The Effect of Student Mobility on the Reading Development Skills of First through Third Grade Students in an Urban School District

Kenny Rodrequez
B.A., Oklahoma State University, 1996
M.S., Oklahoma State University, 2004

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_____
Dennis King, Ed.D.
Major Advisor

_____
James Robins, Ed.D.

_____
Jeanette Cowherd, Ed.D.

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Abstract

Mobility negatively impacts student achievement as students experience gaps in reading development skills as they transfer schools. As a student moves they lose social interaction and connectedness with teachers and other students. These social interactions and connections are needed for the student to progress academically. The purpose of this study was to determine the impact of student mobility on the reading development skills of a cohort of elementary students in first, second, and third grade using the NWEA reading assessment. Archival NWEA data was collected from District A, an urban school district in the Midwest, to complete the study.

Research questions were developed to address four main areas: (1) The impact mobility has on students NWEA MAP reading achievement growth in language and writing; (2) The impact mobility has on students NWEA MAP reading achievement growth in vocabulary; (3) The impact mobility has on students NWEA MAP reading achievement growth in literature; (4) The impact mobility has on students NWEA MAP reading achievement growth in overall RIT composite score. The study included a cohort of 565 students who were in first grade in 2013, second grade in 2014, and third grade in 2015. A two-way repeated measures ANOVA was conducted to test each hypothesis.

The results of the study indicated there was a statistically significant interaction effect of Time*Mobility for all research questions. A statistically significant interaction was found for the main effects of time and mobility for vocabulary, literature, and RIT composite score. There was not a statistically significant main effect for mobility in language and writing.

Dedication

I would like to dedicate this dissertation to my family. First, to my wife, Tracie. Throughout the past 24 years, you have been my all. I cannot imagine my life without you and am thankful for your support the past 4 years as I worked to complete the doctoral process. Without you by my side, I would never have made it.

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Chapter One

Introduction

One of the foundational components of learning is reading as students must be able to read and comprehend content in all other core instructional areas. A growing body of research supports the importance of strong early literacy skills to ensure future success. Students achieving reading proficiency by the end of third grade is a critical indicator of student success (Hernandez, 2011). Students who fail to reach reading proficiency by the end of third grade have a higher risk of dropping out of school (Hernandez, 2011). Reading proficiency is even more vital for students of poverty considering 31% of African American students from poverty and 33% of Hispanic students from poverty did not graduate from high school if they did not achieve reading proficiently by third grade (Hernandez, 2011). The challenge for schools in the United States is ensuring all students become literate as national statistics show that 18% of adults age 16-65 years old read at or below a fifth-grade level (National Center for Educational Statistics, 2016).

School accountability for student achievement increased with the introduction of the No Child Left Behind Act (NCLB) in 2002 and continued with the release of the Every Student Succeeds Act (ESSA) in 2015. A major focus of these education reform efforts was to lower the achievement gap that exists between demographic populations. However, according to Reardon, Greenberg, Kalogrides, Shores, & Valentino (2013), while there have been some advances, there is no "support for the hypothesis that No Child Left Behind has led, on average, to a narrowing of racial achievement gaps" (p. 1). NCLB utilized standardized tests, such as state assessments and national assessments

such as the ACT, as a measurement of academic performance. Standardized tests are not designed to measure or identify social or emotional factors, such as academic and school attachment, teacher support, peer values, and mental health which may contribute to the widening achievement gap (National Center for Education Statistics, 2009, 2013). Standardized tests and educational reform efforts do not measure factors such as student mobility. Mobility occurs when a student changes schools for a reason other than promotion to the next grade and is a factor that directly impacts students' academic progress as well as social and emotional development (Rumberger, 2003).

The National Research Council and Institute of Medicine (2010) examined the impact of student mobility on the social and emotional development of young children and stated:

> Children's body function, brain development, capacities for dealing with stress, and behavior change over time, and these variations may make them more or less vulnerable to—or able to withstand—the effects of mobility. Parents as well as children may perceive and handle a move differently depending on the child's developmental stage... Disruptions in this development can have a snowball effect, which explains how mobility has the potential to harm children... Specifically, mobility (particularly repeated mobility) can disrupt children's routines, the consistency of their care and health care, and their relationships, as well as learning routines, relationships with teachers and peers, and the curriculum to which they are exposed. (p. 6)

Mobility rates have been directly correlated to negative effects on students' educational outcomes in the short-term and long-term and have led to slower academic

pacing overall (Hartman & Leff, 2002; Parke & Kanyongo, 2012). Slower academic pacing may be tied to students experiencing at least one non-promotional school change throughout their educational experience, thus making the study of the effects of student mobility extremely vital to student success (Rumberger, 2015). Reynolds, Chen, and Herbers (2009) identified that "school mobility can contribute to low school performance and related difficulties because it introduces discontinuities in learning environments that alter or weaken instructional, school, and peer ecologies" (p. 4). Student learning is delayed as instructors are not familiar with a student's past experience and cannot always make connections to new learning (Lash & Kirkpatrick, 1990). The learning of new information has been shown to be dependent on building instruction on past experiences and knowledge (Hirsch, 1996). Familiarity with a student's past experience is especially important when teachers are trying to diagnose and provide interventions for developmental reading gaps that may have occurred. Gains in academic achievement occur through a cumulative process which improves upon existing skills (Duncan et al., 2007). Students who are mobile experience multiple changes in academic environments which leads to gaps in reading development. Mobility is a contributing factor to learning difficulties students may have in reading (Foorman, Petscher, Lefsky, & Toste, 2010; U.S. Government Accountability Office, 1994; Grigg, 2012; Hinz, Kapp, & Snapp, 2003; Johnson & Lindblad, 1991; Kerbow, 1996; Mantzicopoulos & Knutson, 2000; Reynolds et al., 2009).

Data indicated 10% of families in 2008 with school-aged children changed homes (U.S. Census Bureau, 2009) and family transiency in the United States appeared to remain high (U.S. Census Bureau, 2014) contributing to student mobility. Non-

promotional school transfers negatively impact student achievement, specifically reading. The U.S. Government Accountability Office (1994) national study of mobility identified that of all third-grade students who changed schools frequently, 41% were below grade level in reading and 33% were below grade level in math. Students who did not change schools showed that only 26% were below grade level in reading and only 17% were below grade level in math.

Mobility negatively influences reading achievement on standardized reading assessments (Rumberger, 2015). Reading development is impacted by attending multiple schools as a student's lack of access to continuous and coherent reading instruction increases the possibility that reading development will be delayed or even impeded (Snow, Burns, & Griffin, 1998). Recurrent mobility disrupts a child's development during primary grade levels even with early intervention efforts being made available. In a study of Title 1 schools, reading was the academic area most negatively affected by student mobility (Thompson, Meyers, and Oshima, 2011). Students who are mobile have gaps in their attendance as they are moving from one school to another. Students who are considered at-risk for attendance in kindergarten and first grade have a 20% less chance to be reading on grade level by the time they are in third grade (Attendance Works, 2011).

Background

District A is a high-poverty, low achieving urban school district in the state of Missouri. According to the Missouri Department of Elementary and Secondary Education (Missouri Department of Elementary and Secondary Education, 2016), in 2013-2014 the district consisted of 25 kindergarten through seventh grade elementary

schools, four seventh through twelfth grade secondary schools, two seventh through eighth grade secondary middle schools, four ninth through twelfth grade secondary high schools, one vocational school, and two alternative schools: one kindergarten through sixth grade school and one seventh through twelfth grade school. Of the approximately 14,100 students in District A, 89% qualified for free or reduced lunch status, and 24% of the district's enrollment included English language learners. The student population in district A consisted of 58% African-American, 28.1% Hispanic, and 8.8% White. The district dropout rate was 8.4% and the attendance rate was 77.4% (Missouri Department of Elementary and Secondary Education, 2016).

District A had a tumultuous academic history in the state of Missouri from the late 1990's through 2016. The school district was designated as non-accredited by the Missouri State School Board Association in 1999 due to low performance on Missouri's Measures of Academic Performance assessments in core subjects of English, Math, Science, and Social Studies as well as "failing to meet any of the state's eleven academic performance standards" (Fine, 2002, p. 5). District A achieved provisional accreditation status by meeting four of the states eleven student academic performance standards in 2002. The school district's academic achievement declined in 2011 as the Missouri School Board Association again removed District A of its accreditation status when the district achieved 3 of 14 student academic performance standards on the Missouri Annual Performance Report and 30% of District A students in grades three through six scored proficient or advanced on the Missouri state assessment (Sulzberger, 2011). District A was granted provisional accreditation in 2014 by the Missouri Board of Education after the district earned 92.5 out of a possible 140 points on the annual performance report,

which was a jump of 8.5 points from the 84 points earned in 2013, and 54.5 points more than the school district's 2012 results (Missouri Department of Elementary and Secondary Education, 2016).

Statement of the Problem

Reading is an important academic task encountered by students (Bharuthram, 2012) and early reading proficiency is predictive of later reading achievement and success (Duncan, et al., 2007; Fiester, 2010). As students move, they are exposed to various teachers with varying ability levels and schools that are teaching varying curriculums which may not align with previous schools the student attended (Gibson & Hidalgo, 2009). Mobility negatively impacts student reading development skills as one non-promotional school change reduces a students' elementary school achievement in both reading and math (National Research Council and Institute of Medicine, 2010). The study of the impact of mobility on reading achievement is vital as the majority of elementary and secondary school children make at least one non-promotional school change during the time they are in enrolled in school (Rumberger, 2015).

Mobility influences reading achievement through the creation of instructional gaps, contributing to students disconnect from school, and loss of instruction through chronic absence from school (Balfanz & Byrnes, 2012; Blum, 2005; Grigg, 2012; Herbers, Cutuli, Supkoff, Heistad, Chan, Hinz, & Masten, 2012; Jensen, 2009; Kerbow, 1996; Nelson, Simoni, & Adelman, 1996; Pribesh & Downey 1999; Rumberger, 2003; Whitlock, 2006; Xu, Hannaway, & D'Souza, 2009). Children's academic success during their early years is strongly associated with their achievement in later years (Snow, et al., 1998). Schools must determine the level of impact student mobility has on reading

development skills within current school reform efforts since student mobility creates continued shifts in the student populations and will directly impact student learning. As academic achievement gaps at age 18 are evident by age five or six (Duncan et al., 2007), it is essential to explore the influence of mobility on reading development skills for children in the early elementary years.

Purpose of the Study

The purpose of this study was to determine the impact of student mobility on reading development skills for students in first through third grade based upon the Northwest Evaluation Association Measures of Academic Progress assessment in language and writing, literature, and vocabulary for a cohort of elementary students in first, second, and third grade over a three-year period of time within an urban school district in the Midwest.

Significance of the Study

Students with reading achievement gaps will experience difficulty in learning (Bharuthram, 2012). The U.S. Census Bureau (2013) reported that family transiency, and thereby student mobility, in the United States remains high and educators must fully understand the relationship between mobility and reading development to ensure the academic success of all students. Researchers have examined the issue of student mobility comprehensively and found that it can predict reading achievement. In a study conducted in the Chicago area (Evans, 1996; Kerbow, 1996; Mehana & Reynolds, 1995), a direct correlation was made between student mobility and reading achievement in schools with high mobility rates (Kerbow, 1996). The study indicated approximately 30% of students had changed schools once and 29% had changed schools more than

once. The results showed that mobility could successfully predict reading achievement and frequent mobility, or more than three times, resulted in a three-month gap in reading scores. Kerbow's (1996) studies indicated that schools with high mobility have classes with slower academic pacing through each month and each grade level contributing to the reading achievement gap. Additional studies discovered mostly negative effects of mobility on reading with increased impacts on students from a low socio-economic status, students with disabilities, and English Language Learners (National Research Council and Institute of Medicine, 2010).

Students experience social interaction every day with other students as well as teachers. Mobility negatively impacts a students' level of social interaction and connectedness needed (Coleman, 1988) for the student to progress academically. This social interaction and connectedness is vital to students continued progress and development according to the social constructivist theory (Vygotsky, 1978). Students with increased mobility are also exposed to various teacher skill levels at each school they attend, which can have a negative impact on academic progress and lead to gaps in reading development skills (Gibson & Hidalgo, 2009). The findings from the current study will provide insight for district officials in addressing reading development skills in a state assessed subject in primary grade levels when reading development is still in its infancy. This study will assist educators in more accurately identifying possible effects of mobility on reading development and assist in implementing strategic interventions to mitigate negative effects on the reading development of students.

Delimitations

Delimitations are self-imposed boundaries set by the researcher on the purpose and scope of the study" (Lunenburg & Irby, 2008, p. 134). This study had the following delimitations:

1. The study was conducted in an urban school district in the Midwest that has been underperforming for more than 20 years (Missouri Department of Elementary and Secondary Education, 2016).
2. The study is limited to only first, second, and third grade students from each of the 19 traditional elementary school sites.
3. The study was conducted only on reading scores.
4. This research focuses on primary grades of first grade, second, and third grade to limit the possibility of previous achievement being a contributing factor in the effect of mobility on achievement levels.

Assumptions

Lunenburg and Irby (2008) defined assumptions as the "postulates, premises, and propositions that are accepted as operational for purposes of the research" (p. 135). The following assumptions were made concerning this research study:

1. Students provided their best effort on the Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP) assessments during the specified timeline.
2. Handling of the materials for the NWEA MAP assessments was performed in an ethical and legal manner, following state guidelines.
3. Teachers administered the NWEA MAP assessments in a standardized manner.

4. State personnel scored the NWEA MAP assessments in a standardized manner.
5. Student attendance was recorded without error.
6. Students who transferred schools throughout the school year did not miss additional days of instruction.
7. Teachers who received new students who transferred into their classes treated them the same instructionally as all other students.

Research Questions

Research questions give the study direction and contain the essence of the study for those who review them (Lunenburg & Irby, 2008). To investigate the connection between yearly mobility and individual reading achievement scores for students in District A, the following research questions guided this study:

RQ1. To what degree does mobility status (non-mover, one-time mover, and multiple mover) impact students MAP reading achievement growth in language and writing for a cohort of students over the course of two academic school years?

RQ2. To what degree does mobility status (non-mover, one-time mover, and multiple mover) impact students MAP reading achievement growth in vocabulary and use for a cohort of students over the course of three academic school years?

