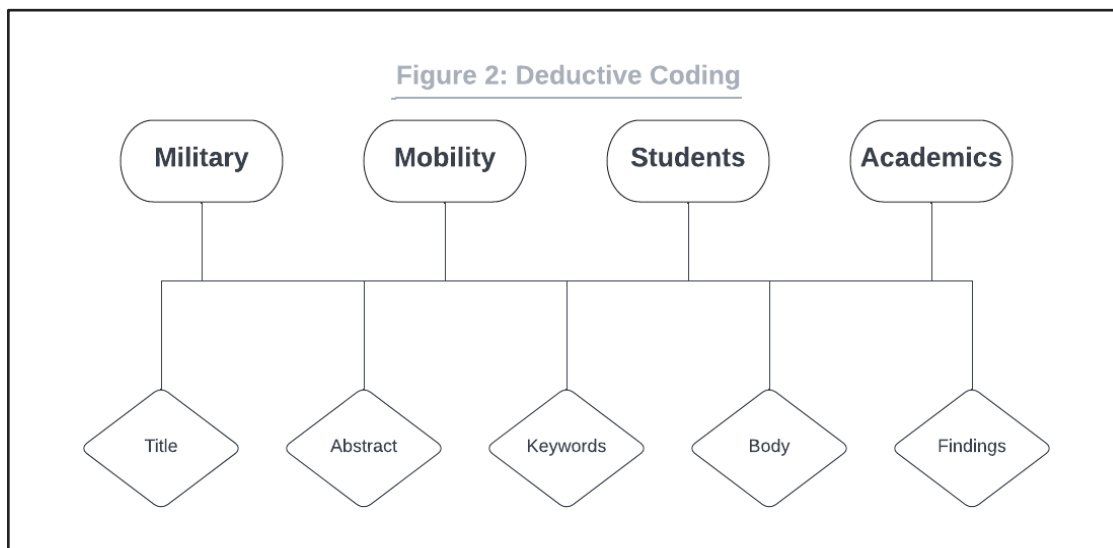


Figure 2.2 Deductive Coding



Findings

The findings of this content analysis show there is a gap in the extant research as it pertains to high-frequency mobility, caused by being military-connected, and the possible effects on the academic performance of elementary-aged students. An initial search of Google Scholar database confirms a myriad of research concerning the terms “mobility and elementary school students” with a return of a possible 892,000 results. However, a search of the same database using “mobility and military-connected elementary school students” results in a return of 853 results. This proves that in the existing research, the focus on mobility and military-connected elementary school students is a fraction of less than one percent. The findings of this content analysis proved to be consistent as a small number of articles met the research criteria of this study.

The results of the deductive coding process are depicted in Table 2.1. The first column contains the broad concepts of students, military, mobility and academic performance. The second column contains sample terms that were used when coding the broader terms. Each of the 28 articles was given one point in each of the categories of broad terms if it was determined that the broad term was contained within the title, abstract, keywords, body and findings of the article, resulting in a total score of 5 points. There were a few articles that did not contain keywords. Therefore, some articles were only able to score four points in each broad topic, instead of five. The top percentage in the right column of Table 2.1 shares the percentage of articles that could have scored a total of five points in each category (n=22). The bottom percentage displays the percentage of articles that could have scored a total of four points in each category (n=6). It may be surprising that the “students” category was not 100%. This is mainly due to the articles not containing a coded term for students in the title or keywords of the article.

Nine of the 28 articles did not have a full four or five points in the “students” category. Due to one of the articles not containing keywords, eight of the nine articles could have scored a total of five points and one of the articles could have scored a total of four points in the “students” category. These results also show that most of the analyzed articles written about military-connected students do not have a major focus on frequent mobility or student academic achievement.

Of the initial search, it is worth noting that approximately 115 of the 249 found sources were dissertations. This demonstrates that there is an interest in studying military-connected students, however, it seems that this research is not moving beyond dissertation work and being published in peer-reviewed journals to reach wider audiences. While the published research since 2001 on the social and academic effects of frequent mobility on school-aged military-connected students is relatively small, the number of completed dissertations in this area appears to be growing. Of the 115 found dissertations, 48 were focused on the social and/or academic impacts related to the frequent mobility of military-connected students and K-12 education. These 48 dissertations were completed in the years between 2007 and 2021. Approximately 65%, or 31 of the 48 dissertations were completed in the 5 years between 2017 and 2021. Based on this evidence, the research base is expanding, which is promising. The results of this research could be utilized by military installations, school districts, school staff, military-connected families, and/or teacher preparation programs to better understand and support K-12 school-aged students as they transition from school to school, which will likely be to different states or countries (Clever & Segal, 2013).

Table 2.1 Deductive coding results

Table 1: Deductive Coding Results		
Code	Sample Coding Terms	Percentage of Articles
Students	students	64%
	children school-aged children military children military-connected children school-aged youth	83%
Military	military	91%
	military-connected military-based military-family-life U.S. armed forces service members	83%
Mobility	mobility	5%
	multiple school transitions moves school transitions transitions frequent moves relocation	50%
Academic Performance	academics	5%
	grades school failure school performance	17%

Discussion and Implications

The lack of focus on military-connected student mobility and the possible effects on academic performance in the extant research published in peer-reviewed journal publications over the last 20 years is surprising. Studies have shown that frequent transitions, especially those that are combined with a deployment, cause stress and negative effects in military-connected students in the areas of social-emotional struggles, social connections, behavioral issues, and decreased academics (CPRL, 2017). The timing of the transition and the age of the student are

important pieces of information. According to the NASEM (2019), the timing of transitions is important and early transitions may affect school performance later in life. The effects of the transition also depend on the time of year the transition takes place. Whether a student transitions into a new school at the beginning of the year or the middle of the year, there is a need to quickly assess the student's knowledge and skills and identify if there are existing gaps (CPRL, 2017). Using the State of Texas Assessments of Academic Readiness (STAAR), taken from third through eighth grade and in high school, Muller and colleagues (2016), found that when taking socioeconomic levels into account, economically disadvantaged military-connected students outperformed their non-military economically disadvantaged peers. However, the same study found that military-connected students that were not economically disadvantaged were outperformed by their civilian peers who were also not economically disadvantaged (Muller et al., 2016). O'Brien (2007) found, when studying third through eighth-grade students in New York, that military-connected students, who were more mobile than their civilian peers, scored at a statistically significant higher level on the New York state math assessment. While frequent mobility is experienced in both the civilian and military communities, Williamson and colleagues (2018), suggested that civilian and military-connected children have unparalleled childhood experiences. One of the differences comes in the form of financial stability. A military-connected student's family typically experiences a stable income provided by the service member(s) in the family as they relocate to a new residence and school. This is not typical of frequent residential and school mobility experienced by a civilian student or family.

This study points to areas of future research. One area to examine is the combined effects of mobility and deployment. These are both transitional times in the lives of military-connected students and their families. Studies on deployment (CPRL, 2017; Knobloch et al., 2015) present

the social and emotional effects of deployment on military-connected students, which in turn, can have an impact on the academic performance of the affected students. Deployments can cause a strain on the relationships military-connected students have with their parents, school staff, and peers. When a student has a parent deployed, the student may worry about the safety of the deployed parent as well as having the home environment change as the student takes on additional chores and responsibilities. Students may also be susceptible to the worry and stress of the parent that is left at home to manage the family (Knobloch et al., 2015). Students experiencing these stresses and worries combined with learning a new school, making new friends, and experiencing a new curriculum may also experience changes in their academic performance.

While the 650,000 military-connected students in the U. S. may have unparalleled experiences compared to civilian students, the number of moves experienced by military-connected students is notably higher than their civilian peers. Military-connected students will likely experience mobility at a rate of approximately 3 times as frequent as their civilian peers, with some students experiencing school mobility every year during their kindergarten through fifth grade years. Longitudinal research to study the academic performance of military-connected students considering the number of experienced school moves made throughout their K-12 careers is an area of need. The comprehensive study conducted by the National Academies of Sciences, Engineering, and Medicine (2019), notes that when comparing the impact of a single school relocation to multiple school relocations over a military-connected student's K-12 academic career, the evidence is limited. Some research questions that could be considered are: Is there a significant difference in the academic performance of military-connected students that have experienced more school moves to those that have experienced fewer moves? Are there

interventions that can be utilized to develop characteristics, such as resiliency, self-efficacy, hope, and optimism, in students that would have a positive effect on academic effects despite experiencing frequent mobility? This information would be extremely helpful to districts and schools that serve military-connected students.

A GAO report on K-12 Education released in 2021, notes that many military families cite educational issues for their children as a drawback to military service. Most schools where military-connected students attend are public schools in communities located near the military installation. The same GAO report states that “as of 2018, approximately 150 traditional public schools were located on military installations operated by local school districts.” Public schools that are not located on a military installation may have staff that are not as aware of the unique life experiences of military-connected students. This may result in military-connected students having a negative perception of their school environment when compared to their civilian peers in the same schools (De Pedro et al., 2014). Having negative feelings toward the school and could influence academic performance. Alternatively, some military-connected students attend schools, in the United States or overseas, that are part of the Department of Defense Education Activity (DoDEA). As of 2023, there were 66,416 students attending DoDEA schools (DoDEA, 2023). Students enrolled in DoDEA schools typically perform well above the national average on the NAEP reading, writing and mathematics assessments (Smrekar & Owens, 2003; DoDEA, 2023). On average, fourth and eighth-grade students scored between 15 and 23 percentage points higher than the national average on these assessments and have maintained high levels of achievement in recent years while national averages have declined (DoDEA, 2023). Future research should explore the practices utilized by the DoDEA system and how these practices could be generalized to both military and non-military connected schools. This could result in

positively impacting the academic success of all students, not just those that are military-connected.

