Spring 5-5-2022

The Relationship Between Length of Principal Tenure and Student Achievement in Central Arkansas Elementary Schools

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THE RELATIONSHIP BETWEEN LENGTH OF PRINCIPAL TENURE AND STUDENT ACHIEVEMENT IN CENTRAL ARKANSAS ELEMENTARY SCHOOLS

By

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Submitted to the Faculty of the Graduate College of
Arkansas Tech University
in partial fulfillment of the requirements
for the degree of
DOCTOR OF EDUCATION IN SCHOOL LEADERSHIP
May 2022

Dedication

This study is dedicated with love and appreciation to my family, friends, and other loved ones. It is dedicated to the educational leaders who have poured into me helping me to always move forward with grace and humility throughout my career. With special and warm thanks for my loving husband, Ekow, and my beautiful daughter, Emerson. Thank you.

Acknowledgments

Surround yourself with the dreamers and the doers, the believers and thinkers, but most of all, surround yourself with those who see the greatness within you, even when you don't see it yourself. ~ Edmund Lee

Throughout the process of conducting this study and writing my dissertation, I have been extremely blessed to receive support from a variety of extremely special people. My husband Ekow has been incredibly supportive throughout this journey and in helping to run our household and in helping to look after our beautiful daughter as I worked through completion of my program of study. I would like to thank my siblings who helped me to fulfill my very first leadership role as big sister, including my youngest sister, Kimberly, whose drive, perseverance, and sheer determination continue to inspire me to this very day. My mother has always pushed me to go to the next level and was there to motivate and push me from earning a high school diploma to earning a doctoral degree and every degree in between. She helped me never settle and to always chase my dreams. My great grandfather set the expectation for our familiar many, many years ago in reminding my mother to always "go for the top." It was his love and support that helped to instill an ever-growing love of education and a drive for each generation of our family to increase and go further than the previous one with the steadfast knowledge that we were achieving on the blood sweat and tears of our ancestors who came before us.
I would like to thank my chair and advisor, Dr. John Freeman, who was the perfect mix of support, expertise, and motivation in helping me to achieve the dream of earning a terminal degree.

Finally, I would like to thank my sweet, sweet Big Girl, Emerson, who provided the motivation that I needed each time I looked into her beautiful brown eyes and knew

that I wanted to do my part to leave a proud family legacy for her to continue. Thank you all. I would not be where I am without the love and support of my village.

Abstract

THE RELATIONSHIP BETWEEN LENGTH OF PRINCIPAL TENURE AND STUDENT ACHIEVEMENT IN CENTRAL ARKANSAS ELEMENTARY SCHOOLS

Valencia Machelle Essel

The purpose of this study was to identify and explain any relationship between student achievement and principal longevity in elementary schools in Central Arkansas. The research questions were aimed at specifically finding any relationship that describes how a principal being in the same building or being moved to other schools impacts the student's growth and achievement in that school. This research was important in being able to support or argue against the implications on students when district leaders decide to move principals from their schools. The research was conducted using archived student and personnel data from the Pulaski County Special School District as well as the Arkansas Department of Education. The sample included all 16 elementary schools in the PCSSD using archived data from the year 2015 through 2019. The achievement data set was pulled from ACT Aspire Math and ACT Aspire Reading scores for all third through fifth grade students in these schools. The data were analyzed using regression and hierarchical analysis via SPSS software. The findings from the data analyses did not present any significance in the relationship between student achievement and principal tenure in Central Arkansas elementary schools. The review of literature revealed similar findings in similar studies, but also highlighted the indirect impact that principals have on student achievement.

Keywords: Student achievement, principal Tenure, elementary schools, Central Arkansas.

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Chapter I. Introduction

According to Onorato (2013), "In an era of accountability, our school systems are facing severe challenges to meet bottom-line results while external pressures from federal, state and local mandates are compelling educational leaders to drive enhanced student achievement" (p. 33). Transformational change in an organization or institution requires time to flow through the phases of the change process completely (Hill et al., 2017). Numerous research studies on educational settings focus on teacher evaluations or teacher performance (Onorato, 2013). Missing from many of these studies is the impact of educational leadership, more specifically, the impact of the school principal and the amount of time that a principal spends in a school. To fully appreciate the success or failure of a school's educational programs, one must thoroughly analyze the impact of the principal on that school's culture and student achievement (Onorato, 2013).

Background of the Problem

With the emphasis on accountability in U.S. public schools, educators and policymakers are under increasing pressure to provide evidence that students are academically successful. The primary tool of measurement on accountability has long been standardized testing with varying results and a great deal of controversy (Ravitch, 2016).

The state of Arkansas has adopted the ACT Aspire Assessment as its mandated test for accountability purposes. The recent history of testing in Arkansas has seen inconsistency during one three-year period when the state changed tests each year, before settling on the ACT Aspire in 2015. Regardless of which test is utilized by the state, the

problem for public schools is finding a way to make sure all students are achieving academically.

Standardized testing is the accepted measure of student achievement in the Pulaski County Special School District, which is the participating district in this study. All schools in this district must participate in the ACT Aspire Standardized Tests for grades 3-10 (Division of Elementary and Secondary Education, 2021). Though standardized testing is the universal measure available, there are issues with the current practices and perceptions of standardized tests in schools (Wasserberg, 2017).

Klein et al. (2006) surveyed 20 educators from schools in a semirural community in western New York to determine how standardized testing impacts teaching and learning. The surveys were sent to elementary, middle, and high school teachers in the selected areas. The questions specifically targeted the following three areas: the impact of testing on students and teachers, the way teachers manage instruction towards testing, and the way teachers assist student learning while testing. Based on the results of this study, the researchers determined that standardized testing did not have a significant impact on teaching and learning in their community (Klein et al., 2006).

Wasserberg (2017) conducted a qualitative investigation to determine the impact of standardized testing specifically on African American students. The researcher sought to determine the impact of negative stereotypes on high-achieving African American students. According to the results of the study, four themes regarding the negative cognitive impacts of standardized testing emerged: (a) a narrow perception of education as test preparation, (b) feelings of anxiety related to the state test, (c) a concern with what White people think, and (d) the rejection and acceptance of stereotypes. The results imply

that standardized testing can be detrimental in reinforcing stereotypes in high-achieving African American students (Wasserberg, 2017).

Hattie (2009) has determined that there are over 200 variables that impact a student's ability to achieve academically. Researchers have spent the better part of the last 60 years trying to figure out the best way to provide for student success. These variables have different effect sizes with a great many originating outside of the school, meaning that educators have little impact on those variables. But by focusing on the in-school variables, there is an opportunity to succeed. Teaching effectiveness is certainly one of the most important variables. But what brings about teaching effectiveness. Again, many things, but one variable in particular has consistently appeared in the research as important to effective teaching and in turn to student success. That variable is principal leadership (Norton, 2003).

Many research studies have attempted to identify leadership skills and styles that work best in schools, but this study focused on one aspect of principalship that has received little attention. Norton (2003) found a link between the length of principal tenure and student achievement. The school principal can have direct and indirect impacts on student achievement of students over time. On one level, this would seem to be obvious. But, it is not simply the length of time itself that can impact student achievement, it is what that principal does in that length of time in a leadership position (Norton, 2003).

The average tenure of school principals in Texas from 1996-2008 was 4.51 years (Fuller & Young, 2009). Schools with a higher percentage of students in low socioeconomic status tended to have shorter tenures, meaning these schools experienced a higher principal turnover throughout the years studied (Fuller & Young, 2009).

Principal tenure has been linked to student achievement when studying the impact of student success over time (Partlow, 2007). Principal retention in schools in Ohio increased over seven years as student achievement scores also increased (Partlow, 2007). Of the eight variables studied, the most significant factor in predicting principal tenure was student achievement (Partlow, 2007). Principals were more likely to return to schools where students were increasingly showing growth and achievement on standardized tests (Partlow, 2007).

Statement of the Problem

This study focused specifically on the relationship between student achievement and the amount of time that a principal has remained at the same school or principal tenure. Some studies have linked student achievement and principal tenure, but this study focused only on elementary schools within the Pulaski County Special School District. The socioeconomic status and ethnicity of students were considered when analyzing to find any correlation regarding student achievement and principal tenure. The researcher in this study sought to determine whether longer principal tenure has a significant impact on student achievement for all students and the previously identified subpopulations.

The average principal tenure in Texas has been documented at 4.51 years from 1996-2008 (Fuller & Young, 2009). Many principals do not return to their schools following their first or second year at an elementary school due to their own choices or forced movement at the discretion of the district leaders (Durow & Brock, 2004). Furthermore, as the poverty level of students in a school increases, principal retention at that school decreases over time (Fuller & Young, 2009). This falls just shy of the five years needed to fully evaluate the effectiveness of a program or leadership initiative in an

elementary school (Hill et al., 2017). Elementary principals need at least five years in a school using the leadership programs and strategies that they have chosen to implement before any transformational change can be successfully implemented and measured with fidelity (Hill et al., 2017).

Purpose of the Study

This study focused on the relationship between principal retention and student achievement. This quantitative, causal comparative, non-experimental study sought to analyze the student achievement data and look for specific trends and correlations. Data from 16 elementary schools located in the Pulaski County Special School District (PCSSD) were used to answer specific research questions about the relationship between the principal's length of tenure and student achievement scores for grades three through five on the ACT Aspire Assessment in reading and mathematics. The schools were all located within the same district in Central Arkansas. Some schools were located in rural areas, while some were located in more urban areas.

The principals of the 16 elementary schools in the participating district provided a measurement for the length of tenure variable for this study and the student achievement variable was measured using ACT Aspire data for the 2018-19 academic year. The ACT Aspire is a standardized test that all students in grades 3-10 in the state of Arkansas are required to complete. Therefore, the purpose of this study was to determine whether principal tenure or retention has an impact on student achievement.

Research Questions/Hypotheses

The following research questions guided this quantitative causal comparative study:

RQ1: What is the relationship between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in mathematics?

H_o1: No statistically significant relationship exists between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in mathematics.

RQ2: What is the relationship between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in reading?

H_o2: No statistically significant relationship exists between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in reading.

The dependent variable in this study was the student achievement scores from the ACT Aspire Assessment for grades three through five in reading and mathematics during the 2018-19 school year. The predictor variable was the principal's length of tenure in the school.

Based on previous research, the researcher's hypothesis was that there would be a positive correlation between student achievement scores and the length of principal tenure, meaning that as the length of tenure increases, the student achievement scores will increase as well. The data used in this study were archived data from the PCSSD. Schools

throughout the state of Arkansas have been required to administer the ACT Aspire assessment for all students in third through tenth grades since the state adopted this assessment platform in the 2015-2016 school year, so these data have been archived by the PCSSD since that date. The schools were not required to complete the ACT Aspire assessment in the 2019-20 school year due to the global pandemic caused by the COVID-19 virus. Therefore, the data used in this study was from the 2018-19 test administration in the PCSSD.

