THE IMPACT OF STUDENT MOBILITY ON SCHOOL RATINGS IN PENNSYLVANIA'S SCHOOL ACCOUNTABILITY SYSTEM

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Abstract

Considerable amounts of financial resources and human capital are dedicated to school improvement efforts in the state of Pennsylvania each year. The factors that guide school improvement designation stem from federal education legislation, and include achievement, academic growth, attendance, graduation, EL proficiency, and career readiness. At the same time, many of the schools designated for school improvement also experience high rates of student transiency. The purpose of this study is to examine the effect that mobile students have on school accountability indicators, and by extension, on school improvement designations. The school improvement accountability data from two school districts with a combined total of eight schools was examined. Transient students were identified, and mock school accountability indicators were calculated, controlling the percentage of transient students in the group to the regional average of 8%. These controlled-score accountability indicators were then compared to published all-student group values in an effort to identify the impact of high percentages of mobile students using a bivariate correlation analysis. The results of the study suggested a strong correlation between transiency rate and change in school accountability indicators for attendance, math growth, math achievement, and ELA achievement, and a moderate correlation with career readiness benchmarks. Of all the school accountability factors examined, the only factor with which student mobility had a small correlation was ELA growth.

CHAPTER 1

Introduction

This chapter will provide an introduction to the action research project. The identification of and significance of the problem will be introduced, as well as the research questions. The purpose of the study will be presented, and key terms will be defined. Finally the financial impact as well as personal significance of the study will be discussed.

Background

This study is of personal significance to the author, as his work is often embedded in school improvement. By being able to better identify factors that result in school improvement designation, the researcher hopes to provide better targeted responses and services to schools, maximizing return on fiscal investment.

The researcher is currently employed with one of Pennsylvania's 29 intermediate units. As part of his job responsibilities, he is frequently called upon to offer consulting to local school districts, focusing on various school improvement efforts. These efforts relate to school accountability indicators of success, including academic achievement, academic growth, career readiness benchmarks, attendance, and graduation rate. The researcher also provides feedback and guidance at a regional and state level on this topic. The researcher provides targeted support to schools after they have been identified. The supports that are offered are largely aligned to efforts to improve curriculum, assessment, and instruction, but currently do not target support for transient students.

The topic was selected for several reasons. Themes and patterns that result from the research can be used to better direct fiscal resources and human resources. Research that supports a correlation between student mobility and decreased school accountability indicators will guide schools towards developing better supports for transient students, which in theory should lead to higher success rates for this marginalized group. The researcher's work as a steering committee member on several statewide initiatives will allow him to inform more global actions based on the research. A correlation between student mobility and school accountability indicators would point to a need for greater consideration of this challenge when evaluating schools. This will allow for greater fiscal responsibility as money will be directed towards a factor that contributes to the scores that lead to school improvement designation.

Identification of the Capstone Focus

The federal Every Student Succeeds Act (ESSA) mandates that beginning in the 2018-2019 school year, states identify the lowest performing schools for three levels of school improvement effort. In contrast to the previous federal legislation (No Child Left Behind), ESSA mandates that schools look at factors beyond reading and math proficiency. Pennsylvania looks at achievement, academic growth, graduation rate, attendance, English language learner proficiency, and career readiness benchmarks. A low score relative to other state schools, in combination of these indicators results in a school being identified for school improvement.

Many of the schools designated for school improvement also experience high student mobility. Decades of research show there is a correlation between student mobility and success in school; kids who move more generally perform worse. If school

improvement designations are based on factors affected by student mobility, are school districts with a high percentage of student mobility more likely to be designated for school improvement?

This study focuses on student mobility in schools and its relationship on school accountability ratings based on research showing the connection between transiency and school success. The researcher posits that if a school has a high number of mobile students, indicators of school success will be lower than average, and this would be reflected in state school accountability ratings. If this relationship exists, schools with higher levels of transient students would want to be aware of the correlation, and will direct fiscal resources in an effort to support this marginalized subgroup, to potentially avoid school improvement designation as well as to provide these students with more opportunity for success.

Research Questions

The study will examine the research questions. Is there a significant relationship between student mobility and a school's accountability rating? How do schools with a high transiency rate fare in PAs accountability system when controlling for student mobility?

Expected Outcomes

This study will examine the impact that high numbers of mobile students has on school accountability system indicators in Pennsylvania. The accountability data from two school districts will be examined. One urban school district has been designated under a school improvement category, and the other is a suburban school district which has not been designated for school improvement but contains several schools with a

higher-than-average transiency rate. Mobile students will be flagged in each school, and a new set of school indicators will be created for each school, adjusted to the national student mobility norm. These new adjusted scores will be compared to the actual scores to determine the effect of high student mobility in Pennsylvania's school accountability system. Additionally, transiency rates and school accountability indicators will be examined to determine what correlation, if any, exists between the level of student mobility in a building and the actual values reported to the state.

Fiscal Implications

The results of this study are of great significance to not only individual school districts, but also to the state as well. From a fiscal standpoint, millions of dollars a year are being spent on school improvement.

At a state level, Pennsylvania is committing significant financial resources into efforts to improve schools. While these efforts are based on research-informed cycles of improvement, and utilize best practices, they do not consider the impact of mobility on initial designation. In other words, if a school is designated for school improvement, does it need improved curriculum, instruction, and assessment, or does it merely suffer from a high student mobility rate? If the state is directing money into helping schools and teachers better align curricula to standards, and better design instruction, it would be fiscally responsible to make sure that the money was going to the schools and challenges that need that help.

From the standpoint of schools, schools that are identified for school improvement are adjusting resources in an attempt to improve student academic performance. It would be a wise use of already finite district money if a school district

discovered that it wasn't curriculum, instruction, or assessment which was in need of improvement, but rather, student mobility rates were resulting in designation. If this was the case, these schools could use their valuable financial resources to put into place better supports for transient students to increase the likelihood of their success.

Summary

This paper will examine the role of student mobility on school accountability indicators within Pennsylvania's school accountability framework. It will examine the impact that high percentages of transient students have on achievements, academic growth, career readiness benchmarks, English language learner proficiency, attendance, and graduation rate, all which factor into designation in Pennsylvania's three school improvement categories. Recommendations for revisions to the state's school accountability system will be provided, as well as best practices that schools may implement to better support transient students. The research began with a review of the literature related to transiency and school accountability, as reported in the next chapter.

CHAPTER 2

Review of Literature

This chapter will review the literature related to student mobility and its impact on achievement. The review of literature will be divided into three parts. Mobility in general will be presented as it will help develop understanding of how this can be defined, measured, and of its impact on students and schools. Next, theoretical foundations impacting student mobility and its impact on achievement and measures of success will be laid out. Finally, practice and policy will be reviewed, including efforts to factor student mobility into state accountability systems. A summary of the findings will conclude the review of the literature.

Mobility Defined

In educational literature, student mobility is frequently referenced. The definition of this, however, is not often comparable across districts or research studies. Kerbow (1996) states that to gain a very clear meaning of the amount of mobility in a school, it is important to separate students entering and students exiting a school from those with stable participation. For the purpose of this paper, mobility will refer to a student withdrawing from one school and enrolling at another. The word transiency will also be used to describe this phenomenon. Finally, students who remain continuously enrolled in a school will be referred to as stable.

There is a significant statistical difference in achievement of groups of students when comparing students of mobility with students of stability (Mullins, 2011). Student

mobility causes a range of issues that span across student achievement and social emotional development, classroom planning and instruction, and school resources (Kerbow, 1996).

Mobility.

Frequent moves by students from one school to another put students, their teachers, and their peers at a disadvantage. Additionally, researchers have found that a high level of mobile students are also economically disadvantaged. Fowler-Finn (2001) reports, "stability and family, residents, school and school attendance support better learning. Those who need stability the most, the poor appear to have the least" (p. 36). The General Accounting Office reports that large urban districts serving a disproportionate percentage of students living in poverty experience mobility rates as high as 40% (GAO, 1994). The GAO's report goes on to highlight the alarming statistic that the United States has one of the highest mobility rates of all developed countries.

One common lens in which researchers have analyzed mobility data is defining a mobile student as someone who had moved at any time in their school tenure. Data from 9915 families was reviewed and determined that in the families in which a child experienced a move during his or her lifetime, significant negative impacts were experienced (Wood & Halfon, 1993). Researchers found that frequent family relocation resulted in increased risk of children failing grades and experiencing frequent behavioral problems. Transient students experience behavioral problems ranging from poor or incomplete work completion to major classroom disruption. Demie et al. (2005) defines student mobility as a child joining or leaving school at a point other than the normal age at which children start or finish their education at that school. Students who demonstrate

movement or changes of school, either once or on repeated occasions, at times other than their normal age to do so at a school can be defined as mobile (Strand & Demie, 2007; Dobson, 2008).

The most recent United States Census, conducted in 2010, reported that 9.7% of the US population moved during the year prior to that census (Mateyka, 2015). Mobility rates differ by geographic region, with the southeast and southwest experiencing the greatest mobility. Rates of mobility change over time as well. Migration estimates from the Current Population Survey Annual Social and Economic Supplement (CPS-ASEC), posted on the census.gov website, show a mobility rate for 2017-2018 of 8% in the northeast United States ("Geographical Mobility", 2018).

Lack of common measurement and definitions.

There is little common language for both measuring and defining mobility. It has been found in previous research that the recency of mobility matters. The more recent the move to a new school, the greater its possible effect on student achievement and assimilation (Green & Daughtry, 1961). In the first year in which a student moves to a different school, progress on learning experiences the most severe loss. This negative impact on achievement continues at a lesser rate in subsequent years. During this initial transition year, transient students also encounter the most difficulty with settling into a new culture and making social connections. One of the earliest researchers of student mobility examined students who moved at any point during their elementary years. According to Kerbow (1996), an examination of Chicago area elementary school students found that only 38% had attended the same school throughout their elementary years. This highlights how prevalent transiency is in some parts of the nation. In fact,

considerable numbers of students experience multiple moves during their school tenure. 13% of the students had attended two or more schools during a six-year period.

Kerbow (1996) identified three groups of students at schools: *stable* students who remained at a school from one year to the next, *in-mobile* students who moved into a school, and *out-mobile* students who moved out of the school. The researcher found that each of these groups of students would experience different levels of achievement. Stable students experienced the best student achievement levels, while the two mobile groups experienced lower achievement levels based on different circumstances. Kerbow's research examined the stable student group achievement versus that of the other two.

Fowler-Finn (2001) calculated the mobility rate for a school by the total of new student entries and withdrawals during the year divided by the total enrollment on the first day of school. This research goes on to state that each entry and withdrawal impacts not only the transient students, but also the stable students, the teachers, and the district. An example of this would be if a school experiences a 10% loss of students and a 10% gain of students. In this case, the researcher considers the school to have a net transiency rate of 20%. Eddy (2011) defined student mobility as "admittance to more than one school in a given district over the period of one academic year". Wasserman (2001) found that the impact of student mobility on student achievement is greater for schools with higher mobility.

Causes of mobility.

Previous research has identified numerous causes of student mobility. One of the most detrimental times to move is during a school year. While moves at any time during a student's tenure are disruptive, moves during the school year result in the greatest

negative impact. There are multiple reasons for academic year moves. Seasonal jobs, such as construction, tourism and farming as well as job and military transfers require families to sometimes relocate during the school year (Lash & Kirkpatrick, 1990). Additionally, changes within the family such as divorce or job loss sometimes necessitate this as well. Rumberger et al. (1999) found that parents list three main reasons for moving their children to another school: the students were forced to leave the school, they moved to another residence in a different school district, or they wanted to switch schools. Zehr (2007) reports that transiency is often related to poverty, and that students in poor families sometimes move around with different family members.

Another reason for a high transiency rate of students is that households often tend to move more frequently during the early stages of family formation and expansion (Dobson, 2008). As a family grows, there is a greater need for a larger living space and an enhanced emphasis on living in a safe community. Migration studies often show a flow of young families from inner-city areas to suburbs and rural neighborhoods. The Family Housing Fund (1998) conducted interviews and found that most mobility fell into one of four categories: coping with life, forced moves, lifestyle moves, or upward mobility. Researchers also found that a lack of family stability and inadequate affordable housing also impacted transiency rates of those in the study.

Mobility's effect on achievement.

Decades of research have shown the detrimental impact that mobility has on student success in school. In a recent study of mobile students in Texas, mobile students were found to be outperformed by non-mobile students on state math assessments (Shoho, 2010). Williams (2003) found that when mobile students are removed from a

value-added growth analysis, school scores increased. Value added growth analyses compare cohorts of students to themselves. This type of statistical analysis examines the change between the entering achievement level of a given group of students to the exiting achievement level. Proponents of value-added analysis point to the fact that children are essentially compared to themselves in this type of reporting. However, if a student moves during a school year, and that move has a significant impact on achievement, then the student will likely perform at a lower rate than was expected. This would affect a school's value-added report at the classroom and at the school level.

Learning difficulties may be magnified if students enter classrooms at a different point in the curriculum or state standards than they had been exposed to in their previous schools (Kerbow, 1996). Although all schools in a state must align instruction to the same standards, there is great variation from district to district, and even classroom to classroom. For example, a student may leave a biology class in which that teacher started the year with cells and cell processes and in the second half of the year moves on to biodiversity, and in that student's new school, the biology teacher may teach those concepts in reverse. This places students at an extreme disadvantage when it comes to experiencing an efficient flow of instruction and curriculum. Students experience these learning difficulties in the first year that they move, but the student often has an adjustment period beyond that initial year. In this way then, a mobile student's adjustment period truly extends over the course of several years. Deficiencies accumulate. State standards and local curricula are intentionally designed and aligned with vertical and horizontal structure. Curricula are often horizontally coherent, which allows for student learning to progress in a logical manner based on the design of the

curriculum. Curricula are also vertically coherent, which means that what students learn at one grade level in a course prepares them for the next course in the sequence. A well-written district curriculum would be purposefully structured and logically sequenced to allow optimal learning. As curricula vary from district to another, mobile students are at a disadvantage in that they have not progressed through a district's intentional learning plan.

The Family Housing Fund (1998) examined mobility's effect on academic achievement. This research found that mobile students had lower attendance levels, and that students absent 20% of the time scored twenty points lower on the California achievement tests in reading. The research also found that reading scores were 50% lower for students who exhibited mobility three or more times than were the scores for stable students.

One of the ways in which mobility impacts achievement is through the need for adjustment to peer groups, the classroom and the school. When a student moves into a new school, one of the key priorities for that student is making adjustments. This emphasis on adjustment results in less available time for learning. Fowler-Finn (2001) writes:

> Each withdrawal and each entry takes a toll on the student who is moving, on the students who remain, on teachers, on support staff, on the office and on parents – schools spend a lot of time on activities that impede direct uninterrupted instruction. (P. 36)

There is a profound impact of frequent mobility on student academic achievement in the early years of a child's school experience. The impact of transiency begins early in

a child's education. Reynolds (1990) reported that in a study of pre-kindergarten and kindergarten programs, mobility had a negative effect on achievement. This may be attributed to the interruption of learning at a time in which the acquisition of key skills is vital (Franco, 2013). Krenicki (1999) examined student results related to the New Jersey Early Warning Test and found that student mobility negatively impacted student scores and reading and mathematics. Kerbow et al. (2003) found that the academic growth of highly mobile students is less than the growth of stable students with similar characteristics. Gamble (2004) examined the effect of student mobility on student achievement under Tennessee's school accountability system. Gamble found that student mobility was shown to affect student achievement in both reading and mathematics. Correlational analyses indicate that high levels of school mobility are significantly related to poor academic performance (Felner et al, 1981).

Kariuki & Nash (1999) found that students who experience mobility several times in their school tenure suffer even greater achievement loss. Researchers found a statistical difference between groups of students with one move and those that made multiple moves. Students removed three or more times were often eligible for special education.

Mobility affects attendance, impacting achievement.

Mobility affects attendance rates as well. For every day that a student does not attend school, the student misses additional knowledge and important contact with peers and teachers. Support for school attendance is important for all students, especially those who are transient. Mobile students are at great risk for falling behind academically and developmentally, resulting in the students falling even further behind, exasperating the situation (Hinz & Snapp, 2003). As students fall behind, they become frustrated and this

results in greater absenteeism. In one study, researchers found that mobility seemed to have a slightly greater impact on attendance then on achievement (Parke & Kanyongo, 2012). Rumberger et al. (1998) found that in a study of California students, children who made even one school change between grade 8 and 12 were less likely to graduate from high school than students who remain stable in the same school. A recent analysis of student mobility versus graduation rate in the state New Jersey found a statistically significant variable that negatively influenced graduation rate. Schools that have high mobility rates tend to have low graduation rates (Ross, 2014).

Mobility's effect on the system.

Student mobility also takes a toll on school systems. Sanderson (2003) reported that urban schools faced with high mobility rates are often forced to commit large blocks of time towards the paperwork related to intake and outflow of transient students. Schools must collect a tremendous amount of information to enter into a student information system. Demographic information, household information medical forms, and media releases represent just some of the paperwork that must be completed. Schools must also dedicate time and effort to administering district required assessments when students enter school. For example, if a school utilizes a diagnostic assessment for planning and instruction purposes, school personnel must administer this assessment to the new student. This process takes additional staff time and can be quite burdensome and a school district with high transiency. Additionally, records are sometimes lost in the shuffle, presenting a challenge for the new school, as staff must communicate with a student prior school in an attempt to obtain school records. This challenge often results

in additional testing and evaluation of the new student, further taxing the system in terms of personnel and finances.

Schafft (2003) reported that the effect of school mobility is even more pronounced in smaller, limited resource districts. In these districts, mobility resulted in increased administrative costs, and great unpredictability in planning and budgeting. Small districts often do not have room to absorb additional costs for testing or salary time spent; personnel in small districts often have multiple roles and do not have time in their schedules to accommodate assessment and intake work with new students. Kerbow (1996) found that in some schools, class rosters changed frequently. This resulted in making planning difficult. Some students may move into the classroom in the middle of the unit and would be lacking necessary prerequisite skills. Not only is it difficult to a reverse course and offer remediation, this also makes assessment of the content more difficult. Teachers reported less time to collaborate with peers, less time to truly focus on the student learning, and less time to innovative in their planning and instruction. These classrooms became more focused on reviewing contents rather than introducing new skills and knowledge. This resulted in slowing the pace of the class for all students, mobile and stable.

Theoretical Foundations Impacting Mobility

Self-concept theory.

Some research shows that there is a connection between moving between schools and self-concept. The self-concept theory relates to the beliefs, opinions, and attitudes towards our existence. Self-concept controls what we think about ourselves and how we think and behave throughout our lives. Long (1972) suggests that mobility causes an

interruption and a smooth flow of peers, teachers, curricular and teaching materials, and general social and academic support systems. When a student moves from a school in which they have valued friendships with peers and trusted relationships with adults, to a new school, the absence of these things impacts their perception of the world. This hypothesis aligns with other work supporting the impact of stressful life events on children. In adjusting to a school transfer, mobile students are forced to adapt to new peers and to new academic and behavioral standards (Jason et al., 1992). What is considered a norm in one classroom may not be a norm in another. Teacher expectations may vary. Different modalities of learning may be incorporated from one classroom to the next. For example, a student may move into a new classroom in which that teacher expects quality cooperative learning work when that student never received any modeling or instruction on what effective groupwork entails. If a student fails to work in adherence to norms of the new classroom, that student may experience frustration and a lack of confidence.

