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AN EXAMINATION OF MENTORING AND INDUCTION EFFECTS ON RETENTION, TEACHING EFFECTIVENESS AND STUDENT ACHIEVEMENT.

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AN EXAMINATION OF MENTORING AND INDUCTION EFFECTS ON RETENTION, TEACHING EFFECTIVENESS AND STUDENT ACHIEVEMENT.

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF EDUCATIONAL LEADERSHIP AND POLICY STUDIES

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DEDICATION

The inspiration for this work is a result of the great mentors I have been fortunate enough to have had a relationship with. First, and foremost, I would not have made it this far, nor had the motivation or stamina to persist through this doctoral degree without the Lord and my faith. My Dad has always been my steadfast encourager and mentor in all things – from giving me advice, telling me I am being too stubborn and should think about the choice I am making, to reassuring me that, "it will all work out". I will forever miss his support, thoughtful wisdom, and timely guidance, as he unexpectedly passed away my first year in the program. My Mom, who is a wonderful, doting, and dedicated shoulder to lean or cry on – if I had not had her help and support with my children that allowed me quiet moments to work on reading and writing, this would not be possible. My children, Dilyn LeBarre and Keila Knott, who I love so much! They have been with me throughout this journey, and have taught me as much as I hope to have taught them. To my brother, Joseph Neihart, and sister, Maegan Neihart, thank you for being some of my biggest cheerleaders. I hope this work serves as motivation and inspiration for my children and siblings to know that anything is possible!

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ABSTRACT

The purpose of this quantitative quasi-experimental study with a non-equivocal groups design is to explore how mentoring and induction variables influence teacher retention, and the effect of mentoring on student achievement and teaching effectiveness. Survey data, student achievement data, and teacher effectiveness data was collected from new teachers in two school districts, one with a formalized mentoring and induction program and one without. Chi-square test results showed a significant effect of mentoring on increasing teacher's intent to remain in the profession. Chi square results on induction supports including common planning period, mentor in the same subject area, and reduced preps had no significant effect on retention. Despite numerical differences between groups, *t*-test results of mentoring on student achievement did not show a significant effect and might be due to the small sample size. T-test results of mentoring on teacher effectiveness did show significant results. During a tumultuous time in education, it is crucial to support and retain new teachers; mentoring research has found is an effective method to support new teachers, increase retention, and increase teaching effectiveness. Districts need to provide quality mentors with detailed, comprehensive, research-based training programs to ensure an effective, quality service to new teachers (Duncan, 2010; Shockley et al., 2013). However, mentoring is only one way to reduce attrition. Plans to support teachers in a variety of ways need to be studied further, then thoughtfully planned and implemented. Only then can we realize an increase in student achievement with a decrease in teacher attrition.

Keywords: mentoring, induction, retention, student achievement

Chapter 1

Introduction

Quality education has been a growing concern since the launch of Sputnik in 1957. Americans and politicians alike have become increasingly impatient with the lack of high school graduates academic proficiency and excellence. Some believe losing the "space race" to the Soviet Union drew negative attention to real or perceived deficiencies in our educational system (Kirst & Wirt, 2009). Others believe the publication of *A Nation at Risk* continued critiques and criticisms of education (Gardner, 1983). Since the "space race" and *A Nation at Risk*, there has been increased pressure on the American educational system to rank first in academic excellence across the world (Gardner, 1983; Kirst & Wirt, 2009). Regardless of the catalyst, the quality of American education and the entire structure has been scrutinized like never before (Fowler, 2013).

Problem Statement

Research has shown the leading indicator of student success is a quality teacher (Duncan, 2010; Marzano, 2003; National Commission on Teaching and America's Future, 1996; Reschovsky & Imazeki, 2003; Rivkin, Hanushek & Kain, 2002; Morris, 2007; Wong & Wong, 2014). Teacher retention is a concern for many districts, especially in states like Oklahoma experiencing budget shortfalls and annual teacher shortages. Retaining effective educators and decreasing teacher shortages is a state-wide concern, because a quality educational system affects all areas of the state, from the legislature to the business community to law enforcement agencies. During the 2014-2015 school year alone, there were more than 800 vacancies in Oklahoma

reported at the beginning of the school year (Eger, 2014). Overall, teachers are leaving the profession in record numbers; approximately 50% of teachers leave the profession in their first five years (Ingersoll & Strong, 2011).

However, despite efforts to recruit teachers, districts across Oklahoma have had difficulty filling vacant teaching positions. This is due to a severe shortage across the state, and is caused by a variety of reasons, ranging from low pay in the state which has caused teachers to move, to unhappiness in the profession from isolation and stress, which makes retention efforts even more important. Historically, there have been efforts to address the teacher shortage, as well as increase the educational quality in the United States. One solution for the teacher shortage has been the recruitment of alternatively certified teachers addressed in the No Child Left Behind Act (NCLB). Part of the efforts to increase retention, teacher effectiveness, student achievement, and reduce new teacher isolation and stress have been induction programs including mentoring. Studies about the potential effects of mentoring on retention, academic performance, and teacher effectiveness are needed.

Legislative Background

Education in the United States began with a one room school houses. The school houses were not created through constitutional direction, as there is no mention of education in the U.S. Constitution; instead, education is a state's right through the 10th Amendment (Kowalski, 2013). However, this does not mean that other branches of the government do not get involved and intervene in issues related to education. The legislative, judicial, and executive branches have all influenced education over the years. The legislative level has enacted laws deemed to be in the nation's best interest

which are tied to funding that allows for appropriate implementation (Turnbull III, Stowe & Huerta, 2007; Kowalski, 2013). Examples of legislative action include the Smith-Hughes Act of 1917, the National Defense Education Act of 1958, the Elementary and Secondary Education Act of 1965, the Individuals with Disabilities Act of 2004, the No Child Left Behind Act of 2001, and Race to the Top through the American Recovery and Reinvestment Act of 2009. The judicial branch has been involved when state law is inconsistent or contradicts federal law, and judicial intervention has increased since 1950 (Fowler, 2013; Kowalski, 2013), for example, Brown vs. Topeka Board of Education in 1954. The executive branch has often been where some of the legislative action originates, for example President Lyndon B. Johnson and the Elementary and Secondary Education Act, President George W. Bush and No Child Left Behind, President Barack Obama and the American Recovery and Reinvestment Act. Furthermore, executive responsibilities also include appointment of the secretary of education who oversees the administrative aspects of federal legislation (Kowalski, 2013). The U.S. Department of Education is currently responsible for these duties, but prior to 1979 other departments were responsible: 1953-1978 – the Department of Health Education, and Welfare, 1939-1952 – the Federal Security Agency, and before 1939 was the Department of the Interior (Kowalski, 2013). Since the 1980's many Americans, politicians, the media, and businesses consider the public education system in crisis (Fowler, 2013). The history of federal intervention in education is important because it shows the increased involvement the federal branches of government have had since the one room school house under state's authority. This

increased involvement has put more restrictions on what must be done in the class room, and who is qualified to be in the class room.

The largest policy related to teacher qualifications, and finally to the state legislative mentoring directive, is the No Child Left Behind Act of 2001, and the subsections within that policy related to teacher qualification. Furthermore, how do these policies regarding teacher mentoring relate to teacher retention and student achievement? Often federal policy leads to state policies and statutes, and that is true of NCLB and Oklahoma education policy. In order to understand the policies included in NCLB, it is important to understand the historical context of the events that brought upon these changes or additions to legislation.

With the launch of Sputnik in 1957, there was public outcry in the United States to increase the achievement in math and science, leading to the National Defense Act of 1958 (Fowler, 2013; Kowalski, 2013). The Elementary and Secondary Education Act (ESEA) was originally implemented under President Lyndon B. Johnson in 1965 and provided grants to districts serving low-income students, scholarships to low-income college students, improving education, developing special education centers, as well as text and library books (United States Department of Education, n.d.). Even with the call for increased achievement and rigor, few people questioned the fundamental legitimacy of the educational system until the 1980's culminating with President Regan's 1983 open letter, *A Nation at Risk* (Gardner, 1983; Fowler, 2103). This led to an increased focus and critique of the educational system. Like never before, the educational system is being scrutinized and examined (Fowler, 2013). There has been steady, increasing pressure on the United States educational system to increase academic achievement to

rank first in the world (Kirst & Wirt, 2009). Like a pressure cooker, this increased scrutiny and momentum has led to federal government regulations, such as No Child Left Behind Act (NCLB) (No Child Left Behind Act, 2001).

The next revision of the ESEA was reauthorized by President George W. Bush in 2001 through the NCLB Act. According to NCLB Title One, Part A, Subpart One, Section 1119, (No Child Left Behind Act, 2001) all districts who receive funds under the act must ensure all teachers hired are highly qualified by the conclusion of by the 2005-2006 school year. The purpose of NCLB was to close the achievement gap through school accountability, and expand opportunity for all students to ensure all children have fair and equal access to a challenging education (Randolph & Wilson-Younger, 2008). In an effort to increase academic achievement, NCLB includes many components directing and regulating public schools and districts daily operations.

The precursor to the NCLB highly qualified teacher requirement was the open paper *A Nation at Risk* (Gardner, 1983). It stated that despite common opinion of teacher overpopulation, there was actually a teacher shortage particularly in certain subjects, teachers being drawn from the bottom quarter of high school and college graduates, as well as the small salary teachers of all years of service receive. Of particular interest to this study is the requirement for all teachers to be highly qualified and how it relates to alternative certification routes. Teachers are considered highly qualified if they have at least a bachelor's degree, state certification or license, or prove they know the subject area taught; secondary teachers prove their knowledge by majoring in their subject area, having enough credits to major in the subject, pass a state-developed test, have a graduate degree in the subject area, an advanced

certification from the state, or a High, Objective, Uniform State Standard of Evaluation (HOUSSE) (Unites States Department of Education, 2004). The HOUSSE is one way NCLB has existing flexibility for districts to use to demonstrate highly qualified teachers. In order for teachers to qualify under a HOUSSE, they must demonstrate highly qualified status through a combination of knowledge in the subject area through professional experience, professional development, and teaching experience (Unites States Department of Education, 2004).

On the surface, requiring a highly qualified teacher is a common sense expectation, because highly qualified teachers lead to student success (Rivkin et al., 2002; Marzano, 2003; Morris, 2007; Wong & Wong, 2014). However, there has been a teacher shortage and in the same legislation, there are provisions for states to create alternative teacher certification routes. Specifically, Title Two, Chapter B of NCLB (No Child Left Behind Act, 2001) describes a transition to teaching program. This encourages states to develop programs that lead to alternative routes for certification and allows recent college graduates or high quality mid-career professionals to teach. However, the latest federal education legislation, the Every Student Succeeds (ESSA) Act of 2015, eliminated the requirement for all teachers to be deemed highly qualified. ESSA now places the teacher certification requirement back on the states, and beginning in the 2016-2017 school year, districts and schools are no longer required to report the number of teachers who are highly qualified, or complete the steps when there are teachers who are not (Association for Supervision and Curriculum Development, 2015; ESSA, 2015: USDE, 2016). The legislation now reads that states must submit plans that assure all teachers and paraprofessionals who are working on

programs funded by Title 1-A meet the state certification and licensure requirements (Association for Supervision and Curriculum Development, 2015;). Although the federal highly qualified requirement has been eliminated, the states still have alternative pathways to teacher certification.