RQ3. To what degree does mobility status (non-mover, one-time mover, and multiple mover) impact students MAP reading achievement growth in literature for a cohort of students over the course of three academic school years?

RQ4. To what degree does mobility status (non-mover, one-time mover, and multiple mover) impact students MAP composite reading achievement scores for a cohort of students over the course of three academic school years?

Definition of Terms

This section of the research is dedicated to key terms that were used throughout the study.

Grade Level Expectation (GLE). This term refers to a document that has been created by the Department of Elementary and Secondary Education of Missouri whose purpose is to show curricular expectations of each grade level (Missouri Department of Elementary and Secondary Education, 2016).

Lexile. The Lexile Framework for Reading is a psychometric system for matching readers with texts of appropriate difficulty. According to MetaMetrics (2009), "the Lexile scale is a developmental scale for reading that ranges from below 0L for emerging readers and beginning texts to above 1700L for advanced readers and texts. Values at or below 0L are reported as Beginning Reader (BR)" (p. 1).

Mobility. Mobility is defined as a student changing schools for a reason other than grade level promotion (Rumberger, 2015).

Multiple Mover. A student who changed schools more than once during the school year being studied (Columbus Foundation, 2003).

Non-Mover. A student who remains at the same school for the entire school year being studied (Columbus Foundation, 2003).

Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP). Assessment used for measuring individual student achievement, calculating student growth, projecting proficiency on high-stakes assessments, and comparing a student's growth to that of students across the country (NWEA, 2013).

One-Time Mover. A student changed schools once during the school year being studied (Columbus Foundation, 2003).

RIT Scale. A measurement of achievement in a particular subject based on whether a student is approximately 50% likely to correctly answer an item calibrated at that RIT level (NWEA, 2013).

Title I. Part of the Elementary and Secondary Education Act which provides financial assistance to local educational agencies (LEAs) and schools with high numbers or high percentages of children from low-income families to help ensure that all children meet challenging state academic standards (U.S. Department of Education, 2015).

Organization of the Study

This dissertation is divided into five chapters. Chapter one includes the introduction, background, and statement of the problem. Additionally, the significance of the study is described along with the purpose statement, delimitations and assumptions underlying the study. The chapter concludes with a listing of the research questions that guided the study, a brief overview of the methodology used to conduct the research, and definitions of terms. Chapter two provides the reader with a review of the literature related to school reform efforts in the United States, the fundamentals of reading instruction, the sociocultural impacts on teaching and learning, the causes of mobility among demographic and socio-economic populations, and research on the influences of mobility on student learning. Chapter three describes the methodology used, including the research design, population, sample, sampling procedures, data collection and analyses, and limitations. Chapter four presents the results of the analysis of the data, including the descriptive statistics and hypothesis testing. Chapter five provides a

summary of the study related to the literature, interpretation of the results of the data analysis, a statement of conclusions drawn, and recommendations for further research.

Chapter Two

Review of the Literature

Throughout the past fifty years, reform initiatives were devised to increase student achievement in the United States. School reform has attempted to close the achievement gap in reading and math among various groups of students, including various demographic populations, spoken languages, and socio-economic status. Education reform initiatives failed to address student mobility, nor has there been any legislation or federal mandates to include such data (Rumberger, 2015). These reform initiatives have only focused on reporting and accountability among students with disabilities, English Learners, low-income students, and students from major racial/ethnic groups (e.g., White, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaskan Native).

The No Child Left Behind Act (NCLB), signed into law by President George W. Bush on Jan. 8, 2002, required schools to develop reform efforts so all children would meet state academic content and achievement standards (NCLB, 2002). NCLB mandated states to test students in reading and math in grades 3 through 8 and once in high school, reporting the results for both the student population and for particular subgroups of students, including English-learners and students in special education, racial minorities, and children from low-income families. The goal of this legislation was to bring all students to a proficient level on state tests by the 2013-14 school year (NCLB, 2002). This federally mandated reform forced all school districts to continually evaluate current educational programs and determine how to meet the federal guidelines, most notably the elimination of the achievement gap between all student subgroups. One factor that can

contribute to the achievement gap and negatively impact student achievement among student groups is student mobility (Rhodes, 2008).

This chapter presents research relevant to the topic of student mobility and how mobility impacts reading development and comprehension skills. First, the various educational reform efforts in the United States are discussed in detail. Second, the fundamentals of reading instruction are introduced and research to support them is highlighted. Third, the impact mobility has on students' ability to learn is researched by examining social constructivist theory. Fourth, the various causes of mobility are examined. Finally, the various influences that mobility has on student learning are reviewed.

Educational Reform

Modern educational reform efforts in the United States began in the early 1960's. President Lyndon B. Johnson initiated a War on Poverty as part of his Great Society initiative. In his annual message to congress, Johnson (1964) stated, "Our aim is not only to relieve the symptoms of poverty, but to cure it and, above all, to prevent it" (p. 114). The war on poverty centered around four essential pieces of legislation: The Social Security Amendments of 1965, the Food Stamp Act of 1964, The Economic Opportunity Act of 1964, and the Elementary and Secondary Education Act (ESEA) (Matthews, 2014). President Johnson signed into law the Elementary and Secondary Education Act (ESEA) in 1965. This legislation marked a new sense of federal oversight of K-12 education by "offering more than $1 billion a year in aid under its first statutory section, known as Title I, to districts to help cover the cost of educating disadvantaged students"

(Klein, 2015, p. 1). This act has been revised and reauthorized several times with each revision increasing the federal role in education (Klein, 2015).

In 1983, President Ronald Reagan presented *A Nation at Risk* (National Commission on Excellence in Education, 1983), a report that was a result of an 18-month study focused primarily on secondary school curriculum. In the report, the National Commission on Excellence in Education concluded that the nation was at risk as other countries were beginning to "match or surpass our educational attainments" (p. 5) and found "23 million adults are functionally illiterate and 17% of 17 year olds could be considered functionally illiterate" (p. 8). Further proof of this statistic came in the form of the National Assessment of Educational Progress (NAEP) assessments which showed that nine-year-old black students scored 15% lower than white students in 1984 (Rampey, Dion, & Donahue, 2009). The National Commission on Excellence in Education provided a grim outlook on education in the United States through observations such as declining test scores, low teaching salaries, poor teacher training programs, and the fear that other industrialized countries were gaining on America's technological superiority. In the report, Paul Copperman (National Commission on Excellence in Education, 1983) stated:

> Each generation of Americans has outstripped its parents in education, literacy, and in economic attainment. For the first time in the history of our country, the educational skills of one generation will not surpass, will not equal, will not even approach, those of their parents. (p. 19)

The commission identified that schools contained a "coherent continuum of learners" (National Commission on Excellence in Education, 1983, p. 22) who were

being taught an "incoherent, outdated patchwork quilt" (p. 22) of classroom learning which led to students being subjected to a "cafeteria-style curriculum" (p. 22) that appeared to have diluted academic rigor thus allowing students to proceed through secondary schools with minimal effort. The commission suggested several changes to America's school curriculum, many of which are still in place today. These include four full years of English instruction, three years of math instruction, three years of science, three years of social studies, and half a year of computer science for all high school students (National Commission on Excellence in Education, 1983). A second recommendation was for schools, colleges, and universities to "adopt more rigorous and measurable standards" (p. 36) including the utilization of standardized tests at major transition points to measure their achievement. A third recommendation suggested that students be allowed to devote significantly more time to learning the new basics that were previously suggested (National Commission on Excellence in Education, 1983). This recommendation included extending the school day and school year as well as assigning more homework for students to practice their needed academic skills.

President George W. Bush in 2002 signed into law a major revision to ESEA titled No Child Left Behind (NCLB). NCLB legislation was created in response to reports and statistics indicating that some children in the United States achieve much greater gains in reading proficiency than others (Kerbow, 1996). In 2002, NAEP assessment results indicated that fourth grade students were not at a significantly improved level than they were a decade earlier in 1992 (Grigg, Daane, Jin, & Campbell, 2003). NAEP assessment results in 2004 identified a 12% discrepancy between nine-year-old white and black students (Rampey, Dion, & Donahue, 2009), only a low 3%

change from 1984. No Child Left Behind was enacted to significantly expand the federal government's role in K-12 education to increase the effectiveness of United States educational system and ensure students continued to be competitive globally by requiring all students to be proficient on state tests by 2014 (NCLB, 2002). The law required States to assess all students in reading and math in grades 3 through 8, once while in high school, and included consequences for schools or districts not showing such progress. States were required to report the results for both the student population and for individual subgroups of students, including English-learners and students in special education, racial minorities, and children from low-income families (NCLB, 2002). Additionally, schools and school districts were required to track growth in student achievement each year, termed Adequate Yearly Progress (AYP). Schools who did not achieve AYP for two consecutive years were given penalties including allowing students to transfer to higher performing schools within the same school district and, if progress was not made, could eventually lead to state takeover of school or district (NCLB, 2002).

In 2006, only 29% of schools nationally were able to achieve the AYP goal. In 2011, U.S. Secretary of Education Arne Duncan asserted that 82 % of schools would most likely be labeled failing that year (Klein, 2015). Only 38% of schools in 2011 failed to make adequate yearly progress. None of the reported AYP numbers were as high as Secretary Duncan previously had stated, but several states did see failure rates of more than 50% indicating that NCLB did not accomplish its intended goal (Klein, 2015).

NCLB's intended outcome was to close the achievement gap by 2013-2014, thereby ensuring all students to reach proficiency (NCLB, 2002). School districts were mandated to also meet additional state standards in areas such as attendance and

graduation rate for all students including subgroups such as low-income students, minority students, students with disabilities, and limited English-speaking students (Thomas & Brady, 2005). Students in these subgroups are often the most mobile (Kerbow, 1996; Rumberger, 2003) which further supports the need to track student mobility. NCLB allowed for mobile students' test scores to not count towards a schools' accountability scores. If a student changed schools but remained in the same district, their assessment score counted toward the district accountability score but not the individual school score. This created a motive for schools to focus less on mobile students or students who enrolled after the start of the school year (Weckstein, 2003), which may contribute to a gap in student achievement.

Franke & Hartman (2003) discovered that "frequent . . . school change is disproportionately experienced by students whom the educational system is most likely to fail: low-income, minority, immigrant, special education" (p.1). These are the same student populations that NCLB was partially designed to assist. The achievement gap continues to exist as NAEP scores have shown only a 3% decrease in gap between white and black fourth grade students reading scores and only a 2% decrease in gap between eighth grade students reading scores between 1992 and 2013 with no change occurring for either grade level between 2011 and 2013 (U.S. Department of Education, 2013). As these reform efforts are based upon state assessments, factors such as behavior and student mobility are not measured as there are no federal mandates to track student mobility (Rumberger, 2015). There is no guarantee the reform initiatives will achieve their ultimate goal of limiting the education gap between all subgroups of students as long as the measures to track progress are only based upon standardized testing.

Fundamentals of Reading Instruction

Success in the subject of reading is essential for students' overall academic success (Caposey & Heider, 2003) and essential for them to "succeed socially and economically in our society" (p. 8). Fiester (2010) found approximately 16% of students who were not reading on grade level by the end of third-grade did not graduate on time, compared to only 4% for students who were reading on grade level by the end of third grade. Additional factors such as poverty increase the percentage from 16% to as high as 26% (Fiester, 2010). Only 2% of students who received additional assistance due to diagnosed early reading deficiencies would complete a 4-year college degree program (Lyon, 2001a). There is also a direct link between academic failure in reading and crime as over 70% of inmates in the United States cannot read above a fourth-grade level (National Institute for Literacy, 1998).

The National Reading Panel was assembled in 1997 by Congress in partnership with the National Institute of Child Health and Human Development and the U.S. Department of Education to help address the continued literacy issues in the United States. This 14-member panel, which included school administrators at both higher education and common education, teachers, scientists and parents, were charged with evaluating existing research in an effort to identify these essential skills and find the most successful methods of teaching reading to children. The panel determined it needed to focus on a few key subgroup areas for their research: alphabetics, fluency, comprehension, teacher preparation and comprehension strategies instruction, and computer technology and reading instruction (National Reading Panel, 1999). The subcommittee that focused on reading instruction identified five pillars of reading

instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension (National Reading Panel, 1999).

Phonemic awareness instruction involves teaching students to focus on and manipulate phonemes, the smallest units which compose spoken language, and teaching them to blend or segment the sounds that are in words using the letters they have learned. The National Reading Panel (1999) concluded that the effect size on phonemic awareness instruction to be significant at .86 when compared to alternative forms of instruction that do not contain phonemic awareness and "that teaching phonemic awareness to children significantly improves their reading" (p. 2-3). Leafstedt, Richards and Gerber's (2004) research on remediation and prevention of reading difficulties indicated that phonological awareness is an important component of early reading development. Leafstedt et al. (2004) have also suggested that students that have phonological deficits have difficulties understanding how words can be broken into individual phonemes and also cannot act on that knowledge. This poses a large concern as students who complete third grade are expected to recognize over 80,000 words (Whitaker, Harvey, Hassell, Linder, & Tutterow, 2006).

Phonics instruction is a method of reading instruction focusing on letter sounds and their use in reading and spelling of words. This method of instruction helps beginning readers understand how words are formed and how to discover patterns in spelling in order to assist them in raising their reading ability. To read successfully and independently, readers need to be able to identify words automatically and have an effective strategy for decoding unknown words (National Reading Panel, 1999; Snow, et al., 1998). Phonics instruction provides key knowledge and skills needed for beginning

readers but should not be the only piece of a reading program. According to the report of the National Reading Panel (1999), studies have identified phonemic awareness and letter knowledge as the two best predictors of how well children in school will learn to read during their first two years in school.

Fluency is defined as the ability to read with speed, accuracy, and proper expression (Rasinski, 2006). This means that a fluent reader is able to read just like they would speak. Fluency is a reading skill that is vital in the comprehension of any text. Fluency is often misunderstood and has changed meanings over time to be known more as speed reading by many teachers and students (Marcell, 2011). Fluency is highly correlated with reading comprehension so when a student reads fluently, that student is also more likely to comprehend what he or she is reading (Armstrong, 1983; Breznitz, 1987; Pinnell, Pikulski, Wixson, Campbell, Gough, & Beatty, 1995). Fuchs, Fuchs, Hosp, and Jenkins (2001) identified how oral reading fluency correlates highly with reading comprehension. In the study, oral recall/retelling, fill in the blank, and question answering were all above a 0.6, indicating a strong correlation. Oral reading fluency, however, was the strongest with a .91 correlation (Fuchs et al., 2001, p. 246).