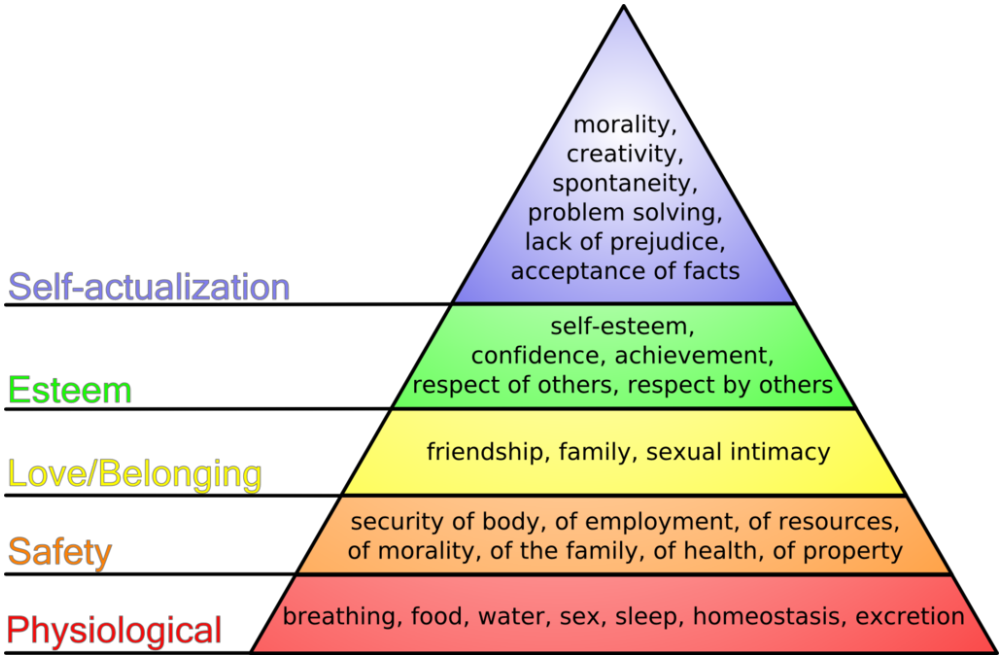
A student's self-concept is a factor that determines success of the outcome of the move. Hendershott (1989) reported that social support attenuates a negative effect of mobility on measures of self-concept. As students continue to struggle to connect socially and academically, they become frustrated, and their self-esteem suffers. This in turn leads to problem behaviors, which consequently, causes academics to erode even more. Attending a new school in conjunction with the pressure of forging new friendships and fitting in may negatively impact children's self-esteem and their perception of their own existence.

Self-actualization theory.

Much of Maslow's work is a conceptual model that is impacted by mobility. Self-actualization derives from being able to leverage one's abilities and resources to reach their potential. Maslow's hierarchy of needs is made up of physiological, safety, love, self-esteem, and self-actualization. Figure 1 shows Maslow's pyramid of needs. Beginning at the bottom, each level needs to be taken care of before one can address the needs at the next level. Maslow connects the role of motivation in learning, theorizing that people follow each of these levels of need in sequence, and that learning is dependent on the foundational components of this hierarchy. The bottom tier in this hierarchy involves basic physiological needs: food, water, and shelter. As mobile students tend to hail from families who are struggling financially, these students often lack the basic physiological and safety needs of the first two levels of the foundation (Kerbow, 1996). Mobile families often have limited access to food and healthcare, and often include non-traditional living arrangements that sometimes pose safety issues (Kerbow, 1996; Schafft, 2006). Even if moving to a new school does not impact physiological or safety needs, it often does impact the third tier –love and belonging. This is the tier in which the importance of connections to peers and friendships is realized. New students lack peer and teacher relationships, and this takes time and effort to develop. Such relationships lead to students feeling accepted and belonging; the absence of these impacts learning.

Figure 1

Maslow's hierarchy of needs. Adapted from "Maslow's hierarchy of needs", by J. Finkelstein, 2006.
https://commons.wikimedia.org/wiki/File:Maslow%27s_hierarchy_of_needs.png



One of the biggest concerns of mobile students is making friends and fitting in. The third tier of Maslow's pyramid involves feeling loved and accepted. It relates to our need to feel as if we belong to a specific social group. It involves both feeling loved and feeling love towards others. Rhodes (2008) found that students experience emotional anxiety related to this, and an inability to focus on their studies until they felt secure in their social setting. This aligns to Maslow's hierarchy of needs, of which safety represents the third tier (Maslow, 1987).

The fourth tier focuses on self-esteem. This is associated with a student feeling confident and respected by others (Maslow, 1987). A student cannot demonstrate confidence until the first three tiers are experienced. The self-worth that comes from

feeling safe and secure and belonging enhances the environment in which learning can take place.

Constructivism.

The concept of constructivism can be used to explain the impact of mobility on student achievement. Active learning occurs during the transition to a new school. Students learn about their own inner beliefs, strengths and challenges, and they learn about those around them, including peers, school staff, and families (Rhodes, 2008). The experiences they face help them to develop the ability to cope and assimilate into a new culture; unfortunately, some students are unable to construct a proper framework for assimilating and experience social, emotional, and academic issues. When students struggle to maintain a proper structure in which they can interact with course materials and grow, learning is impacted.

Psychological theory.

In the absence of conditions conducive to personal growth, mobile students can suffer. The adjustment of being a transfer student can impact a student's psychological well-being, social and academic competence and behaviors, and eventually achievement. Mobile students face many challenges in assimilating to a new school, including the psychological challenge of coping with a new school environment (Holland, 1974), and adjusting to new standards and classroom routines (Jason et al., 1992).

Developmental-ecological theory.

Developmental ecological theory goes a step further in that it acknowledges not only the impact of mobility on mobile children, but also how mobility affects teachers and peers in the classroom as well. The needs of mobile children can negatively affect

instruction for other students and cause a general disruption to learning (Bronfenbrenner, 2005). This has been confirmed by additional research, finding that when teachers adjust their routines to accommodate mobile students this leads to changes or repetition in lesson plans (GAO, 1994). This theory also suggests that there are impactful transactions that occur between a student and his or her peers and teachers, and over time, this creates important pathways to social, emotional, and academic development. If a child has a history of success in developing connections with peers and teachers, this can be built upon in the future, and the child has an advantage. Mobile students often do not have the luxury of developing such connections, and this unsuccessful history of social transactions breeds future difficulty with adjustment.

At a workshop convened by the National Research Council in June 2009, one paper examined the consequences of student transiency from a developmental perspective (Beatty 2010):

> 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)

In other words, mobility is detrimental to a student's emotional and academic growth, and this causes gaps in their development. Subsequent moves only magnify gaps that develop in these foundational developmental milestones.

Social-cultural theory.

Researchers have commonly identified sociocultural theory as a foundation for understanding the impact of mobility on educational outcomes. Coleman (1998) posits that social capital theory argues that children build vital connections with their peers and teachers which are critical for their own personal development and success, and mobility removes the opportunity to build these connections. Developing connections and friendships with peers takes time. Stable students have the advantage of benefiting from already established relationships with peers and are at an advantage. Vygotskiĭ's (1978) socio-cultural theory explains that success in school is highly dependent on social success and cultural relevance. When students move into a new setting, they struggle to connect with peers; for some, these connections never develop. It is difficult for some students to succeed in an environment in which they do not yet understand the culture.

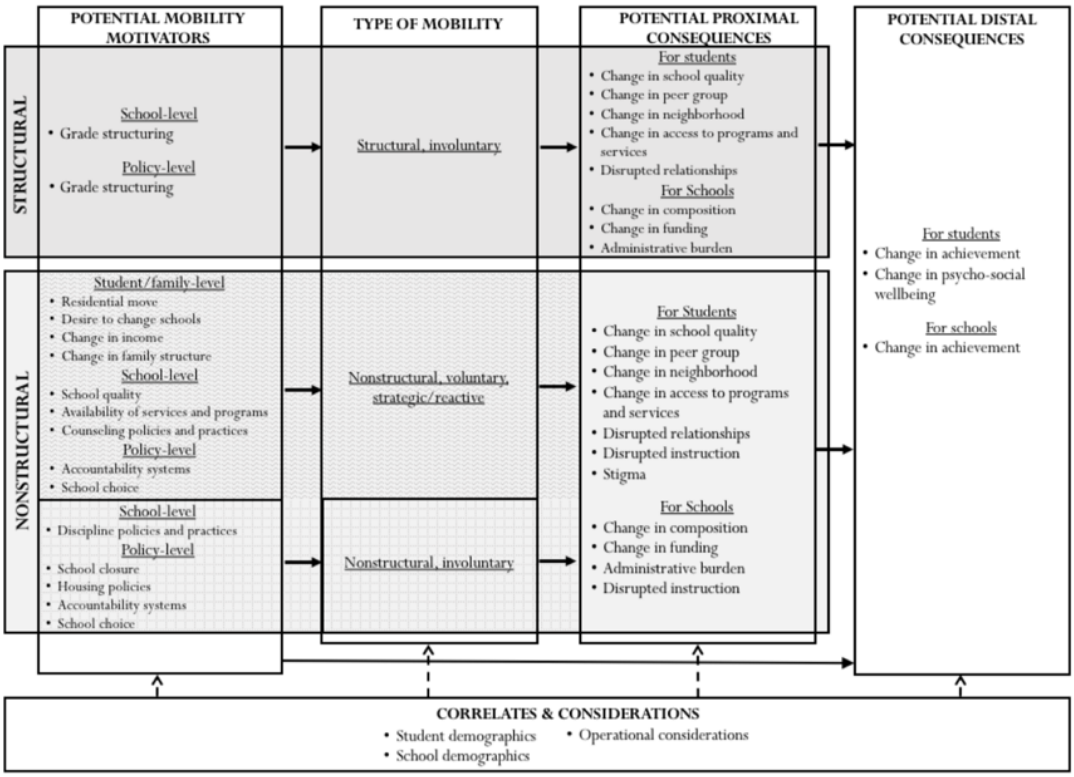
Relational framework.

In an examination of mobility of students in schools across the US, Spencer (2017) examined existing literature and presented a framework that defines student mobility. Spencer's framework also outlines the relationships between the causes and effects of mobility within several different contexts. Figure 2 highlights the types, motivators and consequences of student mobility. Considering all of these variables is important when interpreting the results of student mobility studies, as they are interrelated. This framework displays the different types of mobility, and how they are

caused by different motivators. These types of mobility include structural, structural, voluntary, non-voluntary, reactive, and strategic. In addition, each of these types of mobility results in varying consequences. Spencer's (2017) framework also highlights additional factors that must be considered in mobility studies, such as the relationship between motivators and distal outcomes of mobility. The presence of variables that may be correlated with motivators, type, and consequences of mobility must also be considered. Finally, the potential impacts of operational considerations must be considered as well.

Figure 2

Relational framework for student mobility. Adapted from "An examination of student mobility in U.S. public schools", by K. Spencer, 2018. https://repository.upenn.edu/cgi/viewcontent.cgi?article=4377&context=edissertations



Policy and Practice

Systems of accountability.

School accountability is a prime topic these days, from local parent teacher organization meetings to the halls of legislators. In accordance with the Every Student Succeeds Act (ESSA), states are accountable for creating an evaluation system for schools and determining a way for focusing resources on low performing schools and traditionally underserved students demonstrate low achievement. States are mandated to establish long term goals for student achievement growth, graduation rates, and English language proficiency. States must also select several additional measures upon which schools can be evaluated. As part of this process, states must identify schools in need of improvement based on the performance of all students, and of student subgroups (U.S. Department of Education, 2019).

Pennsylvania's system of accountability.

Pennsylvania has created a system for measuring the success of schools using multiple measures. A new reporting system, the Future Ready PA Index, features a dashboard approach to school and student group performance. The Future Ready PA Index illustrates student and school success on eleven indicators using a color-coded system (Pennsylvania Department of Education, 2019). Six of these indicators are used in the process for identifying schools in need of school improvement.

These indicators are as follows (federal accountability school improvement indicators denoted with an *):

- Percent Proficient or Advanced on Pennsylvania State Assessments*
- Meeting Annual Growth Expectations*
- Percent Advanced on Pennsylvania State Assessments
- English Language Growth and Attainment*
- Regular Attendance*
- Grade 3 ELA and Grade 7 Math Early Indicators of Performance
- Career Standards Benchmark*
- High School Graduation Rate*
- Industry-Based Learning
- Rigorous Courses of Study
- Post-Secondary Transition to School, Military, or Work

School improvement identification in Pennsylvania.

In a process termed annual meaningful differentiation by federal statute, states must designate schools, at least every three years, into three designations:

- *Comprehensive Support and Improvement (CSI)*: Schools facing significant challenges in achievement, growth, and any of the other four areas highlighted above

- *Additional Targeted Support and Improvement (A-TSI):* schools experiencing poor performance by one or more student groups belong a specified threshold
- *Targeted Support and Improvement (TSI):* schools experiencing poor performance by one or more student groups in danger of approaching a specified threshold

Schools are identified for one of the levels of school improvement if they have both low achievement scores and low growth profiles (below statewide minimum values) and poor performance on additional ESSA-required indicators. If mobility impacts student achievement and growth as well as graduation rates, can a high mobility rate lead to a school improvement designation?

Stakeholder perceptions.

Parents place high value in published accountability ratings. Research surrounding parent perceptions of state school accountability reporting show that 80% of parents place value in reported test score summaries (Owens & Peltier, 2002). Unfortunately for school systems with high student transiency rates, while it is easy for a parent to view a website and see a number, it's not as simple to understand factors that influence that number. It is often common practice for external stakeholders, including the media, to compare the values assigned to an indicator for two separate schools. Without context, it could appear that the school with a higher value is the better school; however, one needs to take into account a variety of factors including mobility. When parents review these school accountability ratings without context, parents in a school

district with high mobility may decide to leave the district for a district for another that is perceived to be better in serving students.

There are numerous factors that the state should keep in the forefront when designing an accountability system. An accountability system must evaluate each school in terms of its own context (Sirotnik, 1999). Such systems must go beyond test scores to include a variety of additional factors. Sewell et al. (1982) found that mobility is a very important intervening variable in achievement and must be controlled during interpretation of achievement progress for reporting and decision-making purposes.

Educational accountability systems across the nation.

Currently, only about half of all states collect data on mobile students or post such data (Blashe et al. 2018). The information that is collected is not consistent, which makes state by state comparisons very difficult. While federal mandates require schools to identify students with some extenuating circumstances, such as homelessness, the federal government does not define how transient students would be viewed, nor does it mandate that they be tracked. Some states count only students who switch mid-year, while others include students who move outside of the academic school year. Florida, for example, tracks students who move between the months of October and February. Massachusetts defines mobile students as ones who move between October and June. Texas is perhaps the closest to define incomplete mobility. Students in a school for less than 83% of the school year are referred to as mobile. Figure 3 identifies the twenty-nine states that track student turnover by any means. Not all of these states publish the results. Figure 4 displays the twenty-four states who post such data. As Figure 5 highlights, only

twenty-one states post district-level mobility data. At the school-level, this statistic is even smaller. Figure 6 identifies the seventeen states that display school level mobility data. Pennsylvania is currently not one of the states that posts or even collects data on student mobility.

Figure 3

Tracking turnover across the country: states that track student turnover [graphic]. (2018). https://projects.jsonline.com/news/2018/10/9/student-mobility-numbers-not-tracked-by-many-states.html

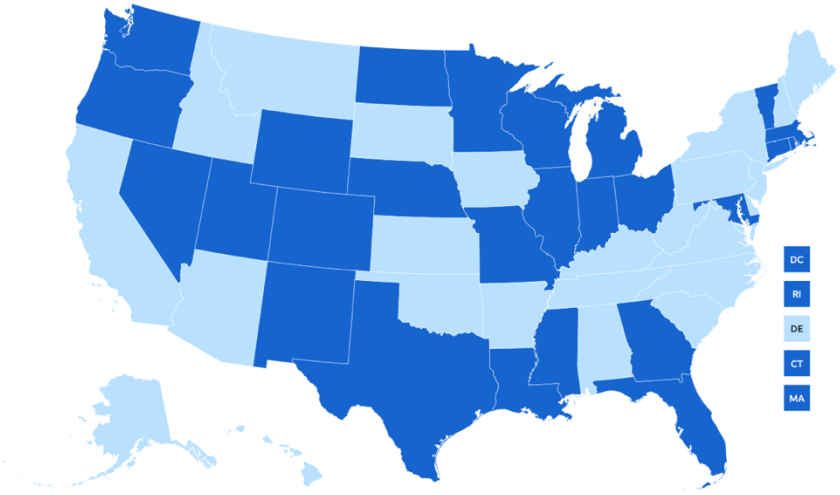


Figure 4

Tracking turnover across the country: turnover data is posted [graphic]. (2018). https://projects.jsonline.com/news/2018/10/9/student-mobility-numbers-not-tracked-by-many-states.html

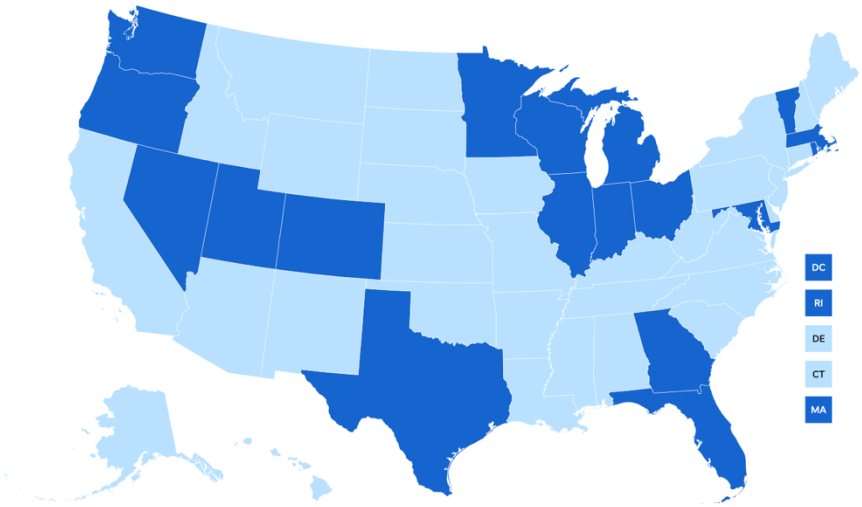


Figure 5

Tracking turnover across the country: district level data is posted [graphic]. (2018). https://projects.jsonline.com/news/2018/10/9/student-mobility-numbers-not-tracked-by-many-states.html

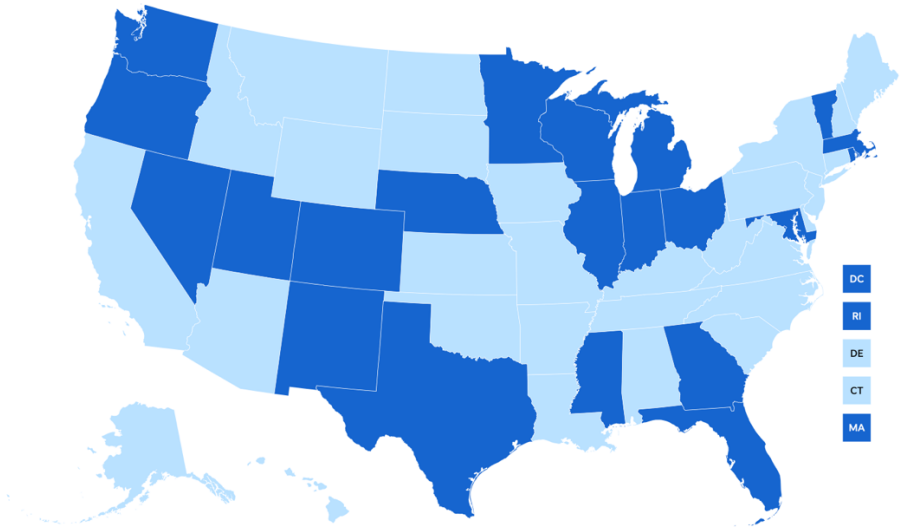
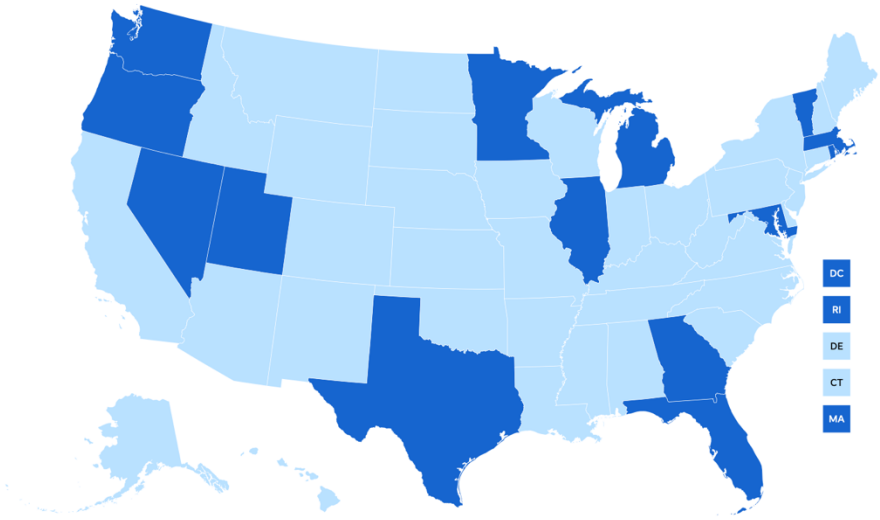


Figure 6

Tracking turnover across the country: school level data is posted [graphic]. (2018). https://projects.jsonline.com/news/2018/10/9/student-mobility-numbers-not-tracked-by-many-states.html



Staff practice and attitudes towards mobile students.