When NCLB was enacted, Oklahoma did as NCLB encouraged and developed appropriate school code which outlined alternative routes to earn a standard teaching certificate, detailed in Appendix A (70 O.S. § 6-122.3). Allowing for an experienced professional to move from the work force to teaching, for example a professional chemical engineer teaching high school student's chemistry might sounds like a positive opportunity for students to learn from an expert with real-world experience. However, alternatively certified individuals do not have the background in essential teaching strategies, pedagogy, and lack a student teaching experience. NCLB Title Two, Chapter B, Section 2311 (No Child Left Behind Act, 2001) specifically states:

> The purposes of this chapter are —
> (1) to establish a program to recruit and retain highly qualified mid-career professionals (including highly qualified paraprofessionals), and recent graduates of an institution of higher education, as teachers in high-need schools, including recruiting teachers through alternative routes to certification; and
> (2) to encourage the development and expansion of alternative routes to certification under State-approved programs that enable individuals to be eligible for teacher certification within a reduced period of time, relying on the experience, expertise, and academic qualifications of an individual, or other factors in lieu of traditional course work in the field of education. (Title Two, Chapter B, Section 2311)

Oklahoma includes provisions that state teachers who are pursuing alternative certification must participate in the resident teacher program (70 O.S. § 6-200). The resident teacher program includes a resident teacher committee whose purpose is to provide guidance and assistance to all new teachers, both alternative certification and

resident traditional certificate teachers, during their first year (Oklahoma State Department of Education, 2011). This is the piece of school code that addresses the NCLB purpose to both recruit and retain professionals participating in the transition to teaching program, because support to new teachers allows confidence to enter the profession and support to stay. A key component of the resident teacher committee is the mentor for the new teacher. The mentor teacher shall only support one new teacher, and whenever possible should be at the same school and have a similar certification as the new teacher (New Teacher Center, 2011). Although the resident teacher program is included in NCLB and Oklahoma school code, there was a legislatively mandated moratorium, which exempted teachers from the requirement to participate and eliminated funding of the program during the 2010-2011 and 2011-2012 school years due to budget concerns. Formerly, mentors received a state-funded stipend of $500 to participate, and mentors had the opportunity to attend training through the Oklahoma Mentor Network (New Teacher Center, 2011).

It is more critical now than ever before, to maintain the incentives for mentors and provide quality guidance to new teachers. The legislators in Oklahoma need to reinstate the incentives and training opportunities for mentors. This is especially true considering the Oklahoma Teacher Preparation Act requires schools in the 2014-2015 school year to participate in the residency program (70 O.S. § 6-195; 70 O.S. § 6-200). If the state cannot fund the incentive and training, schools should find a way to continue this on their own, as mentoring a new teacher is a serious responsibility and schools should have consistency in delivery. Perhaps this can be done through grants, community, or business partnerships. The support through mentors with the resident

teacher program helps new teachers become more effective and enhances retention rates.

Social Disparities and Equal Access

The NCLB (No Child Left Behind Act, 2001) requirement for schools and districts to hire highly qualified teachers is in the best interests of students (Darling-Hammond, 2010; Synar & Maiden, 2012). However, districts across Oklahoma have had difficulty filling teaching positions due to a severe shortage across the state. The 2014-2015 school year alone, began with more than 800 vacancies reported, and 300 of those vacancies were from two of the largest urban districts in the state, Oklahoma City Public Schools and Tulsa Public Schools (Eger, 2014). Often economically disadvantaged students have less access to high quality teachers, as well as experience a high-level of teacher turn over (Darling-Hammond 2003; Darling-Hammond, 2010; Duncan, 2010; Ronfeldt, Loeb, & Wyckoff, 2013). Teacher turn over can be both the cause and effect of problems, not only for the school itself, but more importantly for student achievement (Duncan, 2010; Ingersoll & May, 2012; Ronfeldt et al., 2013; Watlington, Shockley, Guglielmino, & Felsher, 2010). In order for schools and students to overcome the achievement gap, students need to have a high quality teacher for three consecutive years (Rivkin et al., 2005; Darling-Hammond, 2010). All too often low-income students are taught by teachers with emergency certifications, or in the process of alternative certification; the achievement gap would close much faster if low-income students had highly qualified teachers rather than those most often encountered (Darling-Hammond, 2010; Duncan, 2010; Luekens, Lyter, & Fox, 2004; Watlington et al., 2010). The process of alternative certification is necessary especially

during times of a teacher shortage, however without support for the alternatively certified teachers, students in those classes lagging behind in achievement could fall farther behind.

Public schools experiencing teacher shortages, often work to solve this problem by hiring teachers without a current standard certification. Title Two; Chapter B of NCLB (2002) describes a transition to teaching program which allows recent college graduates or high quality mid-career professionals to teach by encouraging states to develop programs that lead to alternative routes for certification. In Oklahoma, this is made possible through legislation that allows for individuals to go through an alternative placement teaching certification process (70 O.S. § 6-122.3; 70 O.S. § 6-186). Appendix A outlines all requirements to obtain an alternative placement teaching certificate.

Resources and Economics

To make matters worse, while the state is experiencing a shortage, teachers are also leaving the profession in record numbers; approximately 30-50% of teachers leave the profession in their first five years (Darling-Hammond, 2010; Ingersoll & Strong, 2011; Ingersoll, 2012; Synar & Maiden, 2012; Ronfeldt et al., 2013). Districts must work to fill their teaching vacancies and retain quality teachers to ensure students are receiving a high quality education (Darling-Hammond 2003; Duncan, 2010; Synar & Maiden, 2012). All entry-level teachers to the profession, as well as teachers going through the alternative placement teaching certification process are required to participate in the resident teacher program (70 O.S. § 6-122.3; 70 O.S. § 6-186; 70 O.S. § 6-195; 70 O.S. § 6-200). A 2002 research report by Wang, Tregidgo, and

Mifsud reported Oklahoma as a bellwether state for teacher preparation legislation, providing financial incentives for teachers to mentor other teachers and earn their National Board Certification. Perhaps the components of the resident teacher program will support teachers to stay in the profession. One component of the program is mentoring. The entry level teacher must work with a mentor teacher who will coach and provide guidance to the entry level teacher. The mentor teacher should participate in a mentor teacher preparation institute when possible (70 O.S. § 6-182.11). However, with the recent decline in educational funding, these incentives are no longer funded (New Teacher Center, 2011). Searching for, recruiting, hiring, and training new teachers are costly endeavors in terms, of time, finances, faculty cohesiveness, and student achievement (Synar & Maiden, 2012). It is more cost efficient to invest in induction programs and retention efforts than to hire replacements. To ensure students are receiving a high-quality education, districts must work to fill their teaching vacancies and retain quality teachers. This study considers current national and state policies that help or hinder districts in recruiting and retaining effective, highly qualified teachers, specifically the No Child Left Behind requirement for schools to hire highly qualified teachers and the alternative certification pathways which led to the residency requirement in Oklahoma.

Purpose Statement

The purpose of this quantitative study is to explore what induction variables, specifically mentoring, influence retention, and the effect of mentored teachers on student achievement. Through a quasi-experimental design, the researcher utilized a

survey to gather responses from new teachers reporting their intent to stay in the profession, satisfaction, and supports they received.

Definition of Key Terms

The following definitions clarify how key terms are used in relation to mentoring and retention.

Beginning Teacher/New Teacher. A beginning teacher is a new teacher who is in their first year of the teaching profession.

Dissatisfier. An aspect of a job that elicits feelings of job dissatisfaction, but an absence does not necessarily equate to job satisfaction.

Elementary. Grades pre-kindergarten through fifth.

Induction Program. Planned, needs-based, comprehensive, professional development programs for the retention and improvement of novice teachers that address teacher effectiveness, growth, and job satisfaction (Shockley, Watlington, & Felsher, 2013, p.22).

Mentee. A teacher who is in their first year of teaching or in their first year in a district who is paired with a mentor teacher.

Mentor. A tenured or career teacher who has taught in the district three or more years and is mentoring a new teacher.

Mentoring. The process of assimilating a new teacher into the profession, district, and school by providing guidance in regards to best practices, feedback following observations, modeling through the mentee's observation of the mentor, and cognitive emotional support.

Resident Teacher. A new teacher who is employed in an accredited school and the school district has elected to place under the guidance and assistance of a mentor teacher and residency committee. The resident teacher shall have completed the program of the college or school of education of the accredited institution of higher education from which the person has been graduated, and shall have successfully completed the competency examination in areas of approval in which the resident teacher seeks certification (70 O.S. § 6-182)

Satisfier. A need that is satisfied enabling an employee to feel satisfaction in their job, but does not automatically indicate an absence of job dissatisfaction.

Secondary. Grades six through twelve.

Teacher Retention. Teachers who remain in the teaching profession; sometimes also referred to as teachers who remain in the teaching profession at the same school.

Theoretical Framework

Few studies have looked at teacher retention through the lens of Herzberg's (2001) two-factor theory of motivation, also known as motivation-hygiene theory (Shockley et al., 2013). Herzberg's theory was built upon Maslow's hierarchy of needs and overlays two factors onto the hierarchy: satisfiers or motivational factors and dissatisfiers or hygiene factors. Figure one depicts Shockley, et al.'s (2013) weighted balance satisfier model that shows how the two models fit together. Unique to this theory is that an increase in a satisfier, which results in increased job satisfaction, does not directly decrease job dissatisfaction (Ewen, Smith, & Hulin, 1966; Shockley, et al., 2013). Similarly, dissatisfiers indicate job dissatisfaction, but fewer dissatisfiers do not

necessarily indicate satisfaction (Ewen, et al., 1966; Shockley, et al., 2013). Shockley, et al. (2013) note an absence in research over teacher induction programs and strategies within those programs which utilize a theoretical framework to design programs, as well an absence in the use of a theoretical framework in the research process.

This study will use Herzberg's two-factor theory of motivation as the theoretical framework which will add to the body of research by viewing mentoring through this lens. Mentoring as a component in an induction program fits into Herzberg's model as a satisfier and in Maslow's hierarchy of needs would be characterized as a higher order need. While hygiene factors or lower level needs, such as food, shelter, and income are essential to living and classified as dissatisfiers, they are not enough to reduce attrition; teachers must also have motivational factors or higher order needs met (Shockley, et al., 2013). Variables that need to be studied more include: specific qualities of successful mentoring programs, such as time requirements for mentors to spend with the mentee, a true study with a comparison group that does not receive mentoring and how teacher effectiveness is impacted by mentoring (Ingersoll & Smith, 2004).

Research Questions

In an effort to find out more about what influences teacher retention, the current study will explore four research questions:

- Research Question 1: Does having a mentor teacher positively influence teachers remaining in the profession?

  Null Hypothesis: There is no influence of having a mentor teacher on teachers remaining in the profession.

Alternative Hypothesis: There is a positive influence of having a mentor teacher on teachers remaining in the profession.

- Research Question 2: Do induction structures within a school positively influence teacher retention?

  Null Hypothesis: Induction structures within a school have no influence on teacher retention.

  Alternative Hypothesis: Induction structures within a school have a positive influence on teacher retention.

- Research Question 3: Does teacher participation in mentoring have a positive influence on student achievement?

  Null Hypothesis: There is no influence of teacher participation in mentoring on student achievement.

  Alternative Hypothesis: Teacher participation in mentoring has a positive influence on student achievement.

- Research Question 4: Does teacher participation in mentoring have a positive influence on teacher effectiveness?

  Null Hypothesis: There is no influence of teacher participation in mentoring on teacher effectiveness.

  Alternative Hypothesis: Teacher participation in mentoring has a positive influence on teacher effectiveness.