This study exhibits a gap in the existing literature since 2001 in the area of the effects of frequent mobility on military-connected students' academic performance. The extant literature is mainly focused on the social-emotional well-being of this population. A large number of public schools are impacted by the frequent mobility of military-connected students. Future studies should focus on this population to determine what supports families utilize to diminish the negative impact of mobility and build resiliency within their families and students. Identifying these supports would benefit students, their families, and the schools and districts where these students attend during their K-12 educational careers. Like most support systems and interventions, those that help mitigate negative effects for military-connected students, who are considered an at-risk population, could benefit all at-risk students, even those not connected to the military. This future research would also support both the missions of Joining Forces and the U. S. Department of Education.

Chapter 3 - Psychological capital and military-connected students: Supporting students that serve our country

Introduction

The purpose of this study is to examine the Psychological Capital (PsyCap) of mobile military-connected parents of elementary-aged students in kindergarten through 5th grade. Carmona-Halty and colleagues (2022) found that high quality parent-child relationships are relevant to the academic success of the child when studying high school aged students, academic PsyCap, and student GPA. Also, Finkel and colleagues (2003) determined that greater family cohesiveness resulted in increased positive self-esteem in their study of psychological adjustment of military-connected children related to transitions. Therefore, the Psychological Capital Questionnaire (PCQ) developed by F. Luthans and colleagues (2007) was adapted to measure the overall PsyCap and the four individual areas of PsyCap of parents of military-connected elementary-aged students in kindergarten through 5th grade. The four areas that work together and make up overall PsyCap are self-efficacy, hope, resiliency, and optimism. Parents were grouped into mobility categories based on the number of self-reported moves made in conjunction with being connected to the military. There are many different resources offered by the military and by schools to aid in the transition process as families move from one duty station to the next. Interviews with parents of current military-connected elementary-aged students were conducted to inquire which of these resources, if any, were utilized by parents with varying levels of PsyCap to assist in the transition process. Data was gathered from the PCQ administered using the internet-based data collection tool, Qualtrics. Semi-structured interviews with parents of military-connected elementary students in kindergarten through fifth grades that attend a school district located on a military installation in the Midwestern region of the United

States, Midwestern Military School District (MMSD), were also conducted. The following questions were used to guide this study: 1) What is the correlation, if any, between the number of times a family has moved and the psychological capital levels of the parents of military-connected elementary students in kindergarten through fifth grade? and 2) What strategies and supports are utilized by mobile military families as they transition between duty stations?

According to the National Academies of Sciences, Engineering, and Medicine (2019), “On average, military children move and change schools six to nine times from the start of kindergarten to high school graduation, which is three times more often than their civilian peers” (p. 140). This study utilizes the definition of frequent mobility as having three or more school changes during a student’s educational career as presented in Welsh’s (2017) literature review. In his 1996 study of civilian elementary students attending Chicago public schools, Kerbow shares that students who experience four or more school moves tend to fall further behind their peers academically and by their sixth year of school will be approximately one year behind their stable counterparts. In 2010, 13% of all students in kindergarten through eighth grade were considered to have experienced frequent mobility (U.S. Government Accountability Office, 2010).

According to Welsh (2017) and Goldhaber and colleagues (2022), nonstructural school mobility is defined as a school move that is caused by something other than the school system (e.g., parental job loss or promotion). Voight and colleagues (2012), in their research on civilian nonstructural school mobility suggest that moves that take place in the early years of schooling are associated with lower academic achievement, but the negative effects may dissipate as students age and become stable.

While there is a large body of research devoted to the effects of residential and nonstructural school mobility as it relates to non-military-connected, or civilian, students, the

existing research related to this same topic for military-connected students is somewhat limited. It is unknown if the results of mobility studies focused on largely urban students and socioeconomically disadvantaged students would generalize to other contexts (Cordes et al., 2019). Therefore, this study examines the Psychological Capital of military-connected families and the supports they utilize as their elementary school-aged students experience nonstructural school mobility and transition between schools as the family relocates between military installations across the United States and world.

Background

Ruff and Keim (2014), posit that military-connected students experience challenges both in the classroom and beyond when transitioning to a new school. For older students, this relates to extra-curricular activities like sports, clubs, and/or school government organizations. They also suggested that while the majority of the existing literature in this area suggests that multiple transitions have negative effects, the supports military-connected students have, including positive relationships, may create positive effects. They continue to cite studies that share multiple transitions and moves tend to help military students build greater resiliency and adaptability, deeper appreciation for cultural differences, and stronger social skills than their civilian peers. These positive results were attributed to “supportive school cultures and strong parental involvement” (Ruff & Keim, 2014, pp. 107-108). In his doctoral research on strategies military families utilize during times of transition, Mispagel (2016) discusses the importance of structure, communication, and parental involvement as overarching areas that are key aspects to success among families of highly mobile elementary students. The military service branches are also aware of the importance of supporting students and their education as they transition to new duty stations. “Senior military leaders recognize that for officers and enlisted service members,

decisions to continue their careers often depend on whether their families are happy. Central to the experience of military families is the quality of education their children receive.” (Mesecar & Soifer, 2017, p. 5). Recognizing the importance of the quality of education, the military has developed support systems to help mitigate the additional family stressors that come with being associated with the military (e.g., deployments, frequent transitions, changing social connections). These support systems are available to the service members and their families and are organized and provided by different levels including the Department of Defense (DoD), the service branches, and the individual military installations (National Academies of Sciences, Engineering, and Medicine, 2019).

One of these supports is the Military Interstate Children’s Compact Commission (MIC3), also known as the Interstate Compact. Beginning in 2006, the DoD began working with the Council of State Governments to address educational challenges experienced by mobile military-connected students during transitions (MIC3, 2021a). The Interstate Compact was created to address common issues that school-aged military-connected students encounter as they move across the United States. The Interstate Compact covers issues such as enrollment, placement and attendance, and graduation requirements. The Interstate Compact has information regarding the transfer of student records, immunization records, and the entrance age for kindergarten and 1st grade, as related to enrollment. It also addresses special education records, extra-curricular opportunities, and attendance as it relates to deployment activities. Additionally, the Interstate Compact has provisions for high school graduation requirements to support those students that may experience several moves during their last four years of K-12 education and allow them to graduate on time (MIC3, 2021b). In 2008, the Interstate Compact was adopted by 11 states, with

Kansas being the first, and as of 2014, all 50 states, Washington, D.C., and the Department of Defense Education Activity (DoDEA) schools have all adopted the Interstate Compact.

The military provides different resources available to families at each duty station. These resources include the School Liaison Officer (SLO). The purpose of the SLO is to aid families with school-aged children with information and opportunities for educational success. School Liaison Officers are employed by each of the four service branches and advise installation commanders on issues related to the education of the students living both on and off the installation (Kitmitto et al., 2011). Some of the highlighted services offered by the SLO according to the my army benefits website (U.S. Army, 2022b), include transition and deployment support, homeschool connections, and post-secondary education and opportunities. The Military and Family Life Counselor (MFLC) is another resource offered by the military. The MFLC is someone that can provide non-medical counseling to help individuals with strategies for improving relationships, stress management, adjustment, and grief or loss (Military One Source, 2023). Within the U.S. Marine Corps, a Family Readiness Officer (FRO) is a resource that can be utilized to ensure the service member's family is taken care of and has needed information and services. The FRO also holds annual command family events to increase connection and morale (U.S. Marine Corps, 2023). Other service branches provide similar services. The U.S. Army helps soldiers and their families through Army Community Service (ACS). This resource is provided at Army installations where 500 or more military members are assigned. ACS provides support in the areas of deployment, soldier and family readiness, relocation readiness, employment readiness, and financial readiness (U.S. Army, 2022a).

PsyCap is employed as the theoretical framework for this study. According to F. Luthans and colleagues (2007) PsyCap is defined as:

“an individual’s positive psychological state of development and is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success” (p. 3).

This initial definition was applied to the workplace. Since F. Luthans and colleagues initial work in this area, this framework has been adapted and applied to the academic setting (B. Luthans, 2014), and cited by Carmona-Halty and colleagues (2022). Many of these studies have applied academic PsyCap to the study of college students (e.g., Adil et al., 2020; Hazan Liran & Miller, 2019; B. Luthans et al., 2014; Sweet & Swayze, 2020). Carmona-Halty and colleagues used the academic PsyCap framework in their study of high school students. PsyCap extends economic, human, and social capital (what you “have” and “know”, as well as “who” you know) to “who you are” and “what you can become” (B. Luthans et al., 2014; F. Luthans et al., 2004; F. Luthans & Youssef, 2004).

Utilizing the research of Finkel and colleagues (2003), which finds the positive correlation of mothers’ levels of self-esteem and levels of self-esteem of their military-connected children, the original PsyCap questionnaire was adapted to measure personal PsyCap levels of self-efficacy, optimism, hope, and resiliency of military-connected parents of elementary school students in kindergarten through fifth grade. In order to change the focus from workplace PsyCap (F. Luthans et al., 2007) and academic PsyCap (B. Luthans et al., 2014) phrases such as “work related goals” and “academic related goals” were adapted to “personal or family related goals”. This was done to see the correlation, if any, between the number of times the parent has

moved and their self-reported levels of PsyCap in the four areas. This study proposes that as military families move to multiple duty stations between states and countries throughout their connection to the military, parental levels of PsyCap have a direct impact on their children, especially elementary-aged students who are in their early developmental stages. When a parent displays positive self-confidence (self-efficacy) in order to meet the challenges of each move, keeps a positive outlook (optimism) and mindset during multiple relocations, has a plan for reaching goals and is able to make a new plan (hope) if the situation arises, and when faced with difficulties, is able to bounce back to even higher levels of success (resiliency) they are modeling the four essential components of PsyCap. PsyCap is categorized as being state-like, rather than trait-like (F. Luthans, et al., 2007). Due to PsyCap being state-like, it can be changed and even developed. Therefore, PsyCap was chosen as the framework for this study. As military-connected families move between duty stations they experience residential mobility, and the school-aged dependents experience non-structural mobility. Finkel and colleagues (2003) state,

“Clearly, parents, teachers, and others who work with military children should recognize that moving to a new neighborhood and a new school disrupts children's peer relationships, and children may be especially emotionally vulnerable and need greater parental time and attention during the months immediately after a move” (p. 1021).