Controlling for outside factors, the single biggest impact on student success is the teacher. Staff practice and attitudes towards mobile students can have a significant impact on their success. From a teacher's perspective, student mobility can be disruptive (Lash & Kirkpatrick, 1990). Not only do such students require immediate attention, but they must learn the rules and routines of the new school and classroom, which put a strain on teachers. School days do not have extra transition time built-in to assist mobile students with transition; instead, teachers must take time away from their already short class periods to help acclimate new students to classroom culture. Teachers in classrooms with multiple mobile students often end up reviewing old material instead of introducing new material, which impacts the stable students in the class (Rothstein, 2004). This slowing down of the pacing of the classroom impacts academic growth of stable students as well. Pennsylvania's value-added assessment system measures students against their past growth. If a classroom teacher slowed the pace of instruction to reteach material to new students, the existing students in the class would likely not achieve as high as statistical modeling would expect, and this would result in potentially poor growth values assigned to this classroom and also to its teacher.

Rumberger et al. (1999) suggest the teachers should review the cumulative records of new students to assess grades, attendance, and important background information. Contacting the prior teacher is an effective way to learn more about that student and the background the student brings (Kerbow, 1996). It is difficult to plan instruction when a teacher does not know what academic knowledge a new student brings. Because of this, assessments are a necessary part of the intake process. Hartman

(2006) reports that not knowing the academic abilities of new students negatively impacts a teacher's planning and instruction process and puts an overall strain on the system and its resources.

Chow (2014) found that teachers should prioritize fostering supportive relationships with mobile students and their parents as a means to promote their success. When teachers have more contact with parents, they can learn more about the student's needs and home environment and provide necessary structure in the classroom to meet those needs. Parents can also learn about teacher expectations, as well as classroom and school culture. Strong teacher-parent connections lead to meaningful and productive conversations, which will better help the transient student in the adjustment period.

Cloer (2015) studied teachers at an elementary school and their perception towards mobile students. The goal of the project was to solicit teacher perceptions about the success or failure of mobile students. Teachers indicated that upon the arrival of a new student, they would examine initial enrollment paperwork and learn about the new student through talking. Examining cumulative records was another action undertaken by teachers, but this sometimes requires dedicated time. Sadly, even though all teachers interviewed placed value in talking with parents of a new student, they indicated that parents do not always make themselves available to meet. All teachers agreed that the presence of mobile students significantly impacts planning and instruction, and that it is difficult to plan without knowing what background the student brings. Teachers also agreed that placing students in groups is difficult without knowledge of a student's prior experience with group work. All teachers found it was important to assign the new

student a friend or a buddy to guide them around the school. The important role of counselors in this process was also mentioned as a vital support to new students.

Cloer (2015) also found that teachers expressed concern for increased behavior issues. New students do not understand class procedures and routines, and thus, may interrupt the flow of the class. Mobile students often demonstrate poor adjustments and experience increased behavioral issues resulting in less time on task and less stability (Rumberger et al., 1999).

Administrative practice towards mobility.

Procedures put in place by administration, as well as general administrative support directly affects the achievement of mobile students. Just as a teacher is the single biggest factor in the success of a classroom, an administrator is the single biggest factor in the success of a school. In a study of student mobility, high rankings of school leadership and usefulness of its professional development programs was found to correlate positively with performance (Heywood & Thomas, 1997). Franke et al. (2003) describe an informal intake process at one school in which an informal family history and child academic assessment take place. It is during such informal intake meetings that school staff may 'get to know' student. Even if all of the prior school records have been received by the new school, personal meetings often provide richer information and context, beyond that which can be found in student academic files. At the same school, front desk staff are sensitive to the issues of new and transient students and are respectful of their circumstances. This is important because the front office is often seen as the first contact points for communications, questions, and concerns.

System-level practices impacting mobility.

Filipelli & Jason (1992) suggest that as part of a child's transition to a new school, educators and perhaps mental health professionals should assess stressful life events in the lives of transfer students. This way, schools might be able to identify potential roadblocks to transition. Adults might be ignorant to the primary concerns of the children themselves; while adults may be interested in making sure the student is properly scheduled and has a bus stop, the child may be more concerned immediately where to sit for lunch and dress code. Students may also come with adverse childhood experiences affecting their ability to transition. Identifying these experiences and their impact on the present can help social workers design an effective transition plan for the student. Huffman (2013) writes about the value of school social workers who can work with at-risk students to build attendance plans, and work with parents to overcome barriers.

Smith et al. (2008) highlighted that a commitment to screening students immediately upon enrollment, using intentional placement, instituting progress monitoring, and adjusting as necessary provides mobile students with a great opportunity to succeed in school. This suggests a shift from a reactive approach to students moving in, to a more proactive approach, one that has been carefully considered and planned beforehand, and implemented in a system in which transient students do not fall through the cracks. This involves providing diagnostic screenings, such as those in math and reading, to identify not only needs but also strengths. The screenings will help inform class placement and planning for instruction. The progress monitoring of mobile students

provided the school with a means of evaluating the success of a student's assimilation, and an early warning of potential roadblocks.

Fisher & Matthews (1999) conducted a qualitative study examining factors that lead to increased school stability for mobile students. The most effective measure schools took was supporting families with wraparound services. The researchers found that students benefit from increased interaction with staff who exhibited a caring demeanor and high expectations. The stability of consistent programming and clear guidelines and policies helped address the academic and social needs of the students. Effective programs placed high value on the creation of positive relationships with families. Increased school stability was supported by school administration in their shared leadership, demand of high levels of collegiality, and their continued evaluation of the program with an emphasis on continuous improvement.

One way of reducing student mobility might be if schools provide information to parents about the harmful effects of changing schools. Kerbow (1996) suggests that if parents were made more aware of the value of stable environments for children, mobility will be reduced, and additionally, relationships with families may be more firmly established. Many urban schools have high levels of mobility. Some of these schools make many attempts to implement programs and practices to help families (Nakagawa et al., 2002). However, it was found that these attempts did not result in greater involvement from the families.

Policy that impacts mobility.

Unfortunately, researchers have found that student mobility has not received much attention from policymakers. One reason is that transiency is often seen as

inevitable and out of the school's control (Rumberger & Larson, 1998). Pupil mobility has implications for many policy areas, including school funding and goal-setting (Demie, 2002). State and local policies can have a considerable impact on the success of mobile students. Rural, chronically mobile students have escaped the attention of schools and public policymakers (Schafft, 2006). This often goes unrecognized, in part because the numbers of students entering and exiting schools usually balance out, so the net enrollment changes are not noticeable. Nationally, the lack of attention paid to transiency is likely because the students don't fit into federal subgroup categories, and thus escape from being under the lens of federal and state accountability.

It is difficult to hold schools accountable when indicators are based on factors outside of the schools control, such as transiency (Delong, 2002). Student mobility poses unique problems. Administrators at high mobility schools should be given fund allocations to create new programs and learning opportunities specifically targeting mobile students (Williams, 2003). Even the US General Accounting Office has proposed that policymakers focus greater attention on the needs of mobile students. GAO's (1994) report suggested that the US Department of Education can play a role in helping mobile children by ensuring that they have access to federally funded education programs and encouraging states to implement more effective student record transfer systems, and to support local education agencies in accommodating mobile students. Wasserman (2001) suggests that achievement test results for schools need to be interpreted taking variation in student mobility into consideration. School choice advocates often point to school choice as a way to reduce the impact of student mobility (Coleman-Weathersbee, 2018). If states allow school choice programs, then students may not have to change schools

when their place of residence changes. Rumberger (2016) suggested that school districts might also be flexible with school boundaries and provide transportation and support to families considering moving.

Gamble (2004) recommends that states have an obligation to collaborate with school systems intensively, to ensure that all stakeholders are informed of the needs of mobile students. It is also important that the presence and plight of mobile students be made visible and understood by all. Better informed staff are better prepared to meet the needs of transient students.

Policymakers should shift their focus from assigning numerical ratings to schools, towards more socially desirable educational outcomes, such as whether students learn what they need to learn and whether these learning outcomes are equally distributed (Longanecker & Blanco, 2003). Housing and community development policy should focus on investment in low income communities, which would result in less families leaving, and thus lower student mobility (Metzger, Fowler, Anderson & Lindsay, 2016). Overwhelming evidence shows that most school mobility is a function of involuntary residential moves, and a governmental program to increase the supply of affordable housing can help stem transiency (Hartman, 2006). This type of investment would enhance social capital and assets within the community. Heinlin & Shinn (2000) proposed that school systems can work with community groups to reduce disruptive moves. Once such program studied involved parents, educators, landlords, social workers, and politicians and led to a 38% reduction in transiency.

Summary

School accountability is an important issue in education today. Schools are being identified as in need of school improvement based on academic and behavioral indicators of success. These indicators of success are negatively impacted by student mobility. The goal of this literature review was to define mobility, identify its connections to indicators of achievement and success, and review how student mobility is factored into statewide school accountability models. Descriptions of student mobility were highlighted in an effort to develop an operational definition of mobility for the purpose of this action research project. Most popular definitions of student mobility defined mobile students as those who have moved within the current school year, though there exists some evidence that suggests that mobility impacts student achievement beyond just the year in which the student experienced a move. Theoretical frameworks related to student mobility were reviewed, suggesting how transiency can have a negative impact on student achievement. Transiency impacts students at a deep level, resulting in developmental, social, emotional and academic deficits. Much of this relates to Maslow's hierarchy of needs. Finally, a review of state and federal accountability models was conducted, finding that there is disparity from one state to another in terms of whether or not student mobility is factored into indicators of school success.

CHAPTER 3

Methodology

The purpose of this chapter is twofold: it will introduce the research methodology for this action research project, and it will discuss its various implications. A comprehensive review of the literature shows that research supports a correlation between student mobility and indicators of school success. There also exists a great disparity between districts and sometimes schools within districts related to levels of student transiency. Additionally, Pennsylvania's system of school accountability provides a report of student success in a number of federally-mandated areas, but it does not consider levels of student mobility.

This chapter will first re-introduce and develop the research questions. The methodology selected will be highlighted, including a justification for the research design as well as a detailed description of the statistical data analysis. Background information on the researcher and participants will be provided. Data collection, procedures and data analysis will be described. Finally, threats to validity, trustworthiness, ethical concerns, and fiscal implications will be reviewed.

Purpose

This action research project examined the impact of student mobility on school accountability indicators. A causal comparative research design was utilized, as the researcher's intent was to conclude a cause and effect correlation between student mobility and overall score accountability indicators.

Problem.

Many of the schools designated for school improvement also experience high student mobility. Decades of research show there is a correlation between student mobility and success in school; kids who move more generally perform worse. If school improvement designations are based on factors affected by student mobility, are school districts with a high percentage of student mobility more likely to be designated for school improvement?

Research questions.

This action research project was initiated to answer two questions. Is there a significant relationship between student mobility and a school's accountability indicators? How do schools fare in Pennsylvania's school accountability system when controlling for levels of student mobility?

Setting and Participants

The school districts taking part in the research project were selected as they represented various levels of student mobility, and ones in which district leaders indicated great interest in the results of the study. In order to examine the impact of mobility, the research required subjects (schools) with significant levels of transiency, in order to examine correlation. One school district chosen has been identified for school improvement by the state, based on school accountability indicators. The other school district has not been designated for school improvement, but some within the school district have voiced concerns relating to the challenges posed by the levels of student mobility they face. Both school districts chosen are led by superintendents who have

great interest in the results of the study, as intend to use the work to inform decisions relating to fiscal and human capital resources.

Each school district is unique in its composition and community, but both school districts experience a significant student mobility rate. In an effort to maintain confidentiality of the data, the school districts will be referred to as *school district X* and *school district Y*.

District X is located in a suburb in western Pennsylvania. In the past, the district has received a number of awards celebrating its academic success, including a Blue Ribbon Schools award. The district serves over 3000 students with a staff of over 500. Over the past 10 years, the communities that comprise the district have experienced a shift in businesses and housing. Transitional housing has become more readily available in the district, which results in greater migration of students. District X has not been designated for school improvement yet, but the administration continues to pay close attention to indicators of academic success of all students, and is committed to adjusting programs and offerings as needed.

District Y is a smaller suburban school district located in a city with a high poverty rate. It is ranked in the bottom 5% in numerous state and national school rankings. The communities that comprise this district have experienced a sharp decline in longtime residents, and the district currently experiences a very high rate of student mobility. The school district receives a high percentage of annual revenue from the state, placing it among districts receiving the highest state funding in Pennsylvania. A tremendous amount of financial resources are being funneled into improving academic

achievement for students in this district, and the superintendent is committed to utilizing these resources efficiently.

Schools were recruited using a variety of strategies. The opportunity to discuss partnering was mentioned at a role-alike meeting of western Pennsylvania schools. The researcher also targeted schools by reaching out to superintendents and asking them to consider participation in the study.

There were several unsuccessful attempts in the process to solicit partners for this project. Several school districts indicated interest initially, but declined to participate as the study involved student data. Two superintendents mentioned to the researcher that they would be concerned if the research showed that there is a little correlation between student mobility and indicators of academic success; this may cause some to infer that a district is doing a disservice to all students, whether or not those students are continuously enrolled. Two cyber-charter schools indicated interest early in the process, but later backed out prior to granting final permission to participate. While the schools did not provide a reason, between initial interest and final agreement, legislation was introduced in the states which would drastically impact cyber charter schools. It is speculated on the part of the researcher that the schools decided not to participate due to the timing of this potential legislation that may drastically impact this type of school in the future. A study that had a potential to show any deficiencies in a school may be frowned upon when the school may likely be under increased public scrutiny.

Intervention and Research Plan

Positivism gives rise to quantitative methodology (Mukherji & Albon, 2015). This research was approached with a positivism epistemology (Age, 2011), as it uses a

systematic, scientific approach to the way the research is conducted, and results examined. Because positivism is grounded in objectivity and discrete data sets, it supports quantitative methodology. In examining the role a positivist methodology plays in quantitative research, Mukherji & Albon (2015) posit that "correlational studies are used in situations when it is difficult or impossible to use experiments, but the researcher wants to see if there is a relationship between two variables". This describes a limiting factor of studying student mobility, as a researcher cannot use an experimental approach to examine student mobility. The role of the researcher in this case was limited to data collection, data analysis, and interpretation in an objective manner. Using extant accountability data provides quantifiable observations. These observations led to a statistical analysis that is judged only by logic and free from subjectivity and interpretation. This approach was selected by the researcher as it is a scientific approach to examining data that leads to results that can be often generalized across a field. In alignment to the researcher's own beliefs regarding the importance of an objective, impartial examination of data, positivist research is likely conducted to establish correlational or causal relationships that can be generalized and shown to be objective (Paré, 2004).

Hendricks (2017) explains that through the action research process, practitioners use the knowledge generated through their research to inform practice as well as guide and improve systems at a higher level. As the researcher has spent several years embedded in school improvement work, action research provides a systemic approach to pinpointing challenges to school improvement.

The approach also allows valuable fiscal resources earmarked for school improvement to be redirected towards research-identified solutions. As an action researcher, the author will be able to ground future work in the results of this project. Having a local, regional, and state role in school improvement efforts, the findings will be acted upon in a manner that should directly impact students, staff, and administrators in the state. As action research, the project will inform the ethics of school improvement efforts based on objective work. This effort will also connect existing research with systemic practices and thinking.

Connection to fiscal implications.

The research design will result in findings that will have several fiscal implications, both locally, as well as at a state and national level. The process outlined in this research project is one that could be replicated at no cost in any Pennsylvania school. Schools may wish to audit their success with transient students by using the same files to examine the academic success of mobile students. As the process would be free, it would not require payment to any outside firm and thus would be a fiscally responsible commitment on the part of district leaders.

Also, at a school level, schools may redirect taxpayer money from content specific expenses to supports for transient students. Schools have only a finite amount of money to spend and targeting the groups of students most in need would provide the most success from the resources they have.

At a state level, over two million dollars will be spent over the next few years on school improvement efforts. At the time, the system as it is currently organized provides content-specific advisers to schools in school improvement at a great cost. The results of

this study may inform the state in making changes to its school improvement staffing, providing more transition coordinators to schools to help those students most in need.

Research Design, Methods & Data Collection

This research was designed as a quantitative correlational study. The goal of the study is to describe the relationship between transiency rate and school accountability indicator values, and also to establish a relationship between these two factors. As such, the project uses a causal comparative design (Schenker & Rumrill, 2004), intended to identify relationships between independent and dependent variables. A hallmark of this type of design is that it examines data after actions have occurred. The researcher hopes to determine whether or not the school accountability indicators, as independent variables, are affected by student mobility, as a dependent variable. Causal comparative research design is an effective way to examine relationships between variables when it is not possible to manipulate the actual variables themselves. As it would the impossible and unethical to intentionally move students between schools, this type of design allows a researcher to examine the effect of such actions outside of the experimental procedures. While other means of research may result in more compelling recommendations based on causation, the research questions associated with this project would be difficult to examine with other methods.