Nature of the Study/Overview of the Methods

The nature of this quasi-experimental quantitative study is to measure the amount of retention, student achievement, and teaching effectiveness in relation to new

teacher participation in an induction program supports, with a specific focus on mentoring, which will serve as the treatment condition. Schools from each level (elementary, middle, and high schools) within two school districts in Oklahoma will be compared. One district, Mentored Public Schools (MPS), has a regimented mentoring program as part of their new teacher induction process. The other district, Not Mentored Public Schools (NMPS), does not have a regimented mentoring program as part of their induction process. New teachers in both districts will be surveyed with a survey called the Schools and Staffing Survey (SASS). The new teacher effectiveness scores will be collected based on their final evaluation score. Student achievement of new teachers will be collected and measured by percentage of failing grades each teacher assigned. New teachers will be divided into two comparison groups: one, teachers participating in a regimented mentoring program and two, those who do not participate, and a *t*-test comparing the means of percentage of failing grades and final evaluation score between the two groups was calculated in a statistical program by IBM, called the Statistical Package for Social Sciences (SPSS) . A forward stepwise multiple regression will be calculated through SPSS to determine effects of multiple independent variables (mentoring participation, a mentor who teaches the same subject, having a reduced number of classes to prepare for, and mentor-mentee common planning period) on a dependent variable (retention percentage).

Significance

Aside from the concern that collegiate preparation programs for secondary teachers is almost exclusively focused on content knowledge, meaning there is very little training and preparation for classroom management techniques, the alternatively

certified teacher does not have any training in this area. Teacher preparation programs are rarely able to provide all the training needed for successful teaching, due to a significant amount of necessary experiential knowledge to understand how to prepare, manage a classroom, deliver a lesson alone, and to teach. The results of this study can provide knowledge regarding the effectiveness of one low-cost resolution to provide new teachers and alternatively certified teacher some insights into effective strategies that work to lessen the stress of new teachers and increase retention. This study will impact the field of Educational Leadership, as well as state and area school districts, because the results will provide insights into how site based programs can implement innovative programs to increase retention, as well as inform teacher preparation programs.

Limitations

A limitation related to this study is that while there is a pseudo-control group, the data is coming from two districts with two different programs. Within these programs and within the school as a whole, there are extraneous variables the researcher cannot control. In addition, the researcher has previously been employed at one of the high schools in the study and is currently employed at the other high school. Efforts to address this potential conflict will be addressed by the primary researcher being present at the meeting where the survey will be distributed only in a capacity to explain the study. Then, the primary researcher will leave the room and another individual without ties to the school will distribute the survey.

Summary

The introduction provided an overview of the historical context of the teaching profession and how the political climates, with various legislative mandates have influenced the climate of education in 2017. Teacher attrition was described in relation to how it is a hindrance to student's education and the institution's financial stability. This led to the description of the purpose statement with key terms, research questions, significance, and a brief description of limitations. Chapter two consists of the literature review, which describes previous research related to the current study and a detailed description of the theoretical perspective.

Chapter 2

Literature Review

Introduction

There are many factors related to both induction programs and teacher attrition. It is important to examine the literature to discover the complexities of the problem related to why teachers leave, the impact this has on the districts, schools, and students, as well as how components included in inductions programs can help to mitigate teacher dissatisfaction, increase satisfaction and increase retention. These areas will be addressed in the literature review through various related sub headings. A natural starting point in delving into the problem of teacher attrition and potential solutions is to look at the various aspects of why teachers leave, which are addressed in factors related to teacher attrition. Once these factors are discussed, it is necessary to understand why this is a problem, as some may argue that a certain degree of attrition is positive and necessary; these challenging areas will be addressed in the problem with teacher attrition. As a result of education being funded through state and federal governments who so often seem to be experiencing budget shortfalls, the financial impact of teacher turnover is a critical area to review and with that, the most effective and economical solutions to reduce attrition.

One of the strategies districts and schools have used to reduce attrition are induction programs. While this may appear to be a straightforward concept, there are varying models used across the country. The induction programs section addresses what has been done in the past and the variations in programming. One specific strategy included in induction programs is mentoring. Similar to induction programs,

there are many mentoring models implemented in various districts and schools. As a result, it is important to review the different mentoring models and successful components from the literature, and these will be explored under mentoring models. This leads to the next section, increasing retention with mentoring, where previous studies discussing how mentoring could increase retention.

Attrition is always related to satisfaction or dissatisfaction and motivation to some degree. Just as it has been found that couples who stay married and not divorce is a result of motivation and commitment to stay together, remaining in the teaching profession is similar. Those who do not succumb to attrition and remain in the profession are motivated by job satisfaction, hygiene factors or dissatisfiers, and the degree to which an individual's needs are being met. The next two sections, Maslow's Hierarchy of Needs and Herzberg's Theory of Motivation, address these concepts and serve as the theoretical perspective or lens this study is based upon. Maslow's Hierarchy of Needs describes an individual's motivation to do certain things is based on a hierarchy of need from basic to more complex, for example a student focusing in class when their mind is on trying to figure out where they will sleep and have shelter for the night. Basic needs range from food, shelter, safety, security to more complex needs related to self-esteem, friendship, love, knowledge, meaning, and self-actualization. Herzberg's Theory of Motivation was partially developed from Maslow's hierarchy and overlays satisfiers or job satisfaction variables and dissatisfiers or job dissatisfaction variables onto the hierarchy. Finally, the last section will provide a description of previous studies that have use Herzberg's two-factor theory in education.

Factors Related to Teacher Attrition

The research surrounding why teachers leave includes a wide-range of reasons. Across the body of literature, the main areas cited for attrition include salary, isolation, administrative support, other career opportunities, personal or family reasons, and personal dissatisfaction, including stress, lack of professional respect, and workload (Hunt & Carroll, 2003; Ingersoll, 2012; Riggs, 2013). Teachers earn on average 20% less than their professional peers (Darling-Hammond, 2010). In an interview with Riggs (2013), Ingersoll highlights the importance of salary when he states the solution to teacher turn over simply comes down to the fact that respected, well-paid professions do not have shortages. Conversely, some studies have shown that not even a higher salary would increase retention (Darling-Hammond, 2010; Riggs, 2013), and compared to other professional occupations with a higher salary, like engineering, science, and computer technology, the attrition rates are similar (Scheopner, 2010). However, this does not indicate there is not a problem of teacher attrition, as the rate has continued to increase over the last 20 years (Scheopner, 2010), and across the nation school districts are experiencing teacher shortages. Furthermore, teachers are more likely to leave the profession when their content area yields higher salaries in other high-demand occupations, such as math and science, but these differences seem to matter more when a teacher is in their more early years in the profession, whereas veteran teachers place more value on working conditions, than salary concerns (Darling-Hammond, 2010).

Professional isolation has been a characteristic of teaching dating back to the one-room school house. Veteran teachers tend to have higher retention rates, and perhaps part of the reason why teacher in the early stages of their careers leave at a

higher rate is because veteran teachers have established a network of friendships and supports within the profession. Interestingly, this is another area where mentoring could potentially remedy one aspect of teacher attrition. Professional isolation and stress may also be related to why teachers cite administrative support as a reason they stay or leave. As legislative, parental, and community demands increase the work-load and stress teacher's experience, the importance of reducing professional isolationism increases; with the sink or swim mentality, beginning teachers cannot be expected to remain in the profession without adequate support. Increased administrative support allows an outlet for teachers to garner new ideas for problems they experience, as well as a partner in trying to reach the same goal of student success. Finally, salary and professional respect are not always tied together; teachers have historically been paid less than other countries and less than what they deserve, but in the past teachers felt valued and respected more than they do today (Scheopner, 2010). It seems that teachers are frequently forced to defend their profession to legislators due to numerous mandates and salary, but also to some parents who no longer feel like they are striving for the same goals of educational success.

The Problem with Teacher Attrition

Some may say teacher attrition is positive, in that it allows new faces with fresh ideas into the profession, providing a sort of rejuvenation into the system, while also creaming-the-crop to eliminate ineffective teachers (Ingersoll & Smith, 2004). However, when attrition in teaching is about 4% higher than in other fields, with 40% of students earning undergraduate degrees in education never entering the classroom, there is a problem (Carroll & Fulton, 2004). Teacher attrition is a major concern of

schools and districts alike, because a high quality teacher is a leading indicator of a student's academic success (Duncan, 2010; Marzano, 2003; Reschovsky & Imazeki, 2003; Rivkin, Hanushek, & Kain, 2002; Morris, 2007; Wong & Wong, 2014). An estimated 30-50% of teachers leave within the first five years of teaching, and the attrition rate of entry-level teachers has increased by one-third in the past 20 years (Darling-Hammond, 2010; Ingersoll & Strong, 2011; Ingersoll, 2102; Synar & Maiden, 2012; Paris, 2013). While all schools are concerned with teacher attrition, it is especially troubling in high need, low-income schools. Ronfeldt, Loeb, & Wyckoff (2013) found teacher turnover has a significant and negative impact on student achievement, particularly for low-performing schools.

These districts need a method to directly recruit teachers into their schools, but there are too few direct pathways from universities to fill the need; as a result, some schools and districts rely on alternative certification routes, but there is a wide range of quality associated with routes to alternative certification (Darling-Hammond, 2010). In Oklahoma, the requirements to obtain an alternative teacher certification the candidate must: have graduated with a bachelor's degree from an institution recognized by the Oklahoma State Regents for Higher Education, attained a 2.5 grade point average or higher throughout the bachelor's program, the major for the bachelor's degree must correspond to a teaching certificate area, have two years of work experience in the subject area of specialization if there is no post-baccalaureate work in a related area, take and pass the Oklahoma General Education Test (OGET) and Oklahoma Subject Area Test (OSAT), as well as compete the fingerprint requirement; once employed the provisional licensee must complete the resident teacher program, pass the professional

educator exam, and complete a professional education component (Oklahoma State Department of Education, 2011). More detailed information of the Oklahoma alternative certification process can be found in Appendix A. Especially during times of teacher shortages, both high performing and high need schools must often fill their vacancies with lower quality teachers (Duncan, 2010; Watlington, Shockley, Guglielmino, & Felsher, 2010; Shockley, Watlington, & Felsher, 2013). This is particularly troubling for high need schools that have difficulty recruiting highly qualified teachers, particularly during times of shortages. If high performing schools experience the burden of teacher shortages, they are more likely to recruit the more highly qualified teachers, leaving the high need schools with even less variety in applicants than usual.

Teachers are the most inequitably distributed resource among schools (Darling-Hammond, 2010; Duncan, 2010; Watlington et al., 2010); low income students often encounter new teachers or teachers with an alternative certificate, rather than experienced, veteran teachers (Luekens, Lyter, & Fox, 2004; Darling-Hammond, 2010; Duncan, 2010; Watlington et al., 2010). Teacher stability is crucially important to student achievement, because teacher attrition is a threat to student learning outcomes (Duncan, 2010; Shockley et al., 2013); in order for students to overcome the achievement gap, or opportunity gap if we are looking at equitable access, students need high quality teachers for three consecutive years to be at the same academic level as their peers in (Rivkin et al., 2005; Darling-Hammond, 2010). The United States Department of Education's Nationwide Listing of Teacher Shortage Areas (2014) has acknowledged this issue and implemented different incentive programs to address the

need through the Teacher Education Assistance for College and Higher Education (TEACH) grant and alternative certification routes, especially for positions/subject areas the state and government determines to be shortage subject areas/positions. Some districts and states are providing support and signing bonuses, such as Delaware's retention incentive awarding between $2,500 and $10,000 to teachers who work and stay in high need schools or Rhode Island's induction program that incorporates weekly coaching along with professional development (United States Department of Education, 2013).

Financial Impact of Teacher Turnover

Aside from the most important concern of how student achievement is effected by teacher attrition, there are also concerns related to the financial impact exiting teachers make on districts. The process of searching for, hiring, and training new teachers is a costly endeavor that encompasses four categories: separation costs, hiring costs, training costs, and performance productivity (Synar & Maiden, 2012). Schools who have to hire many novice teachers year after year must constantly invest money into recruitment and professional support, leading to scarce resources being wasted teaching new teachers the basics who leave before becoming skilled, and districts do not reap the benefits of their investment (Darling-Hammond, 2010; Shockley et al., 2013).