The understanding and use of vocabulary is directly tied to any individuals' ability to function in the world and has been identified as a vital skill within reading comprehension (National Reading Panel, 1999). Vocabulary is also vital in the continued development of reading skills (National Reading Panel, 1999). Children learn to communicate through listening and speaking and those who successfully transition from listening and speaking to communicating through reading and writing "need a large meaningful vocabulary and effective decoding skills" (Pikulski & Templeton, 2004, p. 2).

Decoding strategies also allow students to identify printed words accurately and do so rapidly and with automation (Pikulski & Chard, 2003). Students must use these high frequency words, like as, the, and through, effectively since "100 words make up about 50% of most English texts; 200 words make up 90% of the running words of materials through third grade; and 500 words make up 90% of the running words in materials through ninth grade" (Pikulski & Chard, 2003, p. 3).

Consistent vocabulary instruction is challenging for mobile students who are changing schools continuously. According to Lyon (2002),

> "If children are not provided early and consistent experiences that are explicitly designed to foster vocabulary development, background knowledge, the ability to detect and comprehend relationships among verbal concepts, and the ability to actively employ strategies to ensure understanding and retention of material, reading failure will occur no matter how robust word recognition skills are" (p. 14)

Language and vocabulary development are at the most crucial and influential in the early years of students and this development "greatly influences school success" (Pikulski & Chard, 2003, p. 10).

Comprehension is a complex process of decoding information. The RAND Reading Study Group (2002) stated that comprehension is "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language" (p. 11). Snowling and Hulme (2011) described reading with comprehension as one of the primary goals of early education. The key skills needed for reading comprehension are already present in many beginning readers due to their ability to

understand the spoken word. A beginning reader possesses some of the needed skills, but being able to simply decode the individual words, word meanings, and sentences is not always enough for reading comprehension (Adams, 1977). Comprehension becomes more essential to students in the later elementary grades because it provides the foundation for further learning in secondary school (Sweet & Snow, 2003). A student's academic progress is profoundly shaped by the ability to understand what is read since students who are not able to understand what they read will likely not have the necessary skills to be successful throughout high school and beyond. Stevens, Slavin, & Farnish (1991) determined that direct instruction on reading comprehension strategies determined the following:

> Learning to read is one of the most important things children accomplish in elementary school because it is the foundation for most of their future academic endeavors. From the middle elementary years through the rest of their lives as students, children spend much of their time reading and learning information presented in text. The activity of reading to learn requires students to comprehend and recall the main ideas or themes presented in…text. (p. 8)

The Sociocultural theory of teaching and learning

Non-promotional school changes disrupt students' learning routines and also experience disruptions to their social structure, including relationships with teachers and peers (National Research Council and Institute of Medicine, 2010). Vygotsky's (1978) social constructivist theory emphasizes the need for "socially meaningful activity as an important influence on human consciousness" (Schunk, 2004, p. 293). Vygotsky (1978) also described the sociocultural theory of appropriation processes by stating that

supportive teacher and peer relationships may provide an important positive influence for children who are mobile. Vygotsky stated that all cognitive functions are products of various social interactions and that learning is a process by which a student is integrated into a learning community, or classroom. According to Vygotsky (1978):

> Every function in the child's cultural development appears twice: first, on the social level and, later on, on the individual level; first, between people (inter-psychological) and then inside the child (intra-psychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relationships between individual. (p. 57)

Cognitivists such as Jean Piaget and William G. Perry, Jr recognized knowledge and learning as a response to interactions with various environmental stimulus. Vygotsky accepted Piaget's claim that learners respond not to external stimuli but to their interpretation of those stimuli. He claimed that cognitivists such as Piaget had overlooked the essentially social nature of language. As a result, Vygotsky claimed other cognitivists had failed to understand that learning is a collaborative process. Vygotsky (1978) distinguished between two developmental levels:

> The level of actual development is the level of development that the learner has already reached, and is the level at which the learner is capable of solving problems independently. The level of potential development (the zone of proximal development) is the level of development that the learner is capable of reaching under the guidance of teachers or in collaboration with peers. The learner is capable of solving problems and understanding material at this level that

> they are not capable of solving or understanding at their level of actual development; the level of potential development is the level at which learning takes place. It comprises cognitive structures that are still in the process of maturing, but which can only mature under the guidance of or in collaboration with others. (p. 85)

The zone of proximal development (ZPD) states that students have the ability to master instructional concepts and ideas, with the assistance of teachers or other more advanced students, that otherwise could not be understood on their own (Ford, 2013). Constructivist theory emphasized the importance "of interpersonal (social), cultural-historical, and individual factors as the key to human development" (Schunk, 2004, p. 294). The ZPD states "those who know more or are more skilled share that knowledge and skill to accomplish a task with those who know less" (as cited in Schunk, 2004, p. 295). The cultural-historical aspects of Vygotsky's theory addressed the idea that learning and development were based on the context of the situation and in the interactions of the learners and their environments (Schunk, 2004). Students who are mobile are exposed to disruptions to these interactions and to their environments.

Vygotsky emphasized that adaptation to any new environment is achieved through social interactions (Vygotsky, 1978). As a child begins a new school due to a promotional or non-promotional change, there are inherent transitions such as becoming familiar with the new physical space, learning new teachers' names and procedures, and various other adjustments to the new school. The National Research Council and Institute of Medicine (2010) stated that "mobility (particularly repeated mobility) can disrupt children's routines, the consistency of their care and health care, and their

relationships, as well as learning routines, relationships with teachers and peers, and the curriculum to which they are exposed" (p. 7).

Rumberger (2015) explained that the impact mobility has on a child "can vary depending on the child's age or stage of development, family circumstances (stress, violence, disruptions of family supports), other risk factors (poverty), and cultural factors (moves across international borders)" (p. 7). Research supports the role social contacts have in stressful life events for children (DuBois, Felner, Meares, & Krier, 1994; Garmezy, 1985; Sandler, Miller, Short, & Wolchik, 1989; Wenz-Gross, Siperstein, Untch, & Widaman, 1997). Strong connections between students, teachers, and positive peers contribute to a child's access to social and scholastic activities (Hughes, Cavell, & Willson, 2001; Ladd, Birch, & Buhs, 1999; Ladd & Burgess, 2001; Wentzel, 1997), the same connections that are severed when a student experiences a non-promotional school change. A child who moves multiple times may have a more difficult time building positive connections during the stressful time of a change of residence and school, as any change in school includes changes in social relationships such as friendship networks (South & Haynie, 2004). This could negatively impact the students' academic achievement.

The academic progress of students from mobile families can be impacted by the disruption of social and emotional connections with their peers and other adults as people have a basic psychological need to be close to others, and the formation of close relationships is a major part of human behavior (Baumeister & Leary, 1995). Students who are transient may find it more difficult to form the close relationships that are needed and may negatively impact their academic achievement. Students with increased school

connectedness appear to perform better academically (Fredricks, Blumenfeld, & Paris, 2004; Suarez-Orozco, Suarez-Orozco, & Todorova, 2008) suggesting that a child with a high level of mobility will have a more difficult time achieving a high level of school connectedness.

The level of connectedness a student feels toward school is negatively impacted by mobility but could also lead to additional risk factors, including poor attendance and higher levels of student behavior issues. The Minneapolis Kids Mobility Project found that attendance, suspension rates and mobility factors were the most important factors that accounted for lower academic performance of student (Craig, 1998). Mobile students demonstrated poor adjustment to their new school environments and were suspended more often, leading to students' spending less time learning in the classroom. For students to avoid instructional learning gaps, students must be present in class for the critical learning opportunities that happen daily (Craig, 1998). The National Research Council and Institute of Medicine (2010) stated "mobility (particularly repeated mobility) can disrupt children's routines, the consistency of their care and health care, and their relationships, as well as learning routines, relationships with teachers and peers, and the curriculum to which they are exposed" (p. 6).

Causes and Effects of Mobility

The key factors that cause students to change schools produce various impacts on students and the families in which they reside. Mobility in the United States occurs predominately due to changes in employment, for family reasons, or due to housing (Ihrke & Faber, 2012). The U.S. Census reports the most common reason families of all demographic populations move are housing changes with 13.5% of U.S. school-aged

children (5-17 years of age) changing residences between 2012 and 2013, with 9% moving within the same county, 2.3% moving to a different county within the same state, 1.7% moving to a different state, and .5% moving from abroad (Ihrke, 2014, p. 3). While this data supports the notion that people in the United States are highly mobile, the reasons various demographic populations move can be vastly different. Ihrke (2014), for example, discovered that over half of Black or African American movers said their main reason for moving was housing related, which is higher than any other race reported (p. 4).

Residential mobility could reflect a positive change in a family, such as a work promotion or the ability to buy a larger home. However, residential mobility can also be caused by negative factors in a family such as the loss of employment or homelessness. Regardless of whether the move is a positive change or a negative one, each move produces positive or negative effects, depending on if the move was voluntary or involuntary. According to Rumberger (2015):

> because voluntary moves are often planned in advance, they often take place between school years to minimize the disruption to students' educational lives. In contrast, involuntary moves often occur during the school year and, hence, can be more disruptive to students' educational experiences. (p. 5)

The most frequently reported reasons for moving according to the U.S. Census Bureau between 2013 and 2014 were: "wanted new or better home/apartment" (15%); wanted "to establish own household" (11%); "new job or job transfer"; and, "wanted cheaper housing" (9%) (Ihrke, 2014, p. 5). These moves can be disruptive to the families and can also be extremely disruptive to a students' schooling (Rumberger, 2015).

A significant factor causing families to change housing more frequently is poverty (Coulton, Theodos, & Turner, 2009; Ihrke and Faber, 2012; Murphey, Bandy, & Moore, 2012). Murphey et al. (2012) found that children in families whose incomes were below the federal poverty level (FPL) are more than four times as likely to have experienced five or more moves as were children in families with incomes twice or more than the FPL. The mobility rate of families also appears to be tied directly to their income level. Murphey et al. (2012) concluded that children who are living in a household where there was not an adult who had been employed for 96% of the past year were two times as likely to frequently move then those who had an adult who had been employed.

Mobility is often a symptom of poverty, which is strongly associated with school or individual failure (Rumberger, 2003). While environmental factors of poor children, including lack of parental involvement, lack of educational stimulation in early years, and high student mobility, can lead to low performance, a correlation was evident between mobility and student performance (Engec, 2006). Gruman, Harachi, Abbott, Catalano, & Fleming (2008) concluded that the impact of mobility between schools predicted a decline in student achievement in a longitudinal study of second through fifth graders even when controlling for income status, behavior, family factors, and shyness. Students in a Florida Reading First program who moved schools during the period between first through third grade saw significantly lower gains in reading development than students who did not move even when controlling for student poverty (Foorman et al., 2010). Pre-kindergarten moves are predictive of poor academic performance when controlling for the effect of poverty (Mantzicopoulos & Knutson, 2000).

Poverty impacts households with children more than households without children. Coulton et al. (2009) determined that the correlation between mobility rates and poverty rates across households with children was fairly strong but was not as strong for households without children. The poverty and mobility correlation is also supported by information from the Current Population Survey illustrating that people below 100 percent of the poverty line had the highest mover rate with 52.5 percent, compared to individuals at or above 150 percent of the poverty line which had a considerably lower mover rate of 31.6 percent (Ihrke & Faber, 2012).

Involuntary moves, such as those associated with homelessness, can be particularly harmful to families and can be directly correlated to student mobility. The National Research Council and Institute of Medicine (2010) examined homelessness and school mobility in Philadelphia through third grade cohort of students who were born in the county and remained there through the end of third grade. The researchers determined that the overall incidence of homelessness averaged 9.2% across Philadelphia, which is three times the national average. The researchers identified that two-thirds of the homeless children made at least one school move (National Research Council and Institute of Medicine, 2010), which is 50% higher than the overall third-grade population nationally. The Committee on the Impact of Mobility and Change on the Lives of Young Children, Schools, and Neighborhoods concluded "homelessness was associated with greater odds of poor academic achievement and classroom engagement, whereas school mobility was associated with increased risk for truancy and suspension" (The National Research Council and Institute of Medicine, 2010, p. 25). "Across all outcomes, the greatest impact was on for students who experienced both homelessness

and school mobility" (p. 25). This research provides further support surrounding homelessness being an outcome of continued mobility.

The Influence of Mobility on Student Learning

A change in school setting results in a student facing work he or she is not prepared for, a teacher who is not familiar with the student's prior learning, and where the student experiences a new environment and must make all new friends (Barton, 2003). Teachers begin the school year getting to know their students and their academic needs, but a student who moves during the school year poses a challenge for the teacher to maintain instruction (Kerbow 1996; Lash & Kirkpatrick 1990). To teachers, mobile students are a new and unknown potential challenge that requires individualized evaluation of skills that might inhibit instructional time (Grigg, 2012).

A significant relationship exists between the number of school moves and reading achievement (Reynolds, et al., 2009). Every time that a student changes schools there is a 1.5 point reduction in standardized assessment scores in reading that is associated with the move (Reynolds, et al., 2009, p. 15). Grigg (2012) studied students in grades three through eight in Nashville Public Schools and discovered that any school change a student experienced caused a decrease in reading achievement the year after the student changed schools. The U.S. Government Accountability Office Report (1994) illustrated that of the nation's third graders, a significantly greater percentage of those who had changed schools three or more times were below grade level in reading and math than compared to those who had never changed schools. Mobile students who experienced inter-district moves but changed attendance zones performed more poorly on standardized assessments than non-mobile students (Johnson & Lindblad, 1991).

Students who experience mobility have little to no control over the learning gaps they experience. While some students do adapt, most have experienced frustration and lower academic achievement in the classroom (Puentes, Herrington, & Kritsonis, 2008). Student mobility directly impacts student learning by disrupting the continuity of instruction, causing students to disconnect from school, and loss of instruction due to absenteeism.