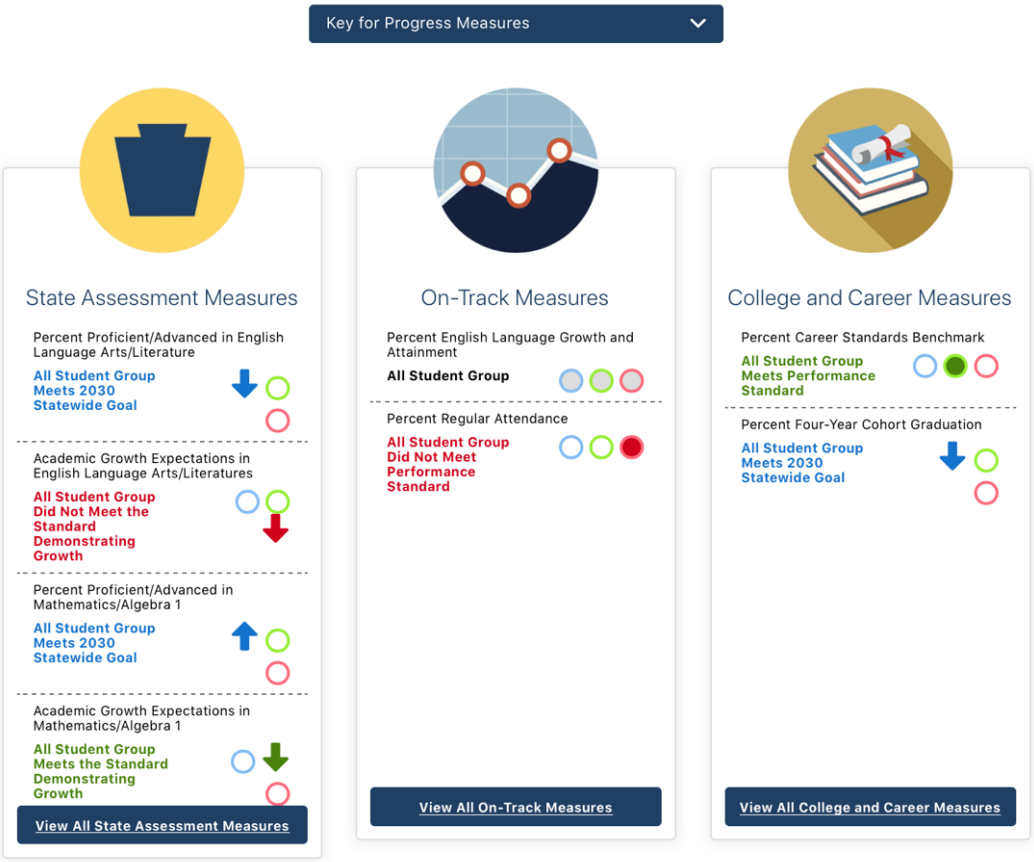
Multiple forms of data.

There are seven key sources of data required as part of this action research project. It is important to note that all data files identified students by PAsecureID, which is a statewide, randomly assigned identification number for students in the state of Pennsylvania. At no point were student names shared with the researcher.

The first source of data examined was the school accountability values posted on Pennsylvania's Future Ready PA Index website at https://futurereadypa.org. This site is updated each fall to reflect the success of Pennsylvania schools during the previous school year. It is an aggregate of school progress measures relate to academic success and college and career readiness. As viewed in Figure 7, this index includes assessment measures, on-track measures and readiness indicators.

Figure 7

Future Ready PA Index. School Performance © 2020. Retrieved April 23, 2020 from https://futurereadypa.org. Screenshot by author.



This website evaluate scores on 11 indicators. Six of these are federally-mandated and are the measures used to designate schools for school improvement. Those six federally mandated measures are academic achievement, academic growth, attendance, graduation rate, English learner proficiency, and career readiness benchmarks. Future Ready PA Index values in each of the six areas were noted for each of the schools involved in the study. The values posted on the website will be compared to the adjusted values determined by the researcher when controlling for percentage of transient students.

Pennsylvania assessments in grades three through eight are administered each spring. High school assessments in the state can be administered throughout the year with a cycle beginning in the summer and ending each spring. The results of these assessments are provided to districts in a single file known as the district accountability file. This file is made available to district superintendents each year in June, through a restricted access site known as PA eDirect (https://www.drcedirect.com/). This file contains state assessment results for all students in the district. The file also contains information related to whether or not each student was attributed to a school for reporting purposes or not. It is this file that was obtained from each participating district that allows the researcher to identify which students would be included in achievement and growth reporting.

The other reports necessary for completion of this project were all pulled from each district's student information system. Several of these are part of the process of data submissions to the state known as PIMS submission. The Pennsylvania Information Management System (PIMS) is the means by which the state aggregates data from schools for reporting and analysis. One such required file is a report known as the

student-career standards benchmark report, which is uploaded at the end of the school year and contains all of the information necessary for calculating career readiness percentages.

Another necessary data source is known as the student calendar fact template. This report provides necessary information to calculate attendance rates. Attendance is reported on the Future Ready PA Index as a lagging indicator, meaning that the number reported on the website is the value from not the previous school year but the year prior to that. A lagging indicator is necessary when a variety of circumstances result in an inability to be able to aggregate final information related to a given indicator in a timely fashion. Another data source is known as the frozen graduate cohort data, which is also a lagging indicator. This report would identify students in the prior year enrolled in high school for four years who graduated. This data will assist the researcher in determining graduation rates.

There is a sixth federally-mandated indicator of success that factors into the Future Ready PA Index, but was not necessary to gather from the participating schools. The percent of English language learners who achieve proficiency is also reported on the system, but is only reported for schools with a minimum N-count of 20. None of the schools participating in this project had an enrollment of English learners at that level, and thus, that data is not available nor reported on the website.

One final piece of data collected from each of the districts identified enrollment dates of students. For the purpose of this research, mobile students were defined as those not continuously enrolled for at least one year. This enrollment information was used to

flag mobile students in the system, and to be used when creating adjusted student groups as detailed in the procedure section that follows.

All of this data was obtained through each of the school district's PIMS administrators. (The Pennsylvania Information Management System, or PIMS, is a statewide, longitudinal information management system designed to assist schools in submitting timely data in a consistent format.) The researcher worked with each superintendent to collaborate with this data administrator to pull the necessary reports from their student information system for use in the project. One strategy that proved helpful was accessing the PIMS manuals on the PIMS website and determining the specific names of the reports needed. Entering into meetings with data administrators, knowing the specific names of the reports needed helped to streamline the process, and the data administrators expressed appreciation for the succinct specificity.

Data files were downloaded to a local, password-protected laptop, and saved in a password-protected folder. Only the researcher maintained access and password to this laptop. At the conclusion of the project, all files in this folder were permanently deleted.

Timing of the data collection.

The timing of the data collection was based upon the extant data required for analysis. State accountability indicators are posted to a public website in the fall, reflecting the prior year's results. Data factoring into these results is drawn from a series of data uploads initiated by the school district, through the summer just prior to the fall release of school accountability indicators. Because of this, all available data for examining a prior year's success is available for collection by mid-summer. The data for this research project was collected during February 2020, reflecting performance during

the 2018-2019 school year, with the exception of two lagging indicators, attendance and graduation.

Choices and organization of the data.

The data collected and analyzed was classified into four categories. The data was obtained from the source that informs Pennsylvania's school accountability system and the same attribution rules were applied. It is important to note that the state created specific rules as to which students are attributed to a school and which students cannot be attributed to a school. The rationale for the creation of attribution roles is based on the fact that there are some students who are enrolled in a school for a minimal amount of time that would not likely allow the organization enough time to make an academic impact.

Achievement.

This indicator represents the percentage of students who scored proficient or advanced on a state assessment. The Pennsylvania System of School Assessment (PSSA) exam is administered to students in grades three through eight for mathematics and English language arts, and grades four and eight for science. Additionally, students are administered tests in Algebra, Biology, and Literature in high school, but this action research study examined state assessments in grades three through eight only, as reporting at the high school is more complex and obtaining the high school assessment data in a format that would allow for validity may prove challenging. These state assessments rank students in four proficiency levels – below basic, basic, proficient, and advanced. Two groups of students do not factor into state calculations: students enrolled after October 1, and first year English language learners. As the Future Ready PA Index

reports achievement at a subject specific, building-wide level, sample groups will be defined by building, separated by content area.

Growth.

This indicator represents how a given group of students has grown from an academic standpoint relative to their entering achievement. The same attribution rules that are applied to achievement are also applied to growth. As the Future Ready PA Index reports growth at a subject-specific, building-wide level, sample groups will be defined by building, separated by content area.

Attendance Rate.

Attendance is defined as the percentage of students enrolled in a school for 90 school days or more, who are present for 90% or more of the days. This measure is a lagging indicator. A lagging indicator is one that is the value from not the school year of interest but the year before that. (The reason for this is that the complete data set that comprises some indicators, such as attendance, cannot be fully collected by state for a considerable length of time after the school year ends.) As the Future Ready PA Index reports attendance at a building-wide level, sample groups will be defined by building.

Graduation Rate.

This represents the percentage of students who graduated from a school in a four-year cohort. This measurement is also a lagging indicator. As the Future Ready PA Index reports graduation at a twelfth grade building level, sample groups will by building cohort.

Career Readiness Benchmark.

This represents the percent of students who have satisfied requirements related to career education as mandated by the state. This is reported by grade span, with reporting occurring at the end of grade 5, grade 8, and grade 11. Accordingly, sample groups will be aggregated based on these reporting rules.

English Language Learner Proficiency.

This indicator provides a measure of English learner growth and attainment of English language proficiency. This is evaluated through the use of a state mandated assessment known as ACCESS for ELLs.

Procedures for aggregating and examining the data.

After obtaining agreement to participate from superintendents, and then obtaining the necessary data from the school district PIMS administrators, the process began with flagging transient students in each of the files.

Flagging students in files.

As none of these files or submissions require a specially defined transiency field, the researcher had to manually flag each transient student in each file. This was accomplished by sorting each file by PAsecureID, then creating a column labeled transient and placing an indicator in this column for each student who had not been continuously enrolled in the school for at least one year.

Identifying students factoring into achievement and growth.

Each district's district accountability file was manipulated to remove all students who were not attributed to a school, remove all students enrolled after October 1, and remove all students who were flagged as first year English language learner students.

These students are not factored into the values on the Future Ready PA Index. The remaining data was manipulated to determine the percent proficient/advanced for each score and this number was compared to its value on the Future Ready PA Index site to ensure fidelity. Once it was verified that the remaining data is the data that factored into school accountability, then an adjusted cohort was created for each school, based on a nationwide regional transiency rate of 8%. If a school had a rate of transiency at higher than 8%, then the transient students would be removed, and through a process of random selection, only 8% would be added back to the file (see process that follows). Finally, proficient/advanced values were calculated again using this adjusted cohort.

Process of random selection.

When the number of transient students exceeded 8%, those students were pulled out of a file and placed into a separate spreadsheet. The students were first sorted in ascending order by PAsecureID. Each student was assigned a number beginning with the number one. A random number generator (https://www.calculator.net/) was used to randomly select a quantity of numbers that would equal 8% of the total student population. These randomly selected students were then added back to the day to file. This new group of students was identified as the adjusted group.

Identifying students factoring into the additional indicators.

For the additional indicators (career readiness, graduation, and attendance) a similar procedure was followed. Students not attributed to a school were removed and transient students were identified. If a school exceeded the 8% threshold of transient students, they were removed and 8% selected for a random sampling and added back to

the group to form an adjusted cohort. Each of these adjusted groups were compared to the formal group in the data analysis phase of the project.

Data analysis.

The data analysis phase began immediately following the creation of adjusted cohort groups to compare to the formal cohort groups. Raw data files were manipulated to isolate students attributed for school accountability. Transient students were flagged in the files. Indicator values were calculated at the all student group level, a stable student only level, and if applicable, and adjusted group controlled to 8% transient students determined through random sampling. SPSS software was used to conduct a correlation analysis on the data.

Statistical analysis.

The statistical analysis took place using SPSS software. This software, produced by IBM, is the leading platform for statistical analysis in higher education, and is widely used in industry. SPSS software was selected as it provides an effective way to manage and analyze data, and a wide range of options to view the results.

The study examined the data in two ways. First, indicators were compared to percent of mobile students in the sample group. Second, the concentration of mobile students was compared to the change in each indicator's value between the all student group and the stable student group.

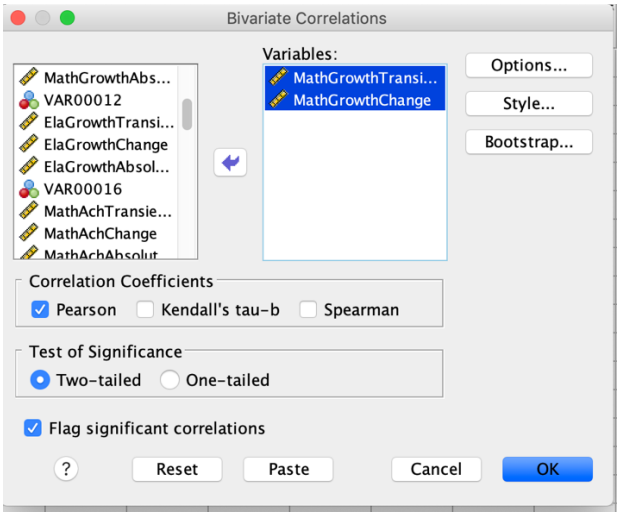
SPSS software was used to determine correlation and statistical significance of the results. A bivariate measures of correlation analysis was utilized. Bivariate correlation analysis is conducted to examine the relationship between two different variables. The analysis produces a value that represents the relationship between a

change in A when there is a change in B. As the focus of this action research project is an examination of the empirical relationship between student mobility and school accountability factors, a bivariate correlation analysis will help examine the hypotheses of association between the multiple sets of data.

The process for completing a bivariate correlation test using SPPS software entails selecting the analyze function, then correlate. In the bivariate correlation option menu, the two variables to be tested (i.e. % transient and math growth score) were pulled into the test box. The following items were also selected: Pearson correlation coefficients, two-tailed significance, and flag significant correlations. Following this setup, the test process was run. (See Figure 8.)

Figure 8

SPSS Software. Bivariate correlations menu ©2015 IBM. Screenshot by author



Institutional Review Board (IRB).

To ensure that no district felt coerced to participate, the researcher held numerous conversations with each participating district superintendent, providing not only the purpose and rationale for the project, but also a detailed description of the methodology

and data analysis. Each superintendent was also provided with a copy of the IRB review request, on which the researcher committed to maintaining confidentiality. As part of this IRB review request, and in subsequent emails, each superintendent was assured of and acknowledged the fact that they retained the right to withdraw from participation at any time. Consent forms to participate were signed by each superintendent.

In adherence to university policy, an IRB request was submitted to the IRB Review Board in November. 2019 (Appendix A). The IRB proposal was approved on November 14, 2019 (Appendix B).

In order to make sure that the data collected was handled and stored in a confidential manner, the researcher requested data files without name association. No personally identifiable information was shared. This anonymous data was saved on a local password-protected computer in a password-protected folder and the data was deleted at the end of the project. There is no risk of bias in this study, as students were not identified by name, and adjusted school accountability indicators were calculated using district-provided files.

Validity

The purpose of this research was to determine the effect of transiency on school accountability ratings. In research it is important to consider if observed variation can be attributable to other causes aside from changes in the independent variable. When considering threats to the internal validity, or credibility, of the results, history and maturation, two common internal validity threats were not present in the study. Another common internal validity threat is selection, and this was negated by the random sampling methods used by the researcher.

It is also important examine external validity or transferability, which relates to how the results of a study can be generalized across subjects and settings. While the experimental process did provide ecological validity, it is possible that the design led to a small threat in population validity. While the researcher took many steps to solicit partners for the project, only two school districts would participate. As the Commonwealth has 499 school districts, it is possible that the two school district selected are not completely representative of the majority, which might impact the ability to generalize the conclusions across the Commonwealth.

Finally, the researcher made all efforts to ensure objectivity in this study. The data that was collected followed a strict format aligned to state data-collection protocols and consistent among all school districts. Random sampling took place using a well-accepted process utilized in research around the globe. Student names were not shared, nor did the researcher and superintendents have any discussion regarding expected outcome of the analysis.

As the project was limited to analyzing extant data, no human subjects were involved. The only potential discomfort to a school would be if the data showed that regardless of student mobility all students are underachieving; this would serve as a discomfort as it would be a sign of an ineffective system.

Summary

The purpose of this chapter was to explain the methodology used to answer the action research questions. A discussion of the methodology, participants, data collection, procedures, and data analysis followed. An empirical methodology of philosophical

positivism was used to develop the research, which examined the effect of transient populations on school accountability indicators.

A quantitative data analysis was conducted utilizing information provided to school districts through the Pennsylvania school accountability system. The method of research was to examine the six school accountability indicators that factor into school improvement designation. The process for examining these and their impact on mobility involved isolating the transient students from the stable students, then conducting a statistical analysis to look for a relationship between the percentage of transient students in a school and its accountability values. The accountability values from eight schools in Pennsylvania were examined. The schools exhibited diversity in terms of socioeconomic composition.

The methodology proved to be internally valid and faced only a small threat in external validity, in terms of population validity. The researcher ensured that the project was completed in an ethical manner, and that no human subjects were involved, and no personally-identifiable information was provided. Proper protocol was followed in adherence to the institutions IRB policy. Chapter 4 will outline results of the study and demonstrate in action the methodology described in this chapter.

CHAPTER 4

Data Analysis and Results

The purpose of this chapter is to present the results of the statistical testing and analysis. A grounded theory methodology of positivism was used to answer the research questions. For each of the two research questions, the data analysis and associated descriptive correlations will be shared, along with supporting methodology to allow the study to be replicated. The processes used to filter the raw accountability files to isolate attributed students as well as to flag transient students will be shared, as well as the calculations that led to the indicators that were studied. Included in this chapter will be graphics and tables used to visually display and emphasize the results of the study. The chapter will conclude with a reflection on each research question and concluding answers drawn from the data. This action research project sought to find answers to two questions. Is there a significant relationship between student mobility and a school's accountability indicators? How do schools fare in Pennsylvania's school accountability system when controlling for levels of student mobility?

Data Analysis

For the purpose of the study, mobility and transiency will appear interchangeable. Mobility will be defined as students who have not been continuously enrolled in the same school for twelve months. An average student mobility rate of 8% was utilized as reported in the Current Population Survey Annual Social and Economic Supplement posted on the census.gov website ("Geographical Mobility", 2018). Based on research

that indicates that transiency impacts academic achievement and school success, the researcher assumed that the presence of mobile students in a school would adversely affect state accountability indicators. Based on this assumption, the researcher also speculated that when controlling for the number of mobile students in a group, the school's accountability numbers would likely experience an increase, perhaps high enough to prevent a school improvement designation. Will the data analysis support these hypotheses?

Key terms and definitions referenced in the process.

Before presenting the process by which the researcher analyzed the data, it is important to provide the reader with an explanation of key terms and definitions referenced in the process. A description of these key terms follows.

Pennsylvania's system of school accountability.

The data analysis created modified students groups (controlled for transiency rate) which were then compared to numbers publicly posted on Pennsylvania's Department of Education website. Pennsylvania has created a system for measuring the success of schools using multiple measures. This system, the Future Ready PA Index, features a dashboard approach to school and student group performance. The Future Ready PA Index illustrates student and school success on eleven indicators using a color-coded system (Pennsylvania Department of Education, 2019). Per federal guidelines, six of the eleven indicators are used in the process of identifying schools in need of school improvement (U.S. Department of Education, 2019). Since this action research examined the impact of transiency on school improvement, these six indicators were examined in each of the three analyses as part of this project.

These indicators are as follows (the six federal accountability school improvement indicators examined in the project identified with an *):

- Percent Proficient or Advanced on Pennsylvania State Assessments*
- Meeting Annual Growth Expectations*
- Percent Advanced on Pennsylvania State Assessments
- English Language Growth and Attainment*
- Regular Attendance*
- Grade 3 ELA and Grade 7 Math Early Indicators of Performance
- Career Standards Benchmark*
- High School Graduation Rate*
- Industry-Based Learning
- Rigorous Courses of Study
- Post-Secondary Transition to School, Military, or Work

Descriptions of the six indicators examined.

Achievement.

This indicator represents the percentage of students who scored proficient or advanced on a state assessment. The Pennsylvania System of School Assessment (PSSA) exam is administered to students in grades three through eight for mathematics and English language arts, and grades four and eight for science. Additionally, students are administered tests in Algebra, Biology, and Literature in high school, but this action research study examined state assessments in grades three through eight only, as reporting at the high school is more complex and obtaining the high school assessment data in a format that would allow for validity may prove challenging. These state

assessments rank students in four proficiency levels – below basic, basic, proficient, and advanced. Two groups of students do not factor into state calculations: students enrolled after October 1, and first year English language learners. As the Future Ready PA Index reports achievement at a subject specific, building wide level, sample groups will be defined by building, separated by content area.