It is estimated replacing a teacher costs 30% of their salary, or between $5,000 and $50,000 depending on the area, and comprehensive teacher induction programs can reduce teacher turnover rates by an estimated 50% (Watlington et al., 2010; Synar & Maiden, 2012). Purposeful induction programs are not always implemented at the level they need to be due to a district's reluctance to fully invest in quality planning and

delivery of the program (Shockley et al., 2013). Retirement is a factor in the cost of teacher turnover and cannot be controlled, but teacher turnover can be influenced by districts and has been cited as the cause of teacher shortages (Duncan, 2010; Watlington et al., 2010); to that end, districts across the nation need to focus efforts on retention which can be increased through mentoring (Ingersoll, 2012).

History of Induction and Mentoring and Programs

One of the first mentions and focused discussion of new teacher support was in the Conant Report on Teacher Education (Tead and Rivlin, 1964). In this publication, new teacher support is discussed among full reforms related to teacher education and certification requirements. Following this publication was the Elementary and Secondary Education Act of 1965. These publications created momentum and efforts to professionalize the teaching profession in the 1980's, and include the Carnegie Task Force on Teaching as a Profession report, the Holmes Group (1986), and the establishment of the National Board for Professional Teaching Standards (2001) (Darling-Hammond, 2016; Williams, 2000). Furthermore, the educational reforms of the 1980s were greatly influenced by the space race and publication of *A Nation at Risk* (Gardner, 1983); reformers in this era believed that investments in beginning teachers would allow novices to more thoroughly acquire the skill and competence of the veteran teacher, in addition to the new teacher socializing into the school and district culture more quickly (Arends & Rigazio-DiGilio, 2000). Consequently, this led to state agencies, local education agencies (LEAs), and institutions of higher education (IHEs) to develop induction and mentoring programs. Induction programs are support programs designed by variety of organizations, including states, professional groups,

school districts, and school sites to support new teachers entering the profession. The purposes of induction programs are to support new teachers, increase their effectiveness, increase their satisfaction, and increase retention (Arends & Rigazio-DiGilio, 2000; Ingersoll & Smith, 2004). The details of induction programs are described below.

Induction Programs

Induction programs are meant for professional teachers who have already completed basic training and are seen as a bridge between the student-teacher experience and the entry into the profession (Ingersoll & Smith, 2004). Many states recognize the need for new teacher support and in the 2010 – 2011 school year 27 states required some form of induction (Goldrick, Osta, Barlin, & Burn, 2012). Despite the wide-spread acceptance of a need for new teacher induction, there is a limited amount of empirical research into these programs. Ingersoll and Strong (2011) reviewed empirical studies that examined the effects of induction programs, and found induction has a positive effect, but the models vary in the frequency and types of supports provided. Comprehensive induction programs should include multiple supports. Some of the variances in supports provided are when schools provide a package or bundle of supports for the induction program, These include, in order of frequency of the support provided, facetime with an administrator, mentors, beginner's seminars, collaboration with colleagues, teacher aides, and a reduced course load (Ingersoll, 2012); despite the type of supports provided, the more comprehensive package a teacher receives, the greater impact on increased retention (Ingersoll, 2012).

Furthermore, mentoring programs have frequently served as the dominant form of teacher induction, to the point of the terms being used interchangeably or synonymously. However, induction programs and mentoring are, in fact, different. Mentoring can be a component of an induction program, and has shown positive benefits when implemented in isolation, but a comprehensive induction program should include more than mentoring. To further complicate differentiation between induction programs and mentoring is the fact that mentoring programs across the nation and world vary in structure. The different models and variations are described next.

Mentoring Models and Variations

Mentoring became part of the educational field in the early 1980's as a part of a movement to improve education and transform teaching and teacher education (Feiman-Nemser, 1996). Although the overall goal is similar in all the models, in that they aim to provide beginning teachers with a more experienced guide to navigate and support new teachers (Ingersoll & Kralik, 2004), there are many mentoring models that have been used throughout the country. Variations across the mentoring models are related to character and content (Ingersoll & Kralik, 2004), and influence mentor investment and quality.

The majority of character differences are related to mentor selection and include selection, compensation, and recruitment. The selection of mentors can be semi-mandatory, voluntary, or by assignment. The type of mentor teacher assigned can vary from a more experienced teacher who teaches the same subject, to simply a more experienced teacher. Mentor compensation is an additional aspect that varies, where some states and districts compensate the mentors with a stipend and some do not. This

is important in terms of valuing the investment of time and resources the mentor teachers are investing, assist in efforts to recruit the best veteran teachers, and further encourage the motivation of mentor teachers to pour into the mentee teachers,

Content differences include structure, preparation, duration, and intensity. Mentor trainings range from intensive multi-day professional development, to none at all. The duration of a mentoring program can be as undefined as assignment of mentor with no required number of meetings, to a single beginning of the school year meeting, or even a highly structured program with a set number of meetings and observations over a couple of years where time is provided for this collaboration. Finally there is also a difference related to how many beginning teachers a mentor serves; some districts limit a mentor to one beginning teacher, while others have no set maximum. The overall structure of the program is made up of all the character and content differences. However, some districts assign mentors to any teacher new to the district, whereas other districts only assign mentors to beginning teachers who entering the profession for the first time. With all the variation in mentoring programs, it is difficult to assess which components are most critical especially when a district is looking to implement a mentoring program.

Research indicates retention is decreased the most when teachers have a bundle of supports through the mentoring process (Ingersoll & Smith, 2004; Ingersoll, 2012). The supports that show the most value include: the mentor having the same planning period as the mentee, pairing the mentored teacher with a mentor who teachers the same subject, and time for collaboration with the mentor and other teachers in the subject area (Ingersoll & Smith, 2004). While the schools with the best programs offer a package of

supports (Ingersoll & Smith, 2004; Ingersoll, 2012), those who do typically have made a concerted effort to support teachers. As a whole, this creates an overall positive, supportive culture, and due to the interconnectedness of elements within a school overall, it is difficult to separate the individual pieces – especially those that occur naturally, such as informal, meaningful conversations in workrooms, professional learning communities (PLCs), and in the mentoring program.

Increasing Retention with Mentoring

It has been said NCLB treats schools and education like an assembly line (Cone, 2011; Randolph & Wilson-Younger, 2012). Schools modeled after factory production fail to support teachers with professional development and sharing professional expertise, leading to decreased motivation for teachers to improve instruction (Darling-Hammond, 2010). Teacher isolation has long been a problem, and new teachers battle this isolation in addition to feeling like they are out on a limb, lost at sea, left to the wolves, and are struggling to survive (Ingersoll, 2012; Paris, 2013; Shockley et al., 2013). Mentoring allows for professional discourse, as teachers, especially new teachers need feedback on effective strategies and techniques to grow (Darling-Hammond, Amrein-Beardsley, Haertel, and Rothstein, 2012; Dufour and Marzano, 2011; Hattie, 2002). Data from the National Center for Education Statistics (2011) show a smaller attrition rate at schools that incorporated mentoring compared to schools that did not, 8% versus 16% respectively. The longitudinal data over two years shows an even more dramatic difference in year two at 9.8% attrition in schools with mentors and 22.5% attrition schools without mentors. Data from the Oklahoma Office of Educational Quality and Accountability (2013) suggest a high school with a mentoring

program had smaller attrition rates than a high school that did not based off each schools average years of teacher experience. This is important because teacher stability has been shown to increase student achievement (Duncan, 2010; Watlington, Shockley, Guglielmino, & Felsher, 2010; Ingersoll & May, 2012; Ronfeldt et al., 2013).

Student achievement was most stunted by having an ineffective teacher, or an inexperienced teacher with a temporary license (Darling-Hammond, 2010; Duncan, 2010; Shockley et al., 2013). Student achievement is linked to both teacher stability and to the degree of teacher preparation (Darling-Hammond, 2010); which is also related to teachers remaining in the profession and continuing to grow as an effective professional, as well as the training alternatively certified teachers receive. While traditionally certified new teachers need mentoring, it is even more critical for alternatively certified teachers, because they have no formal training in education and pedagogy. Duncan (2010) stated, "The ability to attract and retain quality teachers over the next five years will shape public education over the next 30 years" (p. 14), and since we are past this point currently, the prediction has now come to fruition; education and the teaching profession is at a critical point and on the cusp of drastic decline if action to attract and retain teachers is not taken now. Districts and legislators need to fund this initiative and invest in appropriate training programs to provide an effective, quality service before the mentors are burdened to the point of additional attrition (Duncan, 2010; Shockley et al., 2013).

Although there is a teacher shortage, colleges and universities are producing more teacher graduates than before, meaning the shortage is not due to an insufficient supply, as widely believed, but is attributed to more of a revolving door phenomenon of

attrition (Ingersoll, 2012). This information highlights the need for more programmatic supports for new teachers; teacher induction programs, including mentoring, aims to provide guidance and support for new and alternatively certified teachers. While mentoring on its own is not a comprehensive induction program, it is shown to support teacher retention even in isolation (Ingersoll, 2012; Paris, 2013; Shockley et al., 2013).

Mentors are often difficult to recruit, are of varying quality, and are hard to sustain (Ingersoll, 2012; Paris, 2013; Shockley et al., 2013). Teacher attrition overall, and in part currently due to baby boomers retirement, increases the need to recruit and retain quality mentors to develop new teachers who will stay in the profession (Duncan, 2010; Ingersoll, 2012; Paris, 2013). While new teachers' needs continue to grow with new standards, legislative changes, and normal entry level needs, the burden and responsibility of mentors is ever increasing; whereas mentors needs are neglected, as they often do not receive support through training or any incentive for their service (Devos, 2010; Shockley et al., 2013). In order to provide new teachers the support they need, schools must provide quality mentors with detailed, comprehensive, research-based training, and provide a state funded stipend for their additional time investment. However, Devos (2010) cautions that mentoring programs need to meet teachers where they are and not merely be standardized to the point of a formal, mechanical process of completing paperwork.

Research based mentoring improves retention rates in many ways by supplementing skills teachers do not report getting enough training for in college; it reduces teachers' feelings of professional isolation, helps them feel supported, improves instruction, increases student achievement, and provides pedagogical ideas, like

classroom management strategies (Darling-Hammond, 2010; Duncan, 2010; Ingersoll, 2012; Paris, 2013). Mentoring can be very beneficial to new teachers and students' alike, increasing teacher retention and student achievement (Frome, Lasater, & Cooney, 2005; Ingersoll, 2012; Ingersoll & Smith, 2004; Paris, 2013; Shockley et al., 2013; Villar & Strong, 2007).

Mentoring and Induction Criticisms

Criticisms of mentoring begin with the variability in participation and inconsistencies in components included from site to site (Wang, Tregidgo, & Mifsud, 2002; Wei, Darling-Hammond, Adamson, 2009). While there have been many studies that look at mentoring and the induction process, much of the previous research is related to specific programs and limit generalizability (Ingersoll & Smith, 2004). Further concerns are related to the induction timeline, as programs vary in terms of both type of supports provided and longevity. The programs vary widely in terms of content, intensity, duration, and types of supports provided, ranging from common planning periods, frequent supportive contact with an administrator, reduced teaching load, collaboration, as well as subject area match and location of mentor (Ingersoll & Smith, 2004, Ingersoll, 2012). Finally, Hargreaves and Fullan (2000) found many mentoring programs fell short of their potential because they must be integrated with policy and practices to transform teaching as a profession. Leading to the final concern, and related to why some individuals believe some turnover is positive, is because of stagnation. Some scholars question mentoring because of concerns that this support will not promote reform-minded teaching practices (Cochran-Smith & Paris, 1995; Hargreaves & Fullan, 2000).