Continuity of Instruction. Mobility has a direct impact on student achievement as a student experiences a break in the curriculum between school moves and struggles to gain the knowledge needed to build upon past concepts to be academically successful (Jensen, 2009; Kerbow, 1996, Nelson, Simoni, & Adelman, 1996; Rumberger, 2003; Xu, Hannaway, & D'Souza, 2009). As students move, these instructional gaps are accelerated which is supported by research showing negative associations between school mobility and academic achievement (Egnac, 2006; Foorman et al., 2010; Ingersoll, Scamman, & Eckerling, 1989; Reynolds, 1991) and the increased "achievement gap between mobile and non-mobile students" (Paik & Phillips, 2002, p. 8). The National Assessment of Educational Progress (NAEP) researchers identified fourth graders who had two or more school moves in the preceding two years and found they were half as likely to meet proficiency goals on the standardized reading achievement test as compared to students who did not change schools at all. Students who moved more than three times in a six-year period could potentially fall behind a full year compared to non-mobile students (National Center for Education Statistics, 2009).

Mobility contributes to gaps in student learning as well as negatively impacts their academic progress (Schulz & Rubel, 2011). Prior to changing schools, a student would

be learning a specific concept and would be given a certain curriculum pacing. Once the school change has been complete, the new class the student has been moved into could be ahead or behind the previous class in curriculum pacing (Schulz & Rubel, 2011). This difference in pacing negatively impacts students' school engagement level and leads to grade level retention and even failure in high school classes. Gibson and Hidalgo (2009) identified this trend in mobile migrant students stating that "with each school move, students may be confronted with a new curriculum, different instructional methods" (p. 685) as well as different graduation requirements. These moves and subsequent academic concerns cause students to "fall behind academically along the way, placing them at risk of dropping out of high school or of graduating without adequate academic preparation to attend college" (p. 684). Students are more likely to face a new curriculum and varied instructional pacing when they experience noncompulsory school changes and/or changes during the academic year (Grigg, 2012).

Mantzicopoulos & Knutson (2000) at Purdue University highlighted the relationship between mobility and academic achievement in the early elementary grades and determined that "school mobility has a consistently adverse relationship to children's academic competence" (p. 310) with students in kindergarten through second grade. Mantzicopoulos and Knutson concluded a direct relationship existed between how often a student changed schools and academic achievement. This is supported by Kerbow (1996) who believed that the low academic achievement of mobile students was partly caused by students struggling with teachers who proceed at a different pace with each different school and students "may be placed in the wrong ability group or fall behind if

they have missed foundational concepts that are necessary for the acquisition of complex material" (Mantzicopoulos & Knutson, 2000, p. 310).

Students with increased mobility are exposed to various levels of instruction at multiple schools they attend, which can have a negative impact on academic progress and lead to gaps in reading development skills (Gibson & Hidalgo, 2009). Early interventions are necessary to ensure students are capable readers by third grade (Neumann, Ross, & Slaboch, 2001) and mobile students are not able to ensure continuity of instruction or interventions when changing schools. Unfortunately, when a student changes schools, teachers slow the pace of instruction and become more review oriented instead of addressing individual student needs (Kerbow, 1996).

Connectedness. School connectedness can be summarized as the level which students feel cared for in school and the extent to which students care about their school (Whitlock, 2006). There is also a direct connection between school connectedness and academic achievement as "students who feel more connected to school tend to perform better in the classroom" (Blum, 2005, p. 6). Student academic achievement is influenced by daily interactions between students in their individual social contexts (Booker, 2004). For students, the social context is the school setting in which they are enrolled. In addition to relationships with other students, a student who enrolls in a new school immediately meets a variety of adults, including their teacher. This relationship is a fundamental component of school connectedness (Blum, 2005). When students' change schools, they experience an interruption of those relationships with students and adults (Grieg, 2012) and a loss in school related social ties (Pribesh & Downey 1999). Students who experience positive relationships with teachers have shown a positive correlation to

math and reading achievement supporting the notion that "interpersonal relationships at school influence academic achievement" (Konishi, Hymel, Zumbo, & Li, 2010, p. 25).

A student who changes schools experiences a disruption to their learning environment. The cognitive development of students in lower grades has been shown to be dependent on a consistent learning environment and any disruption can have long-lasting effects on later development (Mashburn et al., 2008; Ponitz, Rimm-Kaufman, Grimm, & Curby, 2009). A within district school move represents a disruptive impact to students as they are required to "adjust to an entirely new school setting, including new teachers, peers, and academic curricula" (Fantuzzo, LeBoeuf, Chen, Rouse, & Culhane, 2012, p. 400) and these in-district moves during a school year appear to have a greater impact on individual students than those that occur between academic years (Hanushek, Kain, &Rivkin, 2004; National Research Council and Institute of Medicine, 2010).

Simpson and Fowler (1994) studied mobility with over 10,000 Denver elementary students and found that students with a high level of mobility have difficulty making new friends. An increased sense of loss, the unknown experienced during a move, and reduced parental support were predicted to contribute to emotional and behavior concerns as well (Simpson & Fowler, 1994). Coleman's (1988) social capital theory supports this conclusion since students' academics suffer when they move due to social ties being broken. Additional research highlights the negative effects that changing schools has on students' social setting as they experience a disruption in relationships among other students and school personnel which leads lower achievement (Coleman, 1988; Pribesh & Downey, 1999; Ream, 2005).

These continued changes cause harmful effects on the development of positive peer relationships (Fantuzzo, LeBoeuf, Chen, Rouse, & Culhane, 2012). Reynolds et al. (2009) stated that each additional school move that a student made was equal to approximately one tenth of a standard deviation drop in reading or mathematics achievement, or about one month of performance. The level of school connectedness also impacts other aspects of life including school behavior, attendance, and involvement (Edens, 2006).

Absenteeism. Students who are chronically absent from school miss 15 or more days throughout the school year (U.S. Department of Education, 2016). A student is absent if they are not physically present on school grounds or at an approved off-grounds location. This includes students who miss for any reason, regardless if the absence is excused or un-excused. Nationally, approximately 14% of all students are chronically absent from school on a yearly basis (U.S. Department of Education, 2016). Chang & Romero (2008) discovered that one in 10 kindergarten and first-grade students miss at least 10 percent of the school year. These are concerning statistics as there is a "strong relationship between student absences and achievement" (Goodman, p. 1, 2014).

Students who are chronically absent are not present for instruction and experience increased achievement gaps (Balfanz & Byrnes, 2012). Researchers agree that chronic absenteeism places students at risk of negative academic consequences (Chang & Romero, 2008; Moonie, Sterling, Figgs, & Castro, 2008). Mobility has also been shown to impact a students' attendance rate (Herbers et al., 2013; Herbers, Cutuli, Supkoff, Heistad, Chan, Hinz, & Masten, 2012). A student who experiences mobility is four times

more likely to be chronically absent than non-mobile students (Utah Education Policy Center, 2012).

Students who are chronically absent in kindergarten have lower reading skills in first grade children regardless of gender, race/ethnicity or socioeconomic status (Chang & Romero, 2008). Additional studies showed that through the end of fifth grade, students continue to show negative effects of attendance even if their attendance had improved in third grade. Herbers et al. (2012) determined that, while the average oral reading ability of first graders was 60 words per minute, students who were considered to be highly mobile only averaged 41 words per minute. This learning gap increases in subsequent years as students scored 20 points lower on their reading assessments by the time they reached the eighth grade (Herbers et al., 2012).

Hinz et al. (2003) analyzed district-wide attendance data from 1999-2000 from the Minneapolis School District's student information system. The authors concluded that there was a direct correlation between the district's high mobility rate, in which students were chronically absent, and student reading scores. Non-mobile students had reading scores that were twice as high as mobile students who had changed schools at least three times during an individual school year (Hinz et al., 2003).

Students who are chronically absent experience negative effects on both academic and socio-emotional outcomes in kindergarten (Gottfried, 2015). Negative academic effects include receiving fewer hours of instruction as well as needing additional academic remediation upon returning to school (Connell, Spencer, & Aber, 1994; Finn, 1993). Socio-emotional outcomes include an increase in school disengagement or alienation contributing to additional social problems in school (Gottfried, 2014). Chronic

absenteeism also impacts students who are present in the class as it may "impede regularly paced instruction and slow academic progress for all students" (Gottfried, 2014, p. 5). This is concerning as chronic absenteeism is extremely prevalent in elementary schools (Balfanz & Byrnes, 2012; Chang & Romero, 2008; Connolly & Olson, 2012; Romero & Lee, 2007) and impacts students during their developmental stages.

A student who changes schools for a non-promotional reason experiences an instructional gap that is equivalent to the loss of one week of reading instruction (Grigg, 2012). This gap can partially be attributed to the level of classroom instruction, which in high mobility schools is more likely to be review in nature and have a slower academic pacing through each month and each grade level (Kerbow, 1996). The learning and achievement gaps accrue over a longer amount of time which negatively impacts the academic achievement of mobile students (Rhodes, 2008).

Summary

Chapter two provided a review of the literature related to mobility and its direct impact on reading development. Within this review, a history of educational reform efforts in the United States created to increase student achievement and close the achievement gap amongst various subgroups of students were discussed. Second, the fundamentals of reading instruction, as noted in the study and report of the National Reading Panel (NRP), were examined including the five essential areas of reading highlighted by the panel: phonemic awareness, phonics, fluency, vocabulary, and comprehension. Third, Vygotsky's theory on the importance of being socially connected was presented and how mobility could impact the level of connectedness that students feel toward school. Fourth, various causes and effects of mobility were then reviewed

including an in-depth review of poverty and how unstable housing may impact mobility levels. Finally, the review examined how student mobility directly impacts student learning by disrupting the continuity of instruction, causing students to disconnect from school, and loss of instruction due to absenteeism.

In chapter three, the methods used to study the relationship between mobility and reading achievement are described. Research design and selection of participants are the first component of chapter three. Then, measurement tools are described and include validity and reliability. Chapter three ends with data collection procedures, data analysis and hypothesis testing, limitations, and a summary.

Chapter Three

Methods

The purpose of this study was to determine the relationship between student mobility and reading development skills for first through third grade students throughout the 2013-2014, 2014-2015, and 2015-2016 school years. This chapter includes an explanation of the research design, population and sample, sampling procedures, instrumentation, measurement, validity and reliability, data collection procedures, data analysis and hypothesis testing, and limitations of the research.

Research Design

A longitudinal, quantitative, two-way repeated measures ANOVA was utilized for this study and was causal-comparative in nature using archived data. Researchers use a longitudinal design to conduct several observations of the same subjects over a period of time, or in the case of this study, over three consecutive years ("What Researchers Mean by", 2015). A benefit of using the same participants in a repeated-measures design is it allows the researcher to exclude the effects of individual differences that could potentially occur if different people were used instead (Howitt & Cramer, 2011). The data in this study is organized into a student cohort and studied over three consecutive years beginning in the 2013-2014 school year. The dependent variable of student achievement data was gathered using archived data from the NWEA MAP reading assessment results for students in first grade during the 2013-2014 school year, second grade during the 2014-2015 school year, and third grade during the 2015-2016 school year in an urban school district. The NWEA MAP assessment results included yearly growth analysis for reading achievement in language and writing, vocabulary, literature,

and overall RIT composite score. Yearly growth analysis is based on the average performance of students in several key parameters. These parameters include: student's starting score, grade level, and at what point during the academic year the two tests used to estimate growth are administered. One independent variable of this study was time, as student achievement was measured over three school years. A second independent variable of this study was mobility status. Students were placed into three categories of the variable of mobility status: non-movers, one-time movers, and multiple movers. Attenders are defined as those students who attended the same school for the 2013-14, 2014-15, and 2015-16 school year. Mobile attenders are defined as those students who transferred schools once during either the 2013-14, 2014-15, or 2015-16 school year. Highly mobile attenders are defined as those who transferred schools more than once during either the 2013-14, 2014-15, or 2015-16 school year.

Selection of Participants

Participants were selected using nonrandom purposive sampling from a longitudinal cohort of first, second, and third grade students who were enrolled in an urban school district during the 2013-2014 school year, 2014-2015 school year, and 2015-2016 school years. Luenburg & Irby (2008) defined purposive sampling as selecting a sample based on the researcher's experience or knowledge of the group to be sampled (p. 175). The researcher specified the criteria that were used to locate survey participants. The established primary criterion for this study was student grade level (first grade in 2013, second grade in 2014, and third grade in 2015). The secondary established criterion for this study was that the selected students were tested using NWEA MAP assessment and had three available valid test scores per year.

Measurement

The reading performance on the NWEA assessment was used to compare the academic achievement of students as noted within the student information system at District A. Students in District A are administered the NWEA MAP for primary grade in kindergarten through 2nd grade and the NWEA MAP beginning in third grade. Each MAP assessment is given three times per school year (Fall, Winter and Spring). The MAP tests are computer-based, multiple-choice, adaptive assessments and are aligned to the Missouri learning standards. The assessments are adaptive based upon the individual students' ability so as they answer a question correctly or incorrectly, the next item is either more difficult or easier.

The MAP for primary grades was administered as an online assessment for all students in kindergarten through 2nd grade in District A and measures reading achievement in specific skill areas of language and writing, literature and informational text, and vocabulary use and functions, as well as overall growth as reported using the RIT scale. The NWEA MAP assessment was administered as an online assessment for all students in District A enrolled in grades 3-12. The MAP assessments are used to measure growth over time and reflect the instructional level of individual students based upon their reading skill level (NWEA, 2013). MAP assessments provide teachers with specific details to inform and guide instruction for individual students. Teachers use the MAP assessment results for the following purposes: (a) to identify skills and concepts that students have mastered, (b) to diagnose instructional needs for individual students and groups of students, (c) to monitor academic growth over time, and (d) to make data-driven decisions to guide instructional choices.

MAP assessments are nationally normed and are reported using the RIT scale to create a grade-independent RIT score, which indicates the level of question difficulty a given student is capable of answering correctly about 50% of the time. RIT scores help educators understand every student's current achievement level based on their zone of proximal development (NWEA, 2015). The NWEA assessments measure the change in the RIT score between the fall and spring assessment, which is the perceived learning growth for an individual student for that time period in that grade level. The growth target is derived after a student takes the fall assessment and a target score is projected for the Spring. The growth target is a statistically calculated number of points predetermined for attainment on the spring MAP test. A student's growth target is based on the student's grade, starting RIT score, and the subject in which that student is tested, and represents the median level of growth observed for similar students (NWEA, 2013).

Mobility. The assessment information for this study was tracked by student mobility based upon the mobility criteria of non-mover, one-time mover, and multiple mover. Non-movers are defined as those students who remains at the same school for the entire school year. One-time movers are defined as those students who changed schools once during the year. Multiple movers are defined as those who changed schools more than once during the same school year.