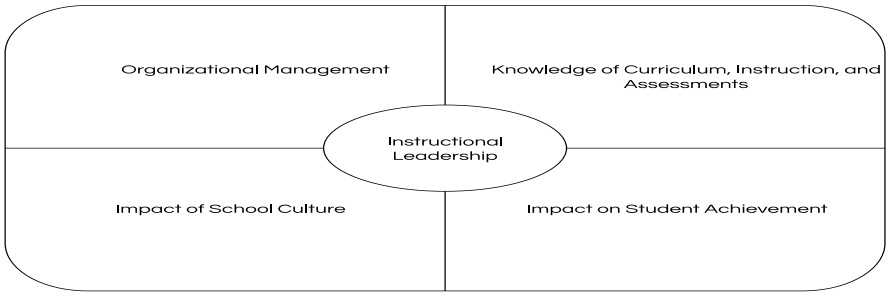
Conceptual Framework

In developing the conceptual framework for the study, various articles and research studies on the idea of instructional leadership were explored. Based on this exploration of the literature and after reviewing similar studies, the conceptual framework was developed. The visual depiction of this conceptual framework is represented in Figure 1. The basic tenets of instructional leadership can be reduced to four major themes:

- Organizational Management
- Knowledge of Curriculum, Instruction, and Assessments
- Impact of School Culture
- Impact on Student Achievement

Figure 1

Visual Depiction of the Conceptual Framework



Organizational management has played an increasingly important role in the practices of principals and school leaders in their efforts to impact building culture and student achievement. Arguably, equally important is the leader's knowledge of curriculum, instruction, and assessment and this expertise or understanding impacts building culture and the way teachers perceive their principals as educational experts. The ability to manage personnel and facilities as well as the ability to monitor and support teaching and learning experiences of a school organization present important aspects of the skills and attributes necessary to recruit and retain effective teachers who directly impact student achievement as well the building culture and climate. These ideas have been verified empirically and analyzed conceptually to validate their inclusion in the conceptual framework that will guide this study by Eileen Horning and Susana Loeb (2010). By building on their findings, the conceptual framework for the study was developed with an expanded view of the understanding of instructional leadership.

Cunningham (2012) stated that "The most common indicator of achievement generally refers to a student's performance in academic areas such as reading, language

arts, math, science, and history as measured by achievement tests. These include statewide exams, SAT/ACT scores, or National Assessment of Educational Progress (NAEP) scores" (p. 1). For this study, student achievement was measured by student performance on the standardized summative assessment for Arkansas in the areas of math and reading throughout the school year.

Significance of the Study

This study examined the relationship between principal retention and student achievement. The results of the study could be used to impact the policies regarding principal tenure within school districts throughout the state of Arkansas. The PCSSD could specifically use data and results from this study to make more informed decisions about moving principals within the school district. Districts throughout the state could similarly benefit from seeing the impact of keeping principals in their schools for longer periods. Districts could reframe their approach to principal preparation within the district and specifically target school leaders who are more likely to stay at the same school for a longer time. Districts could also decide to put more funding into professional development experiences that encourage and support principals so that they are more likely to return to their assigned schools.

Research Design

For this study, the researcher focused on elementary school students in one central Arkansas school district. More specifically, achievement data of the third through fifth-grade students at PCSSD was gathered and analyzed. The population for the study were elementary students and principals in the state of Arkansas. The convenience sample for the study was elementary school students in the PCSSD. Based on the literature, the

results of the study showed that principal tenure does have an impact on student achievement over time.

To avoid bias and derive detailed statistically relevant data for this study, quantitative trends in archived data collected were analyzed. Using Statistical Package for the Social Sciences® (SPSS), the data were analyzed to determine whether principal tenure impacts student achievement scores. An analysis via descriptive statistical methods was the first step in understanding the data. Next, multiple regression analysis was used to identify and analyze any correlations between student achievement and the tenure of the principals in the study.

Definition of Terms

- **ACT Aspire**-ACT Aspire is an interactive assessment system for students in grades 3–10 that provides a measure of student performance in English, reading, mathematics, science, and writing in the context of college and career readiness.
- **Economically Disadvantaged Students (FRL)-** students who qualify for free or reduced lunch
- **English Language Learners (ELL or EL)-** A national origin minority student who is limited English proficient (ADE).
- **Highly Mobile Students**-Non-mobile student means a student who is continuously enrolled at a school from October 1 of the school year through and including the initial date of testing. Conversely highly mobile students are any students who enroll in a school in Arkansas after October 1 of the academic year.
- **Longevity**-Longevity length of service or duration of duty in a position, for this study this will be limited to the years of service in the current school.

- **Special Education Students (SPED)**- Special Education students are students who have specific learning needs identified and a prescriptive educational plan identified through an IEP, Individualized Education Plan.
- **Student Achievement**-Student achievement is the measurement of the amount of academic content a student learns in each time frame. Student achievement refers to the extent to which a learner has attained their short or long-term educational goals.
- **Tenure**-Tenure is the amount of time that a person holds a job, office, or title; for this study, the amount of time that a principal holds their position in a specific elementary school

Chapter II: Literature Review

The question of how we improve student achievement in the elementary classroom continues to be pondered by educational policymakers, educators, and stakeholders. It is a common dialog in research that spans the early educational system to the most recent school reform movement. In response to this movement, educators are faced with new challenges and demands and increased accountability from local, state, and federal officials to meet these expectations. Thus, schools need high-performing teachers and principals to meet these demands (Petty, 2018).

Bowers and White (2014) conducted a research study to analyze the impact of principal background, training, and experience in addition to teacher academic qualifications on school proficiency trajectory over time. The study included all elementary and middle schools in the state of Illinois from the 2001-02 school year through the 2005-06 school years (Bowers & White, 2014). This study was unique in being the first of its kind to analyze data from an entire state over six years (Bowers & White, 2014). The results of the study suggest that teacher academic qualifications, principal training, principal experience as a principal and an assistant principal, and experience of the principal as a teacher previously in their schools are significantly related to school proficiency growth over time (Bowers & White, 2014). The results also suggest that principal background and training programs have an impact on school proficiency over time (Bowers & White, 2014).

Procedures for Obtaining Literature

The sources obtained for this portion of the research were gathered using a variety of resources including Google Scholar searches, ATU library database searches through

JSTOR, ProQuest, and ERIC. The research was carefully reviewed and used to create the most specific and relevant topics to generate viable literature resources for inclusion in this study. Some of these sources are experimental, quasi-experimental, and meta-analytic empirical studies. A preliminary review of abstracts, key terms, and subsections was employed to determine relevance before incorporating them into the literature review. The sources used were all peer-reviewed journals, web-based journal articles, government reports, published dissertations, or research-based studies.

Purpose of the Literature Review

The purpose of reviewing existing research helped to set the stage for the relevance of this study, identified any gaps in the current research, and raised inquiries that could best benefit the educational research field. This review of the literature was also conducted to determine the viability of the proposed study. There was also a need to determine whether the field was saturated with the topic of principal longevity and its impact on student achievement. This review of the literature led to the decision to conduct a partial replication study based on my interest in this topic and the recommendations from several studies (McDonald, 2013; Petty, 2018) based on several stated limitations. To inform this study, several topics have been examined in the review of the literature including, principal performance in high and low-income schools, principal preparation programs, principal impact on student achievement, and standardized testing as a method of measuring student achievement.

Principal Performance in High and Low-Income Schools

Brown (2015) conducted a qualitative study, using interviews and artifact analysis to answer the following research questions: What supports did the elementary principals

in the two investigated high-achieving schools implement, and did the supports differ in the high-achieving low-income school? Two principals from the same district with different school demographics who had raised student achievement in their schools were selected for the study. One principal was from a school in an affluent community while the other principal was from a school in a neighboring school with primarily low-income students and families. The results of the study indicated that there are many similarities in the support that principals offered at both schools, but there were differences based on student and community demographics that may have contributed to school success as well (Brown, 2015).

Racial inequality and student poverty were also factors in analyzing the data for this study. Researchers Brunn-Bevel and Byrd (2015) presented a historical analysis of racial inequality in Virginia K-12 public schools. At the time of this study in Virginia, standardized tests were used to evaluate students' success, evaluate teacher and administrative effectiveness, and measure states' educational efforts (Brunn-Bevel et al., 2015). The study used data from the district level to analyze disparities between black and white students in Virginia in 2010 (Brunn-Bevel et al., 2015). The study also used data from the state level to get information regarding school district size, teacher-student ratio, and school funding to better understand the standardized test data (Brunn-Bevel et al., 2015). The study argued that historic inequality in educational settings continues to disproportionately and negatively impact Black students' performance on standardized tests (Brunn-Bevel et al., 2015). The authors made recommendations for decreasing this gap by suggesting implications for future policymakers (Brunn-Bevel et al., 2015).

Principal Preparation Programs

Corcoran (2017) completed a study with a focus on the growing interest in principal effectiveness as a method of enhancing teaching and student learning. Findings from the study suggested that this interest has led to a focus on the quality of principal preparation programs (PPPs) with a suggestion to have them more closely reflect teacher preparation programs (Corcoran, 2017). The purpose of the study was to analyze the effect of the National Institute for School Leadership's Executive Development Program (NISL-EDP) on student achievement in a large school district in the Midwestern United States (Corcoran, 2017). The researchers used propensity score matching to report their analysis of student achievement scores (Corcoran, 2017). The conclusion was that students' test scores alone do not function as a method of truly evaluating principal effectiveness (Corcoran, 2017). The researchers suggested that the results of the study could be beneficial for other researchers and policymakers in developing and evaluating accountability systems for schools or principals (Corcoran, 2017).

The New York City Leadership Academy conducted a study to train and grow their own educational leaders (Corcoran et al., 2017). They instituted a 14-month long Aspiring Principals Program (APP), which prepared principals to lead some of the lower performing schools in their organization (Corcoran et al., 2017). The study focused on the performance of leaders who had been through the APP and compared them to those who had been through more traditional educational leadership programs (Corcoran et al., 2017). The study concluded that those APP principals performed equally to other new principals (Corcoran et al., 2017). Though APP principals slightly outperformed their

traditionally trained counterparts in language arts, they fell behind those same principals in math performance (Corcoran et al., 2017).

Principal preparation programs that detract from their focus on increasing academic performance should be redefined, and high-quality principal preparation programs can and should promote practices that ensure student academic achievement (Vanderhaar et al., 2006).

Research in Illinois public schools suggests that teacher academic qualifications, principal training, principal experience as a principal and an assistant principal, and experience of the principal as a teacher previously in their schools are significantly related to school proficiency growth over time, dependent upon school context (Bowers & White, 2014).

Principal Retention

A deeper awareness of the strains associated with the role of the principal and of the role of the school district office leadership in supporting or hindering the principals' tasks and time allocation may increase the likelihood that principals will be content on the job, have balance in their lives, and remain in their positions longer (Van Vooren, 2018). Schools must hire principals that are prepared to effectively lead schools. Moreover, it is imperative schools retain principals for a sufficient period to have a significant impact on student achievement (Brockmeier et al., 2013). Creating an action plan for retaining principals, monitoring principal turnover, developing personnel retention policies are all research-based recommended strategies for retaining good educators once they have been hired by a school district (Norton, 2003).

Durow and Brock (2004) conducted a study that was unique in that it focused on principal retention for Catholic school principals. The results of this study concluded that personal needs, career advancement, support from their employer, and clearly defined role expectations were key factors in principals' decisions of whether to remain in the same position at the same school for the upcoming school year (Durow & Brock, 2004). The study also focused on specific factors that lead principals to leave their job and presented suggestions for successful principal retention based on the qualitative study (Durow & Brock, 2004). This study was related to the issue of principal retention.

Principal Impact on Student Achievement

Klein et al. (2006) explored the impact of standardized testing on teachers' instructional methods and curriculum decisions. Two hundred teachers were surveyed through paper-based questionnaires placed in their mailboxes (Klein et al., 2006). Qualitative methods were used to analyze the data received from the surveys (Klein, et al., 2006). The study highlighted the teacher's propensity to teach based on what would be needed for standardized testing and not necessarily what they believed was best for their students (Klein et al., 2006). Some teachers reported positive impacts such as having a more targeted and focused approach to instruction based on what should be covered for the standardized assessment (Klein et al., 2006).

Norton (2002) completed a study purporting that student achievement is indirectly tied to principal job satisfaction and principal retention. The study suggested that principal turnover has nationally reached a critical high point and that intervention methods to retain quality principals are therefore warranted (Norton, 2002). The study names the work-life of the principal, low salary levels, time constraints, lack of parent

and community support, and lack of respect are among the reasons that principals are choosing not to remain in their positions (Norton, 2002). The author suggested that it was essential to redefine the principals' job description to allow principals to spend more time focused on students and instruction (Norton, 2002). The author also suggests other specific recommendations for retaining quality principals (Norton, 2002).