Theoretical Framework

The rationale and justification for increasing retention with mentoring has been described, but what does this mean in terms of theory and specifically related to the variables included for this study? The term theoretical framework has been described as, "an argument, discussion, figure, or rationale, and it helps to explain, or predict phenomena that occur in the world, and an explanation of how the variables and relational statements are connected" (Creswell, 2014, p.86). A strong theoretical framework allows a lens for which the researcher will view the problem, results, and overall study. The theoretical framework used for this study will be Herzberg's two-factor theory of motivation. This theory, in part, builds upon Maslow's hierarchy of needs, and as such the following sections will provide a detailed description of Maslow's hierarchy and Herzberg's two-factor and how they relate to the problem and variables included in the study.

Maslow's Hierarchy of Needs

Maslow's hierarchy of needs has also been described as a theory of human motivation (Maslow, 1943). Human motivation has also been defined as different from behavior, in that behaviors are almost always motivated, but are also influenced by other internal and external biological, cultural, and situational factors as well. Maslow's original hierarchy included five levels, which were later expanded to include eight levels. The eight levels and examples of motivators within that level are listed below in Figure 1.

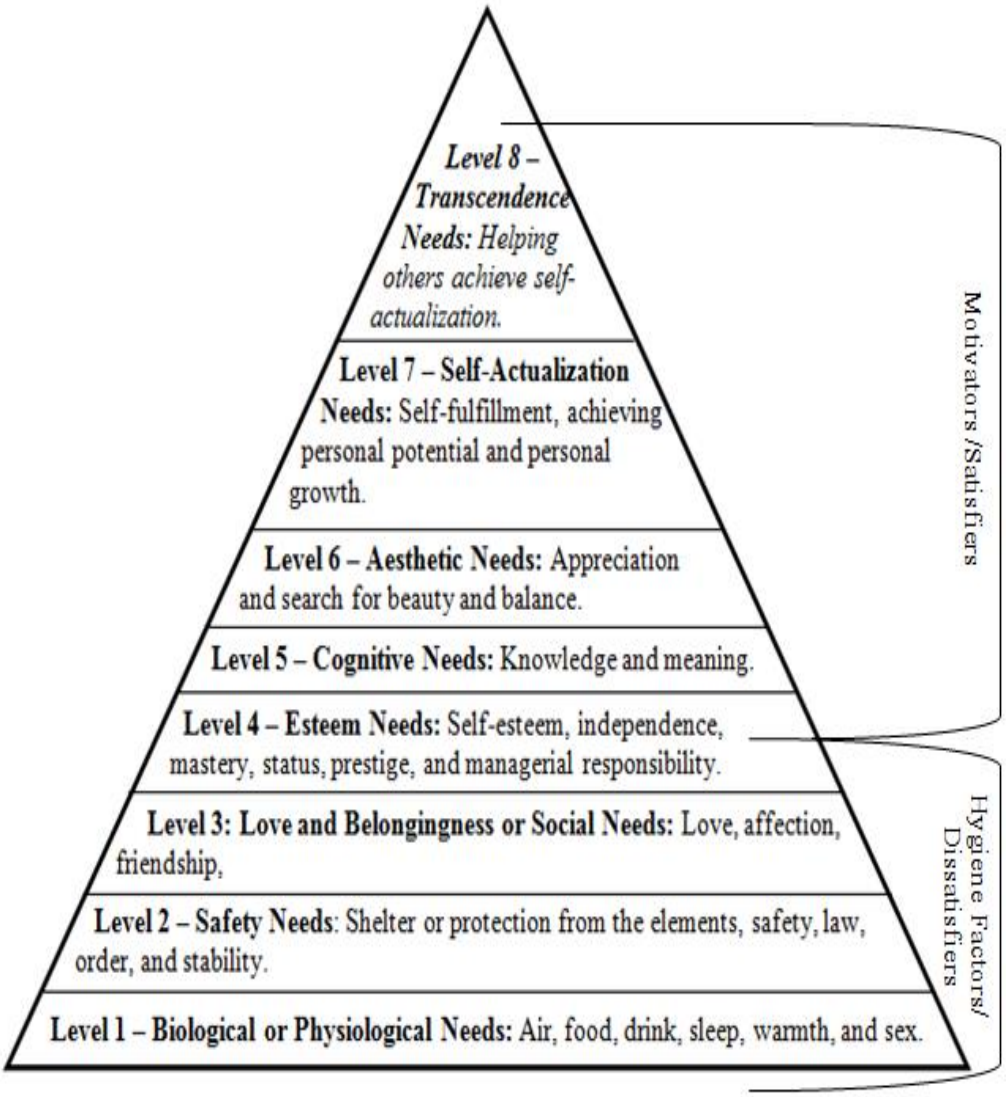

Figure 1. Maslow's Hierarchy of Needs. Adapted from McLeod, S. A. (2014). Maslow's Hierarchy of Needs. Retrieved from www.simplypsychology.org/maslow.html

A hierarchy of needs is based upon the proposition that each human need is categorized by prepotency, meaning the desire for a higher-order need depends on the prior satisfaction of a more prepotent need (Maslow, 1943, Shockley, et al., 2013). An individual is focused on the most prepotent need, while attention to the other needs is minimized; once the need is mostly satisfied the next prepotent need emerges and dominates the individual's focus (Maslow, 1943, McLeod, 2014). A classic example of

this often discussed, is that students have a difficult time focusing in class and on academic achievement if they have not eaten or do not have a place to live. The reason for this is because their basic biological or physiological needs have not been met; as we move up the hierarchy from the first, most basic level to the next, more complex level, the previous level needs should be mostly satisfied (Maslow, 1943; McLeod, 2014; Shockley, et al., 2013).

The hierarchy can also be applied to teachers, and is pointedly important when thinking about their retention in the profession. Teacher components related to the hierarchy include salary and benefits in biological physiological and safety needs. While induction components such as mentoring, common planning time, and reduced preparations are esteem and cognitive needs, they also fall into a split category of satisfiers and dissatisfiers. This is a result of how the individual views the support, for example having a reduced number of classes to prepare for may be seen as a structural area the workplace can control, from a teacher's perspective this may more fit with a satisfier because it allows for satisfaction in the content of the job. Nias (1981) described factors in these split categories as positive or negative satisfiers. However, it is important to note there are outside situational factors teachers in Oklahoma currently struggle with, specifically related to the ever-present financial shortfalls the state faced in the 2015-2016 school year, with current projections that do not get districts back to their full funding before the budget cuts. Teacher salary or income is classified as a lower level need, hygiene factor, or dissatisfier, because earning the money to live and support yourself and possibly a family is essential to living, and an absence creates dissatisfaction as a result of not having the ability to fulfill basic needs.

Herzberg's Theory of Motivation

Herzberg's theory of motivation has been referred to as two-factor theory of motivation and motivation-hygiene theory. This theory examines work factors related to job satisfaction and dissatisfaction, and are categorized into motivation factors and hygiene factors. Herzberg's theory was, in part, built upon Maslow's hierarchy of needs and overlays the motivation and hygiene factors onto the hierarchy. In Herzberg's theory, Maslow's higher order needs are motivation factors that need to be met, so an individual is motivated to produce meaningful work (Shockley, et al., 2013). Motivation factors are related to job satisfaction and the specific job characteristics are referred to as satisfiers. Hygiene factors are related to job dissatisfaction and the specific job characteristics are referred to as dissatisfiers. In Maslow's hierarchy these factors are an individual's more basic needs that should be addressed to reduce feelings of job dissatisfaction. This theory suggests that the two factors of motivation are not opposites; rather they are categorically independent of each other. Specifically, the addition of a satisfier, or motivation factor, would increase job satisfaction, but does not simultaneously decrease job dissatisfaction (Herzberg, 1974).

The satisfiers are known as motivation factors because when they are present to a certain degree in an organization, they bring about work motivation as a result of positive work-related attitudes and job satisfaction (Herzberg, 1974). These factors that make people satisfied at work are related to the content of their jobs, such as interesting work, recognition for achievement, growth, and increased responsibility. In relation to teachers these satisfiers or motivational factors would include mentoring, induction

programs, delegation of authority, more responsibility, self-worth, purpose, belonging, and higher levels of respect for the profession (Shockley, et al., 2013).

Hygiene factors are made up of dissatisfiers which are the factors within an organization related to the context of the job and how well the individual is treated at work. Job dissatisfaction is related to the preponderance of dissatisfiers. Herzberg (1974) describes these as hygiene factors to symbolize the fact that they are preventive, environmental, workplace conditions. These treatment factors, or dissatisfiers, include company policies, salary, working conditions, and interpersonal relationships. Specifically related to teachers, hygiene factors or dissatisfiers would include salary, administrative support, school and federal mandates, number of classes teachers must prepare, class size, and time during the day for planning and collaboration.

Hersey and Blanchard (1993) discuss Maslow and Herzberg's theories together, explaining that Maslow describes needs or motives and Herzberg provides insights into how organizations may satisfy these needs; for example money and benefits satisfy physiological and safety needs, interpersonal relationships and supervision are hygiene factors which satisfy love and belongingness or social needs, and motivators or satisfiers include challenging work, growth and development, as well as increased responsibility that satisfy higher order needs at the esteem, cognitive, and self-actualization levels. Specifically in terms of this study, mentoring as a component in an induction program, as well as induction components including common planning time fit into Herzberg's model as a satisfier and in Maslow's hierarchy as a higher order need. While hygiene factors or lower level needs, such as food, shelter, and income are essential to living and classified as dissatisfiers, they are not enough to reduce attrition;

teachers must also have motivational factors or higher order needs met (Shockley, et al., 2013). Figure 1 and 2 depict the Weighted Balance Satisfier Model and show satisfiers and dissatisfiers in relation to Maslow's hierarchy (Shockley et al, 2013).

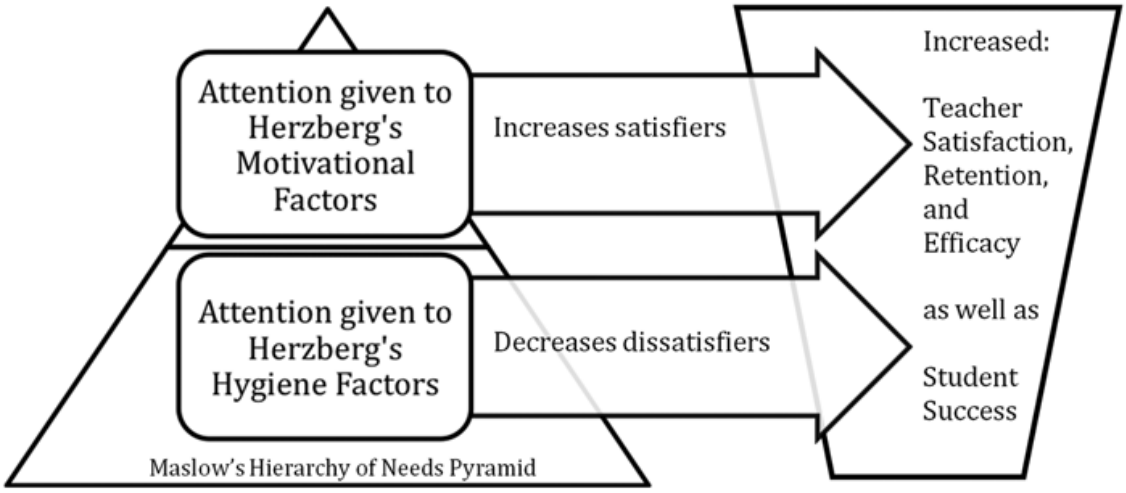

Figure 2. The Weighted Balance Satisfier Model (Shockley, R., Watlington, E., & Felsher, R. (2013). Out on a Limb: The Efficacy of Teacher Induction in Secondary Schools. *NASSP Bulletin*, 0192636513510595.).