A student who changes schools for a reason other than promotion must go through an un-enrollment process. Once the attending school receives confirmation, the office personnel inputs that information into the Student Information System (SIS). This system also tracks daily attendance at all school sites. The student then must go to the next school he/she wishes to attend and be enrolled in that school site. The office

personnel at that school site will then input that students' information into the SIS to officially enroll that student in their school. The SIS is then able to produce a final report of the attendance history of every student throughout District A. The information for this study was provided through a data file downloaded from the Tyler SIS software system into an excel spreadsheet.

Validity and Reliability. Lunenburg and Irby (2008) identified content validity as the degree an instrument measures what it purports to measure. Validity and reliability are core components to assessments. According to Lunenburg and Irby (2008) "Validity is the degree to which an instrument measures what it purports to measure" (p. 181). Furthermore, validity is the product of a validation process that specifically involves "an evaluation of the credibility, or plausibility, of the proposed interpretations and uses of test scores" (Kane, 2009, p. 181). The extent to which a measurement is an accurate and complete indicator of the subject that is being measured typically defines its validity. Reliability means consistency of measurement and typically deals with the level of internal consistency of the test item (Lunenburg & Irby, 2008).

NWEA (2013) published a technical manual for the MAP test. The purpose of this manual was to provide technical measurement characteristics of the MAP and MAP for primary grades assessments, including "psychometric characteristics, item development processes, test development processes, and processes for development and maintenance of the measurement scales" (p. i). Classification is based on the level of student achievement demonstrated on the MAP for each content area. For example, the purpose of the MAP communication arts score is to demonstrate student achievement in only that content area. Much of the documented validity evidence for NWEA tests

comes in the form of concurrent validity (NWEA, 2013) and is "expressed in the form of a Pearson correlation coefficient between the total domain area RIT score and the total scale score of another established test designed to assess the same domain area" (p. 184). Strong concurrent validity is indicated when the correlations are approximate .85. NWEA (2013) conducted a study of reading tests in 10 states in which 8 out of 10 states showed an average correlation above .70, while two states showed an average correlation below .70.

To enhance reliability across time, NWEA uses a test-retest approach to answer the question "To what extent does the test administered to the same students twice yield the same results from one administration to the next?" (NWEA, 2004, p. 2). Studies published by NWEA (2004) show evidence of concurrent validity of the MAP with numerous state achievement tests. For example, for reading in third grade, the correlations range from .66 with the Texas Assessment of Knowledge and Skills to .87 with the Stanford Achievement Test, 9th Edition. NWEA conducted a study to determine how well RIT scores on the MAP correlated with student performance on the Maine Educational Assessment (MEA), and to identify RIT cut-scores that would predict success on the MEA (Cronin, 2004). Results indicated a correlation of .74 for fourth grade reading scores. This suggests that the MAP has the capacity to identify students at risk for academic difficulties, and given individual subtest scores, determine the subject area(s) where support is most needed.

Data Collection Procedures

The researcher received approval by completing a request that was sent to District A. Archival data for the NWEA MAP student scores were requested from the 2013-

2014, 2014-2015, 2015-2016, and 2016-2017 school years. The request form was sent to the assistant superintendent of accountability and academic precision for the district (see Appendix C). All references to the person in the position were removed and the name of the district was replaced with District A. An Institutional Review Board (IRB) request was submitted to Baker University on December 12th (see Appendix A). The Baker University Institutional Review Board approved the research on December 15th (see Appendix B). After all approvals were received, the researcher obtained NWEA data for all first, second, and third grade students who met the criteria for inclusion in the sample.

The information was collected from the Student Information System, which stores data for all students. Student data includes achievement information from the NWEA MAP reading assessment results. An independent variable of this study were students who were placed into three categories based upon their mobility in which the student changed schools during a school year: non-movers, one-time movers, and multiple movers. Data was received in the form of an excel spreadsheet. The independent and dependent variables were then entered into JASP Statistics program version 0.8.0.0 for Macintosh for the analysis (JASP Team, 2016).

Data Analysis and Hypothesis Testing

Historical MAP test data was provided by District A from the 2013-2014, 2014-2015, and 2015-2016 school years. This study examined the research questions below in order to determine the results of mobility on achievement. These questions provide the source of data for analysis.

RQ1. To what degree does mobility status (non-mover, one-time mover, and multiple mover) impact students MAP reading achievement growth in language and writing for a cohort of students over the course of two academic school years?

H1. Mobility status has a statistically significant impact on MAP reading achievement growth in language and writing for a cohort of students over the course of two academic school years.

RQ2. To what degree does mobility status (non-mover, one-time mover, and multiple mover) impact students MAP reading achievement growth in vocabulary for a cohort of students over the course of three academic school years?

H2. Mobility status has a statistically significant impact on MAP reading achievement growth in vocabulary for a cohort of students over the course of three academic school years.

RQ3. To what degree does mobility status (non-mover, one-time mover, and multiple mover) impact students MAP reading achievement growth in literature for a cohort of students over the course of three academic school years?

H3. Mobility status has a statistically significant impact on MAP reading achievement growth in literature for a cohort of students over the course of three academic school years.

RQ4. To what degree does mobility status (non-mover, one-time mover, and multiple mover) impact students MAP composite reading achievement scores for a cohort of students over the course of three academic school years.

H4. Mobility status has a statistically significant impact on MAP reading achievement composite scores for a cohort of students over the course of three academic school years.

A two-way repeated measures ANOVA was used to test the hypotheses. The repeated measures ANOVA was conducted to determine the effect of the number of student moves on the students' academic results on the NWEA MAP reading assessment over the course of three academic school years. The researcher compared the same group of students over a period of three years and compared the number of moves each student made over that time frame with their reading assessment data to determine if there was a main effect for the between subjects' factor, total number of moves, a main effect for the within subjects factor, grade level, or the interaction between the two factors (Number of Moves x Grade level).

Limitations

Limitations are not in the control of the researcher but are real factors that may have an effect on the interpretation of the findings or generalization of the results (Luneburg & Irby, 2008). Limitations for the current study included the following:

1. The quality of reading instruction varies by teacher regardless of gender.
2. The curriculum pacing of each individual teacher varies from school to school.
3. It is unknown at what point in time throughout the school year that an individual student transferred to a different school.
4. Seventy percent of the district's students scored in the Below Basic or Basic achievement levels on the state assessment.

Summary

This chapter restated that the purpose of the study was to determine the effect of student mobility on reading developmental skills. Chapter three also explained that a longitudinal, quantitative, two-way repeated measures ANOVA was utilized and was causal-comparative in nature using archived data. The participants were selected from a longitudinal cohort of first, second, and third grade students who were enrolled in an urban school district during the 2013-2014 school year, 2014-2015 school year, and 2015-2016 school years. For measurement, the NWEA MAP for primary grades was used for students in kindergarten through 2nd grade and the NWEA MAP was used for students in third grade. The assessment was tracked over three years and measured based upon student mobility; non-movers, one-time movers, and multiple movers. The chapter concluded by reviewing various limitations that were not in the control of the researcher. Chapter four presents the results of the hypothesis testing.

Chapter Four

Results

The primary purpose of this study was to determine the impact of student mobility on reading development skills for elementary students in first through third grade based upon the NWEA MAP assessment. The study examined a cohort of elementary students enrolled in first grade in the 2013-2014 school year, second grade in 2014-2015 school year, and third grade in 2015-2016 school year for an urban school district in the Midwest.

Table 1 identifies the study which analyzed two independent variables of time and student mobility to predict their influence on the dependent variable of student achievement. This chapter restates the research questions identified in chapter one, the hypothesis tested that addresses each question, the statistical analysis conducted to address each research question, and the results of the testing.

Table 1

Research Repeated Measures Design Variables by Hypothesis

Hypothesis	Independent 1	Independent 2	Dependent	Years
H1	Time	Mobility	Language	2
H2	Time	Mobility	Vocabulary	3
H3	Time	Mobility	Literature	3
H4	Time	Mobility	RIT	3

Descriptive Statistics

First, second, and third grade students were included from District A in the current study. This sample of students included a cohort of 565 total students and were enrolled in:

- First grade during the 2013-2014 school year
- Second grade during the 2014-2015 school year
- Third grade during the 2015-2016 school year.

Table 2 shows the number of students aligned to the mobility of each student. Mobility is defined as a student changing schools for a reason other than grade level promotion (Rumberger, 2015). In this table, a mobility score of zero is equal to a non-mover during the school years being studied. A mobility score of one is equal to a one-time mover during the school years being studied. A mobility score of two is equal to a multiple mover during the school years being studied. RQ1 explored two repeated years of data, and RQ2, 3 and 4 utilize three repeated years of data.

Table 2 illustrates the total number of students and the level of mobility that each group of students experienced during the academic years of 2013-2014 and 2014-2015.

Table 2

Number of Students in Study and Mobility During First 2 Academic Years

Mobility	*n*
Non-mover	503
One-time mover	72
Multiple mover	8

Table 3 illustrates the total number of students and the level of mobility that each group of students experienced during the academic years of 2013-2014, 2014-2015, and 2015-2016.

Table 3

Number of Students in Study and Mobility During 3 Academic Years

Mobility	*n*
0	474
1	72
2	19

Figure 1 illustrates the overall RIT composite score in year one which had a mean of 165.8. Students scoring at the 50th percentile typically score 176.9 at the end of the school year. The overall RIT composite score increased in year two as illustrated above with a mean of 179.6. The overall RIT composite score increased in year three as illustrated above with a mean of 187.5.

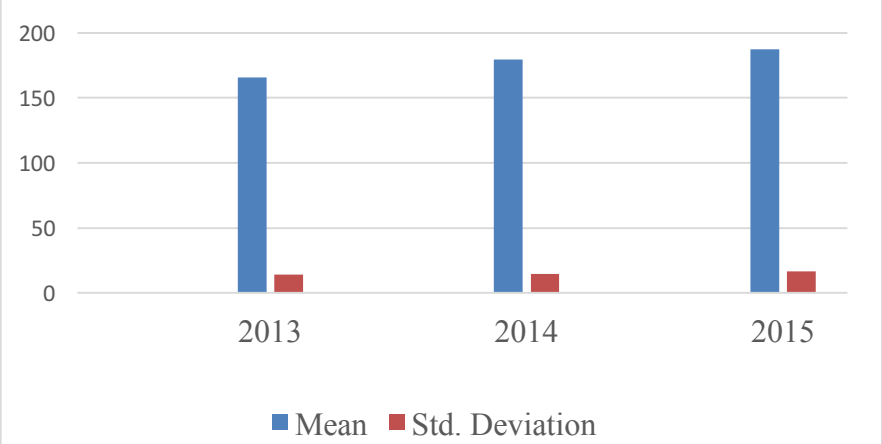

Figure 1. Overall RIT Composite Score. The overall RIT composite score for academic years 2013, 2014, and 2015 are shown.

Hypothesis Testing

In this section, the following format will be used to report findings: First, Results of Repeated Measures ANOVA (three ANOVA test of significance) will be discussed; second, significant Interaction Follow Up Results (only significant interactions will be discussed using descriptive follow up findings); third, Post Hoc Analysis Results for the Significant Main Effects (only the significant main effects Post hoc tables will be discussed). Each hypothesis will be discussed separately. The JASP Statistics program version 0.8.0.0 for Macintosh (JASP Team, 2016) was used to analyze the data for each research question in this study.

RQ1. To what degree does mobility status (non-mover, one-time mover, and multiple mover) impact students MAP reading achievement scores in language and writing for an elementary student cohort over two academic school years (2013, 2014, 2015?

H1. Mobility status had a statistically significant impact on MAP reading achievement scores in language and writing for an elementary student cohort over two academic school years (Alpha level .05).

A two-way repeated measures ANOVA was used to test H1. Differences in student language and writing achievement over two academic school years was explored with three ANOVA tests of significance: two main effects (time and mobility) and one interaction effect (time*mobility). This analysis was delimited to two years of academic data in the assessed subject of language and writing. The NWEA MAP for primary grades reading assessment was used to measure student achievement. The researcher

collected repeated student achievement scores (language and writing) and student moves (mobility) during the two-consecutive year time frame.

Results of ANOVA Test of Significance. Table 4 illustrates the significant interaction effect time*mobility ($F = 3.01$, $df = 2, 562$, $p = .050$). Following the advice of Field (2013), a descriptive follow up analysis was conducted. H1 interaction effect time*mobility was supported. Also, shown in Table 4, a significant main effect for time ($F = 64.21$, $df = 1, 562$, $p = < .001$) was found. Following the advice of Field (2013), post hoc analysis was conducted. H1 main effect time was supported.

Table 4

Summary Main Effect and Interaction of Time and Mobility

Source	*SS*	*df*	*MS*	*F*	*p*
Time	4551.5	1	4051.47	64.21	<.001
Time ∗ Mobility	380.1	2	63.10	3.01	.050
Residual	35460.7	562	63.10		

Table 5 illustrates no significant main effect for mobility was found ($F = 1.282$, $df = 2, 562$, $p = .278$). Mobility alone did not impact language achievement. Following the advice of Field (2013), no post hoc analysis was conducted. H1 main effect mobility was not supported.

Table 5

Summary of Mobility Main Effect Analysis Results

Source	*SS*	*df*	*MS*	*F*	*p*
Mobility	1010	2	505.1	1.28	.278
Residual	221452	562	394.0		

Interaction Follow Up Results. The interaction of time and mobility was demonstrated (see Table 6). Students who were multiple movers scored lower than those students who were non-movers or one-time movers during the year (SpringLang1*0 = 165.90 vs SpringLang1*2 = 160.30). The greatest pairwise difference in student achievement was found between Spring 2 with non-movers (M = 180.10) and Spring 2 with multiple movers (M = 169.80). Mobility and time have interacted to influence student achievement. All students showed an increase in achievement from grade to grade (see Table 6). A decrease in mean scores is found when the interaction of time and mobility is reviewed. Student performance is reduced for those students with two or more moves as the student progresses from grade to grade.