Ozdemir (2019) conducted a qualitative study in 36 Turkish schools to determine whether principal leadership behaviors impact student achievement in mathematics among secondary students in low-income areas. The study concluded that principal leadership practices have an indirect effect on students' math scores but that principal leadership behaviors did not have a significant impact on teachers' instructional practices (Ozdemir, 2019).

Partlow (2007) set up a research study to search for possible relationships between certain contextual variables and principal turnover and to test the independent variables as predictors of principal turnover frequency. The schools participating in the study were all Ohio public schools over a seven-year period of time. Findings from the study indicated the only significant connection to principal turnover was student achievement test scores on reading and math (Partlow, 2007).

Van Voorenset (2018) set out to analyze the attrition rates of principals by focusing on the job demands of principals. The study followed and documented the daily lives of the selected school leaders from one school district. The study focused on time management, principal support, professional development, technology, and principal activities highlighting the dynamic changes in roles and expectations of principals' daily routines. The study also suggested ways for districts and colleges or universities to work

together to improve the leadership practices of school principals and concluded that all principals had different stressors based on their schools' needs, and that district leadership plays an important role in the ability of schools to retain principals (Van Vooren, 2018).

Vanderharr et al. (2006) designed a study to find relationships between teacher preparation programs and student achievement in urban school settings. The quantitative study used regression techniques to construct a model for data analysis (Vanderhaar et al., 2006). The study was designed to find relationships between teacher preparation programs and student achievement in urban school settings (Vanderhaar et al., 2006). The study concluded that student poverty, teacher experience, and previous achievement were strong predictors of projected student achievement (Vanderhaar et al., 2006). College and district educational preparation programs were not found to be significant predictors of student achievement (Vanderhaar et al., 2006). The study included recommendations for policymakers, practitioners, as well as potential future researchers (Vanderhaar et al, 2006).

Wasserberg (2017) conducted a qualitative research study to gain insight into African American students' perceptions of standardized testing (Wasserberg, 2017). The researcher found that standardized testing can be particularly damaging for African American students when it reinforces negative stereotypes about race (Wasserberg, 2017). The study focused on four high-achieving African American students at the same elementary school (Wasserberg, 2017). The students were interviewed in a focus group. The research also gathered information through an additional 30 hours of observation (Wasserberg, 2017). Findings revealed four themes regarding how high-achieving

African American children perceive their educational experiences at the school: (a) a narrow perception of education as test preparation, (b) feelings of anxiety related to the state test, (c) a concern with what White people think, and (d) the rejection and acceptance of stereotypes (Wasserberg, 2017).

Xianxuan Xu (2018), in an article entitled, Principal's Impact on Student Achievement, asserted that the building principal impacts student learning in a variety of indirect and direct ways. The practices and characteristics of a principal can impact student attendance, student engagement, school faculty job satisfaction, and even collective teacher efficacy (Xu, 2018). All these factors can impact student success and achievement in an elementary school. Student attendance and engagement directly impact the amount of exposure that students get to curriculum, instruction, and assessment in the school setting.

A principal's characteristics and attributes can directly impact faculty and staff job satisfaction of school employees as well. Xu's (2018) article purports that high-achieving schools are managed and led by effective principals. More pointedly, Xu (2018) suggested that an effective principal has an impact that is equivalent to increasing student achievement by at least two months in one school year. Conversely, an ineffective principal can impact student success by lowering student achievement by at least two months as well. The author concluded that though the principal impact on student achievement is largely indirect, it is nonetheless a considerable impact (Xu, 2018).

According to Xu (2018), next to teacher quality, school leadership is the single greatest school-level factor on student achievement. The most effective principals are not

only good instructional leaders but successful managers of the school's day-to-day operations as well. To be a positively impactful principal, the school leader must be able to suitably manage the faculty, staff, and facilities of the school building as well. Xu (2018) also explained that previous research proves that principal tenure, the amount of time that a principal has in their current position, and principal stability has a positive impact on student success. Contrarily, with the introduction of a new principal without administrative experience, Xu (2018) points to increases in student absenteeism, lower rates of experienced teachers at the school, higher rates of student turnover, and higher rates of novice teachers (Xu, 2018).

Kearney (2012) asserted that the principal of a school is extremely important in setting the culture of a school building. The principal does not typically provide direct instruction to students; however, the role of the principal has an impact on student success by directly setting and managing the culture of the school. A study (Kearney et al., 2012) was conducted of 105 elementary schools and 44 secondary schools in nine school districts throughout the south-central portion of Texas. The Kearney et al. (2012) study used student achievement tests to determine and measure student success. Results showed that within the elementary setting, in particular, principal longevity was "highly correlated" to elementary student success. The results obtained in the secondary schools showed that principals in high need schools, those with great rates of poverty and low student achievement tend to leave after their first and only year as principal at the school (Kearney, 2012).

The schools included in the study demonstrated characteristics of the absence of organizational commitment, lack of shared mission and vision, and ineptitude regarding

the development and sustainability of any meaningful change (Xu, 2018). The study quantifiably concluded that principal turnover negatively impacted student success, as measured through achievement tests. Though principal longevity is not the only factor, by and large, the longer a principal serves in a specific school building, the greater the positive impact on student success will be. Kearney et al, concluded that stable and consistent school-level leadership develops and stimulates greater student success and achievement.

Standardized Testing as a Method for Measuring Student Achievement

While the early origins of standardized testing in American Schools are arguably rooted in racial and otherwise stereotypical perspectives (TERC, 2001), the modern implementation of criterion-referenced assessments such as the ACT Aspire tests is to determine if students have mastered the standards for that grade level (DESE, 2021; TERC, 2001)

The ACT Aspire assessment is criterion-referenced instead of norm-referenced (DESE, 2021). This means that the test questions are designed to measure a student's ability to demonstrate mastery of a specific skill or standard (Bond, 1996). With norm-referenced assessments, the student's ability as well as their performance relative to other test takers are considered (Bond, 1996).

Objective tests with a uniform or standardized method of administration and evaluation can be extremely helpful in defining and measuring objective benchmarks of student success (Deerman et al., 2008). Standardized testing has been a practice in American public schools since as early as 1965 (Deerman et al., 2008). In many instances, these tests have proven useful in validating the quality of teaching and learning

in public schools (Deerman et al., 2008). No one measure of success paints an accurate picture of true success in a learning environment (Deerman et al., 2008). Taken into consideration with other measures of success, however, standardized tests can help provide valuable information regarding the evaluation of instruction, curriculum, and assessment practices of a school or district (Deerman et al., 2008).

The strict and prescriptive requirements for administering these tests help to ensure that the results are valid and reliable in objectively quantifying student achievement (Deerman et al., 2008). Standardized tests are used as high stakes summative tests, but they are also used throughout the academic year to determine emotional learning needs, intellectual learning deficits, and even help to draft Individual Learning Plans, or IEPs, for students who struggle (Deerman et al., 2008). These IEPs are only written after a battery of standardized tests is administered and evaluated by special education professionals (Deerman et al., 2008). Over-reliance on standardized testing alone can be problematic, but the use of standardized tests can be beneficial for both schools, districts, and even states in evaluating the viability of curriculum and instruction (Deerman et al., 2008). Standardized tests can also help to identify gaps in instructional practices, student subgroup populations, and even alignment of curriculum to the testing tool (TERC, 2001).

Nonwhite students are impacted differently from their white counterparts through the implementation of standardized testing and the practice can even reinforce negative stereotypes for black students (Wasserberg, 2017). Historically imbalanced racial practices/policies in school systems can be greatly exacerbated through standardized

testing (Brunn-Bevel & Byrd, 2017). Research supporting the relationship between student achievement scores and principal efficacy is limited (Grissom et al., 2012).

In summation, this study used standardized testing as a measure of student success. Standardized tests, such as the ACT Aspire have been proven to have the necessary validity and reliability to appropriately measure student success. Student achievement as measured through ACT Aspire test results were the only basis for determining student achievement in this study to determine whether students are making adequate progress in their schools.

As the length of a principal's tenure at a school increased, the school's mean scale scores increased. Findings also revealed that schools with greater principal stability had higher school mean scale scores (Brockmeier et al., 2013). In addition, principal educational experience had less of an impact on student achievement than principal tenure or principal stability (Brockmeier et al., 2013). Principals improve with experience, especially during their first few years on the job. Additionally, principals with stronger organization management skills such as those required for managing people or preparing school budgets lead schools with greater student achievement gains (Grissom et al., 2012).

Additionally, multiple research studies (Kearney et al., 2018; Grissom et al., 2012; Xu, 2018.) have proven that school leaders have an indirect impact on student success in schools. While the characteristics of the principal and other attributes have been explored, this study will look to specifically identify any direct or indirect ways that the longevity or tenure of the elementary school principal impacts student achievement in Pulaski County, Arkansas public schools. This study was also conducted based on prior

research studies that have demonstrated that principal preparation programs factor into school leaders' success in improving student achievement as well. While the study did not investigate specific preparation programs, the level of principal educational preparation was reported by the highest degree the principal has attained.

Understanding Instructional Leadership

Prior to the 1980s, the definition for instructional leadership was narrowly constrained to encompass those instructional activities such as classroom walkthroughs, observations, direct modeling, and instructional coaching conducted by the school leader (Marks & Printy, 2003). Along with this idea of school leadership was the perspective that the school leader was a centralized figurehead who held the expertise and answers for how to ensure student growth and achievement. In recent years, this definition has been challenged to incorporate more of the comprehensive skills and attributes that are necessary to be an effective instructional leader of a school organization (Marks & Printy 2003; Loeb & Horng, 2010).

The integration of student achievement data can be particularly helpful and relevant in ensuring that students are meeting their achievement goals and growing academically (Timperly, 2005). More and more principals are expected to be instructional leaders in addition to school managers. Increased research has shown that principals who place an emphasis on instructional leadership for themselves and their teachers can increase student achievement by using assessment data to drive their pedagogical decisions (Timperly, 2005).

A shift in the approach to school leadership has proven that educational leaders are most effective when they adopt a more shared or distributed style of leadership. When

school culture is driven by a top done, lone leader, then schools run the risk of losing ground when the principal leaves followed by the return to former ineffective practices and an inability to attract new leadership. A distributed leadership model allows for authentic capacity building in the staff, by creating a system that relies on the interactions of multiple staff members to bring about change as opposed to solely relying on one leader's actions in the school system (Timperly, 2005).

While several studies describe the direct and indirect impact of the school principal on student achievement, it is important to also note the type of leadership practices that we would expect to see in schools that have successfully brought about change and or growth in student achievement (Marks & Printy, 2003). Parks and Printy point out the necessity of enlarging the leadership capacity of the organization by involving teachers in the decision-making process to facilitate sustainment and stability. Since teachers are the employees of the school district with the most immediate and frequent interaction with students their input is particularly valuable in the decision-making process. Instructional leadership encompasses not only the functions directly related to the teaching and learning, but also the sum of interactions that result in managerial practices, operational decisions, and even facilities management (Marks & Printy, 2003). Since all these areas of leadership can indirectly impact student learning and teachers' instructional capacity as well, they were included in the spectrum of instructional leadership for the purposes of this study. Since shared or distributed leadership is innately more inclusive, the practice positively impacts teachers' ability to stay connected to their classroom while demonstrating drive and resourcefulness (Marks & Printy, 2003). These practices allow a professional environment that allows teachers to

play a critically important knowledgeable and functional role in the school's leadership decision making structure (Marks & Printy, 2003).