Previous Studies in Education with this Theoretical Approach

Herzberg's two-factor theory and Maslow's hierarchy of needs have been used in industrial-organizational psychology and independently in educational research, for example there are studies that explore job satisfaction and teacher retention; however, studies that explore this through the use of Herzberg's two-factor theory are sparse; there have been few studies that combine the two theories and even fewer that use these perspectives in relation to teacher induction. The range of application this theoretical perspective may hold for future studies is broad, as the individual theories have been used previously for a variety of research topics.

Urick (2016) combined the two theories to examine leadership styles and found they did not differ due to higher order needs, but varied due to a hierarchy of control. Nias (1981) researched teacher satisfaction and dissatisfaction related to Herzberg's two-factor theory and found support for the theory in that environmental factors of a job such as career structure, salary, and physical conditions remain dissatisfiers in that improvement in these areas does not necessarily increase satisfaction. Furthermore, job satisfaction increases with opportunities for personal growth, individual recognition (Nias, 1981). A meta-analysis by Shockley et al. (2013), described a study by Gokce (2010) which used Herzberg's two-factor theory to explore teacher motivation and job satisfaction. Gokce (2010) found job satisfaction was more related to motivation factors than hygiene factors, but also concluded no one theory of motivation could fully explain job satisfaction.

Shockley et al. (2013) used Herzberg's two-factor theory as the theoretical perspective in their meta-analysis of studies that aimed to measure the impact of teacher induction on retention and student achievement. They viewed teacher induction programs through this lens, and provide an example describing the hygiene factor and basic need of salary as seemingly providing satisfaction on the surface, while in all reality salary considerations simply hold dissatisfaction at bay. In order to attain satisfaction, motivational factors must be met. In the teaching profession, these could include instructional support, leadership roles, and opportunities for professional development. To further illustrate, Shockley et al. (2013), described a situation where a teacher may love and fully enjoy the work of teaching, but be unhappy and unfulfilled in a particular school environment. Due to the lack of research in teacher induction and

retention through this theoretical lens, and many without consideration of a theoretical lens at all, more research is needed in this area.

Summary

Throughout the literature review, the critical areas related to teacher retention have been discussed, including why it is it important to retain teachers, how it affects student achievement, and the financial impact teacher turn over creates. In 2001 the American Federation of Teachers published a policy brief titled *Beginning Teacher Induction: The Essential Bridge*, which attributed a lack of support as the prevalent reason beginning teachers leave the profession prematurely (American Federation of Teachers, 2001). The goal of this study is to determine which induction supports new teachers receive that are most effective in regards to retention, student achievement, and teacher effectiveness. Herzberg's two-factor theory of motivation is used in the study to provide a lens for which to view induction support, including mentoring, and teacher retention. In the model, support from a mentor is a motivator or "hygiene", so from the theoretical perspective, teachers who receive mentoring would be more satisfied and likely to stay in the profession compared to those who did not. Next, the research method section summarizes the need for the study, how the researcher isolated the variables to study, and the method used to answer the research questions.

Chapter 3

Research Method

Introduction

Beginning teachers need support in their first year of teaching, at minimum, to combat feelings of isolation and assimilate into the school culture. Without support, many teachers feel unprepared for the job and leave the profession. The cost of teacher turnover ranges from $4,631 to $26,502 and are related to separation costs, induction and professional development costs, hiring incentives, recruitment, and overall hiring costs (Watlington, Shockley, Guglielmino, & Felsher, 2010). The National Commission on Teaching and America's Future (2007) found an investment of intensive teacher induction returns $1.66 for every $1.00 invested. Aside from cost related benefits, the more important potential advantages are related to student achievement, and the impact retention has on student achievement. The mentoring benefits related to retention and student achievement have been previously documented (Villar & Strong, 2007; Ingersoll, 2012). However, because of the degree to which induction and mentoring models vary, it is necessary to evaluate the effectiveness of specific models. This study examines the influence of induction structures, specifically mentoring, on teacher retention, teacher quality, and student achievement. Elements described in this chapter include study design, research design, sample, variables, research questions, instrumentation, procedures, assumptions, data analysis, limitations and future research.

Overview

This quantitative study includes data from six schools with similar demographics within two urban school districts in Oklahoma, Mentored Public Schools (MPS) and Not Mentored Public Schools (NMPS), as well as survey data from teachers across both districts. Survey data will be collected from new teachers who are completing their first year in the profession, to assess whether mentoring and induction structures relate to retention. In addition, student achievement and teacher effectiveness data will be collected on new teachers from one elementary, middle, and high school in each district.

Both districts have induction structures, but only MPS has a regimented mentoring program. The regimented mentoring program in MPS includes many minimum requirements. First the mentor must be a career teacher, meaning the teacher has successfully taught for at least three or more years. The mentor is matched with the new teacher based on teaching subject, and the mentor should not be assigned to more than one new teacher. The district also requires a minimum number of hours for the mentor teacher to meet one-on-one with the new teacher. Suggested activities for this one-on-one time include lesson planning, discipline, basic survival knowledge for the school, like how to enter grades and basic location of necessary items teachers need. There are also parameters for what can and cannot count as hours, for example, time in Professional Learning Communities, and lunch cannot be counted toward the hourly requirement. In addition, there are site level new teacher meetings that occur every day the first week of school, once a week during the first month of school, and followed by monthly meetings thereafter. The mentor teacher and new teacher are also required to

observe each other at least three times per year. Furthermore, additional induction components in Mentored Public Schools include new teacher seminars before school starts to equip new teachers with various training and techniques, such as class room management, and student information system training. Finally, the district office also offers new teacher meetings once per month at the district office.

New teachers and alternatively certified teachers comprise a growing proportion of Not Mentored Public Schools overall teaching staff. There is a lack of an official policy to guide school sites on how they should support their new teachers; as a result, individual school sites support new teachers as they see fit, and new teacher support services vary greatly among schools. Some schools have assigned mentors with periodic meetings as a group with the principal, some only have assigned mentors, and others have no structured form of support in place for new teachers.

While there is not a regimented mentoring program in Not Mentored Public Schools, there is an induction program. Due to a lack of official district policy related to the induction program, all components of the program are optional. The first support new teachers receive is new teacher orientation. The new teacher orientation for all new teachers begins in the summer before school starts, and spans three days with sessions covering the district's high impact strategy toolkit, district developed assessment framework and tool kit, the absences reporting system called AESOP, how to input and set up the grade book in the student information system called Infinite Campus, the resources on the district web site included in the staff tools tab, an overview of district technology web site resources, the teacher evaluation tool in iObservation, the purpose of the Marzano framework, which is the observation tool and used as opportunity for

growth. Teachers who start after new teacher orientation also go through a condensed new teacher orientation before they begin that lasts two hours and provides information in the same areas. There are also monthly new teacher networking meetings where teachers engage in a roundtable discussion and are held at different school sites each time. Some buildings have instructional coaches to work with teachers in a coaching capacity and teach various instructional techniques. However, all sites do not have an instructional coach and teacher participation is optional, based off the voice and choice framework from Jim Knight. Finally, each building has a lead mentor that serves as a buddy when the new teacher has basic questions, like where the building resources are and how to put grades into the student information system, but this building mentor is not a true mentor in the sense of providing coaching and does not have any formalized, structured expectations.

The total sample size for the dependent variable retention includes 19 mentored teachers and 22 not mentored teachers. The total sample size for dependent variables teacher effectiveness and student achievement includes 30 new high school teachers (14 mentored and 16 not mentored), 4 new middle school teachers (2 mentored and 2 not mentored), and 7 new elementary school teachers (3 mentored and 4 not mentored), with a total sample size of 41 new teachers (19 mentored and 22 not mentored). Variables for inclusion in the study were derived from a review of previous literature (Ingersoll & Kralik, 2004; Ingersoll, 2012; Paris, 2013; Shockley et al., 2013), and include teacher attrition rates from an elementary, middle, and high school that incorporate mentoring into their induction program compared to attrition rates of an elementary, middle, and high school that does not have a formalized mentoring

component, as well as the relationship between mentoring on student achievement and teacher effectiveness.

Study Design

Research Design: Quantitative methods

A quasi-experimental design includes a sample that is not randomly assigned and instead utilizes groups that are already intact, meaning the groups cannot be assumed equal at the beginning of the study (Creswell, 2014; Ravid, 2011). Due to the use of a non-random convenience sample for this study and the comparison of two nonequivocal groups, one with treatment and one without, this quantitative study will be a quasi-experimental design.

Quasi-experimental designs with causal inferences require thoughtful choice in design features such as control groups, and pre-treatment observations to improve the strength of the causal inference (Shadish & Cook, 1999). Heckman and Todd (1996) as cited by Shadish and Cook (1999) state selection adjustment methods work best when comparison group members come from the same local labor markets as participants, answer the same survey questions, and when data on program participation is available. Due to the teachers in the sample working in the same city, they would be considered from the same labor market. In addition, the schools where the teachers in the sample work are of similar demographics in terms of size, socio-economic status, and ethnicity. Teachers from the treatment group and control group will also complete the same survey questions. With nonequivocal comparison groups the equivalency to the treatment group cannot be guaranteed; however, the intentional matching characteristics of the groups mean the nonequivocal comparison groups are a focal local control,

meaning both groups are in the same locale and focused on persons with the same characteristics (Shadish & Cook, 2009). The pre-treatment condition in this study is not possible or even reasonable, because this study aims to focus on teachers who are new to the profession and beginning their career with an induction program that includes mentoring.

The data used for this analysis was collected from survey data, as well as from secondary and extant sources, such as teacher evaluation ratings, percentage of secondary students receiving failing grades, and elementary students who are below reading grade level. Multiple sources of data created two data sets that were derived from the same two school districts. The first sample was derived from the survey data, which was collected from the two school districts in Oklahoma; the second set of data came from six schools within the same two school districts in Oklahoma.

Variables

Variables for inclusion in the study were derived from a review of previous literature (Ingersoll, 2012; Ingersoll & Smith, 2004; Paris, 2013; Shockley et al., 2013; Villar & Strong, 2007) and are described in more detail throughout this section. An independent variable is the treatment variable in a study that affects outcomes (Creswell, 2014). The independent variables include induction support structures, such as participation in a mentoring program, a mentor who teaches the same subject, a reduced number of classes to prepare for, and common planning periods. Dependent variables are the outcomes or the results influenced by the treatment variable (Creswell, 2014). The dependent variables include retention percentage, teacher effectiveness, as measured by evaluation scores, and student achievement, as measured by percentage of

secondary students failing the course and elementary students below reading grade level.

The independent variable of mentoring participation, and dependent variables of student achievement and retention were previously studied in a five year, longitudinal, cost effectiveness study. Villar and Strong (2007) examined the rate of return from teachers who participated in a comprehensive new teacher mentoring program. The comprehensiveness of the program is defined as such, because it includes strict procedural processes that are followed in the programmatic design. The guidelines begin with mentor selection, where mentors go through a vigorous selection process to find the best veteran teachers to provide mentoring through full release, meaning the teacher would mentor new teachers full time. In this role the mentors would have no more than 15 new teachers to guide over their first two years. The mentor and mentee meet once per week for two hours so the mentor can observe and coach the new teacher. The mentee will be provided release time to observe the mentor, followed by a meeting to discuss feedback and questions. Variables included in the study were student achievement and retention rates. Results indicate the comprehensive mentoring program led to increased student achievement and increased retention.