Growth.

This indicator represents how a given group of students has grown from an academic standpoint relative to their entering achievement. The same attribution rules that are applied to achievement are also applied to growth. As the Future Ready PA Index reports growth at a subject-specific, building-wide level, sample groups will be defined by building, separated by content area.

Attendance Rate.

Attendance is defined as the percentage of students enrolled in a school for 90 school days or more, who are present for 90% or more of the days. This measure is a lagging indicator. A lagging indicator is one that is the value from not the school year of interest but the year before that. (The reason for this is that the complete data set that comprises some indicators, such as attendance, cannot be fully collected by state for a considerable length of time after the school year ends.) As the Future Ready PA Index reports attendance at a building-wide level, sample groups will be defined by building.

Graduation Rate.

This represents the percentage of students who graduated from a school in a four-year cohort. This measurement is also a lagging indicator. While eight schools participated in this project, only one of these schools was a high school; therefore the

researcher did not examine graduation rate as an n-count of one would not provide statistical significance.

Career Readiness Benchmark.

This represents the percent of students who have satisfied requirements related to career education as mandated by the state. This is reported by grade span, with reporting occurring at the end of grade 5, grade 8, and grade 11. Accordingly, sample groups will be aggregated based on these reporting rules.

English Language Learner Proficiency.

This indicator provides a measure of English learner growth and attainment of English language proficiency. This is evaluated through the use of a state-mandated assessment known as ACCESS for ELLs. This indicator is only reported for schools that have a minimum student group of 20 English learners; none of the schools participating in this project met this requirement, thus the researcher omitted this indicator from the correlation analysis.

Definition of transient.

As examined in the review of the literature, there is little common language for both measuring and defining mobility. It has been found in previous research that the recency of mobility matters. The more recent the move to a new school, the greater it's possible effect on student achievement and assimilation (Green & Daughtry, 1961). In the first year in which a student moves to a different school, progress on learning experiences the most severe loss. This negative impact on achievement continues at a lesser rate in subsequent years. During this initial transition year, transient students also encounter the most difficulty with settling into a new culture and making social

connections. Additionally, the Current Population Survey Annual Social and Economic Supplement (CPS-ASEC), posted on the census.gov website, shows a mobility rate for 2017-2018 of 8% in the northeast United States and defines mobility as those who have moved 'within the past twelve months'("Geographical Mobility", 2018). For these reasons, for the purpose of this action research, transient students will be defined as students who have not been continuously enrolled in the same school for 12 months.

School improvement identification.

In a process termed annual meaningful differentiation by federal statute, states must designate schools, at least every three years, into three designations:

- *Comprehensive Support and Improvement (CSI)*: Schools facing significant challenges in achievement, growth, and any of the other four areas highlighted above
- *Additional Targeted Support and Improvement (A-TSI):* schools experiencing poor performance by one or more student groups belong a specified threshold
- *Targeted Support and Improvement (TSI):* schools experiencing poor performance by one or more student groups in danger of approaching a specified threshold

Schools are identified for one of the levels of school improvement if they have both low achievement scores and low growth profiles (below statewide minimum values) and poor performance on additional ESSA-required indicators. If mobility impacts student achievement and growth as well as graduation rates, can a high mobility rate lead

to a school improvement designation? With this key background developed and defined, collection of the data began.

Collecting the sample data.

The first step in this process was to collect the data that would be examined. This study examined student accountability data from eight Pennsylvania schools. Four of these schools are elementary buildings with a K-4 configuration. The economically disadvantaged rate at the schools ranges from a low of 40% through a high of 68%. One school is a K-6 building configuration with a 74% economically disadvantaged rate. Two schools are middle schools, one 5-6 building and one 7-8 building, with economically disadvantaged rates of 53% and 60% respectively. The eighth building examined in this study is a high school with an economically disadvantaged rate of 47%. With the exception of the 7-8 and high school buildings, all of the other buildings have been federally-designated as Title I.

Once permission to participate was obtained from superintendents of districts involved in this study, the researcher identified the state mandated uniform data file submissions that factor into state accountability indicators. Each district's data manager exported the requested files from the district's student information management system, removing student names as an added layer of confidentiality. These files were shared with the researcher. In addition, the district data managers also provided a file containing student enrollment information from June 1, 2016 through May 31, 2019. This information was used to flag transient students in the accountability files. With these files in hand, the next step was to determine which students in these files are factored into (attributed) to school accountability values.

Identifying attributed students and triangulating data.

Upon receipt of the accountability files, the next step in the process was to identify which students in the files are attributed to the schools. This was necessary because there are some students who may be enrolled in school, but due to Pennsylvania's school accountability attribution business rules, the students do not factor into calculations. For achievement and growth, the district accountability file was filtered, removing students who were not attributed to any district school. Additionally, first year English language learners, as well as those students enrolled after October 1, were removed. In order to confirm the accuracy of the filtering and to ensure the triangulation of data, proficiency rates were calculated for each school and compared to those published on the Future Ready PA Index website.

For career readiness benchmarks, the exported file contains all students to be attributed, and thus, no additional filtering of exempt students was necessary. Care only had to be taken to filter for each school and create separate groups as such. The file necessary for calculating attendance contains all student attendance data including those who attended for only a partial year. The researcher had to apply the business rules of selecting only those students who attended for 90 or more days. Finally, the file necessary for calculating graduation rate required students attributed to other schools to be filtered from it. As with the attendance and growth files, these files were triangulated to ensure that the starting indicator values matched those on the Future Ready PA Index website. Now that the researcher identified which students 'count' towards accountability, the next step was to determine which of those students could be considered transient.

Identifying and flagging transient students.

After the data from the accountability files was filtered for accuracy in matching the state report and values, the next step was to identify and flag transient students in the file. For the purpose of this action research project, transient students are defined as those students who have not been continuously enrolled for at least one year prior to the start of a given school year. This project focused on school accountability indicators from the 2018-2019 school year, with attendance and graduation being lagging indicators, reporting from the 2017-2018 school year. As such, it was necessary to obtain enrollment information from June 1, 2016 through May 31, 2019. Once the accountability files were filtered for attributed students and accuracy checked, transient students could be flagged in the files.

In flagging students in the achievement, growth and career readiness files, the researcher identified students who enrolled on or after August 24, 2017. These students would be flagged in the files. The PAsecureIDs of transient students were pasted into each accountability file, and a conditional highlighting rule was applied which helped to quickly identify transient students in the file. A column was added to denote this attribute. The same process took place for the attendance and graduation accountability files; however, as these two indicators are lagging, students who are enrolled on or after August 24, 2016 were defined as transient. Once transient students were identified, this allowed for transiency rates to be calculated for each group for each indicator.

Calculating the rate of transiency in each group for each indicator.

As each accountability indicator has its own attribution rules, and the exports from student information management systems are specific to the report, there is

variation between transiency rates for a given school for each indicator. A rate of transiency was calculated for each school for each indicator. The rate was calculated by comparing the number of transient students in a group to the total number of students in the group. The transiency rate was defined by the percentage of transient students in the group. This was used in two ways. The first was to identify if a school had a transiency rate higher than the 8% national average. If so, the school was assigned an adjusted cohort controlled to 8%. The other key aspect in identifying the transiency rate is for use in the correlation analysis that follows.

Creating stable and adjusted groups.

The data in the original files obtained from participating districts contained the information that resulted in the indicators posted on the Future Ready PA Index website, and this included all stable and mobile students. As this action research project examined whether the inclusion of mobile students impacts the indicator values, it was important to create two separate groups for each school and indicator. These two groups would be compared in the analysis to determine the impact that the addition of transient students has on a school's accountability values. The first additional group set was defined as only stable students, and did not include any mobile students. This was pertinent as it provided an overall indicator value for a group if it did not include any transient students. For schools and indicators that had a mobility rate higher than 8%, an adjusted group was created as well. This adjusted group was important as it was used to examine whether or not a school's accountability values are lower when the percentage of mobile students is higher than average.

The process for creating the adjusted group began with removing the transient students from the file. Random numbers were then assigned to this list of transient students, and a random number generator was used to select students to add back to the file. Students were randomly selected and added back to the accountability file until the transiency rate for the group was calculated at 8%. This became the adjusted group. These three sets of sampling groups – all, stable, and adjusted – were then analyzed for correlation.

Bivariate measures of correlation.

This study sought to examine the effect of transiency on achievement indicators and focused on exploring the correlation between two different sets of variables: the relationship between transiency and change in indicator value, and the relationship between transiency and the actual value. Bivariate analysis was selected as a means of answering the problem statement, as this analysis provides an effective method to show whether or not there is any association between transiency and accountability indicators. Bivariate correlation analysis is one that examines the relationship between two different variables. The analysis produces a value that represents the relationship between a change in A when there is a change in B. For example, a bivariate analysis could be used to examine the percentage of electric vehicles in a community compared to the number of charging stations; it might also be used to examine the relationship between the number of web browser ads displayed for face masks and the number of online mask purchases. In the case of this action research project, the researcher was examining the relationship between two variables: the rate of transiency and each of the indicator values. Bivariate analysis is an effective way to solve this problem, as it shows the

researcher the relationship between transiency and indicator values. If the levels of transiency are known, it might be easier to predict the indicator value. Data analyses results that show a strong correlation between transiency rates and school accountability indicators will provide an answer to the researcher's problem examining whether high transiency rates affect school improvement designation.

Pearson correlation.

A bivariate correlation analysis produces a Pearson correlation coefficient that can be used to identify the strength of a relationship. Additionally, this analysis also identifies whether there is statistical significance with the relationship. One important limitation of this analysis to note is that a bivariate Pearson correlation does not identify causation, but rather correlation or association between sets of variables.

A bivariate Pearson correlation begins with a null hypothesis H_0 that assumes a true correlation value p_0 of 0. An alternative hypothesis H_A represents the actual correlation as p_1, with an assumed value not equal to 0. This can be represented as:

If H_0 holds a p_0 of 0, no correlation exists;

If H_A holds a p_0 not equal to 0, some correlation exists

This analysis examines what, if any, correlation exists supporting an H_A with a p_0 not equal to 0. The correlation coefficient of the sample is identified as r, and is calculated (using the SPSS software) as:

$$r_{ab} = \frac{\operatorname{cov}(a,b)}{\sqrt{\operatorname{var}(a)} \bullet \sqrt{\operatorname{var}(b)}}$$

with (a,b) representing the variables in consideration, cov(a,b) is the covariance between a and b, and var(a) and var(b) representing the sample variance of a and b, respectively. Adhering to Cohen (1988), the strength of the correlation is defined by:

strong correlation $|r|>.5$

moderate correlation $.3<|r|<.5$

weak correlation $.1<|r|<.3$

As Pearson Correlation values can be positive or negative, absolute values are used in considering strength of relationship. The value in the use of a Pearson Correlation analysis in this project is that its results will show the strength of the relationship between the rate of student transiency and the school accountability values. A challenge in conducting a Pearson Correlation analysis is the mathematical computations necessary; using software that automates the process, including reporting, mitigates this challenge.

SPSS software.

Conducting multiple correlation analyses by hand can be very time-consuming, and thus, a commercial software package was utilized for this purpose. This software allows the researcher to more easily input data from the school accountability files, and quickly view automated correlation analysis results. Statistical Package for Social Sciences (SPSS) is a software package published by IBM that allows complex statistical data analysis. This software is one of the leading data analysis tools used by social scientists, researchers, educators, and many others in higher education. It offers a familiar interface for inputting data, and powerful tools for conducting regression and correlation analysis, as well as producing visualizations. SPSS was used in this study's correlation analysis. The software provided the researcher with a statistical correlation

between each experimental group and each of the accountability indicators. This was then used by the researcher to identify whether or not a significant correlation existed, as well as to prepare recommendations for future action and research. With accountability files obtained, attributed and transient student identified, and transiency rates calculated, the correlation analyses could begin.

Examining change in school indicators caused by transiency rate.

Is there a significant relationship between a school's rate of student mobility and its school accountability indicators? Can a correlation be made between the percentage of transient students in a school group's student composition and the impact that subgroup has on the schools indicator value? In order to address this, a correlation analysis was conducted examining the relationship between change in indicator value at each school when comparing the all-student group with the stable-only student group. In other words, can a connection be made between how many transient students are in a school population and how this affects its indictor value? The researcher was looking for how significant of an impact that transiency rate has on a school accountability values (and thus, on its 'effectiveness', as reported on the Future Ready PA Index). The following analyses were conducted using the bivariate correlation analysis tool in SPSS:

- Change in Math Growth Indicator vs. Transiency Rate
- Change in Attendance Indicator vs. Transiency Rate
- Change in ELA Achievement Indicator vs. Transiency Rate
- Change in Math Achievement Indicator vs. Transiency Rate
- Change in Career Readiness Indicator vs. Transiency Rate
- Change in ELA Growth Indicator vs. Transiency Rate

Examining relationship between levels of transiency and reported indicators.

How do schools fare in Pennsylvania's school accountability system when controlling for levels of mobility? If a school with a higher than average level of transient students had a level of student mobility as low as the national average, would its accountability indicator values be higher? Can one infer that when a school has a higher level of student transiency, its school accountability values will be correspondingly lower and thus, the school would be more susceptible to school improvement designation? In order to address this, two different correlation analyses were conducted. The first analysis examined the relationship between indicator value when comparing the stable-only student group at each school and an adjusted group controlled for the national average of 8% mobility. The analyses conducted using the bivariate correlation analysis tool in SPSS were:

- Career Readiness Indicator for all-student group vs. adjusted group
- Math Achievement Indicator for all-student group vs. adjusted group
- ELA Achievement Indicator for all-student group vs. adjusted group

The second analyses examined the percent of transient students in a school group compared to its value reported on the Future Ready PA Index website. The following analyses were conducted using the bivariate correlation analysis tool in SPSS:

- Attendance Indicator vs. Transiency Rate
- ELA Achievement Indicator vs. Transiency Rate
- Math Achievement Indicator vs. Transiency Rate
- Math Growth Indicator vs. Transiency Rate
- Career Readiness Indicator vs. Transiency Rate

- ELA Growth Indicator vs. Transiency Rate

The following section of this chapter will discuss the results of these analyses.

Results

Research question one - findings.

Is there a significant relationship between a school's rate of student mobility and its school accountability indicators? Table 1 displays the results of the analyses that were conducted. For each set of variables examined, the correlation coefficient between the variables as well as the significance of the relationship is displayed.

The key point to note in this table is the 'Strength of Relationship' column. Of the six analyses conducted, it was found that four of the six show a strong relationship between the rate of transiency and the change indicator value at that school; the remaining two show a moderate relationship. This means that yes, there exists a significant relationship between the rate of student mobility and indicator values.

Table 1

Bivariate correlation results between transiency rate and change in examined indicators for each school.

Analysis	Pearson Correlation (r)	Strength of Relationship	Statistical Significance(p)
Change in Math Growth Indicator vs. Transiency Rate	-.982	Strong	.018
Change in Attendance Indicator vs. Transiency Rate	-.961	Strong	.002
Change in ELA Achievement Indicator vs. Transiency Rate	-.635	Strong	.126
Change in Math Achievement Indicator vs. Transiency Rate	-.630	Strong	.130
Change in Career Readiness Indicator vs. Transiency Rate	-.450	Moderate	.703
Change in ELA Growth Indicator vs. Transiency Rate	-.356	Moderate	.557

Career readiness benchmarks.

Career readiness benchmarks are reported as the percentage of students who, by the end of grades five, eight, and 11, have completed a mandated number of career readiness artifacts. As seen in Table 1, a moderate correlation of -.450 was found between the rate of transiency and the change in career readiness benchmark value. This demonstrated that an increased rate of transiency results in a decreased career readiness indicator value.

Attendance.

Attendance is defined as the percentage of students enrolled in a school for 90 or more school days who were present for 90% or more of those school days. As seen in Table 1, a strong correlation of -.961 with a statistical significance of .002 was found between the rate of transiency and the change in attendance value. This demonstrated strong evidence that an increased rate of transiency results in a decreased attendance indicator value.

Math growth.

Academic growth in math will be defined using Pennsylvania's PVAAS model of growth, which examines the entering achievement for a group of students compared to the exiting achievement of the same group of students. It will be calculated by creating custom reports populated with the students in each examined goup. As seen in Table 1, a strong correlation of -.982 with a statistical significance of .018 was found between the rate of transiency and the math growth value. This demonstrated strong evidence that an increased rate of transiency results in a decreased math growth indicator value.

ELA growth.

Academic growth in ELA is defined in the same manner. As seen in Table 1, a small correlation of -.356 was found between transiency rate and ELA growth value. This demonstrated only small evidence that an increased rate of transiency results in a decreased ELA growth indicator value.

Math achievement.

Achievement in math will be defined as the percentage of students who scored proficient or advanced on the current year's math state assessments (PSSA or Keystone Exam). As seen in Table 1, a large correlation of -.630 was found between the rate of transiency and the math achievement levels. This demonstrated strong evidence that an increased rate of transiency results in a decreased math achievement indicator value.

ELA achievement.

Achievement in ELA will be defined in the same manner. As seen in Table 1, a strong correlation of -.635 was found between the rate of transiency and the ELA achievement levels. This demonstrated strong evidence that an increased rate of transiency results in a decreased ELA achievement indicator value.

Graduation and EL proficiency.

English learner proficiency indicators were omitted from this analysis because there was not an n-count to be reported on the Future Ready PA Index. The graduation indicator was omitted as there was only one participating high school in this action research project.

Research question two – findings.

How do you schools fare in Pennsylvania's state school accountability system when controlling for transiency? Table 2 displays the results of the analyses that were conducted. For each set of variables examined, the correlation coefficient between the variables as well as the significance of the relationship is displayed.

The key point to note in this table is the 'Strength of Relationship' column. Of the three analyses conducted, it was found that all show a strong relationship between the school indicator value for the all-student group and the group adjusted to 8%; this means that decreasing the rate of transiency for each school does had a direct impact on all values examined, increasing the school indicator values.

Table 2

Bivariate correlation results between cohorts adjusted to 8% transiency rate and change in indicator value examined for each school.

Analysis	Pearson Correlation (r)	Strength of Relationship	Statistical Significance (p)
Career Readiness Indicator vs. 8% Transiency Rate	1	Strong	.000
Math Achievement Indicator vs. 8% Transiency Rate	1	Strong	.000
ELA Achievement Indicator vs. 8% Transiency Rate	1	Strong	.000

How does transiency affect the indicators that factor into school improvement designations? In order to examine the last research question, a correlation analysis between transiency rate and absolute values of indicators was conducted. Table 3

displays the results from this analysis. For each set of variables examined, the correlation coefficient between the variables as well as the significance of the relationship is displayed.

The key point to note in this table is the 'Strength of Relationship' column. Of the six analyses conducted, it was found that three of the six show a strong relationship between the rate and transiency and the indicator value at that school; one of the remaining three shows a moderate relationship. This means that an increased rate of transiency in a school could have a negative impact on four of the six values examined as reported on the Future Ready PA Index. If increased transiency rates lead to decreased accountability values, this makes school with high mobility rates more susceptible to being designated for school improvement.

Table 3

Bivariate correlation results between transiency rate for each school and the absolute (reported) values of each indicator for that respective school

Analysis	Pearson Correlation (r)	Strength of Relationship	Statistical Significance (p)
Attendance Indicator vs. Transiency Rate	-.920	Strong	.009
ELA Achievement Indicator vs. Transiency Rate	-.779	Strong	.221
Math Achievement Indicator vs. Transiency Rate	-.639	Strong	.361
Math Growth Indicator vs. Transiency Rate	-.414	Moderate	.586
Career Readiness Indicator vs. Transiency Rate	-.270	Weak	.826
ELA Growth Indicator vs. Transiency Rate	-.204	Weak	.742

Career readiness benchmarks.