This study is designed to investigate the correlation, if any, between the development of PsyCap and the number of times a family has moved during their connection to the military. Is there an increase or decrease in any of the four areas of PsyCap as families experience a higher number of residential relocations?

Methodology

Data used for this study was gathered through an adaption of the Psychological Capital Questionnaire (PCQ) self-rater version. The PCQ was created by F. Luthans, et al. (2007) to assess employees in the business world to gauge and enhance job satisfaction and company commitment. The PCQ has been adapted to assess levels of academic PsyCap in students in high school and at the college level. For this study, the PCQ was adapted to be more focused on personal goal setting, pathway generation, and positive and flexible mindset, rather than workplace goals and commitments. The adaptations were approved by Mind Garden, Inc., the company that serves as a warehouse for psychological assessments, including the PCQ. The PCQ consists of 24 questions that address the four areas of self-efficacy, hope, resiliency, and optimism that make up PsyCap as well as overall PsyCap levels. Individuals are asked to rate themselves on a six-point Likert scale with one representing “strongly disagree” and six representing “strongly agree”. There are three questions in the PCQ that are reverse scored with one representing “strongly agree” and six representing “strongly disagree”. There are six questions in each of the four areas listed above. Examples of how the PCQ was adapted to focus on an individual’s personal and family life are listed below, along with the area of PsyCap it is used to assess, in Table 3.1.

The PCQ was sent to parents of elementary-aged students attending schools in a school district located on a military installation in the Midwestern part of the United States, MMSD, during the spring of the 2022-2023 school year. The survey was administered electronically utilizing Qualtrics. Along with the questions from the adapted PCQ, parents were also asked questions regarding the number of relocations they have experienced while being connected to the military, defined as mobility, and the number of nonstructural school moves of the oldest elementary-aged child in the family, defined as school mobility. The results of these questions

enabled the participants to be placed in groups based on the both the frequency of mobility and school mobility. Participants experiencing zero to two relocations were placed into the low mobility category. Participants experiencing three to four relocations were placed into the medium mobility category and those experiencing more than five relocations were placed into the high mobility category. Categories were also created to reflect the nonstructural school moves of the oldest elementary-aged student in the family. Families with the oldest elementary-aged student experiencing zero to two nonstructural school moves were placed in the low school mobility category. Medium school mobility is defined as three to four nonstructural school moves and high school mobility is defined as making five or more nonstructural school moves.

Table 3.1 PCQ question adaptations for the current study

Original Question from PCQ	Adapted Question	PsyCap assessed area
I feel confident analyzing a long-term problem to find a solution.	I feel confident analyzing a family-related long-term problem to find a solution.	efficacy
If I should find myself in a jam at work, I could think of many ways to get out of it.	If I should find myself in a jam in my personal life (or with my family), I could think of many ways to get out of it.	hope
When I have a setback at work, I have trouble recovering from it, moving on.	When I have a setback at home (with my family), I have trouble recovering from it and moving on.	resiliency

There were 246 surveys returned. Of these 246, there were some individuals that did not give consent to be a part of the survey (n=22) and some that did not complete the entire survey (n=46). This resulted in 178 viable survey responses that were used for this study. Of the 178 survey results, 12 were considered low mobility, 26 medium mobility, and 140 high mobility. When examining school mobility, of the 178 responses 74 were considered low school mobility,

82 were in the medium school mobility category, and 22 were in the high school mobility category. There was no other demographic information collected from the survey except for connection to the military. Of the 178 survey responses, 141 respondents were military spouses, 30 were active-duty military service members, five were retired service members, one was a member of the Reserves or National Guard, and one was a civilian with no military connection. One hundred fifty-three of the 178 respondents were female and 25 were male. The program Stata statistics software was used to analyze the data collected from the PCQ. The data was organized by total scores in each of the four areas of self-efficacy, hope, resiliency, and optimism, and an overall PsyCap score for the full 24 questions. This data was used to run a regression model to see if there were any statistically significant differences in scores between the three mobility categories. Total mobility was used rather than school mobility for regression analysis since the study was focused on the potential impact of mobility caused by the military on levels of PsyCap. Therefore, the high mobility group was used as the reference group for these models.

Sixty-eight of the 178 respondents agreed to be interviewed for this study. The 68 respondents that agreed to be interviewed were dispersed in the categories of mobility as follows. Three were in the low mobility category, ten were in the medium mobility category, and 55 were in the high mobility category. Since this portion of the study focuses on how families with elementary-aged children transition between duty stations, the categories of school mobility were used to group potential interview subjects. The overall scores in each of the four areas assessed by the PCQ were obtained for the 68 respondents and the scores were sorted from highest to lowest. The three respondents with the highest score in each of the four PsyCap areas and in each of the three school mobility categories were added to a list of potential interviewees. The sort

began with the area of self-efficacy, and continued with hope, resiliency, and finally optimism. If a respondent was one of the three with the highest score in more than one area, the next highest scoring respondent was added to the list of potential interviewees until there were two new possible interviewees for each of the four PsyCap areas and three school mobility categories. The lowest scoring respondent from each of the categories (PsyCap areas and school mobility categories) were also selected as possible interviewees. This sort resulted in 30 potential interview subjects. The total score on the 24-question PCQ was used to sort the 30 respondents within each school mobility category. The two respondents with the highest total scores and the two respondents with the lowest total scores in each school mobility category, resulting in 12 total respondents, were chosen, and contacted as potential interview candidates. Eight of the 12 candidates agreed to participate in interviews. Three of the interviewees were in the low school mobility category, two in the medium school mobility category, and three in the high school mobility category. All 12 of the interviewees fell in the high mobility category. Semi-structured interviews were conducted with respondents regarding supports and strategies that are utilized during family transitions between duty stations. The semi-structured interview methodology created a flexible structure when working with research participants. This flexibility was created by having an interview protocol and a set list of questions that were asked of each research participant while also leaving space for follow-up questions related to provided answers and the study's research questions (Brown & Danaher, 2019; Given, 2008). The interviews were conducted using the Zoom video conferencing software. The inductive process of data analysis (e.g., moving from the specific details provided by the research subjects to broader themes across all interviews) was utilized to find commonalities and major themes regarding the supports these families employed as they experienced frequent nonstructural school mobility. This was an

iterative process as the transcripts were continuously referenced (data collection) during the analysis and coding phase to ensure adequate details were extracted (Creswell, 2015).

Findings

Table 3.2 represents the descriptive statistics for the four individual categories of the PCQ and the overall score from the PCQ that was determined as the sum of each of the four areas combined. These statistics show that overall, participants rated themselves lower in resiliency than any other PsyCap area. Linear regression analysis was also performed using the high mobility group as the reference group to examine the presence of any statistically significant correlations between the groups. The results of the regression analysis are in Table 3.3. The linear regression analysis shows that there is no statistical significance between mobility groups in either overall PsyCap or the individual areas of self-efficacy, hope, and optimism. Holding all else constant, there appears to be a slight negative correlation in resiliency for families in the medium mobility group when compared to families in the high mobility group.

Table 3.2 PCQ Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Overall PsyCap	178	107.3146	13.71798	49	133
Self-Efficacy	178	29.13483	4.118831	9	34
Hope	178	26.7191	4.485983	10	33
Resiliency	178	24.17416	3.733798	8	30
Optimism	178	27.28652	4.58959	10	36

Table 3.3 Linear Regression Results

Psychological Capital Questionnaire					
	(1)	(2)	(3)	(4)	(5)
	Overall PsyCap	Self-Efficacy	Hope	Resiliency	Optimism
Low Mobility	-2.459524	-1.652381	-.097619	.2047619	-.9142857
Medium Mobility	-2.139011	.071978	-.2642857	-1.493956+	-.4527473
Observations	178	178	178	178	178

**p<0.01, *p<0.05, +p<0.1

Note: Reference group=high mobility. low mobility=0-2 relocations. medium mobility=3-4 relocations. high mobility=5 or more relocations

Eight interviews were conducted with parents of elementary-aged military-connected students. All eight of the interviewees were female and spouses of active-duty military service members stationed at a military installation in the Midwest. While all eight were in the high mobility category, having experienced at least five military-connected relocations, they were in different categories of school mobility when examining the number of nonstructural school moves of their oldest elementary-aged child. Three interviewees were in the low school mobility category, two in the medium school category, and three in the high school mobility category. The inductive process of data analysis was used to examine transcripts from the semi-structured interviews conducted with these parents of military-connected elementary students. This process resulted in the broad categories of communication/records, community, school choice, and resources.

Communication/records. Communication/records is defined as communication regarding student progress with school faculty as well as communication at home with family members regarding upcoming residential relocation. Interviewees discussed the importance of having open

communication with school staff regarding student progress to make sure student needs could be communicated to faculty of the new school. Interviewees also shared the importance of making sure they had accurate school and health records to be able to share with the receiving school/district in the new location. Communication within the family was also discussed as an area of importance. This consisted of sharing news of the upcoming move with children as soon as possible in order to talk about feelings and emotions associated with leaving the current school, teachers, and friends and looking forward to new adventures. During one interview, one parent was sharing the importance of talking with her children about upcoming moves to help them mentally and emotionally prepare. During the interview she noted that she wouldn't just randomly share with her children that, "Oh, we're moving in six weeks.". The fifth-grade daughter was within earshot when this comment was made. The parent had to clarify and reassure her daughter that, in fact, they were not moving in six weeks and that she was only using that as an example. This illustrates the importance of open communication to help prepare children for times of transition.