Table 6

Descriptive Statistics for the Results of the Test for H1

Source	Total Moves	*M*	*SD*	*n*
Spring Lang 1	0	165.90	15.09	503
	1	167.40	13.38	54
	2	160.30	13.38	8
Spring Lang 2	0	180.10	15.31	503
	1	178.10	15.43	54
	2	169.80	14.76	8

Scores were higher in spring 2 when compared to spring 1 (see Figure 2). An average increase in language scores regardless of mobility was 11.45 points. Language scores increased between year 1 and year 2 and mobility was not a factor unless student was a multiple mover (see Figure 2).

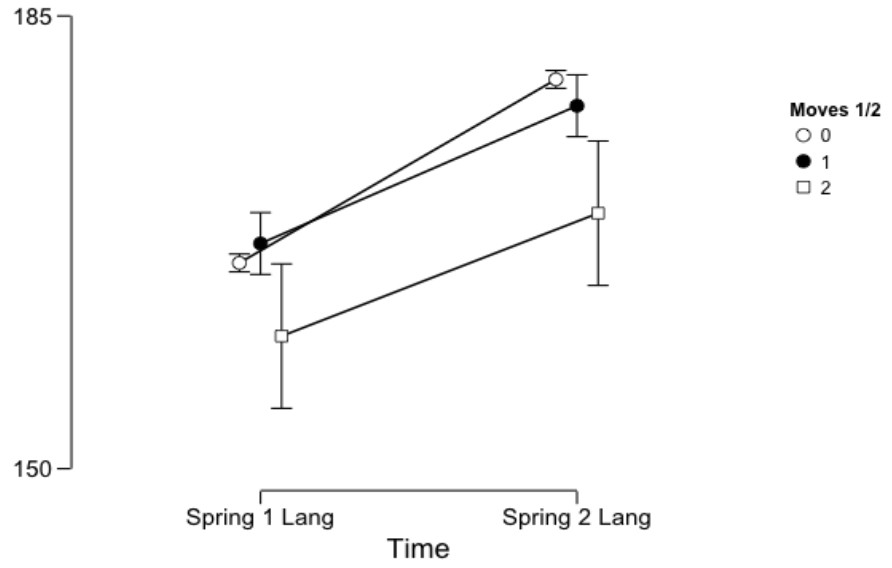

Figure 2. Comparison of language scores from spring 1 to spring 2.

Main Effect Post hoc Results. Following the advice of Field (2013), post hoc analysis was conducted for the main effect of time but not for mobility. Table 7 illustrates a significant pairwise comparison identified for time (Tukey t = -8.013, df = 2, 562, p = <.001). H1 was supported as student achievement increased 11.45 percentile points. It was found that regardless of mobility, progression through grade levels positively influenced student achievement. A large pairwise difference (MD = -11.45) was found between spring 1 and spring 2 for Language.

Table 7

Summary Post hoc Comparisons Achievement Results for H1

Year 1	Year 2	*MD*	*SE*	*t*	p_{tukey}
Spring Lang 1	Spring Lang 2	-11.45	1.43	-8.01	< .001

Note: MD = median difference

In summary, H1 was supported in two of the three challenges. A significant interaction for time*mobility was found. Significant main effect and *p*-values were found for time. No significant main effect for mobility was found. Conclusions and recommendations follow in Chapter Five.

RQ2. To what degree does mobility status (non-mover, one-time mover, and multiple mover) impact students MAP reading achievement growth in vocabulary for a cohort of students over the course of three academic school years?

H2. Mobility status has a statistically significant impact on MAP reading achievement growth in vocabulary for a cohort of students over the course of three academic school years (Alpha level .05).

A two-way repeated measures ANOVA was used to test H2. Differences in student vocabulary achievement over three academic school years was explored with three ANOVA tests of significance: two main effects (time and mobility) and one interaction effect (time*mobility). The NWEA MAP reading assessment was used to measure student achievement. The researcher collected repeated student achievement scores (vocabulary) and student moves (mobility) during the three-consecutive year time frame.

Results of ANOVA Test of Significance. Table 8 identifies the significant time*mobility ($F = 417.58$, $df = 4, 1124$, $p = .001$) interaction. Following the advice of Field (2013), descriptive follow up analysis was conducted. H2 interaction effect time*mobility was supported. Also, shown in Table 8, a significant main effect for time ($F = 137.89$, $df = 2, 1124$, $p = .001$) was found. H2 main effect time was supported.

Table 8

Summary Main Effect and Interaction of Time and Mobility for H2

Source	*SS*	*df*	*MS*	*F*	*p*
Time	25517	2	12578.39	137.89	< .001
Time * Mobility	1670	4	417.58	4.58	.001
Residual	102535	1124	91.22		

Table 9 illustrates the significant main effect for mobility found ($F = 4.85$, $df = 4, 1124$, $p = .008$). H2 interaction effect time*mobility was supported. Following the advice of Field (2013), a post hoc analysis was conducted. H2 main effect mobility was supported.

Table 9

Summary of Mobility Main Effect Analysis Results for H2

Source	*SS*	*df*	*MS*	*F*	*p*
Mobility	5693	4	2846.6	4.85	.008
Residual	329898	1124	587.0		

Interaction Post hoc Results. Table 10 identifies the interaction of time and mobility demonstrated. Students who were multiple movers scored lower than those students who were non-movers or one-time movers during the year (SpringVocab1*0 = 166.3 vs SpringVocab1*2 = 158.1). The greatest pairwise difference in student achievement was found between spring 3 with non-movers (M = 188.50) and spring 3 with multiple movers (M = 177.30). Mobility and time have interacted to influence student achievement. All students showed increase in achievement from grade to grade (see Table 10). A decrease in mean scores was found when the interaction of time and mobility was reviewed. Student performance was reduced for students who were multiple movers as the student progresses from grade to grade.

Table 10

Descriptive Statistics for the Results of the Test for H2

Source	Total Moves	*M*	*SD*	*n*
Spring Vocab 1	0	166.30	15.57	474
	1	166.60	15.50	72
	2	158.10	9.97	19
Spring Vocab 2	0	180.60	16.15	474
	1	176.60	15.38	72
	2	174.80	11.44	19
Spring Vocab 3	0	188.50	16.86	474
	1	182.10	16.36	72
	2	177.30	12.70	19

Achievement increased over the course of year 1, year 2 and year 3. There was a significant difference in achievement based upon the main effect of mobility as student achievement was lower for each move that a student made (see Figure 3). Additionally, vocabulary scores increased between year 1 and year 2 and between year 2 and year 3 (see Figure 3). Mobility was a factor as students who were one-time movers or multiple movers scored significantly lower than students who were non-movers.

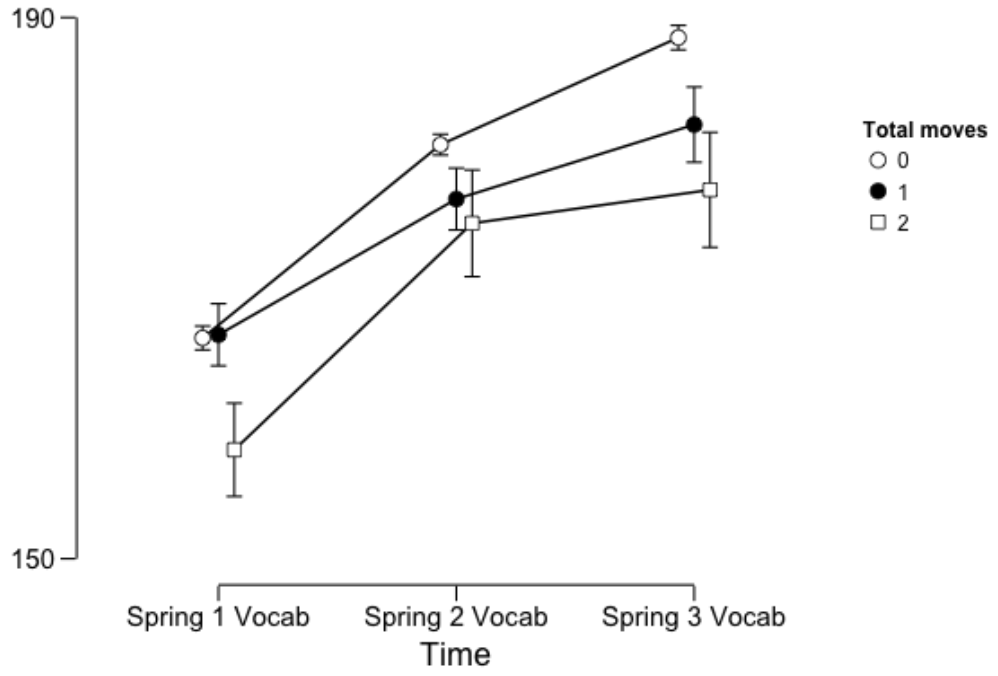

Figure 3. Comparison of vocabulary scores from spring 1 to spring 3.

Main Effect Post hoc Results. Following the advice of Field (2013), post hoc analysis was conducted for the main effect of time. Table 11 illustrates the significant post hoc pairwise comparison identified for time (Tukey t = -11.60, *df* = 4, 1124, *p* = <.001). Student achievement scores increased in Year 2 (MD = -13.68). Also, shown in Table 11, a significant post hoc pairwise was also identified for time from year 1 to year 3 (Tukey t = -18.98, *df* = 4, 1124, *p* = <.001). In this pairwise comparison, the largest student achievement scores increase (MD = -18.98) was found. However, Table 11 identifies the significant post hoc pairwise identified for time from year 2 to year 3 (Tukey *t* = -5.30, *df* = 4, 1124, *p* = <.001). The smallest student achievement score increase was reported (MD = -5.30) for this pairwise comparison. H2 was supported as student achievement changed over time (see Table 11). Non-movers and one-time movers in spring 3 showed similar increases in vocabulary scores but scored significantly

lower if they were multiple movers. This evidence suggests that mobility of two or more moves suppressed student achievement scores more significantly than zero or one move.

Table 11

Post Hoc Comparisons Achievement Results for H2

Year 1	Year 2/3	*MD*	*SE*	t	p_{tukey}
Spring Vocab 1	Spring Vocab 2	-13.68	1.2	-11.60	< .001
	Spring Vocab 3	-18.98	1.2	-16.09	< .001
Spring Vocab 2	Spring Vocab 3	-5.30	1.2	-4.49	< .001

Note: MD = median difference

In summary, H2 was supported in three of the three challenges. A significant interaction for time*mobility *p*-value was found. Significant main effect and post hoc *p*-values were found for time. A significant main effect for mobility was also found. Conclusions and recommendations follow in Chapter Five.

RQ3. To what degree does mobility status (non-mover, one-time mover, and multiple mover) impact students MAP reading achievement growth in literature for a cohort of students over the course of three academic school years?

H3. Mobility status has a statistically significant impact on MAP reading achievement growth in literature for a cohort of students over the course of three academic school years (Alpha level .05).

A two-way repeated measures ANOVA was used to test H3. Differences in student literature achievement over three academic school years was explored with three ANOVA tests of significance: two main effects (time and mobility) and one interaction effect (time*mobility). The NWEA MAP reading assessment was used to measure

student achievement. The researcher collected repeated student achievement scores (literature) and student moves (mobility) during the three-consecutive year time frame.

Results of ANOVA Test of Significance. Table 12 identifies the significant time*mobility ($F = 2.85$, $df = 4, 1124$, $p = .023$) interaction found. Following the advice of Field (2013), descriptive follow up analysis was conducted. H3 interaction effect time*mobility was supported. Also, shown in Table 12, a significant main effect for time ($F = 115.61$, $df = 2, 1124$, $p = <.001$) was found. H3 main effect time was supported.

Table 12

Summary Main Effect and Interaction of Time and Mobility for H3

Source	*SS*	*df*	*MS*	*F*	*p*
Time	23321	2	11660.60	115.61	<.001
Time ∗ Mobility	1704	4	287.90	2.85	.023
Residual	113367	1124	100.90		

Table 13 illustrates the significant main effect for mobility found ($F = 4.83$, $df = 4, 1124$, $p = .008$). Mobility did impact literature achievement. Following the advice of Field (2013), a post hoc analysis was conducted. H3 main effect mobility was supported.

Table 13

Summary of Mobility Main Effect Analysis Results for H3

Source	*SS*	*df*	*MS*	*F*	*p*
Mobility	6820	2	3409.80	5.27	.005
Residual	363974	562	647.60		

Interaction Post hoc Results. Table 14 identifies the interaction of time and mobility was demonstrated. Students with 2 or more moves scored lower than those who

were non-movers or one-time movers during the year (SpringLIT1*0 = 166.5 vs SpringLIT1*2 = 159.8). The greatest pairwise difference in student achievement was found between spring 3 with non-movers (M = 188.70) and spring 3 with multiple movers (M = 174.70). Table 14 illustrates all students showed increase in achievement from grade to grade. A decrease in mean scores was found when the interaction of time and mobility is reviewed. Student performance was reduced for those students with two or more moves as the student progresses from grade to grade.

Table 14

Descriptive Statistics for the Results of the Test for H3

Source	Total Moves	*M*	*SD*	*n*
Spring LIT 1	0	166.50	16.42	474
	1	165.60	13.98	72
	2	159.80	12.63	19
Spring LIT 2	0	181.50	16.62	474
	1	177.50	18.10	72
	2	173.30	13.04	19
Spring LIT 3	0	188.70	17.72	474
	1	183.10	18.44	72
	2	174.70	13.58	19

Figure 4 identifies achievement increased over the course of year 1, year 2 and year 3. There was a significant difference in achievement based upon the main effect of mobility as student achievement was lower for each move that a student made. Figure 4 illustrates the literature scores increased between year 1 and year 2 and between year 2

and year 3. Mobility was a factor as students who were one-time movers or multiple movers scored significantly lower than students who were non-movers.