The relationships between teachers and the principals are integral to the idea of instructional leadership. According to Geoff Southworth (2005), the most successful leaders acknowledge that teachers require strategically developed supportive measures to fit their individual needs. Effective leaders are also those who have a varied scope of understanding regarding curriculum, classroom observation, personnel management, facility oversight, and a contemplative approach to communication with others. In terms of the relationships with teachers, Southworth (2005) highlights three aspects attributed to effective principals: they are as follows:

- Talking with teachers
- Promoting teacher's professional growth
- Fostering teacher reflection

In order for a school to have a culture of learning there should be evidenced based methods for leadership practices, knowledge of teacher's current needs and strengths, emphasis on data driven strategies. These ideas should be integrated into processes and practices throughout the school's organizational methods. In terms of enhancing the quality of teaching and learning the study points to the importance of modeling effective instruction, monitoring lesson plans and student work samples, and facilitating the use of professional discussions to push teachers in their mindsets and practices (Southworth 2002). Furthermore, school leaders gain credibility through their ability to demonstrate expertise in "curriculum, pedagogy, and both student and adult learning." Ultimately through relationships, familiarity and mastery of instructional methods, principals have

the ability to create a school with a culture of teaching and learning for both teachers and students (Southworth, 2002).

Shifting the Definition of Instructional Leadership

Eileen Horning and Susana Loeb conducted a study in 2010 after reviewing literature that narrowly defined instructional leadership as those practices such as classroom observations and directly coaching teachers. The researchers sought to support a more conclusive and comprehensive idea of instructional leadership, which encompassed school managerial practices in the definition of instructional leadership as well. Loeb and Horning surveyed over 800 principals, 1100 assistant principals, and 32, 000 schoolteachers. Additionally, they conducted over 250 full-day observations along with in-depth interviews with principals as well.

The researchers Horning and Loeb (2010) concluded that most schools that experienced growth in student achievement were more apt to be led by principals who were also effective managers of their schools. Upon realization of this, the researchers concluded that the definition of instructional leadership should be fleshed out to incorporate the administrative behaviors that they attributed to school success as well (Horning & Loeb, 2010).

One of the key areas that consistently appeared in the practices of the more successful principals was an ability to hire, support, and retain high-quality teachers (Horning & Loeb, 2010). These leaders were able to create and sustain a culture of learning that was also a positive working environment for teachers and students. Specifically, those principals who self-reported that they felt they were strong organizational managers had this affirmed in the assistant principals' surveys.

Additionally, the efficacy of a principal's organizational skills was repeatedly shown to be a consistent covariate for increased student achievement. The study found that when principals strategically focus on managing the organization well, improved student achievement scores and students and parents report a more optimistic perspective on the school climate (Horning & Loeb, 2010).

The ability to effectively manage faculty and staff is one of the most critical components of an effective organizational leader (Horning & Loeb). The most impactful principals placed a high emphasis on retaining the most efficacious teachers while removing those identified as marginal or poorly performing. The principals described instances of strategically managing funds to ensure that stronger teachers were able to take advantage of professional development experiences to help them achieve personally identified professional goals. Conversely, these principals report targeting the marginal teachers with professional development to coach them into improvement or to encourage them to leave. One principal even stated that they would manage their time to specifically observe, document, and meet with a marginal teacher with the express intent to encourage her to leave (Horning & Loeb, 2010).

These leaders described the importance of determining why a teacher was or was not having a positive impact on the school or student achievement and then acting upon that information accordingly. There was no one specific approach, they evaluated each situation and decided how to proceed based on the specific circumstances. Though the methods described by some principals may be questionable at best, the point is that each of these principals expressed the importance of retaining and supporting the development

of the teachers who were effective, while either improving or removing those who were not (Horning & Loeb, 2010).

Upon completing a comparison between principals involved in their study who spent more time in observations, versus those who spent more time with administrative management tasks, this study did not find that those principals who spent more time on teacher observations impacted student achievement or the instructional climate of the school more profoundly than those who did not. They did find that teachers in schools with more competent school managers were more often able to find the support and professional support that they needed within the school organization since the school leaders had worked to create a culture that intrinsically provided, they assistance their teachers needed. The overarching findings from this study assert that principles most significantly and positively impact school culture and student achievement by recruiting, hiring, supporting, and retaining high-quality professionals to teach in their schools. Once they find these individuals, the school is more likely to show growth and attract even more successful teachers to join the organization (Horning & Loeb, 2010).

Transformational Leadership

The transformational leadership model is built upon a continuous process of feedback and consistent progress checks that result in analysis and change when necessary. James Burn (1978) set the foundational definition for transformational leadership as "a process where leaders and followers work together to advance motivation and morale." In this conceptual definition, leaders and followers are equally committed and involved in the change process. A leader committed to this level of transformation would exhibit behaviors and ideals aimed at developing or reshaping an

environment to ensure a culture that allows for positive systemic change that can be sustained by the leaders and followers of the organization (Fuller, 2009).

In order to improve school performance, the transformational leader places an emphasis on the individual and collective understandings, skills, and commitment of teachers (Marks & Printy 2005). While respecting and acknowledging these understandings, leaders may still call on these teachers to fully explore and reflect on their own thoughts about instruction and the role they play in the school organization (Marks & Printy 2005). Transformational leaders may also establish new and redefined descriptors for high-quality instructional practices to drive change. Both practices acknowledge the importance that teacher mindset and learning culture may directly or have on student engagement and achievement (Marks & Printy 2005). Practices such as convening a leadership team to draft and communicate school mission and vision with the students, teachers, and community have also been proven important indirectly impacting organizational achievement of a school (Heck et al., 1990).

First Year Principal Challenges

A. Bayar in a 2016 study set out to pinpoint specific challenges that principals face during their first year as novice school principals. In identifying the challenges, Bayar hoped to present findings to aspiring principals, other principals, and policymakers with the ability to bring forth policies and practices that may retain school principals beyond their first year. The researcher was able to isolate six key challenges to the first year principalship through this research:

1. Safety
2. Unfavorable attitudes of parents and families

3. Bridging cultural gaps of immigrant families
4. Teacher unions
5. Negative teacher attitudes
6. Behavior management

First year principals struggled with keeping students and teachers safe by decreasing the number of violent altercations that occurred on their campuses (Bayar, 2016). They ran into cultural issues in terms of negative attitudes from the community and even teachers within the school (Bayar, 2016). Some principals described the difficulty of being promoted to principal in schools where they previously functioned as teachers and the struggle to have their teachers recognize their new role as leader or administrator in the school (Bayar, 2016). Behavior management was another area that new principals described as being difficult as they endeavored to cut down on students' misbehavior. Additionally, the principals pointed to the difficulty in helping newly immigrated students to understand the cultural and linguistic skills necessary to be successful in their new schools (Bayar, 2016). Although this qualitative study was conducted in Turkey, many of the issues principals described may be similar to barriers that school leaders here in the united states face as well. These issues all fall into the categories of obstacles that new principles may face that require additional time and support to understand or remedy.

A study of first year principals in urban schools found that schools that lose a principal after their first year, tend to see decreases in student achievement during the next academic cycle (Burkhauser et al., 2012). This study also found that principal attrition was more greatly due to the decisions to move principals by the schools or

districts as opposed to the new principal making the decision to leave the school (Burkhauser et al., 2012). These findings emphasize the importance of placing the most appropriate administrators in the schools where their talents, experiences, and expertise will be most beneficial and most impactful. It is critical that district leaders hire and place the best principals in the schools where they can have the greatest positive impact since removing a principal after one year may directly or indirectly negatively impact student achievement even after the principal is gone. The study also found that over 20% of principals who do not meet adequate yearly progress are more likely to leave (Burkhauser et al., 2012). This finding underscores the importance of ensuring first year principals have the resources and support to meet goals set for their new schools. Additionally, first year principals who reported having an active partnership and smoother transitions were able to experience more student achievement gains than those who did not (Burkhauser et al., 2012). This study also underscores the importance of strategic principal placement and adequate principal preparation to meet the needs of the schools they will serve in. This is particularly important since the negative impacts can be even greater in low-performing schools (Burkhauser et al., 2012).

First year principals may be overwhelmed or discouraged by many of the unanticipated hurdles they face in their first year as new principals (Walker et al., 2003). In a 2003 study, roughly 60% of participants admitted that they had little to no experience in supervision and therefore struggled to adequately meet the expectations for managing the staff of their schools (Walker et al., 2003). Many of these same respondents reported the difficulties associated with transitioning from a teacher into a school leader (Walker et al., 2003). Dealing with difficult parents and even achieving work-life balance also

ranked among the unexpected difficulties that these new principals faced (Walker et al., 2003). This same study reported that mentorship, experience in school administration, and support from other school administrators were vital in helping to set the groundwork for a more successful first year (Walker et al., 2003). Principal preparation programs, whether at the university level or from within the district, should consider incorporating a required internship and mentorship program for prospective administrators but also first year principals in order to crucial the unexpected challenges that impede a school leader's early success.

Chapter III: Methodology

Public education has moved into an era of accountability that continues to focus on test scores as the primary measure of academic success (Shepherd, 2008). School effects research has identified hundreds of variables that impact a student's ability to achieve academically, many of which are outside the purview of the schools (Hattie, 2009). It is estimated that only 25% of the effect size originates within the school. This means that schools have to work very hard in utilizing that 25% effect size to achieve success. One school-level variable that has been emphasized for school improvement is principal leadership. The role of the principal has shifted from a management perspective to instructional leadership, with principalship being perceived by district administrators and policymakers as an important factor related to student academic success (Simkin et al., 2010).

Because principalship is so important to the effectiveness of schools and the academic success of students, it would seem that a better understanding of how the principal's length of tenure in a school impacts that success would be relevant. That is the purpose of this quantitative, causal comparative, exploratory study, to investigate the relationship between the principal's length of tenure and student academic achievement as measured by the ACT Aspire math and reading test results from 2018-19. This chapter presents the methodology used in this study.

This study was a partial replication of a study by Petty (2018), in which he sought to answer similar questions regarding the relationship between the principal length of tenure and student achievement. The methodology in this study was similar but differed in several aspects. The Petty study used middle schools in the state of New Jersey, while

the present study used elementary schools from one district in central Arkansas. The prior study used the state-mandated tests in New Jersey (PARCC) while the present study used ACT Aspire used in Arkansas. Many of the controlling variables to be used in the present study are the same as the prior study, but not all of the variables from the Petty study were used in the present study. While the present study sought to answer similar questions, it was not intended to support or disprove the prior study, but merely to add to the literature related to this subject. Since it was a non-experimental study using archived data containing variables that were not manipulated, the generalizability of the results was limited only to similar elementary schools in the state of Arkansas. This chapter described the methods used, the research design, research questions, and sample population.