Community. Community is defined as the social connections made by both parents and children associated with school, neighborhood, military unit, church, and/or military installation. Interviewees described the importance of farewell-type activities as they were leaving one installation as well as establishing new connections when arriving at a new location. Many discussed participating in events associated with their church community or their spouse's military unit as they themselves, as well as others within these communities, were arriving or leaving a duty station. They also discussed how important it was to have things for their children to remember the places they have been. These items included school yearbooks and photos of teachers and friends. Creating new social connections was just as important, if not more so

according to one parent, than holding on to previous connections. One parent commented that holding on too tightly to previous social connections caused her child to have a harder time creating new connections after one relocation. It was important to all interviewees to feel like they were part of a community that was able to identify with their frequent mobility. One parent shared their children attended a school where the population of military-connected students was minimal while stationed at one duty station. The parent felt that the school staff did not take the time to address academic needs. Another interviewee commented that the end of the school year feels different at a school with a low military population compared to one that has a majority of the student body that is military-connected. At the school with the higher civilian population, the feeling is one of excitement around all the fun things the students will do together over the summer. At the school with a higher military-connected population, there is more of a feeling of sadness since many of the students will be moving. A third parent made the comment that in their experience it is almost worse to be the one “left behind” when all your friends are moving.

School choice. School choice is defined as opportunities and location associated with relocation and schooling. When asked, “What is the first thing you do related to your child’s education when you find out you are moving to a new duty station?” all interviewees commented on researching the schools in the new area. The school where the child is assigned is typically determined by where the family lives. This could be in the housing provided on the military installation, or part of a residential area not associated with the military installation. When moving to a new location, the interviewees all shared the importance of looking up information on the schools in the area regarding their ratings on different websites such as Google, Indeed, the state department of education, or greatschools.org. They all also spoke to the importance of recommendations from friends that have been, or are currently stationed in the area, as well as

recommendations from other users on different social media platforms. The types of information that interviewees commented on being important to their research was centered around curricular and extracurricular opportunities, student-teacher ratios, and school safety. Some parents commented that where they chose to live was determined by the information they gathered regarding the schools in the area. Another parent shared the importance at looking at the details of the information being shared through online reports. She spoke to two different schools the family was considering that were similarly rated. In looking more closely at the details surrounding each school, she found that one school had a lower overall student body population and lower student to teacher ratios than the other. This information was what helped the family make their ultimate decision on where they would live and where their children would attend school.

Resources. Resources is defined as services, organizations, or professionals, families utilize during times of transition. Interviewees shared that resources provided by the military installations were helpful during times of transition. These resources included school counselors and MFLCs, SLOs, FROs and ACS. These resources were noted as being helpful for both the adults and children in the families as they transitioned. School counselors and MFLCs were noted as helping with feelings of anxiety and readjustment when moving to a new location. One family noted that after being overseas during the pandemic, returning to school in the states was hard for her children and both the school counselor and MFLC were pivotal during this time. Another parent discussed the importance of having these resources, because some students have an easier time talking and listening to someone that is not mom or dad. School Liaison Officers were also noted as being helpful in sharing the documentation the family would need for the new location and helping provide resources and information regarding schools in the new area. One

interviewee shared that she knew the SLO couldn't recommend one school over the other, but shared a site on the state's department of education website that offered information that the parent had not been able to find. The parent noted during her interview that the information shared by the SLO was "worth its weight in gold" in her eyes. Both the FRO and ACS were noted as services that could be utilized for finding support as difficulties arise. One parent noted they have experienced hardships in different areas as they have moved. It was noted that in the past they had difficulties within the school, other times within their church, while other times it might be within her spouse's unit. Therefore, she shared that they have learned no matter where they go is to expect hardships, deal with the hardships as a family (utilizing available resources) and adjust.

Discussion and Implications

In examining the results of the linear regression analysis, the coefficients for the low mobility and medium mobility groups are negative in the areas of overall PsyCap, hope, and optimism. The low mobility coefficient is negative in self-efficacy and medium mobility is negative in resiliency. While the results do not show any statistically significant differences between low mobility, medium mobility, and high mobility groups in these areas, it shows that holding all else constant, families experiencing high mobility tend to have a slightly higher overall score in the areas of overall PsyCap, hope, and optimism. This could be the result of the time of year the PCQ was administered. The PCQ was sent to parents during the spring of the 2022-2023 school year. This is a time when many military-connected families are finding out if they will be assigned to a new duty station and experiencing a permanent change of station (PCS). Since PsyCap is considered to be state-like rather than trait-like, meaning the PsyCap areas of self-efficacy, hope, resiliency, and optimism are "more open to change and development

compared with “trait-like” constructs” (F. Luthans et al., 2007, p. 544) it may be possible that the news of an upcoming move, or not, were impacted by this information. Therefore, due to major life events, like a PCS, that one parent compared to uprooting a plant, roots and all, the state of mind of the survey respondents may have been different than if the questionnaire would have been administered at a different time of year.

An interesting finding from the regression analysis was that the medium mobility group did have a slightly statistically significant correlation to the area of resiliency. This group scored, on average, 1.49 points lower in this area than peers in the high mobility group. Finding the effect size by dividing the medium mobility coefficient (1.49) by the standard deviation (3.73) results in an effect size of approximately 0.40, or 40% of one standard deviation. The R² value for the resiliency regression model was 0.02, meaning there are many other factors besides the mobility levels of an individual that impact their resiliency level.

Another factor that may lead to the three mobility groups of low, medium, and high, being relatively similar could be related to what F. Luthans et al. (2006), describes as the PsyCap Intervention (PCI) training model. This model was designed to increase levels of the four areas that make up PsyCap and the overall PsyCap of individuals, originally, in the workplace, and more recently applied to academic PsyCap (B. Luthans et al., 2014). In this model, individuals are asked to identify challenging goals, multiple pathways for reaching the goals, and potential obstacles that may keep them from achieving their goals. Individuals would then receive feedback from colleagues on potential other pathways toward achieving their goals and overcoming obstacles. These practices should enhance and increase individuals’ levels of hope and optimism. The process of identifying multiple pathways and potential obstacles and how to overcome these obstacles, should increase levels of resilience as individuals are identifying ways

they can overcome their obstacles. In addition, resilience is developed as individuals are also asked to think of any resources they could utilize in helping achieve their goals and overcome obstacles. This process should increase levels of self-efficacy as individuals become more confident in their abilities to achieve their goals and overcome obstacles. This study asserts that, due to resources available to military-connected individuals and the importance of community, the steps outlined in the PCI, while not formally discussed, are embedded to some extent into the military community.

In the military community, individuals are goal-centered and reach these goals through promotions and duty assignments. This is not just seen as a promotion or growth opportunity for the active-duty military member, but for the spouse and family, as well, as many times pronouns like “we” are used by military spouses when referring to these milestones. As referred to earlier in this article, the military sees the family as an integral part of the military member’s success. This is why they have established positions and services such as the FRO, ACS, SLO, and MFLC. As professional goals are set by the military member it is typical that the family works to support these goals. Through interviews, the importance of social connections and community were discussed by each interviewee. Through the local social network of families within units, churches and neighborhoods, and extended social networks of friends and colleagues throughout the military and on social networking platforms, military-connected individuals have the opportunity to discuss pathways and potential obstacles towards reaching their goals. The military provides transitional support to families, and specifically to those with school-aged children, with services provided by MFLCs and SLOs. This may help explain the reason there was no statistically significant differences between mobility groups when analyzing the results of the PCQ in most areas.

This study also asserts that higher levels of self-esteem of military-connected mothers has a positive correlation to the levels of self-esteem in children, as researched by Finkel and colleagues (2003), the same may be true of levels of PsyCap. As parents participate in goal setting, establishing multiple pathways to reach their goals, utilizing available resources, and “bouncing back” from setbacks, they are developing their own levels of self-efficacy, hope, resiliency, optimism, and overall PsyCap and they are providing successful models for their children. This could be compared to what Bandura (1997) refers to as vicarious learning, which is essential in the development of state-like traits such as PsyCap. Therefore, students with parents with higher levels of PsyCap have an increased likelihood to have higher levels of PsyCap themselves.

Future studies in this area could survey both parental levels and student levels of PsyCap. As this study focused more on parents of elementary school-aged students in grades K-5, students themselves were not surveyed. It would be difficult to get reliable data from lower elementary level students due to a lack of understanding of the phrases and statements used in the PCQ. Intermediate students (grades 5-8) could be surveyed in the future and compared to mobility rates to gauge the possible correlation between PsyCap levels and mobility levels within this student population. This would be beneficial to military-connected students, who by nature are also highly mobile, but could also be applied to civilian students that experience high levels of mobility. Applying the concepts of the PCI to highly mobile students, whether military-connected or not, could have a positive impact on the PsyCap levels of these students. One way to do this is to provide opportunities for students to have vicarious learning experiences. B. Luthans and colleagues (2014) determined that when college-aged business students were provided with vicarious learning experiences and role models that closely resembled those in

observance, it “lead to the conclusion that “if they can do it, I can do it too.”” (p.197).

Comparing student PsyCap levels to achievement levels on standardized tests, whether given at the district, state, or national level, to find potential correlations is another area of potential future research.

Future studies should attempt to collect additional demographic information on participants completing the PCQ. Thinking specifically of the military-connected community, along with the number of moves a person has made, it may be beneficial to collect the number of deployments a person has served, the number of children within the family, the marital status of the parents, sex, and rank. The current study was completed by a majority of female military spouses. In my own experience working with families at MMSD, many of the military spouses I have dealt with do not work full time and are the primary contacts for school related issues. Granted, this is only representative of one military installation, but may be why the majority of the respondents were female military spouses. Future research should make a concerted effort to broaden the scope of the survey to include a more diverse population that is more representative of the overall military population. According to the 2021 demographics report (U. S. Department of Defense, 2020), the active-duty military is made up of 82% enlisted members and 18% officers. The total active-duty force is 83% male and 17% female; 75% White, 9% Black or African American, 6% Unknown, and 6% Asian.