As seen in Table 3, a small correlation of -.270 was found between the rate of transiency and the absolute value of career readiness benchmarks. This demonstrated only small evidence that an increased rate of transiency results in a decreased career readiness indicator value, which could lead to greater likelihood of school improvement designation.

Attendance.

As seen in Table 3, a large correlation of -.920 with a statistical significance of .009 was found between the rate of transiency and the absolute value of attendance rate. This demonstrated strong evidence that an increased rate of transiency results in a decreased attendance indicator value, which could lead to greater likelihood of school improvement designation.

Math growth.

As seen in Table 3, a moderate correlation of -.414 was found between the rate of transiency and the absolute value of math growth. This demonstrated evidence that an increased rate of transiency results in a decreased math growth indicator value, which could lead to greater likelihood of school improvement designation.

ELA growth.

As seen in Table 3, a small correlation of -.204 was found between the rate of transiency and the absolute value of ELA growth. This demonstrated only small evidence that an increased rate of transiency results in a decreased ELA growth indicator value, which could lead to greater likelihood of school improvement designation.

Math achievement.

As seen in Table 3, a large correlation of -.639 was found between the rate of transiency and the absolute value of math achievement. This demonstrated strong evidence that an increased rate of transiency results in a decreased math achievement indicator value, which could lead to greater likelihood of school improvement designation.

ELA achievement.

As seen in Table 3, a large correlation of -.779 was found between the rate of transiency and the absolute value of ELA achievement. This demonstrated strong evidence that an increased rate of transiency results in a decreased ELA achievement indicator value, which could lead to greater likelihood of school improvement designation.

Graduation and EL proficiency.

English learner proficiency indicators were omitted from this analysis because there was not an n-count to be reported on the Future Ready PA Index. The graduation indicator was omitted as there was only one participating high school in this action research project.

Discussion

This action research project examined two questions: is there a significant relationship between a school's rate of transiency and its accountability indictor? How to schools fare in Pennsylvania's school accountability system when controlling for transiency? An interpretation of the analyses results will be discussed in the next section.

Findings on the relationship between rate of transiency and indicator value.

Is there a significant relationship between a school's rate of transiency and its accountability indicator? It was assumed that there would be a strong relationship between the percentage of transient students in a school population and its accountability values. This was supported by the results of the project. Four of the six indicators examined showed a strong relationship between the rate of transiency and the change indicator value for the schools; the remaining two show a moderate relationship. This provides statistical evidence that there is a significant relationship between the rate of student mobility and each of the indicator values examined. The indicators with the strongest relationship to rate of transiency were found to be math growth and attendance, followed by ELA achievement and math achievement. ELA growth and career readiness showed a moderate relationship.

There are implications of these results at several levels. At a school level, this is important because it provides evidence of the need for support of mobile students, in all of the six areas examined. At a student level, what interventions are in place to assist the students? What supports do schools have in place to ensure that the unique needs of the students are met? At a state level, this is important because it supports an existing body of work relating to the challenges faced by students who move between districts. As the state is committed to equity for all students, this often-marginalized group should be provided with statewide assistance. The state is investing millions of dollars over the next few years in school improvement efforts, and this supports the researcher's belief that research-based supports that address the challenge of student mobility be provided.

Findings on the impact of transiency on school improvement indicators.

How do you schools fare in Pennsylvania's school accountability system when controlling for transiency? It was assumed that an increased percentage of mobile students would lead to decreased school accountability indicators, and this in turn would lead to a greater likelihood of school improvement designation for schools which experience a high level of student mobility. The bivariate Pearson Correlation analysis of the impact of transiency rate on the values of school accountability indicators found a strong correlation for its impact on math and ELA achievement, as well as in attendance. A moderate correlation was found to math growth; a small correlation was found for both ELA growth and career readiness benchmark values. As a result, schools with a higher level of transiency will likely experience accountability indicator numbers that are lower, and it is reasonable to infer that these schools will more likely be identified for school improvement. The results of this project showed that for schools with a greater than average level of transiency, when this rate was reduced to the national average, their school accountability values increased. This would make them less likely to be identified for school improvement designation.

This is important for schools as a school improvement designation carries a negative stigma. No school wants to be identified for school improvement. The results of this research will inform not only the participant schools, but schools across the Commonwealth that their levels of transient students do impact their accountability scores; there is a significant correlation between the percentage of transient students and the change in their value. In other words, the more transient students they have, the lower

their values will likely be. This in turn will make them more susceptible to being identified for school improvement. Recommendations based on this will be provided in the next chapter. This is also important for the state as it identifies a potential flaw in its school improvement designation system. As mentioned earlier in this paper, Pennsylvania's accountability system does have some measures in place to ensure that students with a short tenure at a school are not included for identification purposes, but the research shows that these business rules do not consider all of the transient students. Just as Pennsylvania recently passed legislation which will factor the poverty rate of a school district into teacher and school leader evaluations, the state may wish to consider factoring transiency rates into the process as well. Additionally, Pennsylvania is investing significant money over the next few years in school improvement efforts, and the research suggests that one subgroup of students not currently the subject of focused effort – mobile students – could benefit from research-based supports.

Findings interpreted by indicator.

While each of the schools may experience variation among transient population, stable student body, staffing and leadership, and other external factors, commonality was found in the impact of mobile students on each building's school accountability indicator value.

Attendance.

The outcome of the analysis for attendance showed a large correlation, with high statistical significance, between attendance values and transiency rates. This corresponds with what can be found in a review of existing literature. Arriving at a new school, students can feel frustrated in their current academic levels compared to those of their

peers, and this sometimes results in greater absenteeism. Parke and Kanyongo (2012) found that student mobility has a profound impact on attendance, even greater than on achievement. What this means in terms of the research problem is that when a school has a high level of transient students, its attendance indicator value will likely be decreased, and this makes it more likely that the school could be designated for school improvement.

Mathematics growth.

The results also showed large and moderate correlations between rates and mathematics growth. The meaning of this in relation to the research problem is that increased levels of student mobility result is a decrease in math growth values, and since these values factor into school improvement designation, make the school more susceptible to school improvement designation. This is likely due to the impact of lost instruction or content not mastered. Growth calculations consider past academic performance and predict or project where students are expected to score on the next assessment, but they do not take into account a student's history of mobility. This is consistent with decades of research that show a detrimental effect of mobility on student success in school. When mobile students are removed from a value-added growth analysis, school scores increase (Williams, 2003). Without a business rule of removing the scores of mobile students, the math growth indicators were negatively impacted.

ELA growth.

Interestingly, in contrast to math growth, the results of the correlation studies showed only a small relationship between transiency and growth in English language arts. What this means in terms of the research problem is that when a school has a high level of transient students, there is only small evidence that its ELA growth indicator

value will likely be decreased, which results in only a small effect on whether the school could be designated for school improvement. The reason for this disparity between content areas is not apparent in the results. The researcher speculates that it could be due to the fact that mathematics is a more discrete subject and English language arts skills extend across multiple curricular areas, the impact of missed instruction is greater in mathematics. PA Core Standards for mathematics have a great variety of discrete topics in each grade level, and the mastery of each is crucial for success in vertical progression (K-12) through the subject area. Specific eligible content in a math course might be addressed for two weeks in one grade, and not revisited until over an entire year later. If as a result of a recent transition, a student fails to master eligible content in a specific reporting category, or even worse, is not exposed to that content, an entire school year might pass until the student has the opportunity to develop that content again. State core standards for ELA represent an integrated model of literacy, one in which components are closely connected (Common Core Standards Initiative, 2020). Skills are introduced and embedded throughout a typical ELA curriculum, which allows for more opportunities for students to interact with content. This more integrated design, with its more multiple opportunities to revisit and refine skills, may explain why students tend to score closer to their projected scores in ELA than in mathematics.

Math achievement.

The results of the study show a strong correlation between transiency and mathematics achievement scores in all analyses. Across the board, mathematics achievement scores were lower when the transiency rate was higher. The meaning of this in relation to the research problem is that increased levels of student mobility result is a

decrease in math achievement values, and since these values factor into school improvement designation, make the school more susceptible to school improvement designation. This aligns to the decades of research that show the detrimental impact of transiency on student success in school. Shoho (2010) found a similar correlation in a similar study examining Texas state math assessments. As curricula vary widely from one district to another, this places transient students at a significant disadvantage when they arrive at a new school, because they have not progressed through that particular district's vertically- and horizontally-aligned curricula.

ELA achievement.

The action research project results also demonstrated a large correlation between transiency rate and ELA achievement values. What this means in terms of the research problem is that when a school has a high level of transient students, its ELA achievement indicator value will likely be decreased, and this makes it more likely that the school could be designated for school improvement. A considerable body of research supports this finding. A study of a New Jersey state exam found that student transiency negatively impacted student scores in reading (Krenicki, 1999). California students experiencing several moves, when administered the California achievement test in reading, demonstrated reading scores that were 50% lower (The Family Housing Fund, 1998).

Career readiness benchmarks.

Finally, the results of the study showed only a moderate correlation between transiency rate and its impact on school indicator, and small correlation between the rate and absolute value. The meaning of this in relation to the research problem is that increased levels of student mobility only moderately impact this indicator, which

demonstrates that it could have some impact on school improvement identification. Of all in-school indicators examined, this is the one that schools can most readily help students to accomplish, possibly due to the fact that career readiness work is exploratory in nature and less dependent on mastery of a sequence of academic skills. Unlike the sequential nature of math and ELA content, career and work standards are more universal and subject to personal choice and teacher acceptance. Even if a transient student has experienced gaps in academic learning in the past, or may be at a lower academic level compared to his peers in the current school, helping the student provide evidence of career awareness would likely be on affected by this. Helping students show evidence of career awareness and preparation requires a less-intense level of effort than academic content.

Summary

This chapter highlighted the results of the correlation analysis, linking the research questions to the evidence that was found. The school accountability data for eight schools was obtained and examined in an effort to understand the impact of student mobility on school accountability indicators.

A bivariate Pearson correlation analysis was conducted, seeking to determine a relationship between three sets of considerations: (a) transiency rate and change in school indicator values, (b) school absolute values and values adjusted to 8% transiency, and (c) transiency rates and absolute school values. Based on the strength of relationship found between the rate of transiency and how that affected the indicator at the school, this means that the addition of transient students to a group has a negative impact on accountability values. Transiency rates had a statistically strong connection to math

growth, attendance, ELA achievement, and math achievement. These rates had a statistically moderate connection to career readiness and ELA growth.

The data analysis also found that when controlling the number of transient students in a score to the national average of 8%, this had a direct impact on all indicators, increasing their value, which demonstrated that the more transient students in a group, the lower their accountability values. If increased transiency rates lead to decreased accountability values, this makes schools with high mobility rates more susceptible to being designated for school improvement. In summary, one research question asked is there a significant relationship between student mobility and a schools accountability indicators. The answer is yes; higher levels of transient students lead to lower accountability values. The second question asked about the impact this might have on school improvement designation. The answer is it could have a direct and negative impact on this, as the resulting lower values put the score at greater risk for school improvement status. Chapter 5 provides a critical analysis of the results, implications all these results at a local and state level, and recommendations for further research.

CHAPTER 5

Conclusions & Recommendations

This chapter provides a discussion of the findings to help answer the following research questions: Is there a significant relationship between student mobility and a school's accountability indicators? How do schools fare in Pennsylvania's school accountability system when controlling for levels of student mobility?

This action research project was a study based on quantitative grounded theory. The purpose of the project was to examine the role of student mobility on Pennsylvania's school accountability framework. This final chapter provides a discussion of the major findings as they relate to impact on students and schools, the theoretical foundations impacting student mobility, its impact on achievement and measures of success, and practice and policy. The chapter also includes a discussion of fiscal implications, as well as implications for theory and research, and practice. Recommendations for future research will also be provided. The chapter concludes with future plans for work in the researcher's field informed by the findings.

Prior to embarking on this project, the researcher predicted that an increased percentage of mobile students would negatively impact school accountability indicators. The analysis indicated a strong correlation between transiency rate and achievement scores and attendance. The theory that the addition of transient students to a school's population would impact school accountability indicators was supported by findings that demonstrate a large correlation between transiency rates and math achievement scores,

ELA achievement scores, math growth values, and attendance. This has significant implications for the researcher as applied to his profession; further action related to the findings will be addressed later in this chapter.

Conclusions

This section of the final chapter will discuss the effectiveness of the research, its applicability and replicability, and the implications of the research.

Effectiveness.

When reflecting on the results of action research, it is important to consider both the efficacy and the effectiveness of the project. Efficacy considers whether the project worked in the experimental setting as designed. Effectiveness considers whether the project will work in a real world setting.

When considering efficacy, it appears that the design of the project was successful. The researcher was able to obtain the necessary data files from each school district, as well as identify the school accountability indicators as defined by the state. Using the data provided, and adhering to student confidentiality by using PAsecureIDs, the researcher was also able to identify and isolate transient students in each population group. The selected SPSS analyses were able to provide correlation data that could be successfully used to either support or reject the hypotheses.

When considering effectiveness, one must consider the applicability of the research design in a broader spectrum. Could the project be applied statewide in all schools? Yes. This research would provide results with confidence due to the consistent methods of data collection, reporting, and analysis at the school and state levels. Pennsylvania requires every school district to collect consistent data in a statewide

system in which every school district reports accountability information following a defined set of standards. The implication of this is that a researcher could obtain the necessary files from every school district in the state without exception. Additionally, given that the information obtained would be in a consistent format from every school district, conducting the analyses with a greater n-group would also be possible. Just as the researcher was able to complete a bivariate correlation analysis comparing data from eight schools, the same analysis could be completed comparing data from 2000 schools. Another factor supporting the effectiveness of this research is the fact that school accountability indicators values are compiled and reported following a standard protocol, and reported on the state website. These accountability indicators are reported for every school district in Pennsylvania, with only a few exceptions.

Application to researcher's institutional setting.

The researcher's intent related to action and communication based on the results of this project was impacted by the COVID-19 crisis of 2020. The results of this study would have been discussed at great length with district leaders of participating schools in spring 2020. The results also would have been shared at a statewide level, for action and discussion at the same time. In March 2020, the priority at both the district level and the state level shifted to a very narrow focus on support of continuity of education; with that said, discussions not directly impacting continuity of education or the reopening of schools were sidelined.

The researcher has already briefly shared the results with the district leaders. Due to a shift in focus in schools, a more comprehensive review of the results has been delayed. At a later time, when planning for the reopening of schools subsides, the

researcher will meet with leaders from each participating school to share the results. He plans to engage the stakeholders in discussions involving the findings and recommendations put forth in this paper.

As for application at a state level, the COVID-19 crisis has also sidelined many discussions. Several planned school improvement protocol and policy meetings have been canceled due to shifting priorities. It is the researcher's intent to engage school improvement leadership and statewide policy- and decision-makers in the findings and recommendations learned as a result of this project.

On a personal level, the researcher has shared these findings with numerous colleagues and peers in districts. Although the strong relationship between rates of transiency and school accountability indicators have long been assumed by some in the field, this project provides statistical evidence. Since completing the project, the researcher has shared these findings and suggested policy change in multiple initiatives in which he is involved, and he plans to intensify these efforts in the future.

Specific findings and interventions to be shared with participant schools.

- In the analysis which included your school's information, there was a strong statistical correlation found between rate of transiency and accountability indicator values. This means that the more transient student you have, the more likely you will have lower indicator values.
- Drawing off of this relationship, the lower your accountability indicators are, the more likely you will be designated or re-designated for school improvement status.
- The result of this project will provide you with statistical evidence that you might use to embark on an effort to provide a more supportive environment for transient

students, which would also reduce the chances that you will fall into school improvement status.

- The use of an action planning template created by the researcher as a result of this project will be recommended. Appendix C displays the LEA Action Planning Template for Transient Cohorts, based on the Council of Chief State School Officers (2017) framework for improvement cycle. This framework is used by many states, including Pennsylvania, to move from a compliance-based focus to an action-based focus for school improvement.
- While the procedure for this would vary from one school to another based on their student information system vendor, the researcher will offer to work with each school to examine the performance of transient students on additional, non-Future Ready indicators of performance, such as grades, classroom and diagnostic assessments, and discipline referrals.
- Based on the results of this comprehensive examination, the school leaders will be directed to local and state points of contact for assistance in building capacity based on the needs that have been identified.
- Finally, and not limited to participant schools, an additional resource will be shared. Appendix D displays the Workflow for Comparing Transient Student Performance to Stable Student Performance. This guide was created by the researcher as a means to provide school districts with the ability to replicate this in part or in whole.

The following section discusses implications related to the study, and highlights actions to impact change that the researcher plans to take based on the results.

Implications.

The findings of this action research project result in numerous implications, both fiscal implications, as well as policy and practice implications. These implications range from actions that may be taken by the researcher to actions that must be considered at a state-level.

Fiscal implications.

As school improvement efforts involve a considerable investment of money, both at a local level and at the state level, the results of this project have numerous significant fiscal implications. Decades of school improvement work have targeted low-performing schools with considerable federal and state money to aid in improving academic outcomes for students. These implications relate to how money is spent on staffing and on resources.

Implication 1: Pennsylvania's School Improvement System – New Positions.

Pennsylvania's official system for school improvement is structured in alignment with federal government education legislation. One aspect of the system involves assigning personnel known as *Core Team Members* (CTM) to each underperforming school. There are CTMs who specialize in general school improvement, math, ELA, and data analysis. These core team members are funded by federal and state school improvement money. The CTM's engage in a process of data gathering, plan development and implementation, and review following a school improvement cycle designed by the state. Consideration for levels of mobile students and their needs is not inherently part of this process. One fiscal implication that may result in substantial positive results for underperforming schools would be shifting funding from existing

CTM positions to create new core team members specializing in support for mobile students. With a focus on the needs of not only mobile students, but the needs of their teachers as well, consultants in this new position may be able to help mobile students transition better. They may also be able to help schools develop a more substantial support structure for mobile students, which should lead to better academic outcomes. Having input into one aspect of school improvement leadership team for the state, the researcher has already shared findings with several co-leads, and will continue to advocate for this change within the sphere of his influence in the future.

Implication 2: Research-Based Practices.

Currently, Pennsylvania's system for school improvement provides funding for the purchase of research-based practices for school improvement. As this action research project demonstrated, mobile students experience decreased academic success and decreased attendance. Funds may be spent on the purchase of research-based products and services that would improve teacher in-school practice towards mobile students. As a state co-lead for school improvement as well as diagnostic assessment, the researcher will apply this learning in the continued development of a research-based practices in assessment portal.

Implication 3: A Shift in Local Expenditures.

School improvement money is often spent on purchasing new curriculum packages for use with the whole student body. If transient students are the student subgroup responsible for decreased accountability scores, then schools may wish to shift funding from global curriculum packages to interventions and supports for mobile

students. The researcher will recommend this shift to leadership of the schools who participated in this project, as well as school leaders across the state.

Implication 4: Personnel.

School districts operate on very finely-tuned budgets, and staffing is often a challenging task. Classroom teachers often struggle to accommodate the needs of mobile students, while continuing to push stable students to higher achievement levels. Schools may wish to shift funding to allow for personnel with an expertise in student transition to assist buildings and teachers with this challenge. The researcher will use these findings to recommend staffing changes in support of transient students. These recommendations will be provided to central administration staff from the schools who participated in the project.

Implication 5: Replication of this Project for Local Audits.

This project was completed at no cost using readily available data that is aggregated and reported by every public school building in Pennsylvania. Schools who wish to audit their success in engaging mobile students are able to replicate this process at no cost to taxpayers. District leaders who initiated this analysis would demonstrate fiscal responsibility in the management of district resources.