Ingersoll and Smith (2004) and Ingersoll (2012) discussed mentoring programs which were most effective in increasing retention provided a bundle, or package of supports. The components included in the bundle are: having a mentor from the same field; having a mentor from a different field; participation in beginner's seminars; common plan time; collaboration with others; external teacher network; supportive communication; reduced schedule; reduced preparations; and teacher aide (Ingersoll &

Smith, 2004, Ingersoll, 2012). Moreover, there were statistically significant effects of teacher turnover reported – as the number of supports new teachers received increased, the probability of turnover decreased (Ingersoll & Smith, 2004, Ingersoll, 2012). Furthermore, Ingersoll (2012) found new teacher participation in induction resulted in increased student achievement.

Paris (2013) studied a mentoring program in Australia, called the Reciprocal Mentoring Model, where the mentee participants were students completing their graduate degree (GD). These students typically come to teaching from other professions, and within a reciprocal model the mentee is not seen from a deficit perspective, rather their prior skills and knowledge is overtly acknowledged. Phase one of the program places the GD student into a school as an artist in residence offering discipline advice to enhance the school's learning program, where placement is based on the GD student's area of expertise. Phase two is reversed where the GD student is now the mentee who is mentored by the placement host. The reciprocal mentoring program spans two year at the same school site. Paris (2013) found mentor teachers helped to avert attrition for at least some of the beginning teachers.

Shockley, et al. (2013) conducted a qualitative meta-analysis of 10 empirical studies on teacher induction program implementation and efficacy. The researchers collected data until saturation was achieved, then coded and categorized for themes through patterned coding. Patterned coding is described as inferential and explanatory coding of data (Miles & Huberman, 1994, p. 57, as cited by Shockley et al., 2013). Shockley et al. (2013) found the isolated component of mentoring to support teacher retention; however one study included in the meta-analysis concluded there is not

enough research, as of 2005, to support mentoring without the other induction components as a proven strategy. This assertion may be due to methodological issues related to the need for more controlled studies (Shockley et al., 2013). The research into these areas supports the use of variables in this study, in that they have been documented to have positively impacted student achievement, retention, and teacher effectiveness in the past. However, some research has been inconclusive, thus furthering the need to study the variables more, especially with a district that has no formal induction program as a comparison group. A conceptual framework outlining how the variables are related to the literature review, theoretical framework, and research questions is depicted below in Figure three.

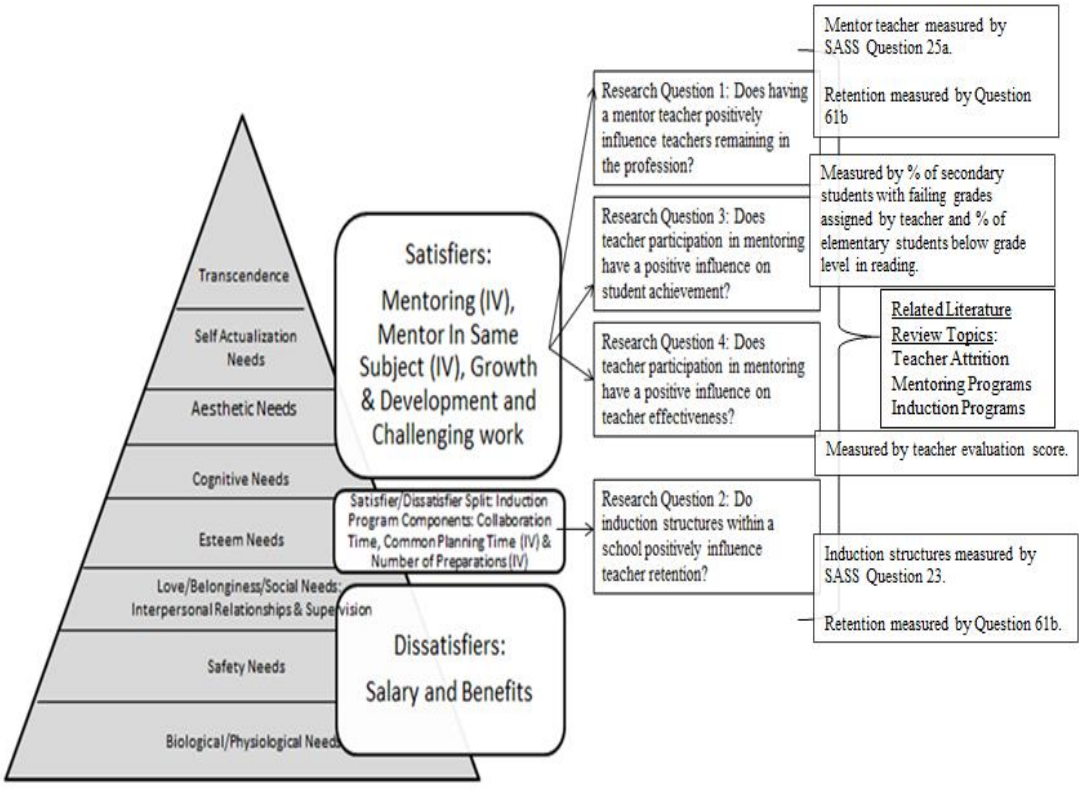

Figure 3. Conceptual Framework.

Research Questions

In an effort to discover what elements influence teacher retention, the current study will explore four research questions:

- Research Question 1: Does having a mentor teacher positively influence teachers remaining in the profession?

  Null Hypothesis: There is no influence of having a mentor teacher on teachers remaining in the profession.

  Alternative Hypothesis: There is a positive influence of having a mentor teacher on teachers remaining in the profession.

- Research Question 2: Do induction structures within a school positively influence teacher retention?

  Null Hypothesis: Induction structures within a school have no influence on teacher retention.

  Alternative Hypothesis: Induction structures within a school have a positive influence on teacher retention.

- Research Question 3: Does teacher participation in mentoring have a positive influence on student achievement?

  Null Hypothesis: There is no influence of teacher participation in mentoring on student achievement.

  Alternative Hypothesis: Teacher participation in mentoring has a positive influence on student achievement.

- Research Question 4: Does teacher participation in mentoring have a positive influence on teacher effectiveness?

Null Hypothesis: There is no influence of teacher participation in mentoring on teacher effectiveness.

Alternative Hypothesis: Teacher participation in mentoring has a positive influence on teacher effectiveness.

Sample

The schools included in the sample were matched as closely as possible in terms of demographics. Although some schools may have been a better demographic match, the lack of new teachers resulted in those schools being inviable; specifically, there were two elementary schools in MPS that were a closer demographic match, but did not have any new teachers at all. Throughout the two districts, all new teachers had the opportunity to complete the survey via email, so the district demographics are included as well.

Mentored Public Schools is an urban school district in Oklahoma serving approximately 19,500 students, and employs 1,297 teachers and counselors. It spans 43 square miles and is comprised of 19 elementary schools, five middle/junior high schools, and 3 high schools. The ethnic makeup of the student population is 42% Caucasian, 25% African American, 4% Asian, 26% Hispanic, and 3% Native American, with a 75% free and reduced lunch rate.

Not Mentored Public Schools is an urban school district in Oklahoma serving approximately 45,000 students, and employs 2,868 teachers and counselors. It spans 134 square miles and is comprised of 57 elementary schools, 14 middle/junior high schools, and 13 high schools. The ethnic makeup of the student population is 19%

Caucasian, 25% African American, 2% Asian, 51% Hispanic, and 3% Native American, with an 80% free and reduced lunch rate.

Demographics for teachers who participated in the district-wide survey are reflected in Table 1.0.

Table 1.0
Descriptive statistics for teacher participants in the district-wide survey.

	Not Mentored Teachers	*Mentored Teachers*
N	22	24
Traditional Certificate	12	12
Alternative Certificate	5	7
Emergency Certificate	4	4
Temporary Certificate	1	1
Associate's Degree	1	2
Bachelor's Degree	22	23
Master's Degree	7	5
Doctoral Degree	1	1

The high school sample in this study includes information from two local high schools, Mentored High School (MHS) and Not Mentored High School (NMHS), with similar enrollment numbers and location. Both schools demographics include minority students as the majority of the population and with low socioeconomic statuses above 75%. MHS is an urban high school with 109 teachers, 1,647 students and a 77% free and reduced lunch rate. Their student population is 39% Caucasian, 20% African American, 2% Asian, 36% Hispanic, and 3% Native American. NMHS is an urban high school with 98 teachers, 1,483 students and a 91% free and reduced lunch rate. Their student population is 11% Caucasian, 13% African American, 1% Asian, 72% Hispanic, and 4% Native American. There are 14 mentored teachers participating form MHS and 17 non-mentored teachers participating from NMHS.

The middle school sample in this study includes information from two local middle schools with similar enrollment numbers, location, demographics, and socioeconomic status, Mentored Middle School (MMS) and Not Mentored Middle School (TMS). MMS is an urban high school with about 49 teachers, 684 students and a 100% free and reduced lunch rate. Its student population is 21% Caucasian, 23% African American, 2% Asian, 51% Hispanic, and 3% Native American. Not Mentored Middle School is an urban high school with about 44 teachers, 591 students and an 84% free and reduced lunch rate. Their student population is 24% Caucasian, 17% African American, 4% Asian, 51% Hispanic, and 5% Native American. There are 2 mentored teachers participating form MMS and 2 non-mentored teachers participating from NMMS.

The elementary school sample in this study includes information from two local elementary schools, In terms of enrollment numbers, demographics, and socioeconomic status, Mentored Elementary School (MES) and Not Mentored Elementary School (NMES) are the most dissimilarly matched in the study. This is because the two elementary schools that were more closely matched in MPS did not have any new teachers. MES is an urban elementary school with about 43 teachers, 706 students and a 95% free and reduced lunch rate. Their student population is 29% Caucasian, 21% African American, 4% Asian, 44% Hispanic, and 2% Native American. NMES is an urban elementary school with about 25 teachers, 389 students and a 56% free and reduced lunch rate. Their student population is 57% Caucasian, 9% African American, 7% Asian, 24% Hispanic, and 2% Native American. There are 4 non-mentored teachers participating form NMES and 3 mentored teachers participating from MES.

Instrumentation

This study is based, in part, on data collected using the National Center for Education Statistics' (NCES) public-use 1999-2000 Schools and Staffing Survey (SASS). The opening letter of the 1999-2000 SASS, states, "NCES activities are designed to address high priority education data needs; provide consistent, reliable, complete, and accurate indicators of education status and trends; and report timely, useful, and high quality data to the U.S. Department of Education, the Congress, the states, other education policymakers, practitioners, data users, and the general public" (Gruber, Wiley, Broughman, Strizek, & Burian-Fitzgerald, 2002, p.3). The SASS has been completed by thousands of teachers and administrators across the nation and has been tested for reliability and validity. It has been used extensively in research nationally and internationally, and is the most extensive survey of elementary and secondary schools, teachers, and administrators in the United States (Gruber, et al., 2002). The SASS is a stratified probability sample design where schools are the main sampling unit (NCES, n.d.).