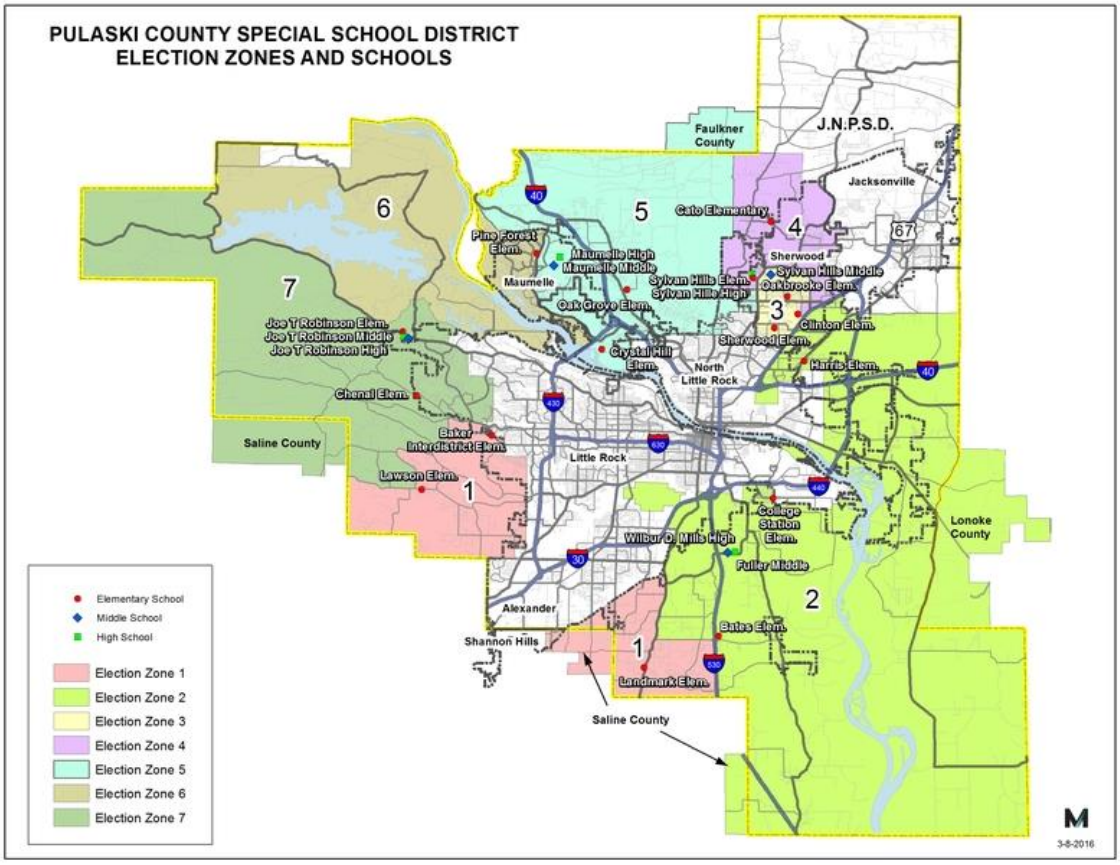
The study used archived data gathered from the Pulaski County Special School District (PCSSD). The study included student achievement data and principal tenure data from the past five years. The tenure of all 16 elementary principles in the district were also gathered for the study. With permission from the superintendent, the data were gathered from the District Testing Coordinator's office.

Setting

The PCSSD was formed in 1927 in a legislative session that combined 33 largely rural independent school districts into one new school district. The geographic area encompassed by this new district included portions of Little Rock, North Little Rock, Maumelle, Jacksonville, Sherwood, Wrightsville, and McAlmont (Worddisk.com), see Figure 2 below.

Figure 2

Map of the Pulaski County Special School District



Since its inception, the PCSSD has undergone demographic and geographic changes including the closings of and annexation of schools. In the autumn of 1987, the Little Rock School District annexed 14 schools from the Pulaski County Special School District (LRSD.com). In July of 2016, all PCSSD schools located in Jacksonville, Arkansas were annexed into the newly created Jacksonville North Pulaski School District. With this change, the PCSSD lost six elementary schools, one middle school, and two high schools. Currently, PCSSD covers more than 600 square miles in central Arkansas spanning multiple cities and municipalities surrounding both the Little Rock

and North Little Rock school districts. The school district is headquartered in Sweet Home, Arkansas (Worddisk).

To avoid bias and derive detailed statistically relevant data for this study, quantitative trends in archived data collected were analyzed using SPSS, to determine whether or not principal tenure impacts student achievement scores. An analysis via descriptive statistical methods was the first step in understanding the data. Next, inferential statistics was used to identify and analyze any trends and correlations between student achievement and the tenure of the principles in the study. The study had a factorial experimental design conducted through regression analysis. Regression analysis allowed the researcher to identify cause and effect relationships in addition to a more in-depth understanding of how the variables statistically impacted one another.

The archived data used in this study was numerical, principal tenure and student achievement scores. Descriptive statistics was used to help describe and define the sample, while inferential statistical methods were used to accurately analyze the data to evaluate the proposed hypotheses. A regression analysis of the interval data was used to identify any causal relationships in the data. A regression analysis allowed the researcher to mathematically sort the data and determine which variables may or may not have an impact based on the independent and dependent variables.

Research Questions/Hypotheses

The following research questions guided this quantitative causal comparative study:

RQ1: What is the relationship between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in mathematics?

H_o1: No statistically significant relationship exists between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in mathematics.

RQ2: What is the relationship between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in reading?

H_o2: No statistically significant relationship exists between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in reading.

Research Design and Methodology

This research study used a quantitative, non-experimental, causal comparative design to address the research questions listed above. Data for this study were collected from PCSSD archival data and the Arkansas Department of Education website. The unit of analysis for this study was school-level using the 2018-19 ACT Aspire Assessment math and reading scores for the third- through fifth-grade in the elementary schools in the PCSSD.

Multiple regression analysis was used to determine if relationships exist between the dependent variable (ACT Aspire Assessment scores) and the predictor variable (principal's tenure in the school). A number of control variables were used in the regression model to try to isolate the predictor and dependent variables. A list of these variables is displayed below.

Table 1

List of Variables for Multiple Regression Analyses

Variable	Level of Measurement	Type
ACT Aspire Math	Student/Scale	Dependent
ACT Aspire Reading	Student/Scale	Dependent
Principal Tenure in School	School/Scale	Predictor
Student Population of School	School/Scale	Control
Percent of Disabilities	School/Scale	Control
Percent of FRL	School/Scale	Control
Percent of Student Mobility	School/Scale	Control
Percent of ELL	School/Scale	Control
Student Attendance Rate	School/Scale	Control

Schools throughout the state of Arkansas have been required to administer the ACT Aspire assessment for all students in third through tenth grades since the state adopted this assessment in the 2015-2016 school year. The data for each year's administration of the assessment has been archived by the PCSSD. Since the schools were not required to complete the ACT Aspire assessment in the 2019-2020 school year due to the COVID-19 pandemic, the data used in this study will be from the 2018-19 administration of the assessment.

Population and Sample Selection

The targeted population for this study was elementary school principals and elementary school students in PCSSD schools containing a third through fifth grade. The ACT Aspire summative assessment is only given to third through tenth-grade students in the state of Arkansas, so kindergarten through second-grade students in elementary schools will not be included in this study. The sample size was 16 elementary schools in the PCSSD. All schools are located in various cities throughout the central Arkansas region. The school sizes vary from student populations of 200-700 total student enrollment. Nonprobability sampling or convenience sampling was used in this study and can be appropriate in quantitative studies to gain greater insight into target populations or populations that have been under-researched. Convenience sampling allowed the researcher to gather data that are readily available, though the results may not be generalizable since the targeted population was not necessarily representative of a national or global sample (Edmonds & Kennedy, 2013).

Instrumentation

The instrument used for this study to measure student achievement was the 2018-19 administration of the ACT Aspire Assessment for third through fifth grades in reading and mathematics. This test is administered by every public school in the state of Arkansas to grades three through ten. Only grades three through five was used for this study.

ACT Aspire. The ACT Aspire assessment is a required summative exam given to all students in grades three through eleven throughout the state of Arkansas. The assessment in Arkansas is a computer-based, timed assessment required for all public and charter school students in the designated testing grades during the spring of each

academic school year. The state of Arkansas adopted the ACT Aspire summative assessment as the standardized testing exam in July of 2015. The initial testing session for ACT aspire was in the spring of 2016.

The state board along with Governor Asa Hutchinson championed the adoption of ACT Aspire since it was a nationally recognized summative assessment that was also meant to serve as a predictor of students ' performance on the ACT college entrance exam. The ACT Aspire summative tests for Arkansan students consist of a separate assessment for math, reading, science, writing, and English. Each assessment session ranges from 40-75 minutes depending on the subject area. This study included ACT math and reading scores since those are the scores that largely factor into the school report card created by ADE to measure a school's overall achievement and growth each year.

Reliability

ACT Aspire is the state-adopted assessment in Arkansas (DESE). It is produced by ACT, Inc. and all psychometric properties of the assessment are derived from research that complies with *The Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014). Using reliability coefficients as an estimate of the internal consistency reliability, inter-item analyses were run on the administration of the 2013 national administration. The Cronbach alpha coefficient results in a score from 0.0 to 1.00 with the higher the score demonstrating that internal consistency. The raw and scale coefficients for mathematics and reading in grades three through five are presented in Table 2 below. They demonstrate that for all grades and subjects, there is strong reliability for the assessment.

Table 2

Raw and Scale Reliability Coefficient Ranges from Spring 2013

Subject	Third Grade	Fourth Grade	Fifth Grade
Mathematics			
Raw	.73 - .79	.55 - .76	.57 - .77
Scale	.75 - .79	.62 - .75	.65 - .77
Reading			
Raw	.83 - .85	.83 - .84	.81 - .84
Scale	.83 - .85	.83 - .85	.81 - .84

Validity

The validity of an instrument has a number of categories. In particular, construct validity demonstrates how well the instrument accurately measures the constructs of interest. For the ACT Aspire Assessment, does it measure reading and mathematics? Or is it measuring another subject area? Similarly, content validity demonstrates that the instrument is accurately measuring what is being measured. For instance, does the reading assessment cover all aspects of reading or narrowly focus on one aspect of reading.

ACT, Inc. assures that the content and construct validity for the ACT Aspire Assessment has been met. Additional information on the validity of the assessments can be found in the Summative Technical Manual (ACT, Inc., 2019).

Data Collection

Data collection for this study was first initiated through the selection of the population. Since this study focused on elementary school students and administrators in

central Arkansas, the PCSSD was an appropriate choice for the study due to its size and diversity in location. Permission was obtained from the PCSSD to use the district in this study (Appendix B). The district encompasses schools in rural areas such as Cato Elementary School as well as urban areas such as College Station Elementary School. The data collection process included gathering all ACT Aspire Assessment scores for PCSSD elementary students third through fifth-grade during the 2018-19 school year.

The PCSSD central office administration agreed to provide the data in a format that was identifiable by school and grade but masked all identifiable information so that no student or principal can be identified in the raw data. In addition, the PCSSD provided the length of tenure for each principal from the schools participating in the study, along with additional school and student data that were used as control variables in the multiple regression analysis. Although all data was archival, no data was collected until the ATU IRB approved this study (Appendix B). All data were provided to the researcher by electronic files that were uploaded into SPSS® for analysis.

Data Analysis

Once the data were received by the researcher, they were then uploaded into SPSS® for statistical analysis. Multiple regression analyses were employed. To avoid bias and derive detailed statistically relevant data for this study, quantitative trends in archived data collected were analyzed. Using Statistical Package for the Social Sciences, SPSS, the data were analyzed to determine whether or not principal tenure impacts student achievement scores. An analysis via descriptive statistical methods was the first step in understanding the data. Next, inferential statistics was used to identify and analyze any trends and correlations between student achievement and the tenure of the principals

in the study. The study had a factorial experimental design conducted through regression analysis. Regression analysis allowed the researcher to identify cause and effect relationships in addition to a more in-depth understanding of how the variables statistically impact one another.

After data were analyzed, results were compiled and conclusions are drawn, this information will be shared with the leaders of the Pulaski County Special school district. The researcher will share data in a presentation that culminates in specific research-based recommendations concerning student performance and whether or not it is impacted by long-term or frequent school leadership changes. The goal of the recommendations will be to help district leaders make more informed decisions about placing and moving principals.

Chapter 4: Data Analysis and Findings

Each public elementary school in Arkansas is evaluated annually using a school performance report card. The components of this report card include enrollment count, class size, teacher quality, overall school score, student's achievement, and a composite school letter grade. Student achievement in Arkansas schools for grades three through five is measured by performance on the ACT Aspire Assessment. The student achievement data is further disaggregated by subpopulations such as English Language Learners, Special Education Students with Individual Learning Plans, Ethnic Demographic Information, and even student mobility to analyze gaps between these identified groups and the general student population. These school report cards are published online by the Department of Elementary and Secondary Education through the Arkansas Department of Education website. The information is available to anyone in the general population and is also available in a language that should be easily understood by users attempting to access and understand the information. With the inclusion of the ESSA School Index, these overall ratings now include student growth as a method of measuring a school's overall success in educating students.