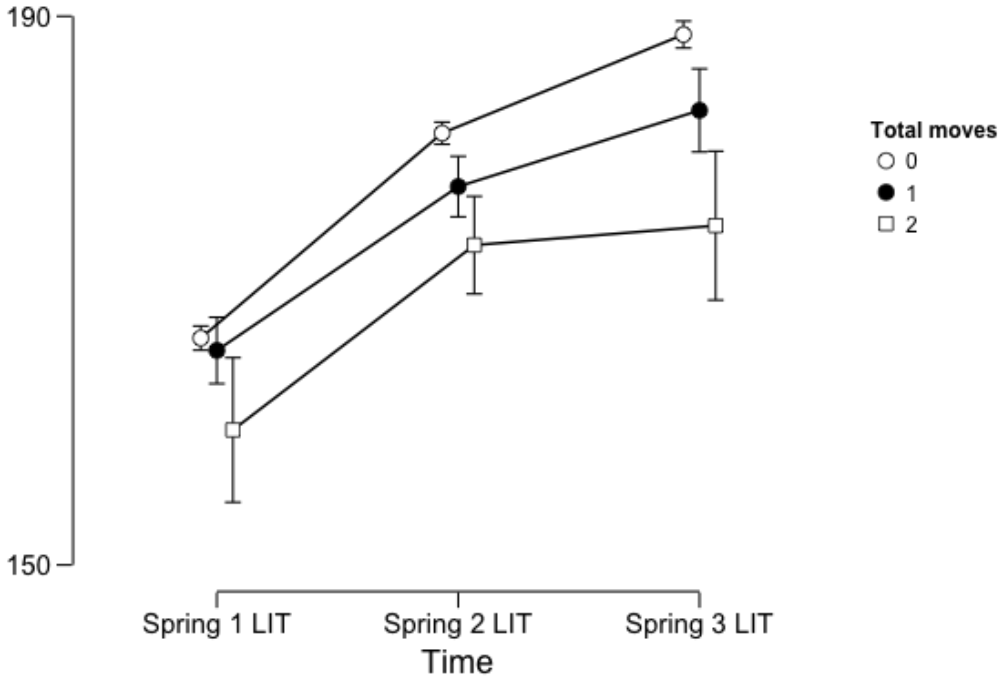

Figure 4. Comparison of literature scores from spring 1 to spring 3.

Main Effect Post hoc Results. Following the advice of Field (2013), post hoc analysis was conducted for the main effect of time. Table 15 identifies a significant post hoc pairwise comparison identified for time from year 1 to year 2 (Tukey t = -10.84, df = 4, 1124, p = <.001). Student achievement scores increased in Year 2 (MD = -13.45). Also, shown in Table 15, a significant post hoc pairwise was also identified for time from year 1 to year 3 (Tukey t = -18.17, df = 4, 1124, p = <.001). In this pairwise comparison, the largest student achievement scores increase (MD = -18.17) was found. However, Table 15 illustrates a significant post hoc pairwise was also identified for time from year 2 to year 3 (Tukey t = -4.72, df = 4, 1124, p = <.001). The smallest student achievement

score increase was reported (MD = -4.72) for this pairwise comparison. H3 was supported as student achievement changed over time, identified in Table 15. Non-movers and one-time movers in spring 3 showed similar increases in literature scores but scored significantly lower if they were multiple movers. This evidence suggests that mobility of two or more moves suppressed student achievement scores.

Table 15

Post Hoc Comparisons Achievement Results for H3

Source		*MD*	*SE*	*t*	*p* tukey
Spring LIT 1	Spring LIT 2	-13.45	1.24	-10.85	<.001
	Spring LIT 3	-18.17	1.24	-14.65	<.001
Spring LIT 2	Spring LIT 3	-4.72	1.24	-3.81	<.001

Note: MD = median difference

In summary, H3 was supported in all four of the four challenges. A significant interaction for time*mobility p-value was found. Significant main effect and post hoc p-values were found for time. A significant main effect for mobility was also found. Conclusions and recommendations follow in Chapter Five.

RQ4. To what degree does mobility status (non-mover, one-time mover, and multiple mover) impact students MAP RIT scores for a cohort of students over the course of three academic school years.

H4. Mobility status has a statistically significant impact on MAP RIT scores for a cohort of students over the course of three academic school years (Alpha level .05).

A two-way repeated measures ANOVA was used to test H4. Differences in student RIT score over three academic school years was explored with three ANOVA

tests of significance: two main effects (time and mobility) and one interaction effect (time*mobility). The NWEA MAP reading assessment was used to measure student achievement. The researcher collected repeated student growth scores (RIT) and student moves (mobility) during the three-consecutive year time frame.

Results of ANOVA Test of Significance. Table 16 illustrates a significant time*mobility ($F = 5.31$, $df = 4, 1124$, $p = < .001$) interaction. Following the advice of Field (2013), descriptive analysis was conducted. H4 interaction effiect time*mobility was supported. Also, shown in Table 16, a significant main effect for time ($F = 188.77$, $df = 2, 1124$, $p = <.001$) was found. H4 main effect time was supported.

Table 16

Summary Main Effect and Interaction of Time and Mobility for H4

Source	*SS*	*df*	*MS*	*F*	*p*
Time	23585	2	11792.61	188.77	<.001
Time ∗ Mobility	1326	4	331.39	5.31	<.001
Residual	70216	1124	62.47		

Table 17 identifies a significant main effect for mobility ($F = 4.98$, $df = 4, 1124$, $p = .007$). Mobility did impact RIT composite scores. Following the advice of Field (2013), a post hoc analysis was performed. H4 main effect mobility was supported.

Table 17

Summary of Mobility Main Effect Analysis Results for H4

Source	*SS*	*df*	*MS*	*F*	*p*
Mobility	5604	2	2801.90	4.97	.007
Residual	316417	562	563.00		

Interaction Post hoc Results. Table 18 illustrates the interaction of time and mobility. Students with 2 or more moves scored lower than those students who were non-movers or one-time movers (SpringRIT1*0 = 166.0 vs SpringRIT1*2 = 160.1). The greatest pairwise difference in student achievement was found between spring 3 with non-movers (M = 188.60) and spring 3 with multiple movers (M = 176.20). Table 18 identifies how all students showed increase in achievement from grade to grade. A decrease in mean scores was found when the interaction of time and mobility is reviewed. Student performance was suppressed for those students with two or more moves as the student progresses from grade to grade.

Table 18

Descriptive Statistics for the Results of the Test for H4

Source	Total Moves	*M*	*SD*	*n*
Spring RIT 1	0	166.00	14.60	474
	1	165.80	13.35	72
	2	160.10	10.53	19
Spring RIT 2	0	180.30	14.56	474
	1	176.50	15.74	72
	2	172.90	11.29	19
Spring RIT 3	0	188.60	16.50	474
	1	183.00	16.61	72
	2	176.20	12.14	19

Figure 5 illustrates the increase in achievement over the course of year 1, year 2 and year 3. There was a significant difference in achievement based upon the main effect

of mobility as student achievement was lower for each move that a student made. Figure 5 illustrates the increase in RIT scores between year 1 and year 2 and between year 2 and year 3. Mobility was a factor as students who were one-time movers or multiple moves scored significantly lower than students who were non-movers.

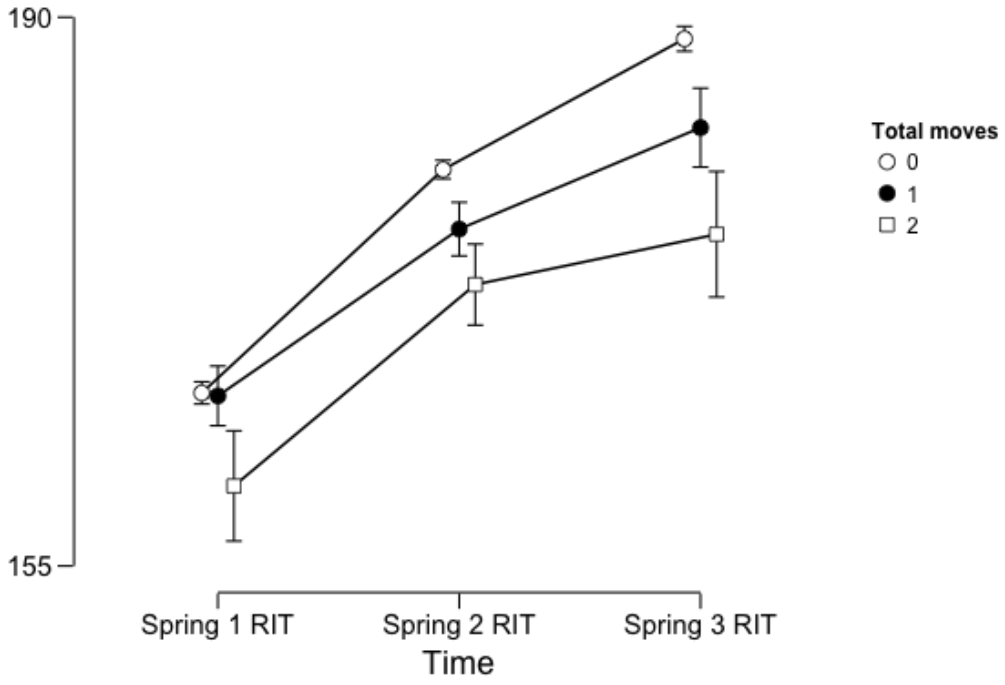

Figure 5. Comparison of RIT scores from spring 1 to spring 3.

Main Effect Post hoc Results. Following the advice of Field (2013), post hoc analysis was conducted for the main effect of time. Table 19 identifies a significant post hoc pairwise comparison identified for time from year 1 to year 2 (Tukey t = -12.58, *df* = 4, 1124, *p* = <.001). Student achievement scores increased in Year 2 (MD = -12.58). Table 19 illustrates a significant post hoc pairwise identified for time from Year 1 to Year 3 (Tukey t = -18.58, *df* = 4, 1124, *p* = <.001). In this pairwise comparison, the largest student achievement scores increase (MD = -18.58). However, Table 19 identifies a significant post hoc pairwise identified for time from Year 2 to Year 3 (Tukey *t* = -6.01,

df = 4, 1124, *p* = <.001). The smallest student achievement score increase was reported (MD = -6.01) for this pairwise comparison. H4 was supported as student achievement changed over time (see Table 19). Non-movers and one-time movers in spring 3 showed similar increases in literature scores but scored significantly lower if they were multiple movers. This evidence suggests that mobility of two or more moves further suppressed student achievement scores.

Table 19

Post Hoc Comparisons Results for H4

Source		*MD*	*SE*	*t*	p_{tukey}
Spring 1 RIT	Spring 2 RIT	-12.58	0.98	-12.88	<.001
	Spring 3 RIT	-18.58	0.98	-19.04	<.001
Spring 2 RIT	Spring 3 RIT	-6.01	0.98	-6.15	<.001

Note: MD = median difference

In summary, H4 was supported in all three of the three challenges. A significant interaction for time*mobility *p*-value was found. Significant main effect and post hoc p-values were found for time. A significant main effect for mobility was also found. Conclusions and recommendations follow in Chapter Five.

Summary

The primary purpose of chapter four was to present the results of the analysis of this study. It provided clarification on the specifics surrounding the descriptive statistics for each variable included. Four research questions and four hypotheses concerning student mobility in an urban school district and the effects of mobility on reading scores

for first, second, and third grade students were analyzed using a two-way repeated measures alpha level ANOVA.

Table 20 illustrates the results of the testing of H1 language and writing achievement was supported in a significant interaction for time*mobility and post hoc *p*-values were found for time. No significant main effect for mobility was found. Table 20 identifies the results of the testing of H2 vocabulary achievement which showed significant interaction for time*mobility, main effect, post hoc p-values for time and main effect for mobility. Table 20 illustrates the results of the testing of H3 literature achievement which showed significant interaction for time*mobility, main effect, post hoc p-values for time and main effect for mobility. Also, results of the testing of H4 RIT composite scores showed significant interaction for time*mobility (see Table 20). Significant main effects for time and for mobility were also found.

Table 20

Summary Hypothesis Results

Hypothesis	Time	Mobility	Time*Mobility
H1 – Language & Writing	Yes	No	Yes
H2 - Vocabulary	Yes	Yes	Yes
H3 - Literature	Yes	Yes	Yes
H4 – Overall RIT	Yes	Yes	Yes

Chapter five provides a summary of the study including an overview of the problem, the purpose statement, and research questions. Additionally, chapter five includes a review of the methodology and major findings. Next, the findings related to the literature are presented. Last, the conclusion to the study is presented which includes

implications for action based on the results, recommendations for future research, and concluding remarks.

Chapter Five

Interpretation and Recommendations

Researchers have identified early reading proficiency as a predictor of later reading achievement and success (Hernandez, 2011; Duncan et al., 2007). The relationship between student mobility and reading development is evident as the National Research Council and Institute of Medicine (2010) has stated that even one non-promotional school change reduces a students' elementary school achievement in both reading and math. Mobility has been shown to negatively influence reading achievement through the creation of instructional gaps, by contributing to students' disconnect from school, and loss of instruction through chronic absence from school (Balfanz & Byrnes, 2012; Blum, 2005; Grieg, 2012; Herbers, Cutuli, Supkoff, Heistad, Chan, Hinz, & Masten, 2012; Jensen, 2009; Kerbow, 1996, Nelson, Simoni, & Adelman, 1996; Pribesh & Downey 1999; Rumberger, 2003; Xu, Hannaway, & D'Souza, 2009; Whitlock, 2006). Chapter five includes a summary of the study, an overview of the problem, a review of the purpose statement, a review of the methodology, major findings, and findings related to the literature. The chapter concludes with proposed action steps for school districts and leaders, recommendations for future research, and concluding remarks.

Study Summary

This study provided an in-depth analysis of the impact of student mobility on reading development skills for students in first through third grade utilizing the Northwest Evaluation Association Measures of Academic Progress assessment. The study examined a cohort of elementary students enrolled in first grade during the 2013-2014 school year, second grade during the 2014-2015 school year, and third grade during

the 2015-2016 school year for an urban school district in the Midwest. The study analyzed the independent variables of time and student mobility to evaluate their influence on the dependent variable student achievement in language and writing, vocabulary, literature, and RIT. Four research questions were generated with four corresponding hypotheses. A two-way repeated measures ANOVA was conducted using archived NWEA assessment data from District A.

Overview of the problem. Children's academic success during their early years is strongly associated with their achievement in later years (Snow et al., 1998). A student can experience a break in the curriculum between school moves and then can struggle to gain the knowledge needed to be academically successful through building upon past concepts (Jensen, 2009; Kerbow, 1996; Nelson, Simoni, & Adelman, 1996; Rumberger, 2003; Xu, Hannaway, & D'Souza, 2009). Therefore, it is important to explore the influence of mobility on reading development skills for children in the early elementary years. The impact of student mobility on reading development skills within current school reform efforts needs to be identified since student mobility creates continued shifts in the student populations and will directly impact student learning.