One means of modifying this project to allow for easier replication would be the elimination of the statistical analysis using SPSS software. A district might still identify transient students, flag the students as such in the districts accountability file, then create modified accountability indicators examining the non-mobile group. While this replication would not include a correlation analysis, since the results of this action research already indicate that a correlation exists, the process of replication would help a

district determine if the same pattern is present locally. The researcher plans to create a document to be shared locally to help guide districts through replicating this process. Not only would this provide another value-added service of the intermediate unit, but would also provide a useful tool for schools to use.

Implications for practice and policy.

There are numerous implications for practice and policy informed by the results of this action research project. Considerations related to student mobility can be classified into: systems of accountability, school improvement identification, stakeholder perceptions, staff practice and attitudes, building-level practice, system-level practice, and policy.

Implication 6: Systems of Accountability.

In accordance with the Every Student Succeeds Act (ESSA), all states must create a system for evaluating schools to determine a way for focusing resources on underperforming schools as well as traditionally underserved students who demonstrate low academic performance. Pennsylvania's Future Ready PA Index is designed to adhere to these federal regulations. There is a protocol in place for determining which students are attributed to schools and which students are not. This does provide some safeguards that prevent students who were enrolled for only a short period of time to factor into school accountability ratings; however, even when considering those exclusions, the inclusion of some students with a history of mobility into school ratings does have a detrimental effect on these scores. Pennsylvania (and states with similar protocols) may wish to revisit attribution roles and consider changes to better account for student mobility between schools. For example, the state may wish to consider the

exclusion of students who have not been continuously enrolled for one entire academic year. While the researcher cannot take definitive action to change this accountability system, he will share the results with decision-makers who might be able to impact change.

Implication 7: School Improvement Identification.

Pennsylvania's system for school improvement is based on a process defined in federal statutes, known as annual meaningful differentiation. This process involves two levels of examination. The first level considers building achievement and growth scores. If a building demonstrates low values in both of these indicators, a second level of consideration is given to for other factors, which include attendance, graduation, career readiness benchmarks, and English learner proficiency. This action research project demonstrated that mobility significantly impacts student achievement and growth as well as attendance. As a result, as long as mobile students are still attributed to school buildings in annual meaningful differentiation, then it stands to reason that buildings with high mobility rates might more frequently be identified as in need of school improvement. The state may wish to consider rate of student mobility when examining the six indicators used to determine school improvement designation. The researcher plans to meet with leaders within the Pennsylvania Department of Education to discuss the results of this project.

It is important to note that in response to the COVID-19 pandemic of 2020, the United States Department of Education granted a waiver to the state of Pennsylvania, waiving it's a requirement to identify schools in the 2020-2021 school year in one category of school improvement, and it's possible that identification in the other category

as a school improvement might also be waived. This pause on designation provides a unique opportunity for the state to consider the implications of this research, and conduct a broader analysis, before reengaging in process several years down the line. This also provides the participants school districts to consider the results of this project and put into place structures to support the needs of transient students before the next round of school improvement identification resumes. It is possible with a comprehensive action plan informed by this research, a score may be able to avoid designation in the future.

Implication 8: Stakeholder Perceptions.

Many parents place a high value in the accountability ratings published on state school effectiveness websites. Owens and Peltier (2002) found that 80% of parents place value on reported school summaries. As there is a strong correlation between student mobility and many of the indicators put it on the future ready index, it stands to reason that schools with high mobility rates may be perceived by parents as failing a significant majority of students, when in reality, the numbers are low in large part due to the transient population. While the state does publish a page of demographic information for each school, mobility rates are not defined or identified. Pennsylvania may wish to adopt a policy of reporting mobility rates by school. The state may even wish to use a visual reporting, for example a scatterplot, to identify schools who are high-performing despite their rate of student mobility. Additionally, it is often common practice for the media to compare values assigned to indicators between schools. Without context, it may appear that a school with a higher value is a better school, while in reality, one of the schools may have a higher rate of student transiency. The state may wish to create and release documents addressing the importance of considering mobility when evaluating a school's

accountability indicators. The researcher plans to share the results of this project with consultants with the Pennsylvania Training and Technical Assistance Network (PaTTAN), to bolster their current efforts in this realm.

Implication 9: Staff Practice and Attitudes.

The implications of this study's results on staff practices prove challenging. From a teacher's perspective, student mobility can be disruptive. Mobile students require immediate and ongoing attention. In addition to the need for getting caught up, the students also need to learn the rules and routines of their new school and classroom. These tasks put an extra burden on teachers who already have limited time to provide appropriate instruction for large numbers of students. As the results of this study showed a significant correlation between student mobility and academic success, teachers may wish to consider the following actions to help minimize the impact of mobility on both the transient students themselves, as well as the rest of the class:

- Reviewing the cumulative records of new students to assess grades, attendance, and important background information
- Administering diagnostic intake assessments to identify student academic strengths and weaknesses
- Fostering supportive relationships with mobile students and their parents
- Ensuring that students understand behavior expectations, procedures and routines, in order to limit behavioral issues

The researcher is responsible for designing and facilitating professional development for hundreds of teachers in the region. He will continue to share the results of this research in

an effort to change teacher perceptions related to this challenge. Additionally, this will be shared with participating districts so they may better inform their own staff.

Implication 10: Building-Level Practices.

School accountability indicators reflect on building administrators. As a significant percentages of mobile students can negatively impact these values, administrators may wish to employ several strategies to help mitigate the challenges posed by transient students:

- Implement high-quality professional development programs aimed at increasing teacher awareness of the challenges faced by mobile students
- Design a formal intake process in which an informal family history and child academic assessment can take place
- Conduct personal meetings with new students and their parents
- Ensure that front desk staff are sensitive to the issues of transient students and respectful of the challenges they face

The researcher plans to meet with building and central administrators from participating school districts to share the results and these recommendations.

Implication 11: System-Level Practices.

As transiency tends to affect entire school systems and is not limited at a building level, there are a number of district-level implications as well. These implications include:

- Designing districtwide student mobility awareness programs and building capacity in all adults who come in contact with children, from bus drivers to cafeteria aides to teachers

- Providing access to mental health professionals to help assess stressful life events in the lives of the students
- Tasking social workers with building assimilation and attendance plans, and working with parents
- Instituting screening in progress monitoring plans to ensure that mobile students quickly acclimate and experience success

The researcher plans to meet with building and central administrators from participating school districts to share the results and these recommendations.

Implication 12: Policy.

As student mobility is a challenge faced by schools nationwide, from rural schools to urban schools, an emphasis on policy may help. Based on the results of this action research project, implications for policy include:

- State and federal education legislation that mandates a new federal reporting subgroup comprised of mobile students
- Fund allocations earmarked to create new programs and learning opportunities targeting this group
- School choice programs and/or flexible district boundary programs may reduce transiency and result in better academic success for students

Future Directions for Research (Recommendations)

Future plans

As a result of completing this action research project, the researcher has identified five areas in which lessons learned will be applied. These actions fall into two categories: state-level actions and local actions.

State-level actions.

The researcher holds leadership positions on several Pennsylvania state educational initiatives. From this scope of influence, the results of this action research will be applied at a high-level through three projects.

Pennsylvania School Improvement Identification and Planning.

Pennsylvania's state system of school improvement identification examines school performance in six areas: academic achievement, academic growth, attendance, graduation, career readiness benchmarks, and English language learner proficiency rate. The system does not currently factor student mobility rates into identification. As a member of the leadership team tasked with designing and implementing some aspects of the school improvement process in the state, the researcher will share the findings of this project and propose a revised set of procedures for school improvement identification that will factor in school mobility rate, or somehow otherwise consider the levels of transient students. Additionally, it will be recommended that the school improvement program establish core team member positions with a focus on student mobility and other out of school challenges. As the project showed that there is a correlation between student mobility rate and accountability indicator values, and these values are used to identify schools for school improvement, then an assumption can be made that schools receiving school improvement services might benefit from supports for transient students.

Classroom Diagnostic Tools.

The researcher is also a state co-lead for a diagnostic assessment known as the Classroom Diagnostic Tools (CDT). The CDT is offered at no cost to all Pennsylvania schools, and is a computer adaptive diagnostic assessment that can be administered in

grades three through 12, in all state assessment tested subject areas. At this time, approximately 60% of schools in the state of Pennsylvania utilize the CDT. One of the biggest challenges facing teachers when a new student enrolls in their classroom is quickly identifying gaps in that student's content knowledge and understanding. The CDT is a powerful tool that can be used to provide a detailed report of student comprehension aligned to Pennsylvania academic eligible content. As part of ongoing promotion of the tool, marketing materials will be created and distributed to schools across Pennsylvania promoting the value of administering the CDT to newly-enrolled students. Schools will be encouraged to embed the use of the CDT into a formal intake process for mobile students. Once the results of the test are available, teachers of the students will be able to examine vertical learning progressions and will be able to quickly identify gaps in learning.

Pennsylvania Intermediate Unit Leadership.

As a state role-alike lead for curriculum and instruction consultants across Pennsylvania's twenty-nine intermediate units, the researcher plans to share the results of this research with peers across the state. Statewide, all intermediate units retain consultants to work with local school districts in various school improvement efforts, and the impact of student mobility on various school effectiveness indicators would be key information to inform this work.

Local-level actions.

The researcher currently holds the position of Program Director in the Teaching and Learning division of a regional education agency (known as intermediate units in Pennsylvania). In this position, he routinely provides consultation and professional

development to local district and school administrators and teachers. He is also responsible for assisting in the development of additional services and professional development, based on district needs, research, and best practice. The results of this action research project will inform local work in four areas.

Communicating Results to District Administrators.

Results of this project will be shared with district administrators through role-alike meetings with superintendents and curriculum directors. Districts will be surveyed as to the formal and informal processes in place to assist transition for mobile students. As the researcher has a high interest in not only the academic success of mobile students, but also the overall success of schools, assistance will be offered to local districts with an interest in developing or refining programs to improve transition for mobile students.

Informing Local Consultation.

The researcher routinely meets with administrators and teachers from 42 local school districts. These consultations often focus on root cause analysis and strategic planning. Informed by the results of this action research project, levels of mobile students and the supports in place to assist them will now be considered in these consultations. When analyses take place examining student academic and organizational success by subgroup, when possible, a 'transient' student subgroup will now be included in the study and subsequent discussion and planning.

Promoting Supports for Transient Students in Remote Learning.

In response to the COVID-19 crisis of 2020, the researcher's institution has recently received several rounds of grant funding to offer professional learning opportunities to western Pennsylvania educators related to remote learning. As a co-lead

for the Reimaging and Reinventing Education project, he is responsible for developing and implementing professional development focusing on building teacher capacity to more effectively offer remote learning. One of the strands of best practices is *flexibility for learners with diverse needs*. The researcher has already begun crafting a professional development module aimed at communicating the results of this research and providing strategies for schools and teachers to welcome and accommodate students who may have moved into the district but due to remote learning, are visiting their new classroom for the first time in only a remote setting.

Building Additional Services and Supports.

The researcher plans to work with the program director for Teaching and Consultation (TAC) to further refine and expand on existing professional development in consulting related to transient students. The TAC staff routinely provide assistance to schools in the support of underserved populations of students. It will be recommended that services specializing in mobile students be substantially enhanced. This updated strand of services and professional development will serve to help schools design formal intake processes for transient students, and to build systemic supports to aid the students in the transition. Additionally, these services would offer professional development to teachers to build their capacity in helping mobile students to acclimate to a new classroom, and to quickly experience academic success.

Recommendations for future research.

Informed by the results of this action research project, research may be conducted to examine the impact of student mobility on school accountability through additional lenses. Building on a limitation previously addressed, future research might study this

issue by examining a larger sample size of at least 330, representing a minimum of 10% of the schools in the state. While similar studies have been completed in other states examining the impact of student mobility on accountability indicators, additional research might focus on the impact of those students on school improvement designation in those states as well. It is also possible that the implications for policy and practice apply on a national level.

As some schools already have existing programs in place to screen transient students and to provide necessary support, additional research could examine this relationship in these schools to determine whether or not the interventions put in place result in reducing the impact of mobility on accountability indicators. Comparisons could be drawn between schools with transient-focused interventions in place and schools without, and analyses conducted to examine the effectiveness of those interventions.

As there are multiple external factors that affect student performance, future research might focus on out-of-school conditions that impact the academic performance of mobile students. Such research might examine number of moves, locations, family background, and community supports. Finally, additional action research might be conducted to examine the impact of transient students at the teacher-level, classroom-level and system-level. What burdens are placed on teachers as a result of students moving in? What are the implications on classroom instruction when a teacher must help a student socially and academically assimilate? What are the system-level challenges that impact a district's ability to effectively help mobile students transition and experience academic success?

Summary

Decades of research have shown the negative impact of mobility on student academic and behavioral success. Building on that research, this action research project found that the impact of that correlation also affects most Pennsylvania school accountability indicators.

The results of the study suggested a strong correlation between transiency rate and change in school accountability indicators for attendance, math growth, math achievement, and ELA achievement, and a moderate correlation with career readiness benchmarks. Of all the school accountability factors examined, the only factor with which student mobility had a small correlation was ELA growth.

While Pennsylvania's Future Ready PA Index does report success on federally mandated indicators by subgroup, mobile students are not considered. This marginalized group can be difficult to identify and label, and their progress or lack thereof may not be as evident as that of other groups of students with stable residence, but it is the responsibility of the state and our school systems to provide supports. The results of the study showed that mobile students negatively impact accountability indicators utilized for school improvement designation. Hopefully, the funds set aside for improving underperforming schools might be utilized for providing services and supports for this group of students that often goes unnoticed.

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APPENDICES

APPENDIX A

IRB Review Request

Proposal Number
Date Received

California University of Pennsylvania

IRB Review Request

Institutional Review Board (IRB) approval is required before beginning any research and/or data collection involving human subjects

Submit this form to instreviewboard@calu.edu or Campus Box #109

Project Title: ***The Impact of Student Mobility on School Ratings in Pennsylvania's School Accountability System***

Researcher/Project Director ***Brian Stamford***

Phone #. ***724-989-8983*** ***E-mail Address.*** ***STA0255@calu.edu***

Faculty Sponsor (if researcher is a student) ***Dr. Kevin Lordon*** ***lordon@calu.edu***

Department ***Department of Secondary Education and Administrative Leadership***

Anticipated Project Dates. ***September 1, 2019*** ***to*** ***May 31, 2020***

Sponsoring Agent (if applicable)

Project to be Conducted at *Allegheny Intermediate Unit, Homestead, PA*

Project Purpose: ☐ *Thesis* ☒ *Research* ☐ *Class Project* ☐ *Other*

Keep a copy of this form for your records.

Required IRB Training

All researchers must complete an approved Human Participants Protection training course. The training requirement can be satisfied by completing the CITI (Collaborative Institutional Training Initiative) online course at http://www.citiprogram.org *New users should affiliate with "California University of Pennsylvania" and select the "All Researchers Applying for IRB Approval"course option. A copy of your certification of training must be attached to this IRB Protocol. If you have completed the training within the past 3 years and have already provided documentation to the IRB, please provide the following:*

Previous Project Title

Date of Previous Project IRB Approval

Please attach a typed, detailed summary of your project AND complete items 2 through 6.

1. *Provide an overview of your project-proposal describing what you plan to do and how you will go about doing it. Include any hypothesis(ses)or research questions that might be involved and explain how the information you gather will be analyzed. All items in the Review Request Checklist, (see below) must be addressed.*

In accordance with federal education accountability regulations, the Pennsylvania Department of Education recently designated hundreds of schools in the state as in need of school improvement. Many of these schools have a higher rate of poverty than their peers, and research shows that with increased poverty comes increased student mobility. Student mobility negatively impacts student achievement and academic success. A quantitative correlational study is needed to investigate the impact that high populations of mobile students have on a school's school improvement designation. The results of this study will inform all schools) as to the importance of providing proper academic supports for mobile students, as well as offer evidence to support a change in Pennsylvania's school accountability system to take into consideration the rates of student mobility.

2. *Section 46.11 of the Federal Regulations state that research proposals involving human subjects must satisfy certain requirements before the IRB can grant approval. You should describe in detail how the following requirements will be satisfied. Be sure to address each area separately.*
   (text boxes will expand to fit responses)

   a. How will you insure that any risks to subjects are minimized? If there are potential risks, describe what will be done to minimize these risks. If there are risks, describe why the risks to participants are reasonable in relation to the anticipated benefits.

There is no risk of any kind, since the project is limited to analyzing extant data; no human subjects will be involved. Only potential discomfort to the schools I work with would be the data showing that regardless of student mobility, most students are under achieving; this would serve as a discomfort as it would be a sign of an ineffective system.

   b. How will you insure that the selection of subjects is equitable? Take into account your purpose(s). Be sure you address research problems involving vulnerable populations such as children, prisoners, pregnant women, mentally disabled persons, and economically or educationally disadvantaged persons. If this is an in-class project describe how you will minimize the possibility that students will feel coerced.

One suburban and one urban school were approached to partner on this research; the schools represents typical schools in the state. Participation is voluntary and the schools are enthusiastic to participate.

   c. How will you obtain informed consent from each participant or the subject's legally authorized representative and ensure that all consent forms are appropriately documented? Be sure to attach a copy of your consent form to the project summary.

A consent form will explain the process and will require each school's signature to participate. A copy of the consent form is attached to this request. Consent is required and was obtained from each school's superintendent (attached).

d. Show that the research plan makes provisions to monitor the data collected to insure the safety of all subjects. This includes the privacy of subjects' responses and provisions for maintaining the security and confidentiality of the data.

All data will be provided to me without name association; no personally identifiable information will be shared with me; this anonymous data will be saved on my local computer and will be deleted at the end of the project. The principal researcher will have access to this data. Based on criteria provided by the researcher, the LEAs Will separate accountability data into two groups of students based on those defined as mobile and those defined as stable residence. The school districts will then remove student names and PA Secure IDs from the dealer before providing it to the researcher. There will be no identifying information in these accountability files. Each school's provided data will contain the following six school success indicators as identified by federal accountability regulations: math/ELA achievement, math/ELA growth, attendance, graduation rate, career benchmark completion, and EL proficiency. These measures can be found reported at: https://futurereadypa.org

3. *Check the appropriate box(es) that describe the subjects you plan to target.*

☐ *Adult volunteers*	☐ *Mentally Disabled People*
☐ *CAL University Students*	☐ *Economically Disadvantaged People*
☐ *Other Students*	☐ *Educationally Disadvantaged People*
☐ *Prisoners*	☐ *Fetuses or fetal material*
☐ *Pregnant Women*	☐ *Children Under 18*
☐ *Physically Handicapped People*	☐ *Neonates*

4. *Is remuneration involved in your project?* ☐ *Yes or* ☒ *No. If yes, Explain here.*

5. *Is this project part of a grant?* ☐ *Yes or* ☒ *No If yes, provide the following information:*

   Title of the Grant Proposal _____

   Name of the Funding Agency _____

   Dates of the Project Period _____

6. *Does your project involve the debriefing of those who participated?* ☐ *Yes or* ☒ *No*

   If Yes, explain the debriefing process here.

7. *If your project involves a questionnaire or interview, ensure that it meets the requirements indicated in the Survey/Interview/Questionnaire checklist.*

California University of Pennsylvania Institutional Review Board
Survey/Interview/Questionnaire Consent Checklist (v021209)

This form MUST accompany all IRB review requests

Does your research involve ONLY a survey, interview or questionnaire?
YES—Complete this form
NO—You MUST complete the "Informed Consent Checklist"—skip the remainder of this form

Does your survey/interview/questionnaire cover letter or explanatory statement include:

[_] (1) Statement about the general nature of the survey and how the data will be used?