While the Arkansas Department of Education does not currently include student achievement as a measure of a principal's success, the achievement does factor into decision-making in PCSSD as evidenced by school improvement plans on their district website. Each school has a public-school improvement plan on the district website, which addresses the following components:

- Student achievement
- Performance Gap

- Participation
- Student Discipline
- Student Attendance

Each of these components directly connects to components of the Report Card published by the Arkansas Department of Education.

Purpose of the Study

This study focused on the relationship between principal retention and student achievement. This quantitative, causal comparative study analyzed the student achievement data and looked for specific trends and correlations. The research study was quantitative, causal comparative, exploratory, and non-experimental. Data from 16 elementary schools located in the Pulaski County Special School District (PCSSD) were used to answer specific research questions about the relationship between principal length of tenure and student achievement scores for grades three through five on the ACT Aspire Assessment in reading and mathematics. The schools are all located within the same district in Central Arkansas. Some schools are located in rural areas, while some are located in more urban areas.

The principals of the elementary schools are the school leaders whose tenure was used for the study. The student achievement was measured using ACT Aspire data. The ACT Aspire is a standardized test that all students in grades 3-10 in the state of Arkansas are required to complete. Therefore, the purpose of this study was to determine whether principal tenure or retention has an impact on student achievement.

Organization of the Chapter

This chapter includes the research questions and hypotheses, the process of data examination, and a thorough explanation of the descriptive statistics. This chapter includes the process of reviewing the data, identifying information, and the analysis and compilation of the data into tables using Statistical Package for the Social Sciences or SPSS software. The chapter concluded with research findings including answers to the proposed research questions and null hypothesis.

Research Questions

RQ1: What is the relationship between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in mathematics?

RQ2: What is the relationship between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in reading?

Independent Variable and Dependent Variables

The dependent variable in this study is the student achievement scores from the ACT Aspire Assessment for grades three through five in reading and mathematics during the 2015-2016, 2016-2017, 2017-2018, and 2018-19 school years. The predictor variable is the principal's length of tenure in the school.

Based on previous research, the researcher's hypothesis is that student achievement scores increased with the length of principal tenure. Existing literature indicates that there are variables within a school setting that impact student achievement. Upon review of these previous studies, there is an expected positive correlation between

these two variables. The data used in this study were archived data retrieved from the PCSSD as well as the Arkansas Department of Education, ADE. Additional student variables included in this study are special education population, socioeconomic status as measured by free/reduced lunch percentages, English Language Learners, student attendance rates, student mobility rates, and total school enrollment.

Schools throughout the state of Arkansas have been required to administer the ACT Aspire assessment for all students in third through tenth grades since the state adopted this assessment platform in the 2015-2016 school year, so this data has been archived by the PCSSD and the ADE since then. The schools were not required to complete the ACT Aspire assessment in the 2019-2020 school year due to a waiver granted as a result of the global pandemic caused by the COVID-19 virus. Therefore, the data used in this study was from the year 2016 through the year 2019.

Descriptive Statistics

Statistical Package for the Social Sciences or SPSS software was used to perform the necessary statistical analysis on the independent variables: principal tenure and principal's number of years of experience. Additionally, the software was used to perform the analysis on the dependent variables ACT Aspire Reading and Math scores. Descriptive statistics for the variables are provided in Table 2.

Table 3

Descriptive Statistics

	M	*SD*	*N*
Math Scores	51.23	17.11	16
Reading Scores	41.31	14.69	16
Prin Tenure	5.69	3.68	16
%SPED	15.06	5.56	16
%FRL	58.00	21.22	16
%ELL	8.44	7.16	16
%Student Att	94.13	1.31	16
%Student Mob	3.37	3.19	16
Enrollment	337.88	146.16	16

This study included a total of 16 elementary schools in the PCSSD. The mean math score for all 16 elementary schools over the course of the years 2015-2019 was 51.23. The mean reading score for all 16 elementary schools for 2015-19 41.31. The mean principal tenure for the 16 elementary schools was 5.69 years. For all 16 elementary schools, the percentage of special education students was 15.06%, the percentage of students on free and reduced lunch was 58%, the percentage of English Language Learners was 8.44%. In addition, the overall percentage of student attendance was 94.13% and the percentage of student mobility was 3.37%. The mean enrollment for the 16 elementary schools was 337.88 students. See table 3 above.

Analysis Procedures for Answering the Research Questions

For each of the research questions, the procedures for identifying the significant control variables and their relative predictive strength is described here. The initial

procedure was a simultaneous multiple regression that used all seven control variables listed in Table 2. The purpose of this procedure was to identify which of these control variables were statistically significant predictors for the dependent variables, math and reading scores.

The next procedure was to run hierarchical regressions. The variables that were determined to be statistically significant in the simultaneous regression procedure were then used, one at a time, to create a series of hierarchical regression models. There were two sets of hierarchical regressions run, one for math and one for reading. The final regression from this portion of the analysis included the independent variable of primary importance to the study, principal tenure. This model was used to ascertain the impact of the contributing variable in deciding the influence on student achievement data as derived from the ACT Aspire data.

The following statistics were relevant to the analyses:

1. The R^2 and R^2 changes were used to find out which variables contribute the most to the R^2 value. *F* scores and *p* values were also noted for each model. These values were found in the hierarchical regression summary table.
2. Also, from the regression summary table, the Durbin–Watson statistic was noted.
3. Overall statistical significance for each model was calculated, which was obtained from the ANOVA table.
4. Beta values associated with each statistically significant coefficient were noted in the coefficients table.

5. The collinearity statistics—more specifically the tolerance and variance inflation factor (VIF)—were determined in the coefficients table.

Analysis and Results

RQ1. What is the relationship between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in mathematics?

H_o1. No statistically significant relationship exists between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in mathematics.

In order to fully explore and answer this research question, several analyses were run using the archived data for the study. The first regression run was a simultaneous regression model with the seven control variables listed in Table 3. These variables were selected after completing a review of the literature as well as analysis of previous similar studies conducted regarding principal longevity and student achievement.

Table 4

Principal Tenure/Math Scores: Simultaneous Variables Entered/Removed

Model	Variable Entered	Variables Removed	Method
1	Enrollment %ELL %SPED Prin Tenure %Student Mob %FRL %Student Att		Enter

Note. a. Dependent Variable: Math Scores b. All requested variables entered

The simultaneous multiple regression for math scores indicated that the model using all seven control variables indicates an R^2 value of .882 and an adjusted R^2 value of .779. This suggested that between 77.9% and 88.2% of student math scores on the ACT Aspire assessment can be explained by the variables in this model. The Durbin-Watson value was 1.484. This value is slightly below the threshold of 1.5 which would indicate an assumption that the residuals did not correlate (see Table 4). The ANOVA results indicate a statistically significant regression (p = .004) in predicting ACT Aspire Math scores (see Table 5 below).

Table 5

Principal Tenure/Math Scores: Simultaneous Model Summary

Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate	Durbin-Watson
1	.939	.882	.779	8.037	1.484

The coefficients table (Table 6) indicates that two of the seven variables included in the simultaneous regression model were statistically significant. The variables that indicate statistical significance are the percentage of free and reduced lunch (p = .003) and percentage of student mobility (p = .021). Length of principal tenure was not shown to have statistical significance (p = .706), but because it is the focus of the study it was retained for the hierarchical regression analysis. The variance inflation factors (VIF) span a range of 1.454 to 5.012 indicating there were no issues of multicollinearity between the variables.

Table 6

Principal Tenure/Math Scores: Simultaneous ANOVA

Sum of Squares	df	Mean Square	F	Sig
3872.849	7	553.264	8.566	.004[b]
516.724	8	64.590		
4389.572	15			

Note. a. Dependent Variable: Math Scores b. Predictors: (Constant), Enrollment, %ELL, %SPED, Prin Tenure %Student Mob, %FRL, %Student Att

Table 7

Principal Tenure/Math Scores: Simultaneous Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients				
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	707.963	349.065		2.028	.077		
	Prin Tenure	.266	.680	.057	.391	.706	.688	1.454
	%SPED	-1.118	.513	-.363	-2.182	.061	.531	1.883
	%FRL	-.615	.148	-.763	-4.156	.003	.437	2.290
	%ELL	-.069	.337	-.029	-.204	.844	.737	1.358
	%Student Att	-6.200	3.546	-.475	-1.749	.118	.200	5.012
	%Student Mob	-3.464	1.207	-.646	-2.869	.021	.290	3.443
	Enrollment	-.029	.018	-.250	-1.610	.146	.612	1.633

Squaring the standardized beta for the two variables that were statistically significant provides the effect size that determines the amount of variance that can be explained by each variable. Free and reduced lunch is the strongest contributor to the overall regression model, explaining 58.2% of the overall variance for student math scores. The negative beta ($\beta = -.763$, $p = .003$) indicates that as the school's free and reduced lunch population increases the school's student math scores decrease.

The other statistically significant variable was the percentage of student mobility in the school. It explained 41.7% of the variance for student math scores. The negative

beta (β = -.646, p = .021) indicates that as the percentage of student mobility increases the school's student math scores decrease.

Hierarchical regression for math scores. The next step in the process in answering Research Question 1 involves using the two statistically significant control variables found in the simultaneous regression to run a hierarchical regression model to measure the influence of each independent variable on student math scores in separate models as individual and combined independent variables. The models were built by inputting each independent variable in the order of their strength, followed by the focus variable, length of principal tenure.

Model 1 = percentage of free and reduced lunch students. Model 2 = percentage of free and reduced lunch students, percentage of student mobility. Model 3 = percentage of free and reduced students, percentage of student mobility, length of principal tenure.

Table 8

Principal Tenure/Math Scores: Hierarchical Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	%FRL[b]		Enter
2	%Student Mob[b]		Enter
3	Prin Tenure[b]		Enter

Note. a. Dependent Variable: Math Scores b. All requested variables entered.

In Model 1 (see Table 8) the independent variable was the percentage of free and reduced lunch students; R^2 was .673, indicating that 67.3% of the variance in student math scores was explained by this variable. In Model 2 the percentage of student mobility was added to the percentage of free and reduced lunch students; R^2 was .777, indicating that 77.7% of the variance in student math scores was explained by these two variables

combined. The R^2 change from Model 1 to Model 2 was .104, indicating that the percentage of student mobility added 10.4% of the variance to the model. The R^2 change was statistically significant $F(6.068)$, $p = .028$. Model 3 added the length of principal tenure to the percentage of free and reduced students and percentage of student mobility, R^2 was .784, indicating that 78.4% of the variance in student math scores was explained by these three independent variables. From Model 2 to Model 3 the R^2 change was .007 indicating that length of principal tenure added only .07% of the variance to the model. The R^2 change was not statistically significant $F(.390)$, $p = .544$.

Table 9

Principal Tenure/Math Scores: Hierarchical Model Summary

					Change Statistics					
Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate	R^2 Change	*F* Change	df1	df2	Sig. *F* Change	Durbin-Watson
1	.820[a]	.673	.649	10.133	.673	28.753	1	14	<.001	
2	.881[b]	.777	.742	8.682	.104	6.068	1	13	.028	
3	.885[c]	.784	.730	8.893	.007	.390	1	12	.544	2.382

Note. a. Predictors: (Constant), %FRL b. Predictors: (Constant), %FRL, %Student Mob c. Predictors: (Constant), %FRL, %Student Mob, Prin Tenure d. Dependent Variable: Math Scores

As shown in Table 10, all of the regression models were statistically significant. This means that the independent variables entered into the three regression models predicted the variance in student math scores. Each model was statistically significant (Model 1: $F = 28.753$, $df = 1, 14$, $p < .001$; Model 2: $F = 22.615$, $df = 2, 13$, $p < .001$; Model 3: $F = 14.500$, $df = 3, 12$, $p < .001$).