The implications of this research extend beyond the military-connected population. Wykes (2015), notes that every state in the United States is home to a military-connected family and that at the time of their research, there were only 12 counties in the United States that were not home to a military Reserve member. Therefore, schools in every state are home to military-connected students. Military families have a choice in where they live and may choose to live in

an area and have their children attend a school that is not located on or near the military installation. It was evident in the interviews conducted for this study that the quality of the school is paramount to where they choose to live when moving to a new duty station. If a family chooses a school where being military-connected is the minority, teachers and other school staff and civilian students and their families may not be as familiar with the military culture and the different stressors that are associated with being connected to the military. Therefore, it is important that teacher preparatory programs and schools and districts that do have a population of military-connected students are aware of the needs of these students while also being sensitive to family privacy. One parent that was interviewed whose children had experiences in both schools with a majority of military-connected students and others with a minority of military-connected students noted that as a military child, you are more often than not the “new” kid in class. When you are around many others that are also “new” kids, it is easier to make connections because you have others that can relate to you and you to them. However, in schools where there are only a few military-connected “new” kids, creating these connections is harder. This can possibly take a toll on an individual’s levels of self-efficacy, hope, resiliency, optimism and overall PsyCap. As noted earlier, a key component to developing higher levels of PsyCap and the traits that work together to create PsyCap, is by seeing others that you resemble successfully reach a goal. The assumption could then be made that the opposite is true and when you are surrounded by others that don’t share or understand your background, it is harder to vicariously learn from them. Future researchers should use comparative data using the PCQ in highly-mobile civilian populations and military-connected populations.

As noted earlier in this article, Cordes and colleagues, (2019) share that it is unclear if the research on civilian mobility centered on urban and economically disadvantaged students could

be generalized to other contexts, which would include the military-connected students. The reverse could be considered in that does the research on highly mobile military-connected students generalize to student populations outside of the military. Applying what research presents as interventions for raising an individual's PsyCap using the PCI, this strategy could be used with any group of students and may benefit students that tend to be more mobile. An area of future research could be used in highly mobile civilian populations, military-connected populations, or both, and implement the PCI with students. Students could be given the PCQ both before and after going through the PCI process to see if the PCI increases PsyCap levels at within the student population as it has been shown at the college level and within the business world.

The importance of mental health and student social emotional learning (SEL) is an area that many states, districts and schools are brining into focus. States are beginning to adopt SEL standards and curriculum to address these standards. In my experience as an educator over the last twenty plus years, I have seen many different iterations of vocabulary terms, lesson plans, and district initiatives put in place to address this area. It is hard not to see commonalities of these programs to the PCI. Teaching students to set goals, both personally and related to their academics, working with them to create pathways to reach their goals and alternate pathways if they encounter roadblocks. Allowing them to know that not everything will work as they have planned, to plan for what to do when they encounter failure, and to continue forward in the face of failure. All of these steps that will increase levels of self-efficacy, hope, resiliency, optimism, and overall PsyCap, should prove to have a positive impact on social emotional development and academic achievement no matter your mobility level or military connection. When we focus on improving those that are most at risk, we find best practices that will also have positive impacts

on those that are less at risk. During one of the interviews for this study the parent used what she called a military term, hunt the good stuff. She noted that when they move to a new area, they hunt the good stuff in order to love their new home. I believe when we focus on the areas of self-efficacy, hope, resiliency, and optimism and help students to develop these skills within themselves, we are hunting the good stuff and teaching them to do the same.

Due to the nature of the PCQ, survey participants self-rated themselves on each of the 24 questions that made up the total PsyCap questionnaire. Even though most of the survey results were anonymous, there could have been some social desirability bias in the survey results.

Chapter 4 - An examination of military-connected student stability and academic achievement at the elementary school level

Introduction

Transitions in the military community are a unique phenomenon. Being military connected brings with it frequent transitions, possible parental deployments and living outside the continental United States. Tong and colleagues (2018) state that the frequency of transitions in the military due to a permanent change of station (PCS) is one key aspect of military life. Military families can choose to live in housing provided on their assigned installation or use the housing allowance provided by the military intended to cover the cost of housing in the local economy. According to the National Academies of Sciences, Engineering, and Medicine (2019), over the last several decades, active-duty military families are more often choosing to live in housing off the installation. Children who live off the military installation may attend a public school that has limited experience dealing with some of the additional issues that are unique to military-connected students (Ruff & Keim, 2014). Painter and colleagues (2021) note that as military-connected, school aged students PCS that “curriculum standards, emotional stressors, and a lack of continuity in schools created obstacles” (p. 37). The purpose of this study is to determine to what extent, if any, levels of stability experienced by military-connected elementary school students in the third through fifth grades affect the educational achievement levels of these students in the areas of reading and mathematics as determined by nationally normed computer-adaptive assessments from Renaissance Learning company, the Star enterprise assessments, and the Kansas State Assessments (KSAs).

Background

The education of military-connected students has been addressed by the federal government since the early 1800s with the establishment of the “post fund”, which was “established by General Winfield Scott’s *General Regulations for the Army; or Military Institutes* in 1821” (Wykes, 2015). The post fund was to be used to support the education of the military-connected dependents living on the military post. While times are much different now, the education of military-connected dependents is still an area of focus of the federal government. Section 7003 of the Federal Impact Aid Program, titled, “Payments for Federally Connected Children” is one program currently in place to support the education of military-connected children (Impact Aid, 2021). Although the federal government continues to fund the education of military-connected students, to have a positive impact on the academic performance of military-connected students requires more than dollars and cents.

Military-connected students have many of the same experiences as their civilian peers (e.g., making friends, learning the curriculum, participating in extracurricular activities). However, military-connected students also have very different experiences not experienced by their civilian peers. These experiences include having their military parent deployed for an extended period or serve a temporary duty assignment causing separation and possibly increased responsibilities at home. Military-connected students also experience frequent transitions between duty stations causing them to move around the country and world. These times of separation and transition can potentially cause emotional, behavioral, and academic issues (Painter et al., 2021; Ruff and Keim, 2014; Tong et al., 2018).

Civilian student mobility is examined to better grasp military-connected student mobility. When examining residential mobility in the United States, the U.S. Census Bureau (2020) shared that between 2019 and 2020, approximately 29.8 million people were noted as engaging in

geographic mobility, including slightly more than 2 million children ages 5 to 9. The Census report defines geographic mobility as moving from one location of residence to another, also referred to as residential mobility. Students that experience residential mobility will typically also experience school mobility. There are many reasons a student may experience school mobility, which include family economic instability, homelessness, foster care, or a change in parental employment. Most school moves take place between each school year; however, it can also occur within a school year, as students move between schools within the same district or between districts. Rumberger (2015) notes that most students in the United States make at least one school change throughout their educational careers.

Military-connected students experience school mobility at a higher frequency than civilian students. Annually, there are approximately 200,000 military-connected students that experience geographic and school mobility. Military-connected students experience school mobility six to nine times from kindergarten through their senior year in high school, which is approximately three times higher than their civilian peers (CPRL, 2017). These school moves typically happen over large distances and between states. Due to the frequency of movement between different states, “inconsistencies in content standards can pose substantial obstacles” (Mesecar & Soifer, 2017, p. 4) to academic achievement. Wykes (2015) shares that military-connected students will typically experience the most mobility during their pre-school and elementary school years but may experience fewer total moves based on the current average length of military service being less than 10 years.

In addition to funding, the federal government is concerned with the educational achievement levels of military-connected students. When Congress passed the Every Student

Succeeds Act in 2015, the Military Student Identifier (MSI) was established. Mesecar and Soifer (2018) communicate the ESSA requirements for the MSI:

ESSA requires all states to collect—and report—assessment data on military-connected students, defined to include students with a parent who is a member of the Army, Navy, Air Force, Marine Corps, and Coast Guard on active duty, including full-time National Guard duty.

An examination of the results shared by the Kansas Department of Education for the 2021 KSAs in English Language Arts (ELA) and Mathematics and using the MSI, military-connected students outperformed non-military connected students in grades 3 through 5 on both assessments (Kansas State Department of Education, 2021). This was determined by comparing the percentage of military-connected students that scored in levels 3 and 4 to those that were identified as non-military connected. The state of Kansas describes levels 3 and 4 as having *effective* and *excellent* abilities to understand and use the skills and knowledge needed for post-secondary readiness (proficient and above). Levels 1 and 2 are described as having *limited* and *basic* abilities to understand and use the skills and knowledge needed for post-secondary readiness. The percentages of students scoring at these levels are reported in Table 4.1. A close examination of this information shows that an average of 13.63% of military-connected students outperformed their non-military peers on the ELA assessment by scoring in the proficient and above category. Military-connected students outperformed their non-military peers on the mathematics assessment with an average of 12.84% more military-connected students scoring in the proficient and above category. This study provides a more in-depth examination of the extent, if any, that stability levels of military-connected students may affect achievement levels on state and local standardized assessments.