[_] (2) Statement as to who the primary researcher is, including name, phone, and email address?

[_] (3) FOR ALL STUDENTS: Is the faculty advisor's name and contact information provided?

[_] (4) Statement that participation is voluntary?

[_] (5) Statement that participation may be discontinued at any time without penalty and all data discarded?

[_] (6) Statement that the results are confidential?

[_] (7) Statement that results are anonymous?

[_] (8) Statement as to level of risk anticipated or that minimal risk is anticipated? (NOTE: If more than minimal risk is anticipated, a full consent form is required—and the Informed Consent Checklist must be completed)

[_] (9) Statement that returning the survey is an indication of consent to use the data?

[_] (10) Who to contact regarding the project and how to contact this person?

[_] (11) Statement as to where the results will be housed and how maintained? (unless otherwise approved by the IRB, must be a secure location on University premises)

[_] (12) Is there text equivalent to: "Approved by the California University of Pennsylvania Institutional Review Board. This approval is effective nn/nn/nn and expires mm/mm/mm"? (the actual dates will be specified in the approval notice from the IRB)?

[_] (13) FOR ELECTRONIC/WEBSITE SURVEYS: Does the text of the cover letter or

explanatory statement appear before any data is requested from the participant?

[_] (14) FOR ELECTONIC/WEBSITE SURVEYS: Can the participant discontinue participation at any point in the process and all data is immediately discarded?

California University of Pennsylvania Institutional Review Board
Informed Consent Checklist (v021209)

This form MUST accompany all IRB review requests

Does your research involve ONLY a survey, interview, or questionnaire?
YES—DO NOT complete this form. You MUST complete the "Survey/Interview/Questionnaire Consent Checklist" instead.
NO—Complete the remainder of this form.

1. **Introduction** (check each)
   [x] (1.1) Is there a statement that the study involves research?
   [x] (1.2) Is there an explanation of the purpose of the research?

2. Is the participant. (check each)
   [x] (2.1) Given an invitation to participate?
   [x] (2.2) Told why he/she was selected.
   [x] (2.3) Told the expected duration of the participation.
   [x] (2.4) Informed that participation is voluntary?
   [x] (2.5) Informed that all records are confidential?
   [x] (2.6) Told that he/she may withdraw from the research at any time without penalty or loss of benefits?
   [x] (2.7) 18 years of age or older? (if not, see Section #9, Special Considerations below)

3. Procedures (check each).
   [x] (3.1) Are the procedures identified and explained?
   [x] (3.2) Are the procedures that are being investigated clearly identified?
   [x] (3.3) Are treatment conditions identified?

4. Risks and discomforts. (check each)
   [x] (4.1) Are foreseeable risks or discomforts identified?
   [ ] (4.2) Is the likelihood of any risks or discomforts identified?
   [ ] (4.3) Is there a description of the steps that will be taken to minimize any risks or discomforts?
   [ ] (4.4) Is there an acknowledgement of potentially unforeseeable risks?
   [ ] (4.5) Is the participant informed about what treatment or follow up courses of action are available should there be some physical, emotional, or psychological harm?
   [x] (4.6) Is there a description of the benefits, if any, to the participant or to others that may be reasonably expected from the research and an estimate of the likelihood of these benefits?
   [ ] (4.7) Is there a disclosure of any appropriate alternative procedures or courses of treatment that might be advantageous to the participant?

5. Records and documentation. (check each)
   [x] (5.1) Is there a statement describing how records will be kept confidential?

[x_] (5.2) Is there a statement as to where the records will be kept and that this is a secure location?
[x_] (5.3) Is there a statement as to who will have access to the records?

6. For research involving more than minimal risk (check each),
[_] (6.1) Is there an explanation and description of any compensation and other medical or counseling treatments that are available if the participants are injured through participation?
[_] (6.2) Is there a statement where further information can be obtained regarding the treatments?
[_] (6.3) Is there information regarding who to contact in the event of research-related injury?

7. Contacts.(check each)
[x_] (7.1) Is the participant given a list of contacts for answers to questions about the research and the participant's rights?
[x_] (7.2) Is the principal researcher identified with name and phone number and email address?
[x_] (7.3) FOR ALL STUDENTS: Is the faculty advisor's name and contact information provided?

8. General Considerations (check each)
[x_] (8.1) Is there a statement indicating that the participant is making a decision whether or not to participate, and that his/her signature indicates that he/she has decided to participate having read and discussed the information in the informed consent?
[x_] (8.2) Are all technical terms fully explained to the participant?
[x_] (8.3) Is the informed consent written at a level that the participant can understand?
[x_] (8.4) Is there text equivalent to: "Approved by the California University of Pennsylvania Institutional Review Board. This approval is effective nn/nn/nn and expires mm/mm/mm"? (the actual dates will be specified in the approval notice from the IRB)

9. Specific Considerations (check as appropriate)
[_] (9.1) If the participant is or may become pregnant is there a statement that the particular treatment or procedure may involve risks, foreseeable or currently unforeseeable, to the participant or to the embryo or fetus?
[_] (9.2) Is there a statement specifying the circumstances in which the participation may be terminated by the investigator without the participant's consent?
[x_] (9.3) Are any costs to the participant clearly spelled out?
[x_] (9.4) If the participant desires to withdraw from the research, are procedures for orderly termination spelled out?
[_] (9.5) Is there a statement that the Principal Investigator will inform the participant, or any significant new findings developed during the research that may affect them and influence their willingness to continue participation?

[_] (9.6) Is the participant is less than 18 years of age? If so, a parent or guardian must sign the consent form and assent must be obtained from the child

[_] Is the consent form written in such a manner that it is clear that the parent/guardian is giving permission for their child to participate?

[_] Is a child assent form being used?

[_] Does the assent form (if used) clearly indicate that the child can freely refuse to participate or discontinue participation at any time without penalty or coercion?

[x_] (9.7) Are all consent and assent forms written at a level that the intended participant can understand? (generally, 8th grade level for adults, age-appropriate for children)

California University of Pennsylvania Institutional Review Board
Review Request Checklist (v021209)

This form MUST accompany all IRB review requests.
Unless otherwise specified, ALL items must be present in your review request.

Have you:

[x_] (1.0) FOR ALL STUDIES: Completed ALL items on the Review Request Form?

Pay particular attention to:

[x_] (1.1) Names and email addresses of all investigators

[x_] (1.1.1) FOR ALL STUDENTS: use only your CalU email address)

[x_] (1.1.2) FOR ALL STUDENTS: Name and email address of your faculty research advisor

[x_] (1.2) Project dates (must be in the future—no studies will be approved which have already begun or scheduled to begin before final IRB approval—NO EXCEPTIONS)

[x_] (1.3) Answered completely and in detail, the questions in items 2a through 2d?

[x_] 2a: NOTE: No studies can have zero risk, the lowest risk is "minimal risk". If more than minimal risk is involved you MUST:

[x_] i. Delineate all anticipated risks in detail;

[x_] ii. Explain in detail how these risks will be minimized;

[x_] iii. Detail the procedures for dealing with adverse outcomes due to these risks.

[x_] iv. Cite peer reviewed references in support of your explanation.

[x_] 2b. Complete all items.

[x_] 2c. Describe informed consent procedures in detail.

[x_] 2d. NOTE: to maintain security and confidentiality of data, all study records must be housed in a secure (locked) location ON UNIVERSITY PREMISES. The actual location (department, office, etc.) must be specified in your explanation and be listed on any consent forms or cover letters.

[x_] (1.4) Checked all appropriate boxes in Section 3? If participants under the age of 18 years are to be included (regardless of what the study involves) you MUST:

[x_] (1.4.1) Obtain informed consent from the parent or guardian—consent forms must be written so that it is clear that the parent/guardian is giving permission for their child to participate.

[x_] (1.4.2) Document how you will obtain assent from the child—This must be done in an age-appropriate manner. Regardless of whether the parent/guardian has given permission, a child is completely free to refuse to participate, so the investigator must document how the child indicated agreement to participate ("assent").

[x_] (1.5) Included all grant information in section 5?
[x_] (1.6) Included ALL signatures?

[x_] (2.0) FOR STUDIES INVOLVING MORE THAN JUST SURVEYS, INTERVIEWS, OR QUESTIONNAIRES:
[x_] (2.1) Attached a copy of all consent form(s)?
[x_] (2.2) FOR STUDIES INVOLVING INDIVIDUALS LESS THAN 18 YEARS OF AGE: attached a copy of all assent forms (if such a form is used)?
[x_] (2.3) Completed and attached a copy of the Consent Form Checklist? (as appropriate—see that checklist for instructions)
[x_] (3.0) FOR STUDIES INVOLVING ONLY SURVEYS, INTERVIEWS, OR QUESTIONNAIRES:
[x_] (3.1) Attached a copy of the cover letter/information sheet?
[x_] (3.2) Completed and attached a copy of the Survey/Interview/Questionnaire Consent Checklist? (see that checklist for instructions)
[x_] (3.3) Attached a copy of the actual survey, interview, or questionnaire questions in their final form?

[x_] (4.0) FOR ALL STUDENTS: Has your faculty research advisor:
[x_] (4.1) Thoroughly reviewed and approved your study?
[x_] (4.2) Thoroughly reviewed and approved your IRB paperwork? including:
[x_] (4.2.1) Review request form,
[x_] (4.2.2) All consent forms, (if used)
[x_] (4.2.3) All assent forms (if used)
[x_] (4.2.4) All Survey/Interview/Questionnaire cover letters (if used)
[x_] (4.2.5) All checklists
[x_] (4.3) IMPORTANT NOTE: Your advisor's signature on the review request form indicates that they have thoroughly reviewed your proposal and verified that it meets all IRB and University requirements.
[x_] (5.0) Have you retained a copy of all submitted documentation for your records?

Project Director's Certification

Program Involving HUMAN SUBJECTS

The proposed investigation involves the use of human subjects and I am submitting the complete application form and project description to the Institutional Review Board for Research Involving Human Subjects.

I understand that Institutional Review Board (IRB) approval is required before beginning any research and/or data collection involving human subjects. If the Board grants approval of this application, I agree to:

1. Abide by any conditions or changes in the project required by the Board.
2. Report to the Board any change in the research plan that affects the method of using human subjects before such change is instituted.
3. Report to the Board any problems that arise in connection with the use of human subjects.
4. Seek advice of the Board whenever I believe such advice is necessary or would be helpful.
5. Secure the informed, written consent of all human subjects participating in the project.
6. Cooperate with the Board in its effort to provide a continuing review after investigations have been initiated.

I have reviewed the Federal and State regulations concerning the use of human subjects in research and training programs and the guidelines. I agree to abide by the regulations and guidelines aforementioned and will adhere to policies and procedures described in my application. I understand that changes to the research must be approved by the IRB before they are implemented.

Professional (Faculty/Staff) Research

_____

Project Director's Signature

Student or Class Research

_____ _____

Student Researcher's Signature Supervising Faculty Member's Signature

ACTION OF REVIEW BOARD (IRB use only)

The Institutional Review Board for Research Involving Human Subjects has reviewed this application to ascertain whether or not the proposed project:

1. provides adequate safeguards of the rights and welfare of human subjects involved in the investigations;
2. uses appropriate methods to obtain informed, written consent;

3. indicates that the potential benefits of the investigation substantially outweigh the risk involved.
4. provides adequate debriefing of human participants.
5. provides adequate follow-up services to participants who may have incurred physical, mental, or emotional harm.

☐ Approved[_____] ☐ Disapproved

_____

_____

Chairperson, Institutional Review Board Date

APPENDIX B
IRB Request Approval

Institutional Review Board
California University of Pennsylvania
Morgan Hall, 310
250 University Avenue
California, PA 15419
instreviewboard@calu.edu
Melissa Sovak, Ph.D.

Dear Brian,

Please consider this email as official notification that your proposal titled "The Impact of Student Mobility on School Ratings in Pennsylvania's School Accountability System" (Proposal #18-105) has been approved by the California University of Pennsylvania Institutional Review Board as amended.

The effective date of approval is 11/14/19 and the expiration date is 11/13/20. These dates must appear on the consent form.

Please note that Federal Policy requires that you notify the IRB promptly regarding any of the following:

(1) Any additions or changes in procedures you might wish for your study (additions or changes must be approved by the IRB before they are implemented)

(2) Any events that affect the safety or well-being of subjects

(3) Any modifications of your study or other responses that are necessitated by any events reported in (2).

(4) To continue your research beyond the approval expiration date of 11/13/20 you must file additional information to be considered for continuing review. Please contact instreviewboard@calu.edu

Please notify the Board when data collection is complete.

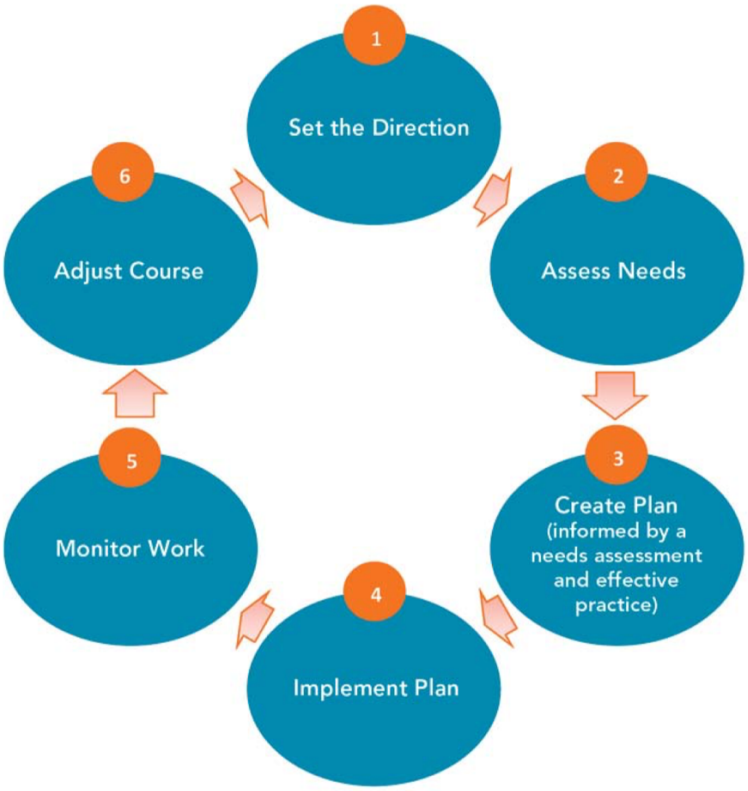
Regards,

Melissa Sovak, PhD.
Chair, Institutional Review Board

APPENDIX C

LEA Action Planning Template for Transient Cohorts - DRAFT

In order to improve a school's support structure for transient students, it is important to build a plan that incorporates effective practices that drive change in practice. The Chief Council of State School Officers (CCSSO) proposes the cycle of improvement below upon which school improvement efforts can be built.



The template that follows provides suggestions for actions to be taken at each stage in this cycle in order to provide a more comprehensive approach to supporting populations of transient students in schools. Should a district decide to formalize the steps in this template, the framework is aligned to Pennsylvania's Future Ready Comprehensive Planning Portal, which should allow for easy transferability between this planning document and the site.

Step	Action	Suggestions
Set the Direction		*Review historical performance of transient students; establish a guidance committee; set student focused SMART goals*
Assess Needs		*Conduct a comprehensive review of the performance and experience of transient students in your school; examine practices, processes and routines that might be inequitable to transient students; conduct a root cause analysis as to why transient students are struggling in your school*
Create Plan		*Create a plan with implementation indicators related to your goals and based on your needs assessment; recommend the use of screening and intake tools for mobile students*
Implement Plan		*Consider implementation at a system, building, and classroom level; how will you meet the goals?*
Monitor Work		*How will you monitor the work and progress of transient students? Might you create a flag in your student information system to allow easier monitoring? How will progress be reported?*
Adjust Course		*As the monitoring occurs, how will you adjust the course? Might you consider focus groups of transient students? Might you consider including transient students in the process?*

APPENDIX D

Workflow for Comparing Transient Student

Performance to Stable Student Performance - DRAFT

Recent research has indicated a correlation between levels of student transiency and Future Ready PA Index school accountability indicators (achievement, growth, attendance, career readiness, graduation, and EL proficiency). Does the performance of transient students in your school district align to this relationship? Use the process below to disaggregate the results for students in your school. This document also includes an optional section that allows for a correlational analysis examining data from multiple schools. *Note: as parts of this workflow involve a basic understanding of PIMS, it is advised that this process is completed by or in cooperation with a district data manager.*

STEP ONE: FILTER FOR ATTRIBUTED STUDENTS. All students who factor into accountability can be found in the *District Student Data File* which is posted for download on the pa.drcedirect.com website each June. District assessment coordinators have access to download this file.

STEP TWO: FILTER FOR ATTRIBUTED STUDENTS. Not all the students in this file factor into school accountability values. Remove the following students from this file (see the column headers for titles):

- Students not attributed to the school code
- Students with a 'Y' in the 'First Year ELL' column

STEP THREE: VERIFY THAT THESE VALUES MATCH. Before proceeding, it is important to verify that the content in this file matches the content that factored into accountability indicators. To determine this, calculate proficiency or positive levels for each of the sixth indicators using the data in this file and compare to those on the futurereadypa.org website. If the values match, move on. If they do not, revisit step two. Note: attendance and graduation are lagging indicators; therefore, those indicators would come from data from the prior years' *District Student Data File*

STEP FOUR: IDENTIFY TRANSIENT STUDENTS. In order to identify transient students, complete a query of the student information management system to identify students who enrolled within the past 12 months. Add a column to the *District Student Data File* and flag the students as transient.

STEP FIVE: CALCULATE INDICATOR VALUES FOR THREE GROUPS. In order to compare the performance of transient students to the all student body, you must create three groups of students: all, stable (non-transient), and transient. Calculate the accountability values for each of the six indicators for each of these three groups, then move on to the questions for consideration portion of this document.

QUESTIONS FOR CONSIDERATION: To examine the relationship between transient students and stable students in your school, consider the questions below. Your response to these questions will help guide school action planning related to transient students.

- Is there a difference between the accountability values for the transient and non-transient groups? If so, what difference?
- Do you notice any trends schoolwide or district-wide? Are these trends consistent or is there variation between grades or schools?
- Are there outliers? To what might you attribute this?

ROOT CAUSE ANALYSIS AND ACTION PLANNING: Now that you have identified trends in your data it is time to action plan. Use the *LEA Action Planning Template for Transient Cohorts* to create a plan for addressing the needs you have identified in your district.

(OPTIONAL) CONDUCT A CORRELATIONAL ANALYSIS OF THE DATA: If you are examining the data of multiple schools, you may wish to examine the correlation. Is there a consistent relationship among those schools between transiency and accountability indicators? One way to examine this is by conducting a bivariate correlation test. While there are multiple ways to do this, one of the most popular software packages for automating the process is IBM's SPSS software. (If you are unfamiliar with the software, it contains many useful tutorials.) In order to complete a correlational analysis comparing the transiency rate at your schools and the school accountability values, conduct a bivariate correlation test. In the bivariate correlation option menu, pull the two variables to be tested into the test box, then select Pearson correlation coefficient, two-tailed significance, and flag significant correlations.

In the example below, one would look for the Pearson correlation in the quadrant under the opposing variable. Below you will note that the Pearson correlation is -.920. Correlation is strong if this value is |p|>=.5

Correlations

		AttendanceTransiencyRate	AttendanceAbsoluteValue
AttendanceTransiencyRate	Pearson Correlation (p)	1	-.920**
	Sig. (2-tailed)		.009
	N	6	6
AttendanceAbsoluteValue	Pearson Correlation (p)	-.920**	1
	Sig. (2-tailed)	.009	
	N	6	6

**. Correlation is significant at the 0.01 level (2-tailed).