Table 10

Principal Tenure/Math Scores: Hierarchical ANOVA

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	2952.155	1	2952.155	28.753	<.001[b]
	Residual	1437.417	14	102.673		
	Total	4389.572	15			
2	Regression	3409.599	2	1704.800	22.615	<.001[c]
	Residual	979.973	13	75.383		
	Total	4389.572	15			
3	Regression	3440.459	3	1146.820	14.500	<.001[d]
	Residual	949.113	12	79.093		
	Total	4389.572	15			

Note. a. Dependent Variable: Math Scores b. Predictors: (Constant), %FRL c. Predictors: (Constant), %FRL, %Student Mob d. Predictors: (Constant), %FRL, %Student Mob, Prin Tenure

Further analysis of the coefficients table presented in Table 11 shows that in Model 1, the independent variable, the percentage of free and reduced lunch students was statistically significant ($\beta = -.661$, $t = -5.362$, $p < .001$. The negative beta indicates that the percentage of free and reduced lunch students has a negative influence on the student math scores. As the percentage of free and reduced lunch students increases, the student math scores decrease.

In Model 2, the independent variable percentage of student mobility was added to the model, and the strength of the variable percentage of free and reduced lunch students decreased (-.820 to -.634). This means that the percentage of student mobility has a significant effect on the strength of the variable, percentage of free and reduced lunch students. However, the percentage of free and reduced lunch students continued to be a statistically significant variable ($\beta = -.634$, $t = -4.192$, $p = .001$). Also, the percentage of student mobility was a statistically significant variable ($\beta = -.373$, $t = -2.463$, $p = .028$).

Table 11

Principal Tenure/Math Scores: Hierarchical Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients							
		B	Std. Error	Beta	*t*	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	89.576	7.588		11.806	<.001					
	%FRL	-.661	.123	-.820	-5.362	<.001	-.820	-.820	-.820	1.000	1.000
2	(Constant)	87.620	6.550		13.378	<.001					
	%FRL	-.511	.122	-.634	-4.192	.001	-.820	-.758	-.549	.751	1.332
	%Student Mob	-1.999	.811	-.373	-2.463	.028	-.689	-.564	-.323	.751	1.332
3	(Constant)	84.093	8.770		9.589	<.001					
	%FRL	-.497	.127	-.616	-3.909	.002	-.820	-.748	-.525	.725	1.378
	%Student Mob	-1.903	.845	-.355	-2.253	.044	-.689	-.545	-.302	.726	1.377
	Prin Tenure	.415	.665	.089	.625	.544	.381	.177	.084	.880	1.137

The negative betas for both variables indicate that they have a negative influence on student math scores. As the percentage of free and reduced lunch students increases, student math scores decrease. Likewise, when the percentage of student mobility increases, the student math scores decrease. Analysis of the collinearity statistics for Model 2 indicated that none of the variables share significant collinearity with one another. Also, the tolerance values were not low. For this model, R^2 was .742. So, 1 minus R^2 was .258 which was smaller than the tolerance values for all of the independent variables in the model.

For Model 3, the focused variable, length of principal tenure was added to the model, and the strength of the variable, the percentage of free and reduced lunch students dropped slightly (-.634 to -.616). This means that adding the length of principal tenure to the model had a very small effect on the strength of the variable, percentage of free and reduced lunch students. The percentage of free and reduced lunch students was still a statistically significant variable (β = -.616, t = -3.909, p = .002). Additionally, the strength of the variable, percentage of student mobility dropped slightly (-.373 to -.355), but continued to demonstrate that it was a statistically significant variable (β = -.355, t = -2.253, p = .044). However, the variable length of principal tenure was not a statistically significant variable (β = .089, t = .625, p = .544). Analysis of the collinearity statistics for Model 3 indicated that none of the variables share significant collinearity with one another. Also, the tolerance values were not low. For this model, R^2 was .730. So, 1 minus R^2 was .270, which was smaller than the tolerance values for all of the independent variables in the model.

Null Hypothesis 1 Decision. No statistically significant relationship exists between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in mathematics.

The analysis demonstrated that the length of principal tenure was not a statistically significant independent variable in relation to the math achievement scores on the ACT Aspire assessment in mathematics. Therefore, the analysis failed to reject the null hypothesis. Simultaneous: (β = .057, p = .706); Hierarchical: (β = .089, p = .544)

RQ2. What is the relationship between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in reading?

H_o2. No statistically significant relationship exists between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in reading.

In order to fully explore and answer this research question, several analyses were run using the archived data for the study. The first regression run was a simultaneous regression model with the seven independent variables listed in Table 12. These variables were selected after completing a review of the literature as well as analysis of previous similar studies conducted regarding principal longevity and student achievement.

Table 12

Principal Tenure/Reading Scores: Simultaneous Variables Entered/Removed[a]

Model	Variable Entered	Variables Removed	Method
1	Enrollment %ELL %SPED Prin Tenure %Student Mob %FRL %Student Att		Enter

Note. a. Dependent Variable: Reading Scores b. All requested variables entered.

The simultaneous multiple regression for reading scores indicated that the model using all seven independent variables indicates an R^2 value of .937 and an adjusted R^2 value of .881. This suggested that between 88.1% and 93.7% of student reading scores on

the ACT Aspire assessment can be explained by the variables in this model. The Durbin-Watson value was 1.881. This value is above the threshold of 1.5 which would indicate an assumption that the residuals did not correlate (see Table 13). The ANOVA results indicate a statistically significant regression ($p < .001$) in predicting ACT Aspire reading scores (see Table 14).

Table 13

Principal Tenure/Reading Scores: Simultaneous Model Summary

Model	R	R2	Adjusted R2	Std. Error of the Estimate	Durbin-Watson
1	.968[a]	.937	.881	5.065	1.881

Table 14

Principal Tenure/Reading Scores: Simultaneous ANOVA

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	3031.579	7	433.083	16.882	<.001[b]
	Residual	205.232	8	25.654		
	Total	3236.810	15			

Note. a. Dependent Variable: Reading Scores b. Predictors: (Constant), Enrollment, %ELL, %SPED, Prin Tenure, %Student Mob, %FRL, %Student Att

The coefficients table (Table 15) indicates that only one of the seven variables included in the simultaneous regression model was statistically significant. The variable that indicated statistical significance was the percentage of free and reduced lunch ($p < .001$). Length of principal tenure was not shown to have statistical significance ($p = .664$), but because it is the focus of the study it was retained for the hierarchical regression analysis. The variance inflation factors (VIF) span a range of 1.358 to 5.012 indicating there were no issues of multicollinearity between the variables. Squaring the standardized

beta for the variable that was statistically significant provides the effect size that determines the amount of variance that can be explained by the variable. The percentage of free and reduced lunch explained 51.5% of the overall variance for student reading scores. The negative beta ($\beta = -.718$, $p < .001$) indicates that as the school's free and reduced lunch population increases the school's student reading scores decrease.

Table 15

Principal Tenure/Reading Scores: Simultaneous Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients				
		B	Std. Error	Brta	t	Sig.	Tolerance	VIF
1	(Constant)	396.276	219.988		1.801	.109		
	Prin Tenure	.193	.428	.048	.451	.664	.688	1.454
	%SPED	-.333	.323	-.126	-1.032	.332	.531	1.883
	%FRL	-.718	.093	-1.038	-7.702	<.001	.437	2.290
	%ELL	.126	.213	.062	.594	.569	.737	1.358
	%Student Att	-3.186	2.235	-.284	-1.426	.192	.200	5.012
	%Student Mob	-1.191	.761	-.259	-1.565	.156	.290	3.443
	Enrollment	-.019	.011	-.194	-1.704	.127	.612	1.633

Note. a. Dependent Variable: Reading Scores

Hierarchical regression for reading scores. The next step in the process in answering Research Question 2 involved using the statistically significant independent variable found in the simultaneous regression to run a hierarchical regression model to measure the influence of each independent variable on student reading scores in separate

models as individual and combined independent variables. The models were built by inputting the independent variable, percentage of free and reduced lunch students, followed by the focus variable, length of principal tenure.

Model 1 = percentage of free and reduced lunch students. Model 2 = percentage of free and reduced students, and length of principal tenure (see Table 16 below).

Table 16

Principal Tenure/Reading Scores: Hierarchical Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	%FRL		Enter
2	Prin Tenure[b]		Enter

Note. a. Dependent Variable: Reading Scores b. All requested variables entered.

In Model 1 (see Table 17) the independent variable was the percentage of free and reduced lunch students; R^2 was .887, indicating that 88.7% of the variance in student reading scores was explained by this variable. Model 2 added the length of principal tenure to the percentage of free and reduced lunch students; R^2 was .890, indicating that 89% of the variance in student reading scores was explained by these two independent variables. From Model 1 to Model 2 the R^2 change was .003 indicating that the length of principal tenure added only 0.30% of the variance to the model. The R^2 change was not statistically significant $F(.322)$, $p = .580$.

Table 17

Principal Tenure/Reading Scores: Hierarchical Model Summary

						Change Statistics				
Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	R^2 Change	*F* Change	df1	df2	Sig. *F* Change	Durbin-Watson
1	.942[a]	.887	.879	5.11386	.887	109.771	1	14	<.001	
2	.943[b]	.890	.873	5.24231	.003	.322	1	13	.580	2.153

As shown in Table 18, both of the regression models were statistically significant. This means that the independent variables entered into the two regression models predicted the variance in student reading scores. Each model was statistically significant (Model 1: $F = 109.771$, $df = 1, 14$, $p < .001$; Model 2: $F = 52.390$, $df = 2, 13$, $p < .001$).

Table 18

Principal Tenure/Reading Scores: Hierarchical ANOVA

Model		Sum of Squares	df	Mean Square	*F*	Sig.
1	Regression	2870.688	1	2870.688	109.771	<.001[b]
	Residual	366.122	14	26.152		
	Total	3236.810	15			
2	Regression	2879.547	2	1439.773	52.390	<.001[c]
	Residual	357.264	13	27.482		
	Total	3236.810	15			

Note. a. Dependent Variable: Reading Scores b. Predictors: (Constant), %FRL c. Predictors: (Constant), %FRL, Prin Tenure

Further analysis of the coefficients table presented in Table 19 shows that in Model 1, the independent variable, the percentage of free and reduced lunch students was statistically significant ($\beta = -.942$, $t = -10.477$, $p < .001$. The negative beta indicates that the percentage of free and reduced lunch students has a negative influence on the student reading scores. As the percentage of free and reduced lunch students increases, the student reading scores decrease.

In Model 2, the independent variable length of principal tenure was added to the model, and the strength of the variable percentage of free and reduced lunch students decreased (-.942 to -.925). This means that the length of principal tenure has only a slight effect on the strength of the variable, percentage of free and reduced lunch students.

However, the percentage of free and reduced lunch students continued to be a statistically significant variable (β = -.925, t = -9.575, p < .001).

Table 19

Principal Tenure/Reading Scores: Hierarchical Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients							
		B	Std. Error	Beta	t	Sig.	Zero Order	Partial	Part	Tolerance	VIF
1	(Constant)	79.129	3.829		20.664	<.001					
	%FRL	-.652	.062	-.942	-10.477	<.001	-.942	-.942	-.942	1.000	1.000
2	Constant	77.221	5.168		14.943	<.001					
	%ELL	-.641	.067	-.925	-9.575	<.001	-.942	-.936	-.882	.909	1.100
	Prin Tenure	.219	.385	.055	.568	.580	.334	.156	.052	.909	1.100

Note: Dependent Variable: Reading Scores

The negative beta for the variable, percentage of free and reduced lunch students, indicates that it has a negative influence on student reading scores. As the percentage of free and reduced lunch students increases, student reading scores decrease. Analysis of the collinearity statistics for Model 2 indicated that neither of the variables shares significant collinearity with one another. Also, the tolerance values were not low. For this model, R^2 was .887. So, 1 minus R^2 was .113 which was smaller than the tolerance values for both of the independent variables in the model.