Table 4.1 Percentage of non-military connected students scoring below proficient and proficient and above compared to military-connected students at grades 3-5 on the 2021 Kansas state assessments

Percentage of non-military connected students scoring below proficient and proficient and above compared to military-connected students in grades 3-5 on the 2021 Kansas state assessments				
Below Proficient	Proficient and Above	Student Group	Grade	Subject
61.07	38.91	Non-Military Connected	3	ELA
47.96	52.02	Military-Connected	3	ELA
54.29	45.68	Non-Military Connected	3	Math
38.77	61.21	Military-Connected	3	Math
53.4	46.59	Non-Military Connected	4	ELA
39.55	60.44	Military-Connected	4	ELA
68.04	31.94	Non-Military Connected	4	Math
56.91	43.08	Military-Connected	4	Math
57.39	42.6	Non-Military Connected	5	ELA
43.45	56.54	Military-Connected	5	ELA
72.31	27.67	Non-Military Connected	5	Math
60.46	39.52	Military-Connected	5	Math

Methodology

Data for this study was collected from a school district located on a military installation in the Midwestern region of the United States, Midwestern Military School District (MMSD). The dependent variable data for this study were collected from the results of computer-adapted, standardized assessments given three times per year during the 2022-2023 school year by MMSD in the areas of reading and mathematics. The Star enterprise assessments, provided by the Renaissance Learning company, were given at the beginning of the first semester (fall), at the end of the first semester (winter), and near the end of the second semester (spring) during the 2022-2023 school year to students in 3rd through 5th grades. The percentile ranking from the

Star assessments and the scaled scores of the 2023 KSAs, administered during the second half of the second semester, in the areas of ELA and mathematics were examined to see the extent to which the number of years a student stays in the same school district may affect the student's academic achievement on these assessments. The scaled scores on both the ELA and mathematics assessments for the 2022-23 assessments range from 220 to 380. The scaled score ranges the state uses for the four proficiency ranges for the ELA and mathematics assessments are listed in Table 4.2 by grade level. Stata statistics software was utilized to find descriptive statistics and linear regression models based on the data from the Star assessments and KSAs.

Table 4.2 2022-2023 State assessment scaled scores by grade levels and proficiency levels

Grade/assessment	Level 1-limited	Level 2-basic	Level 3-effective	Level 4-excellent
3rd ELA	220-275	276-299	300-326	327-380
3rd Mathematics	220-275	276-299	300-328	329-380
4 th ELA	220-270	271-299	300-334	335-380
4 th Mathematics	220-265	266-299	300-330	331-380
5 th ELA	220-274	275-299	300-325	326-380
5 th Mathematics	220-272	273-299	300-325	326-380

The main independent variables were from student demographic information provided by MMSD's student management system, Skyward. Examination of this data proved that the number of times students have transitioned to new schools was unavailable. Therefore, a stability proxy was used based on the number of years the students have been enrolled at MMSD. Students were categorized into three stability groups, low (one to two years), medium (three to four years), and high (five or more years), based on the number of years they have attended MMSD. Students were also grouped into two groups, returning students and new students, to gain insight into the annual student turnover in MMSD. Descriptive statistics for the Star reading and mathematics percentile rankings and KSA ELA and mathematics scaled scores are presented in Table 4.5. Regression models were used to estimate the relationship between levels of achievement and levels of stability.

Findings

Examining the levels of stability at the district and grade levels in MMSD provides interesting context to this study. Annual turnover is defined as the number of new students divided by the total number of students. The annual turnover rate for the 2022-2023 school year for students in the 3rd through 5th grades in MMSD is 50.6%. The annual turnover rates are presented in Table 4.3. MMSD is made up of mainly military-connected students (92.3%) with one parent serving as active-duty in the military. The majority of all students in grades three through five, 76.7%, are considered low stability. The stability groups for grades three through 5 are presented in Table 4.4. Using the data from MMSD is ideal for this study since the majority of students in this district are connected to the military and experience frequent mobility.

Table 4.3 Percentage of returning and new students by grade level for the 2022-2023 school year

grade	returning students	new students
3rd	45.2%	54.8%
4th	45.5%	54.5%
5th	58.4%	41.6%
total	49.4%	50.6%

Table 4.4 Percentage of students at each grade by sex, military-connected, and stability levels

grade	sex	military-connected	low stability	medium stability	high stability
3rd	50.8% female 49.2% male	92.9%	80.2%	13.7%	6.1%
4th	41.3% female 58.7% male	93.7%	78.3%	13.3%	8.4%
5th	52.6% female 47.4% male	90.3%	70.8%	16.2%	13.0%
total	48.6% female 51.4% male	92.3%	76.7%	14.4%	8.9%

Note. Low stability = 1 or 2 years in the same school. Medium stability = 3 or 4 years in the same school. High stability = more than 4 years in the same school.

The first examination of the data was done using the percentile ranking scores from the Star reading and mathematics assessments. These assessments were administered by MMSD to all students in grades three through five three times during the 2022-2023 school year. For purposes of this study, the mid-year, or winter, assessments were not analyzed. Both the fall and spring assessments were analyzed to determine if there was a change in the correlations between percentile rankings and stability levels during one school year. Looking first at the descriptive statistics for the fall Star assessments, the mean percentile score in the area of mathematics is slightly higher at the 63.675 percentile when compared to the mean reading percentile at the 57.114 percentile. The mean percentile rankings in both reading and mathematics increased when comparing the fall assessment results to the spring results. The difference between the fall and spring mean percentile rankings, or average growth, showed a higher average growth in mathematics (11.35) than reading (6.081). Overall, the Star assessment results show, on average, that students in MMSD scored higher on the mathematics assessments in both fall and spring, than on the reading assessments during the 2022-2023 school year. Next, comparing the descriptive statistics for the scaled scores earned by 3rd through 5th graders in MMSD on the 2023 KSAs, the average scaled score on the mathematics assessment (315.33) was slightly higher than the average scaled score for the ELA assessment (312.07). The scores fall within the performance level descriptor of level 3 - effective. The descriptive statistics for the Star assessments and KSAs are presented in Table 4.5.

Table 4.5 Star reading and math percentile ranking and KSA ELA and math scaled score descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Fall Star Reading PR	455	57.114	27.90	1	99
Spring Star Reading PR	482	63.195	25.92	1	99
Fall Star Math PR	465	63.675	26.98	1	99
Spring Star Math PR	480	75.025	24.39	1	99
2023 KSA ELA SS	474	312.07	27.17	220	380
2023 KSA Math SS	494	315.33	28.68	220	380

Examining the fall percentile ranking on the Star reading assessment compared with stability levels and sex, only sex is statistically significant. Holding all else constant, females tend to score higher on the fall Star reading test than their male peers. Females scored, on average, five percentile points higher than their male peers. When taking a close look at the percentile rankings on the spring Star reading assessment, holding all else constant, females still tend to score, on average, 3.403 percentile points higher than their male peers, however, this is not at a statistically significant level. Stability does seem to contribute to the correlation between percentile rank on the fall Star reading assessment, but not at statistically significant levels. Holding all else constant, students experiencing medium stability tended to score, on average, 2.611 percentile points higher than their peers with low stability and students experiencing high levels of stability scored, on average, 6.159 percentile points higher than those that experience low levels of stability. When looking at the results of the spring Star reading assessment results, there is almost no difference between how students in the medium stability group scored in comparison to their low stability peers. However, those students in the high stability group tended to score higher than their low stability peers at a statistically significant level. Holding all

else constant, students in the high stability group tended to score 7.614 percentile points, or 29% of one standard deviation, higher than their low stability peers.

Turning the attention to the data collected from the Star mathematics assessments, holding all else constant, females tended to have a slightly lower percentile ranking than their peers on the fall assessment. While not at a statistically significant level, females tended to score, on average, 1.970 percentile points lower than their male peers on the fall assessment.

Comparing this to the spring assessment, while still not at statistically significant levels, holding all else constant, the gap between males and females increased, as females tended to score 2.555 percentile points lower than their male counterparts. Focusing on stability, *ceteris paribus*, both students in the medium and high stability groups tended to score at statistically significant higher percentile rankings than their peers in the low stability group. Medium stability students scored, on average, 7.928 percentile points higher than their low stability peers, and high stability students scored, on average, 7.607 percentile points higher than their low stability peers.

Comparing this to the results of the spring Star mathematics assessment, *ceteris paribus*, students in the medium stability group were no longer statistically different and tended to score relatively the same as their low stability peers. However, students in the high stability group continued to score, on average, at statistically significant higher percentile rankings than their low stability peers. Students in the high stability group tended to score an average of 8.721 percentile points, or 35.8% of one standard deviation, higher than their low stability peers. Results of the linear regression analysis using Star percentile rankings for the fall and spring assessments in reading and mathematics are presented in Table 4.6 with the corresponding effect sizes in reading presented in Table 4.7 and mathematics presented in Table 4.8.

Table 4.6 Linear regression results for Star reading and math assessments

2022-2023 Renaissance Learning company Star Reading and Math Assessments Grades 3-5				
	(1)	(2)	(3)	(4)
	Fall Reading Percentile	Spring Reading Percentile	Fall Math Percentile	Spring Math Percentile
Medium stability	2.611	0.034	7.928*	-0.231
High stability	6.159	7.614*	7.607*	8.721*
Female	5.245*	3.403	-1.870	-2.555
Dual military	-6.320	3.219	7.848	7.774
N	455	482	465	480

**p<0.01, *p<0.05, +p<0.1

Note. Reference group = male, White, low stability, from a married, single military officer family. Low stability = 1 or 2 years in the same school. Medium stability = 3 or 4 years in the same school. High stability = more than 4 years in the same school. Single military = one parent is active-duty military. Dual military = two parents are active-duty military.

Table 4.7 Star reading percentile rank effect sizes

	Fall Reading Percentile Coefficient	Fall Reading Percentile Effect Size	Spring Reading Percentile Coefficient	Spring Reading Percentile Effect Size
Standard deviation	27.90		25.92	
High stability			7.614	0.294
Female	5.245	0.188		
N	455	455	482	482

Note. Effect size = coefficient divided by standard deviation.

Table 4.8 Star math percentile rank effect sizes

	Fall Math Percentile Coefficient	Fall Math Percentile Effect Size	Spring Math Percentile Coefficient	Spring Math Percentile Effect Size
Standard deviation	26.98		24.39	
Medium stability	7.928	0.294		
High stability	7.607	0.282	8.721	0.358
N	465	465	480	480

Note. Effect size = coefficient divided by standard deviation.