Purpose statement. The purpose of this study was to determine the impact of student mobility on reading development skills. The study involved reading achievement for students in first, second, and third grade based upon the Northwest Evaluation Association Measures of Academic Progress assessment in language and writing, vocabulary, literature, and overall RIT for an elementary cohort of students over a three-year period of time within an urban school district in the Midwest. Four research questions were used to shape this study to align with the purpose of identifying the gaps

in reading skill development for students who are non-movers, one-time movers, or multiple movers.

Review of the methodology. A longitudinal quantitative research design was used to determine the impact of student mobility on student reading development skills. The population for this study included an elementary cohort of students who were enrolled in first grade during the 2013-2014 school year, enrolled in second grade during the 2014-2015 school year, and enrolled in third grade during the 2015-2016 school year in District A. The independent variables for this study were time and student mobility. The dependent variable was academic growth on the NWEA Reading assessment. To test each hypothesis, two-way repeated measures ANOVAs were conducted using the JASP Statistics program version 0.8.0.0 for Macintosh (JASP Team, 2016).

Major findings. In the current research study, all four of the hypotheses tested showed a statistically significant interaction for time*mobility. The main effect of mobility on achievement data was statistically significant for three of the four hypotheses tested. The effect of student mobility on academic growth in reading, as measured by the difference in 2013, 2014, and 2015 spring scale scores on the NWEA reading assessment, was shown to be statistically significant. This interaction illustrated that student mobility does negatively impact student achievement for elementary students in first, second, and third grade students. An additional finding was students in 3rd grade showed similar increases in vocabulary, literature, and RIT scores for students who were non-movers and one-time movers but scored significantly lower than students who were multiple movers. This evidence suggests mobility of multiple movers further suppressed student achievement scores over non-movers or one-time movers. The results of all hypothesis

tested highlight the conclusion that each additional move a student makes negatively impacts their reading achievement.

Findings Related to the Literature

The researcher conducted a review of the literature related to the impact of student mobility on academic achievement in reading. National Assessment of Educational Progress (NAEP) researchers discovered that fourth graders who had two or more school moves in the preceding two years were half as likely to meet proficiency goals on the standardized reading achievement test (Grigg, Daane, Jin, & Campbell, 2003). Mantzicopoulos & Knutson (2000) stated there was a direct relationship between the number of times a student changed schools and academic achievement (p. 310). In the current study, mobility did impact student achievement in reading and the number of times a student changed schools further suppressed student achievement scores.

Mobility directly impacts student achievement as a significant relationship exists between the number of school moves and reading achievement (Reynolds, et al., 2009). Every time a student changes schools there is a 1.5 point reduction in reading achievement associated with the move (Reynolds, et al., 2009, p. 15). This conclusion was supported in the current research study as students in third grade experienced a 3% decrease in mean score for overall RIT composite with one move and a 6.5% decrease in mean score for overall RIT composite with two moves.

Student mobility directly impacts student learning by disrupting the continuity of instruction, causing students to disconnect from school, and loss of instruction due to absenteeism. Mobility has a direct impact on student achievement as a student experiences a break in the curriculum between school moves and struggles to gain the

knowledge needed to build upon past concepts to be academically successful (Jensen, 2009; Kerbow, 1996, Nelson, Simoni, & Adelman, 1996; Rumberger, 2003; Xu, Hannaway, & D'Souza, 2009). Mobility contributes to these learning gaps in student learning and negatively impacts their academic progress (Schulz & Rubel, 2011). Students with increased mobility are exposed to various levels of instruction at multiple schools they attend, which can have a negative impact on academic progress and lead to gaps in reading development skills (Gibson & Hidalgo, 2009). A direct connection exits between school connectedness and academic achievement as "students who feel more connected to school tend to perform better in the classroom" (Blum, 2005, p. 6). Continued changes to students' social connections cause harmful effects on the development of positive peer relationships (Fantuzzo, LeBoeuf, Chen, Rouse, & Culhane, 2012). Testing in the current study concluded there is a statistically significant interaction for time*mobility for all four of the hypothesis tested. This supports research illustrating non-promotional school changes negatively impacts student achievement in reading and specific reading development skills.

Mobility also impacts attendance as a student who experiences mobility are four times more likely to be chronically absent than non-mobile students (Utah Education Policy Center, 2012) and students who are chronically absent in kindergarten have lower reading skills in first grade (Chang & Romero, 2008). Overall, student mobility impacts student achievement as a student who changes schools for a non-promotional reason experiences an instructional gap that is equivalent to the loss of one week of reading instruction (Grigg, 2012).

Conclusions

The goal of this study was to determine the impact of student mobility on the reading development skills of students in first, second, and third grade. The study used archival data from the NWEA reading assessment to determine if mobility statistically impacted reading development skills. The following section includes implications for action by educational leaders to assist in understanding the impact mobility has on reading development skills. This section then contains recommendations for future research and ends with concluding remarks.

Implications for action. The current quantitative study investigated the impact of student mobility on reading development skills. The research presented in this study illustrated that mobility did in fact have a negative impact on reading development skills in literature, vocabulary and overall RIT. Mobility contributes to gaps in student learning as well as negatively impacts their academic progress (Schulz & Rubel, 2011). District leaders should focus on district processes to mitigate negative effects of the enrollment process for students entering the district throughout the school year and ensure specific strategies are in place to build positive relationships with students who enroll from other schools to help build the level of school connectedness as soon as possible.

Recommendations for future research. Below are recommendations for future replications with modifications, extensions, and research on the impact of mobility on reading development skills.

1. It is recommended that future researchers replicate the current study but disaggregate the data based on the ethnicity of the students as an extension of the study.

2. It is recommended that future researchers replicate the current study but expand it to other grade levels.
3. It is recommended that future researchers replicate the current study and include more participants by gathering data from larger school districts.
4. It is recommended that future researchers replicate the current study using additional reading assessments to further analyze the specific reading skills that are effected by student mobility.
5. It is recommended that future researchers replicate the current study to determine the difference in reading development skills based upon when the student moves throughout the school year to determine if the time of year contributes more positively or more negatively.
6. It is recommended that future researchers expand upon the current study by determining the interaction of student mobility, the level of connectedness that a student has toward school, with academic achievement in the area of reading.
7. It is recommended that future researchers replicate the current study and compare results between urban, suburban, and rural school districts. This type of study would expand the current body of knowledge to include a more varied group of students.

Concluding remarks. A student who cannot read on grade level by 3rd grade is four times less likely to graduate by age 19 (Hernandez, 2011) and mobility is one of the factors that negatively impacts academic achievement in reading (Rumberger, 2015). Students who move experience academic disruptions as "it introduces discontinuities in

learning environments that alter or weaken instructional, school, and peer ecologies" (Reynolds, et al., 2009, p. 4). There continues to be a lack of educational research however on how mobility specifically impacts individual reading development skills.

In the current research study, all four of the hypothesis tested showed a statistically significant interaction of time and mobility in reading development skill areas of language and writing, vocabulary, literature, and overall RIT. The new knowledge gained from this study illustrates that mobility:

- has a negative impact language and writing scores.
- has a negative impact on vocabulary scores.
- has a negative impact on literature scores.
- has a negative impact on overall RIT scores.
- contributes to gaps in student learning.
- negatively impacts academic progress of elementary students.
- has a more significant impact on students in grade three than students in grade one and grade two.

The findings in this study contribute to documenting the problem of student mobility in schools. Research should continue to be expanded on this topic to ensure exact effects on reading development skills are identified and addressed by school officials to potentially mitigate any negative impacts.

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Appendices

Appendix A: Proposal for Research to Baker University

Date:

School of education
Graduate department

IRB PROTOCOL NUMBER _____
(irb USE ONLY)

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

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

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

Name	Signature	
1. Dennis King	_____,	Major Advisor
2. Phillip Messner	_____,	Research Analyst
3.		University Committee Member
4.		External Committee Member

Principal Investigator: Kenny Rodrequez
Phone: 918-269-8518
Email: Kenny@kennyrod.com
Mailing address: 12544 Grand Court, Kansas City, MO 64145

Faculty sponsor: Dr. Dennis King
Phone: 913-344-1231
Email: dennis.king@bakeru.edu

Expected Category of Review: _X_Exempt ___ Expedited _ __Full

II: Protocol: (Type the title of your study)

The Effect of Student Mobility on the Reading Development Skills of First through Third Grade Students in an Urban School District

_____

Summary

In a sentence or two, please describe the background and purpose of the research.
The purpose of this study was to determine the impact of student mobility on reading development skills for a cohort of students in first through third grade over a three-year period of time. Mobility will be measured through a student changing school sites zero times, one time, or more than one time. The results of this study will provide insight for district officials in addressing reading development skills in a state assessed subject.

Briefly describe each condition or manipulation to be included within the study.
There are no manipulations or conditions included within this study.

What measures or observations will be taken in the study? If any questionnaire or other instruments are used, provide a brief description and attach a copy.
Reading skills will be measured in first grade, second grade and third grade October, January, and March throughout each school year in 2013-2014, 2014-2015, and 2015-2016 using the NWEA assessment for a cohort of students to determine the amount of growth that has occurred. Only archived data will be utilized for this study.

Will the subjects encounter the risk of psychological, social, physical, or legal risk? If so, please describe the nature of the risk and any measures designed to mitigate that risk.
There will not be any psychological, social, physical, or legal risks associated with this study as only archived data will be used and there will not be any student names associated with the data, only student numbers.

Will any stress to subjects be involved? If so, please describe.
There will not be any stress to any subjects associated with this study as only archived data will be used and there will not be any student names associated with the data, only student numbers.

Will the subjects be deceived or misled in any way? If so, include an outline or script of the debriefing.
None of the subjects associated with this study will be deceived or misled in any way as only archived data will be used and there will not be any student names associated with the data, only student numbers.

Will there be a request for information which subjects might consider to be personal or sensitive? If so, please include a description.
There will not be any requests for information which subjects might consider to be personal or sensitive as only archived data regarding NWEA reading scores will be used and there will not be any student names associated with the data, only student numbers that are tied to student grade levels and school year assessed.

Will the subjects be presented with materials which might be considered to be offensive, threatening, or degrading? If so, please describe.
Subjects associated with this study will not be presented with materials which might be considered offensive, threatening, or degrading as only archived data will be used and there will not be any student names associated with the data, only student numbers.

Approximately how much time will be demanded of each subject?
The subjects will not be exposed to any time demand as archived data from the 2013-2014, 2014-2015 and 2015-2016 school years will be used.

Who will be the subjects in this study? How will they be solicited or contacted? Provide an outline or script of the information which will be provided to subjects prior to their volunteering to participate. Include a copy of any written solicitation as well as an outline of any oral solicitation.
All subjects associated with this study will have been students in first, second, and third grade within the [redacted] School District during the 2013-2014, 2014-2015 and 2015-2016 school years and only archived data will be used. Therefore, no subjects will need to be solicited or contacted as consent was granted through enrollment in the school district.

What steps will be taken to insure that each subject's participation is voluntary? What if any inducements will be offered to the subjects for their participation?
There will not be any direct contact with any subject as only archived data will be used.

How will you insure that the subjects give their consent prior to participating? Will a written consent form be used? If so, include the form. If not, explain why not.
All students whose data will be used were students of the district in school year 2013-2014, 2014-2015, and 2015-2016 and consent was granted through enrollment. No written consent form will be needed as archived data will be used for this study.

Will any aspect of the data be made a part of any permanent record that can be identified with the subject? If so, please explain the necessity.
Students will not be formally identified in this study. The subjects will be assigned a random student number and specific names will not be associated with the assigned numbers.

Will the fact that a subject did or did not participate in a specific experiment or study be made part of any permanent record available to a supervisor, teacher or employer? If so, explain.
Only students who were enrolled and participated in the NWEA MAP assessment during the 2013-2014, 2014-2015, and 2015-2016 school years are used in this study. The study

will not become a part of a student's permanent record and data will not be associated to students by name.

What steps will be taken to insure the confidentiality of the data? Where will it be stored? How long will it be stored? What will be done with it after the study is completed?
The data is confidential as only archived data will be used. The student names will be converted into a random to be associated with the data. Student names will not be accessed or accessed during this study. The data will be stored on a encrypted portable hard drive and then deleted after the study is complete.

If there are any risks involved in the study, are there any offsetting benefits that might accrue to either the subjects or society?
There are no risks involved in this study only archived data will be used and there will not be any student names associated with the data, only student numbers.

Will any data from files or archival data be used? If so, please describe.
Archived data for students in first, second, and third grades during the 2013-2014, 2014-2015, and 2015-2016 school years in the [redacted] Public School District will be used. NWEA MAP reading assessment results from the three assessments given each during the 2013-2014, 2014-2015, and 2015-2016 school years will be used for this cohort of students.

Appendix B: IRB Letter of Approval

Baker University Institutional Review Board

December 15, 2016

Dear Kenney Rodrequez and Dr. King,

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

Please be aware of the following:

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

Please inform this Committee or myself when this project is terminated or completed. As noted above, you must also provide IRB with an annual status report and receive approval for maintaining your status. If you have any questions, please contact me at EMorris@BakerU.edu or 785.594.7881.

Sincerely,

Erin Morris PhD
Chair, Baker University IRB

Baker University IRB Committee
Joe Watson PhD
Nate Poell MA
Susan Rogers PhD
Scott Crenshaw

Appendix C: Research Approval Document

KANSAS CITY
PUBLIC SCHOOLS

CRITERIA FOR APPROVAL OR DISAPPROVAL

The approval or disapproval of requests will be made within the following general guidelines.

1. The only projects which will generally be approved are those which:
   a) contribute to the improvement of education in the Kansas City Public Schools;
   b) contribute to the improvement of education in general.

2. Even within the above categories, studies will generally be disapproved if they:
   a) appear to infringe on the privacy of pupils, parents, or staff members;
   b) present a burden to pupils or staff members;
   c) threaten school-community relations in any way.

3. Research solely for a course requirement will be considered only for the Kansas City Public School District staff.

4. At any point in the research process, Kansas City Public Schools staff can terminate the study if determined necessary for any reason.

5. Any results or product created as a result of this project which uses data from the district's students, staff, or facilities must be made available to the Kansas City Public Schools.

PARTICIPATION OF THE SCHOOLS

Generally, participation in any research study conducted by an outside agency or individual will be completely voluntary on the part of the principals, teachers, pupils and any other personnel involved.

Project Approval Signature _____ Date 2018/12