Null Hypothesis 2 Decision: No statistically significant relationship exists between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in reading.

The analysis demonstrated that the length of principal tenure was not a statistically significant independent variable in relation to the scores on the ACT Aspire assessment in reading. Therefore, the analysis failed to reject the null hypothesis. Simultaneous: ($\beta = .057$, $p = .706$); Hierarchical: ($\beta = .089$, $p = .544$)

Conclusions

Upon the conclusion of a thorough review of the analysis from SPSS, the null hypotheses for both research guiding the study are maintained. The results of this study indicated that no statistically significant relationship exists between the principal's length of experience and student's academic achievement on the ACT Aspire assessment. Of all predictor variables included in this study, percentage of students eligible for free and reduced lunch were found to be most significant throughout each regression conducted.

Chapter V: Conclusions, Implications, and Recommendations

Instructional leadership both directly and indirectly impacts instruction and learning in school buildings. For a principal to bring about real and sustainable change in a school, they need time to become familiar with the needs of the building as well as the nuances and needs of the learning community they serve. A review of the literature in chapter 2 suggests that principals as instructional leaders can impact student achievement and the quality of instruction in their schools. With such a robust body of literature investigating the connection between student achievement and principal effectiveness, the conclusion might be drawn that principals who are in schools for greater periods of time would have a more positive impact on student academic growth and achievement over time.

Surprisingly, the research drawing a direct connection between the two is not clearly evident or apparent. Therefore, the purpose of this study was to determine whether any direct correlation exists between principal tenure and student achievement on math and reading standardized tests in a central Arkansas school district.

Purpose of the Study

The purpose of this study was to collect and analyze data to help draw direct concussions on the implications of moving principals from elementary schools. The goal was to decidedly conclude whether leaving a principal in a building for a longer period of time would positively impact students' academic performance as measured by ACT Aspire math and reading assessments. A thorough and conclusive understanding of these variables and how or if they impact one another would prove particularly beneficial for

school district leaders in helping them to make decisions about how often to move or remove principals from elementary schools.

In addition to the academic test scores, the study also included specific demographic information for each school as well. These additional variables were included in the study to provide a more comprehensive view of the school that the principal was assigned to lead. Factors such as socioeconomic status as measured by the percentage of students receiving free or reduced lunch, the number of students identified as English Language Learners, the number of special education students on Individualized Education Plans, and the racial and ethnic makeup of the student body were included to help draw additional conclusions about student achievement based on these factors as well.

Chapter Organization

Throughout this chapter, the results listed in Chapter 4 was examined and explained. This chapter included a summary of conclusions, recommendations for practice, recommendations for future studies as well as additional findings.

Research Questions and Answers

RQ1. What is the relationship between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in mathematics?

Null Hypothesis 1. No statistically significant relationship exists between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in mathematics.

Answer: The null hypothesis for the study is retained based on the findings of the study and data analysis conducted via SPSS as described in Chapter 4. In the simultaneous multiple regression, principal tenure was not a statistically significant variable. In the hierarchical multiple regression, principal tenure was not statistically significant. Based on this data analysis, principal tenure does not have a statistically significant effect on students' achievement scores as evidenced by performance on the ACT Aspire Math Assessment.

RQ2. What is the relationship between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in reading?

Null Hypothesis 2. No statistically significant relationship exists between PCSSD elementary principal length of tenure and third through fifth-grade student achievement as evidenced by scores on the ACT Aspire assessment in reading

Answer: The null hypothesis for the study is retained based on the findings of the study and data analysis conducted via SPSS as described in Chapter 4. In the simultaneous multiple regression, principal tenure was not a statistically significant variable. In the hierarchical multiple regression, principal tenure was not statistically significant. Based on this data analysis, principal tenure does not have a statistically significant effect on students' achievement scores as evidenced by performance on the ACT Aspire Math Assessment.

Conclusions from the Findings

There is little existing research analyzing the impact of principal longevity on elementary student achievement based on ACT Aspire performance. There is literature

that explores the relationship between K-12 student achievement and principal tenure, such as the study conducted by Douglass Petty in 2018. The Petty study drew very similar conclusions to the findings of this study although the study included additional variables and focused on middle schools in New Jersey. Petty concluded that there was no statistical significance between principal longevity and math, reading and ELA student achievement on the Partnership for Assessment of Readiness for College and Careers or PARCC assessment.

Prior to the Petty study, a similar study by David McDonald concluded that there was a positive correlation between student achievement on the Palmetto Assessment of State Standards and principal. This study was also conducted using middle school students, but focused on students in South Carolina. McDonald concluded that the correlation between student achievement and principal longevity was weak and likely impacted by other variables as well.

Soehner and Ryan (2011) concluded that there is both direct and indirect link from principal leadership to student achievement, but the study suggests that further research is warranted to more poignantly identify which aspects of the principal's leadership most significantly impact student achievement. As described in the review of literature for this study, the school principal impact the school and the students therein in a variety of ways. Based on the literature and existing research, and conclusions from this study, however, principal tenure is a factor that is negligible when exploring that relationship.

This study revealed that student variables such as socioeconomic status and stability in school enrollment are more significant predictors of a student's ability to meet

achievement requirements for the ACT Aspire assessment. Since the percentage of students qualifying for free and reduced lunch was the most statistically significant factor, with student mobility being second, the findings of this study align with previous findings in similar studies. Since the primarily investigated variable of the study, principal longevity, was not found to be as statistically significant, this study falls in line with the majority of similarly conducted studies.

Recommendations for Educational Policy

Since socioeconomic status was the significantly strongest variable impacting student achievement, principals in school populations with high percentages of students for high poverty homes should undergo professional development to assist them in specifically meeting the needs of students from these families. Principals and district leaders over these schools should work to specifically outline the needs of the communities they serve and draft school mission and vision statements that actively integrate those needs. According to the Suber study, effective principals in high poverty schools exhibited the following common leadership qualities:

- an emphasis on teacher empowerment,
- investing time in relationships, and
- setting the example of expectations for all stakeholders

Based on existing literature on highly effective principals in communities of low socioeconomic status, principals in these schools should receive specific guidance on how to connect the needs of the community to the goals of the schools. These principals should have or have the ability to cultivate meaningful relationships with the students, teachers, and community members connected to their schools.

Recommendations for Educational Practice

According to a study by Stephen Jacobson (2008), principals' leadership can account for almost 5% of the variation in test scores, or roughly 25% of all in-school variables when analyzing contributing variables to school achievement (Jacobson, 2008). Ranking second only to the impact of the classroom teacher, principal leadership has a remarkable influence over a student's learning in a school building.

Principal preparation programs should incorporate a component or required course of study that specifically prepares aspiring school leaders to work with students from families with high poverty and low socioeconomic status. There are several nuances in understanding the parents and community members in these high-risk environments, and principals must have a specific skill set to be successful with this targeted subpopulation of the larger educational population. Principles and other school leaders should be required to share a specific plan that addresses plans for analyzing and closing achievement gaps between economically disadvantaged students and the general student population.

Recommendations for Future Research

Upon the conclusion of this research study, the following recommendations can be made based on the findings and limitations of this research.

1. This study relied solely on the ACT Aspire math and reading scores as a measure of student achievement. Future researchers should consider incorporating at least one other measure of reliable student achievement from an additional assessment.
2. This study did not include factors specific to the principals aside from tenure or longevity.

3. This study was completely quantitative. For future research, it would prove valuable to include interviews, surveys, or observations of the principals to provide a more well-rounded description of the principal further enhancing the likelihood of identifying specific attributes that contribute to student achievement and principal success. A mixed method such as this may help to provide greater insight into how the principal impacts student achievement.
4. Future researchers should consider including an instrumentation process that allows them to get the specific total number of years of experience in education as well as the total number of years that a principal has an administrator.
5. This study was limited to elementary schools in central Arkansas, future researchers may choose to expand the study to include other grade levels and geographic areas for more generalizable results and conclusions.
6. While the sample set of 16 elementary schools provided access to thousands of student data sets, increasing that sample size my present more opportunities for greater variations in the analyses. Future research should consider including a larger and more diverse sample set for more generalizable results and more thorough comparisons.

Conclusions

Among the expectations for principals are increasing student achievement, enhancing teachers' instructional capabilities, and ensuring a positive school culture for teaching and learning. Frequently moving principals from school to school creates a barrier to the principal creating lasting and trusting relationships within the learning community and the school community as well. In order for principals to hone their craft

as transformational leaders, they need time to specialize skills and develop healthy learning cultures in their schools. When principals are moved, this process is upended and must be restarted with new personnel. This is particularly detrimental in schools with large populations of high-poverty students. Since high poverty students tend to be the students who are most mobile, the recommendations would be relevant for both variables which were most statically relevant based on the findings of this study.

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Appendices

Appendix A

ATU IRB Approval Letter

ARKANSAS TECH UNIVERSITY

OFFICE OF RESEARCH AND SPONSORED PROGRAMS

1509 North Boulder Avenue
Administration, Room 207
Russellville, AR 72801

479-880-4327
www.atu.edu

January 3, 2022

To Whom It May Concern:

The Arkansas Tech University Institutional Review Board has deemed Valencia Essel's proposed research, entitled "The Relationship Between Length of Principal Tenure and Student Achievement in Central Arkansas Elementary Schools," to be exempt pursuant to federal regulation 45 CFR 46.104 (d)(2)(i)(ii).

Please note that in the event that any of the parameters of the study change, the researcher may be required to submit an amended application.

Please proceed with your research. We wish you success with this endeavor.

Sincerely,

Rene Couture

Rene Couture, Ph.D.
Institutional Review Board
Arkansas Tech University

Appendix B

District Approval to Conduct the Study

Valencia Essel

November 5, 2021

Dr. Charles McNulty
Superintendent
925 E Dixon Rd,
Little Rock, AR 72206

RE: Permission to Conduct Research Study

Dear Dr. McNulty,

I am Valencia Essel, a current elementary assistant principal in the Pulaski County Special School District. I am also a doctoral candidate in the Doctor of Education program at Arkansas Tech University. I am writing to request permission to conduct a study in the Pulaski County Special School District. My study would focus on analyzing data to identify any possible correlation between administrator longevity and student achievement. I will need to include demographic information for the campuses through the descriptors included below which will be coded to ensure student anonymity. The results of the study will be used to complete my dissertation. In order to thoroughly conduct this research, I would need the following information:

- ☐ Total Student Population of the school
- ☐ Percentage of Students with disabilities within the school
- ☐ Percentage of economically disadvantaged students within the school
- ☐ Percentage of Highly Mobile Students within the school
- ☐ Percentage of Students who are English Language Learners within the school
- ☐ Students Attendance Rate within the school
- ☐ Faculty Attendance Rate within the school
- ☐ Faculty Turnover Rate within the school
- ☐ Principal's length of time in the current school within the school
- ☐ Principal's Total Number of Years of Experience in Education within the school
- ☐ Principal's Total Number of Years of Experience in Administration within the school
- ☐ Math and Reading ACT Aspire Achievement Data for 2015-2016, 2016-2017, 2017-2018, 2018-2019

Again, I will ensure the confidentiality of all data through a unique coding system. Permission to receive this information and conduct the study in the Pulaski County Special School would be greatly appreciated. Please let me know if you have any questions or would like for me to provide more detail regarding the proposed study.

Thank you for your time and consideration of this request.

Valencia Essel

Valencia Essel