An examination of the ELA and mathematics KSAs, *ceteris paribus*, shows once again that females tend to score at statistically significant higher levels than their male counterparts, but only in the area of ELA. Females tended to score, on average, 7.444 scaled score points, or 27.4% of one standard deviation, higher than their male peers. On the mathematics KSA, females tended to score approximately the same as their male peers (an increase of 0.656 scaled score points). When examining stability levels, there are no statistically significant differences between the scaled scores of the three different stability groups. Students in the medium stability group tended to score, on average, roughly the same as those in the low stability group in both ELA (an increase of 0.146 scaled score points) and mathematics (a decrease of 0.403 scaled score points). High stability students tended to score slightly higher, on average, than their low stability peers on the ELA and mathematics assessments, with an increase of 2.510 and 2.593 scaled score points, respectively. The results of the linear regression analysis using the 2022-2023 KSA scaled scores from in the areas of ELA and mathematics are presented in Table 4.9 with the corresponding effect sizes presented in Table 4.10.

Table 4.9 Linear Regression Results for 2023 ELA and Math KSAs

2022-2023 Kansas State ELA and Math Assessments Grades 3-5		
	(1)	(2)
	ELA Scaled Score	Math Scaled Score
Medium stability	0.146	-0.403
High stability	2.510	2.593
Female	7.444*	0.656
Dual military	6.724	7.269
N	474	494

**p<0.01, *p<0.05, +p<0.1

Note. Reference group = male, White, low stability, from a married, single military officer family. Low stability = 1 or 2 years in the same school. Medium stability = 3 or 4 years in the same school. High stability = more than 4 years in the same school. Single military = one parent is active-duty military. Dual military = two parents are active-duty military.

Table 4.10 ELA state assessment scaled score effect sizes

	ELA State Assessment Scaled Score Coefficient	ELA State Assessment Scaled Score Effect Size
Standard deviation	27.17	
Female	7.444	0.274
N	474	474

Note. Effect size = coefficient divided by standard deviation.

Discussion and Implications

The purpose of this study was to examine the correlation, if any, between academic achievement levels of military-connected students in the 3rd through 5th grades and the stability levels of these students. Through examining different data sources and data from different times throughout the school year, the conclusion of this study is that there is enough of a correlation surrounding stability levels and student academic achievement on district administered and state required standardized assessments to add to the current body of research in this area. While not always statistically significant, students categorized as high stability (attending the same school

district for 5 or more year) tended to score, on average, higher than their low stability (attending the same school district for one to two years) peers on both the district administered Star enterprise assessments in reading and mathematics and on the KSAs in the areas of ELA and mathematics. Since stability was used as a proxy for mobility, this study also concludes that frequent mobility related to being connected to the military has a negative correlation with the academic achievement of elementary school-aged students in the 3rd through 5th grades.

It was noted that female students tended to score higher than their male counterparts on the Star reading and KSA ELA assessments. Females also tended to score relatively the same if not slightly lower than their male peers on the Star mathematics and KSA mathematics assessments. In a comprehensive study on differences in academic achievement in the areas of mathematics and reading between males and females, Stoet and Geary (2013) found an inverse relationship between achievement levels in reading and mathematics between sexes. They found that in countries that had a larger gap in the achievement levels between sexes in mathematics tended to have smaller gaps in reading, The inverse was also true in that countries that had larger achievement gaps in reading between sexes tended to have smaller gaps in mathematics. This finding appears to apply to this study as well. There is a larger gap between percentile scores on the fall Star reading assessment for males and females with females scoring, on average, 5.245 percentile points higher than males. Inversely, the gap in percentile scores on the fall Star mathematics assessment is smaller between males and females with females scoring, on average, 1.870 percentile points lower than males. However, as the gap in percentile rankings in the area of reading got smaller on the spring Star reading assessment with females scoring an average of 3.403 percentile points higher than males, on the spring Star mathematics assessment, the

difference in percentile rankings increased slightly between males and females with females scoring an average of 2.555 percentile points lower than males.

It is also interesting to note that being less stable/more mobile seems to have a larger negative correlation with academic achievement on the Star reading and mathematics assessments at the beginning of the school year than at the end of the school year. Less stable students tended to score lower on the fall Star reading and mathematics assessments, with mathematics showing statistically significant levels, than their peers with medium and high stability. However, the difference between low stability and medium stability students virtually disappears on both the spring Star reading and mathematics assessments. However, based on this study, students with low stability tend to score lower on both the spring Star reading and mathematics assessments, at statistically significant levels, than their high stability peers. Interestingly, this holds true on the KSA ELA and mathematics assessments, which are also administered near the end of the school year, with low stability students scoring at roughly the same levels as their medium stability peers and just slightly lower than their high stability peers, on average. Students experiencing low stability tend to be still in the transitional phase of moving to a new location, learning a new school system, and making new social connections at school and in the neighborhood. This could be one explanation for this group scoring at lower levels at the beginning of the school year compared to their more stable peers.

This study is not causal in nature and does not assume that stability or mobility is the cause of students performing higher or lower on standardized assessments. There are myriad of other factors that are at play in a military-connected student's life that this study does not examine. For example, there was no way of telling if the students represented in this study had a parent that was either deployed or on a temporary duty assignment. Both of these factors may

affect a student's emotional and/or behavioral state. Studies have shown that spouses of deployed military members tend to have higher levels of anxiety, depression, and stress related issues (e.g., sleep disorders) than their civilian peers (De Burgh et al., 2011; Meadows et al, 2016). It is also noted that the effects of deployment on younger military-connected children "are more likely mediated through their impact on parents and the caregiving system" (NASEM, 2019, p. 8). In support of this, Carmona-Halty and colleagues (2022) suggest that healthy parent-child relationships yield higher academic achievement in students. Therefore, students with a deployed parent may be more likely to experience negative academic outcomes.

This study suggests other areas of relevant research in the area of academic achievement as it relates to mobile military-connected students. As noted earlier, the number of times a student has experienced geographic, residential, or school relocations was unable to be determined. While the MSI is a needed piece of data to determine if a student is connected to the military, it is insufficient in determining the number of transitions a student has made. Future research should take into account the total number of moves students have made in determining the extent to which this mobility may have an effect on academic achievement. As noted earlier, there are myriad of other factors both socially and emotionally that may also have an impact on student academic performance. Students may be affected socially and emotionally due to frequent transitions, a parental deployment or temporary duty assignment, and possibly due to the social and emotional state of either the active-duty or non-active-duty parent. These are all areas worth exploring to get a better picture of how schools and communities best support military-connected students and their families.

Chapter 5 - Implications and future research

The purpose of this study was to examine frequent mobility as it relates to the academic achievement of elementary-aged dependents of active-duty military service members. This study was conducted in a series of three articles examining different aspects related to transitions military families experience during a PCS. The first article was a content analysis of the extant research since 2001 focused on the possible effects, if any, of military-connected mobility on the academic performance of elementary-aged students in the first through fifth grades. Secondly, utilizing an adapted version of the PCQ and interviews with parents of current military-connected elementary students, levels of parental PsyCap were measured and the structures and strategies families use as they transition between duty stations were investigated to find possible trends based on the levels of mobility experienced by these families. Finally, standardized testing data for students in the third through fifth grades from district administered, computer-adapted assessments in reading and mathematics and state assessments in the areas of English language arts and mathematics were analyzed to see the correlations, if any, between student academic performance, defined as percentile rankings on district assessments and scaled scores on state assessments, and levels of student stability. The data for the second and third articles was collected from a school district located on a military installation in the Midwest region of the United States, Midwest Military School District (MMSD).

The findings from each of these articles is briefly summarized in this chapter and in more depth in each of the three articles themselves. To set the stage for this study the content analysis was done to position this study in the extant body of research. The current research on possible impacts of frequent mobility experienced by mobile military-connected elementary school

children pales in comparison to the research that has been conducted on the academic effects of mobility in the general population. A quick Google Scholar search using the terms “academic effects of mobility” returns approximately 4,150,000 potential studies. Adding the terms “in K-12” reduces the potential studies to 79,500. Adapting the search terms to “academic effects of military-connected mobility in K-12” returns approximately 228 potential studies. Expanding the search to examine other available education databases utilizing Kansas State University’s online library, ERIC, the psychology and behavioral collection, the military and government collection and the APA PsychInfo databases were all included. After creating a coding frame to analyze the potential studies in alignment with the search terms, “mobility”, “military”, “elementary school”, “military-connected” and “military-connected children”, a total of 28 articles were found to fit all the search terms. This analysis helped create the obvious need for additional research in this area.

Parents of military-connected elementary school children were the participants in the examination self-efficacy, hope, resiliency, and optimism, the four traits that are contained within the larger concept of PsyCap. The PsyCap questionnaire was adapted from its original focus on employees in the workplace to focus more on what this study terms personal psychological capital. This was done to gain insight into the levels of this trait-like framework with parents. Parents were surveyed and interviewed since other studies have shown that the relationship at home between parents/caregivers and student is a mediating factor when it comes to military related transitions, like deployments and frequent mobility, and the effects on children (National Academies of Sciences, Engineering, and Medicine, 2019). In addition to the PCQ, parents were surveyed regarding the number of military-related relocations they had experienced. Using data from both the PCQ and other survey questions, this study was able to investigate the correlations, if any, between mobility levels and PsyCap levels. The study determined that in

regard to overall PsyCap, while those that experienced lower levels of mobility tended to score slightly lower, an average of approximately two points, there was no statistically significant difference between individuals that experienced higher levels of mobility from those with lower levels of mobility. One area that was slightly significant was in the area of resiliency where individuals of medium mobility, defined as having moved three to four times, tended to score on average approximately one and a half points lower than those that had experienced high mobility, defined as moving five or more times. The survey was sent to parents during the months of March and April of 2023. This is during the time when families have recently learned of new orders causing a possible upcoming move. It may be that the family did not get the orders they were hoping for, or possibly that they would continue at the current duty station. When interviewed about transitioning between duty stations, one military spouse noted that not moving is almost worse than moving because you see all your friends leaving and getting the chance for a new adventure and you are staying behind. As PsyCap is state-like and somewhat dependent on current situations, the reasons listed above could help explain the difference in resiliency scores between medium mobility and high mobility individuals. Interviews were also conducted with parents of elementary school students. The broad concepts that all interviews had in common were in the areas of communication/records, community, school choice, and resources. These individual areas are discussed within the article and are consistent with what Mispalet (2016) shared as the presence of “structures of consistency” within mobile military families to facilitate successful transitions.

An examination of district and state administered standardized assessments in relation to stabilization, defined as being in one school district, levels of students in grades three through five was conducted. This was done to examine the correlation, if any, between student percentile

rankings on district assessments and scaled scores on state assessments, and the length of time spent in one school district. Student information was gathered from the student management system of MMSD as well as from the state department of education in order to determine demographic information and the number of years a student had been enrolled in MMSD. Students were placed into one of three researcher created stability categories (low, medium, and high) based on the number of years they had attended MMSD. Low stability was defined as having spent one or two years in the same school district. Medium stability was defined as having spent three to four years in the same school district. High stability was defined as having spent five or more years in the same school district. These stability groups were compared to percentile rankings students earned on the Renaissance Learning companies' Star assessments, computer-adapted standardized assessments, in reading and mathematics. These assessments were given three times throughout the 2022-2023 school year. The fall and spring assessments were utilized to investigate any possible differences when compared to student stability groups using descriptive statistics and linear regression models. State administrated assessments in the area of English language arts and mathematics were also examined in comparison to stability levels to determine any correlations that may be present. The study determined that females tended to score higher than males in reading and English language arts than in math. The relationship between performance in reading and English language arts and math could be categorized as inverse. This was consistent with the findings of Stoet and Geary (2013) in their study of achievement differences between sexes in the areas of reading and mathematics. Student stability tended to have a positive correlation with performance on the Star and state standardized assessments, with differences being more statistically significant on the district assessments. The differences between stability groups were more statistically significant on the fall Star math

assessment than on the spring Star math assessment suggesting that student transitions may play a larger role in achievement levels at the beginning of a school year when they are adjusting to many new environments (home, neighborhood, school) than at the end of the school year.

Students in the high stability group tended to score at statistically significant higher levels on the district Star assessments than their medium and low stability peers. High stability students also tended to score higher on state assessments, but not at statistically significant levels. While this study was not causal in nature, these results suggest that students that experience higher levels of mobility may experience lower levels of achievement when compared to more stable peers.

When interviewing parents of elementary school students one of the main common themes that parents discussed when transitioning from one duty station to the next was that of community. This related to the local communities of the neighborhood, school, church, and their spouse's unit as well as the larger military community across the country and world.

Interviewees mentioned the importance of creating social connections in order to have others they could rely on in times of need. This applied to the larger community of friends, colleagues, and acquaintances they had made throughout their travels. All interviewees spoke about how they would reach out to others they knew, or even social media groups, when they found out where they military would be sending them next. This is not something that is as prevalent in the research on mobility outside of the military population. Focusing on civilian mobility, Rumberger (2015), noted that the current evidence showed overall negative effects as a result of nonstructural residential and school mobility. These negative effects are lower test scores and lower high school graduation rates. The more times a student experiences school changes, the more severe the effects, especially if the school changes are accompanied by family disruptions, such as homelessness (Rumberger, 2015). In a study of fourth and fifth-grade students, Dinnen

and colleagues (2020) confirmed previous findings that higher rates of nonstructural school mobility resulted in lower academic performance on standardized tests. In a review of the extant research, no matter how student mobility is examined, whether specifically by structural or nonstructural, or by combining these types of mobility, there is an implication that school mobility is associated with a decline in reading and math achievement (Welsch 2017). While this study noted some negative correlations between students that are less stable and academic performance, the negative correlations are much lower than what is found in the civilian population. One possible explanation for this was discovered through this research. Through conversations with interviewees, is evident that the military is made up of a community of movers, meaning that individuals that join the military have an expectation that they will not be in the same place their entire careers and have the expectation that the military will cause them to move around the country and possibly the world. This is also not typical of most communities that are not connected to the military. This mobile mindset may suggest why the research on mobility and its possible negative effects on academic achievement of military-connected students seems to be lower than in the non-military population.

Knowing that mobility can potentially have adverse effects on a student's education and since the federal government is technically responsible for the level of mobility military-connected students experience, the federal government, as well as the military, have created resources to support military member, their families, and the schools attended by military-connected students. As discussed previously in this study, the federal government provides financial support to schools that serve military-connected students through the Federal Impact Aid program. There are other national groups that have been created to support the education of military-connected students, such as the Military Impacted Schools Association (MISA) and the

National Association of Federally Impacted Schools (NAFIS). According to the MISA website (MISA, n.d.), “Formed in 1986, MISA works on funding (Impact Aid), legislation, partnerships and programs for military families on the move.” There is a myriad of other supports that have been established with support from the federal government and military branches for military-connected students. These supports may also suggest why mobility tends to have fewer negative impacts on the academic achievement of military-connected students. Students and families outside of the military community have some supports afforded to them, but not nearly at the same levels as those in the military.

There are many implications and areas of future research as a result of this study. First, there is a need for researchers to continue to examine the school-aged military student population. This study attempts to shed some light on the mobility levels of elementary school students and possible correlations between mobility and academic achievement on standardized assessments. The implementation of Common Core standards has been beneficial to the military-connected K-12 population as they move across state boundaries with nearly every PCS. However, not every state (only 41 as of 2023) has adopted the Common Core standards. This increases the possibility that military-connected students will experience varying standards and possibly creating educational gaps. This under researched population of students would benefit from longitudinal studies that investigate academic achievement through high school and into post-secondary education would be beneficial. Scores on higher level standardized exams such as the ACT or SAT could be used to examine any possible correlations with the number of school moves experienced by the participants. According to Wykes (2015), when comparing military-connected students that attended Department of Defense Education Activity (DoDEA)

operated schools that took the SAT in 2014, DoDEA students scored, on average, as well or better than national averages, with the exception of math.

Another area of possible research that would be beneficial to the military-connected student population would be to examine the possible social, emotional, and behavioral impacts of parental deployments, temporary duty assignments, and frequent relocation. Referring to the interviews conducted with parents, creating social connections seemed to be paramount in ensuring a successful transition. Through my own experience with military-connected students, I have witnessed students who struggled emotionally and behaviorally due to separation caused by the deployment or temporary duty assignment of a parent. I have also had firsthand experience working with students that are struggling to make social connections after a transition. PsyCap at the student level may be a mediator (along with the parent/caregiver relationship mentioned earlier) between parental separation, mobility, and academic achievement. The PsyCap of parents was utilized in this study due to possible inaccuracies of surveying elementary-aged students.

The timeframe of this study, as mentioned earlier, may have influenced the collected results. Therefore, since PsyCap is considered state-like and can develop and change, future studies may consider a more longitudinal approach using the PCQ at different times relative to times of transition. For example, an individual could be surveyed prior to learning of a transition, after learning of the transition, after arriving at the new location and after having been at the new location for a period of time. This could examine if an individual's PsyCap fluctuates and if any of the four areas that make up PsyCap differ during any of these observations. This could possibly identify strategies that may help increase levels and also strategies to avoid if levels decreased. This study could be done with any individual or population that experiences mobility.

An implication of this study and the understudied military-connected student population could be addressed through college-level courses and educator preparatory programs. According to the 2021 Demographics Report (Department of Defense, 2021), there are approximately 1.5 million military dependents from ages 0-18. Nearly 35% of these dependents (521,930) are between six and eleven years old, which is approximately first through sixth grades and nearly 26% (389,598) are ages 12-18, which would equate to approximately seventh through twelfth grades. Military-connected students are represented in every state in the United States. Therefore, it is important for teacher preparation programs to include information regarding military-connected students (e.g., The Compact, stressors that surround transitions and deployments, etc.). Knowing and understanding this unique population will also help with understanding and building interventions and strategies to assist any student that experiences frequent mobility.

One area that is not discussed in this study but needs to be acknowledged regarding any educational research since 2019, is the impact the COVID-19 pandemic has had on today's students. When the pandemic hit and governors around the country closed schools, there was a definite impact on anyone involved in education, especially students. Speaking firsthand as an elementary school principal and father of both a high school and college aged student, there was an educational and social emotional impact. Educationally speaking, students went from being in class with their teachers and peers for approximately seven and a half hours each day, to possibly seeing these same people through a computer screen for a fraction of a fraction of the normal school day. Depending on where the students lived, this may have continued into the 2020-2021 school year. Now, what if you were new to the school, state, or country during this time due to a military PCS? Students that may have a hard time making social connections, are even more

disadvantaged. From firsthand experience, I knew a student that struggled in this area for an entire year virtually before I ever met them in person. The COVID-19 pandemic may have impacted the data in this study, but to what extent, I don't know. This is an area that needs to be addressed in the future for all students, and with especially students that experienced transitions during this time.

This study provides insight into the highly mobile military-connected student population and adds to the extant research in this area. While not causal in nature, the correlations examined in this study further the current understanding with regards to the possible impacts frequent mobility may have on the academic achievement levels of military-connected elementary school students. It also adds to the research on the importance of community and creation of social connections within the military community. While I am not military, nor were either of my parents, I have had the honor and privilege of working with military-connected students and their families since 2001. Being able to add to the research and possible understanding of this unique population is one way I can serve those that choose to serve and protect my freedoms and country.

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