The survey questions included in the SASS were used to determine if teachers were planning to leave the profession or school after their first year, if they were assigned a mentor teacher, if their mentor teaches the same subject, if they have 2 or fewer classes to prepare for, and if they have a common planning period with teachers in the mentees subject area. The SASS contains questions related to teacher satisfaction, mentoring, and school structures, such as common planning periods and a reduced number of classes teachers must prepare. Question 23 of the SASS asks, "Did you receive the following kinds of support during your first year of teaching?" and lists

the following categories where the respondents answer yes or no: “reduced teaching schedule; reduced number of preparations; common planning time with teachers in your subject; seminars or classes for beginning teachers; extra classroom assistance (e.g., teacher aides); regular supportive communication with your principal, other administrators, or department chair (NCES, n.d.). Question 25a asks respondents to answer yes or no when asked, “In your first year of teaching did you work closely with a master or mentor or teacher?” and if yes, “Was this teacher’s subject area the same as yours?” (NCES, n.d.). Finally, question 61b asks, “How long do you plan to remain in teaching?” with 5 response options including, “as long as I’m able; until retirement; will probably continue unless something better comes along; definitely plan to leave teaching as soon as I can; undecided at this time” (NCES, n.d.).

Student achievement was assessed through the percentage of secondary students assigned failing grades from each teacher’s total teaching load and elementary students who were below grade level in reading. These data were able to be analyzed, because each district calculates failing grades on the same numerical scale (0-59 is a failing grade), allowing for true comparisons. The final dependent variable of teacher effectiveness was measured by the teacher’s final score on their evaluation. Both districts use the Marzano evaluation tool, so the teacher’s final scores will be comparable across the two districts. The Marzano evaluation tool views an effective teacher as one who makes instructional decisions, implementing effective strategies, which produce gains in student learning (Learning Sciences Marzano International, 2012). The model is based on growth and reciprocal feedback where conversations

emerge from the observations about teaching and learning based on a common instructional framework.

Prior to statistical analyses in SPSS, variables in the model were cleaned and recoded to ensure there was a meaningful zero. The independent categorical variables with a yes or no response (mentoring participation, mentoring same subject, reduced preps, and common planning periods) were recoded where 0 = no and 1 = yes. The categorical dependent variable of retention, where teachers reported their intent to remain in the profession, were reverse coded to indicate 0 = undecided at this time, 1 = definitely plan to leave teaching as soon as I can, 2 = will probably continue unless something better comes along, 3 = until I am eligible for retirement, and 4 = as long as I am able. Next, the retention variable was collapsed into two groups due to small sample sizes in each category. The collapsed variables were recoded to reflect 0 = undecided at this time, definitely plan to leave teaching as soon as I can, and will probably continue unless something better comes along, and 1 = until I am eligible for retirement and as long as I am able. The category will probably continue unless something better comes along was grouped as a 0 based on the additional optional comments tied to that response, where the participants indicated they already had plans to leave the profession; for example, "I'm leaving to teach abroad next year (two year contract: 2017-2019) When I get back, I definitely don't want to stay in OK to teach and I will look to get out of teaching in the public school" and "I plan to be a missionary so this is a good temporary career". After the data was cleaned and recoded, the statistical analyses were run in SPSS. Table 1.1 shows the descriptive statistics for all variables included in the study.

Table 1.1
Descriptive statistics for all variables.

	N	*Min*	*Max*	*Mean*	*Standard Deviation*
Data Set One					
Remain Teaching	35	.00	1.00	.629	.490
Mentored Status	46	.00	1.00	.522	.505
Mentor Same Subject	17	.00	1.00	.826	.388
Reduced Preps	35	.00	1.00	.081	.285
Common Subject Plan	35	.00	1.00	.500	.505
Data Set Two					
Mentored status	42	0	1	.45	.504
Percentage of Semester 1 Fs	39	.00	.62	.193	.182
Percentage of Semester 2	40	.00	1.0	.206	.219
Percentage of Semester 1 & 2 Fs	40	.00	.70	.199	.190
TLE Score	42	2	4	3.60	.540

Data Collection Procedures

At the end of the 2016-2017 school year, data was collected from each school detailing each teacher's percentage of secondary failing grades assigned, elementary students below reading grade level, and their final evaluation score. New teachers who were finishing their first year of teaching in both districts were given the SASS survey electronically. New teachers from each of the six schools were also given the SASS to complete electronically at a designated meeting near the end of the school year. Once the researcher was introduced, the building administrative representative left the room. Then, the researcher provided the electronic survey without the building administrative representative out, so the meeting only included the researcher and the new teachers to ensure the participants were comfortable answering the questions truthfully. The participants were also provided access to the survey information so they could take it at home or elsewhere in private. The SASS survey was duplicated electronically and the data was compiled in an electronic format through Qualtrics, an online survey program and imported into SPSS.

Data Analysis

The first data set included a final sample of N = 35 for induction structures on the dependent variable retention. This second data set that included the effect of mentoring on dependent variables student achievement and teacher effectiveness included a final sample of N = 42, n = 19 public school teachers from MPS and n = 22 public school teachers from NMPS. The data set was analyzed with SPSS, which is a windows based software package that provides advanced statistical analyses and interpretation. Data collected from administration of the SASS was analyzed and interpreted with SPSS, and specifically used to calculate chi square tests of independence and *t*-tests with an alpha level set at 0.05 and .10, as seen in (Bryk & Raudenbush, 1988; Ingersoll & Kralik, 2004; Raudenbush & Bryk, 1986; Sampson & Raudenbush, 1999; Sampson & Raudenbush, 2004; Smith & Ingersoll, 2004). In addition to the aforementioned researchers who have considered and reported results of .10, for over 35 years there have been researchers who published articles concerned about the strict adherence to a .05 alpha, especially in education. Carver (1978), stated, "The emphasis on statistical significance over scientific significance in educational research represents a corrupt form of the statistical method" (p. 378). Furthermore, statistical significance is influenced by how many subjects are used in the study, and the more subjects used in a study, the greater likelihood of statistically significant results (Carver, 1978). As such, an alpha level of .05 and .10 were considered significant, because of the chance for a type II error from lower statistical power due to a small sample size.

A chi square test of independence is a statistical measure used to determine if two independent variables are related or independent of each other in relation to the dependent variable (Ravid, 2011). The independent variable used for the chi squares were: mentored (n = 18) and not mentored (n = 17), mentor teaches the same subject (yes n = 13, n = 4), a reduced number of classes to prepare for (yes n = 3, n = 32), and common planning period (yes n = 16, n = 19). The dependent variables used for the chi square tests are intent to remain in the profession.

A *t*-test is a statistical measure used to compare means and determine whether differences between two groups are statistically significant (Ravid, 2011). The independent variable of participation in mentoring was broken down into two treatment groups for the purposes of the *t*-tests: TLE mentored (n=19) and not mentored (n=23) and secondary failing grades and elementary below reading grade level mentored (n=17) and not mentored (n=23). The dependent variables used for the *t*-tests are teacher evaluation scores and number of secondary failing grades or elementary below reading grade level per teacher.

Based on a large effect size (Eby, Allen, Evans, Ng, & Dubois, 2008), the minimum sample size needed is 26 (Cohen, 1992). Research questions one and two were analyzed through four separate chi square test of independence run in SPSS to determine whether the two independent variables are related or independent (Ravid, 2011). The dependent variable for research questions one and two was whether the teacher plans to leave or stay in the profession. The independent variable in research question one was assignment of a mentor, with (n = 18) for mentored teachers and (n = 17) for not mentored. There were four independent variables related to teacher supports

within a school for research question two: assignment of a mentor (N = 35), mentor who teachers the same subject (N = 17), common planning period as teachers in the same subject area (N = 35), and a reduced number of classes to prepare (N = 35).

Unequal frequencies were expected because previous research indicates mentoring increases retention and satisfaction (Ingersoll, 2012; Paris, 2013; Shockley et al., 2013). SPSS was used to calculate the chi squared calculations with alpha levels of .05 and .10. See expected and observed frequencies in Tables 3.3, 4.2, 4.4, and 4.6. An odds ratio was calculated by hand. The first step in calculating the odds ratio was to group both satisfaction groups together to obtain a total satisfaction value and group both not satisfied groups for a total not satisfied value. The percentage of likelihood to remain in the profession with or without mentoring as a support, was calculated by dividing the total number of teachers who reported they intend to stay by the total number of teachers who were mentored, and the same formula was used for not mentored teachers. The total number not mentored teachers who reported intent to stay was divided by the total number of not mentored teachers to calculate the percentage of likelihood to stay. Then, the odds ratio was calculated by dividing the total number of satisfied mentored teachers and dividing that number by the total number of mentored teachers. That number became the numerator, and was subtracted from one to determine the denominator. The same calculation was done for not mentored teachers, and finally the two total numbers were divided and are represented by the following formula:

$$\frac{\frac{mentored\ stay/total\ mentored}{1-(mentored\ stay/total\ mentored)}}{\frac{not\ mentored\ stay/total\ not\ mentored}{1-(not\ mentored\ stay/total\ not\ mentored)}}$$

Two separate independent samples *t*-tests were used to explore research questions three and four. SPSS was used for the calculations, and the α level was set at .05 and .10 due to the small sample size (Bryk & Raudenbush, 1988; Ingersoll & Kralik, 2004; Raudenbush & Bryk, 1986; Sampson & Raudenbush, 1999; Sampson & Raudenbush, 2004; Smith & Ingersoll, 2004). The *t*-tests compared two groups of new teachers: those who participated in a regimented mentoring program and those who did not. To address question three, the first *t*-test compared the means of both groups to determine if participation in mentoring shows decreased number of students receiving failing grades, where participation in mentoring is the independent variable (semester 1 percentage of secondary failing grades and below grade level N = 39, whereas semester 2 and yearlong secondary percentage of failing grades and below elementary reading grade level N = 40), and number of secondary students receiving failing grades and below elementary reading grade level is the dependent variable; this will determine the effectiveness of mentoring on student achievement.

Question four was analyzed through the second *t*-test, and the means of both groups were compared to determine if participation in mentoring showed an increase in teacher effectiveness based on teacher's final, annual overall evaluation scores; this suggested the effectiveness of mentoring on teaching effectiveness, where the independent variable is participation in mentoring (N = 42) and the dependent variable is teacher evaluation score.

Assumptions

Chi square.

The assumptions for the chi square tests of independence for research questions one and two were met based on the presence of independent observations across categories and data are frequency counts. In addition, the dependent variable of intent to stay in the profession was collapsed into categories in a logical manner which was justified according to intent to stay or leave.

t-tests.

For research question three, a histogram generated in SPSS was run to check the distribution of the data. The histogram was positively skewed and revealed an uneven distribution of data showing there were fewer secondary failing grades and elementary students below reading grade level.

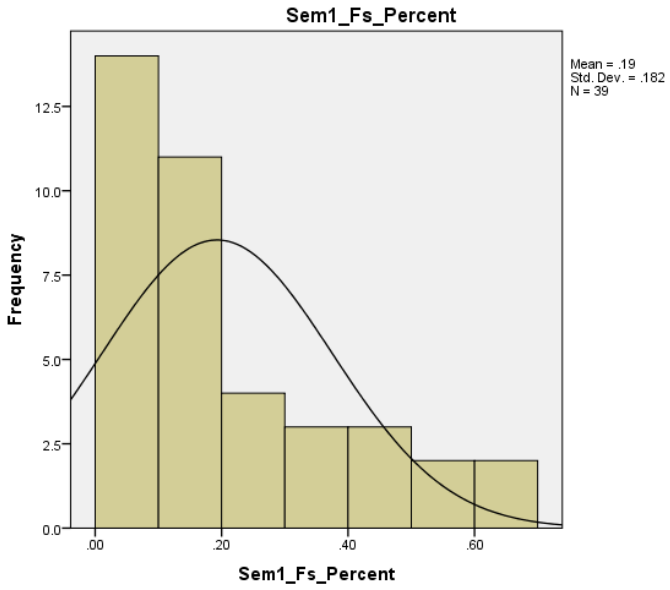

Figure 4. Semester one secondary failing grades and elementary below reading grade level histogram.

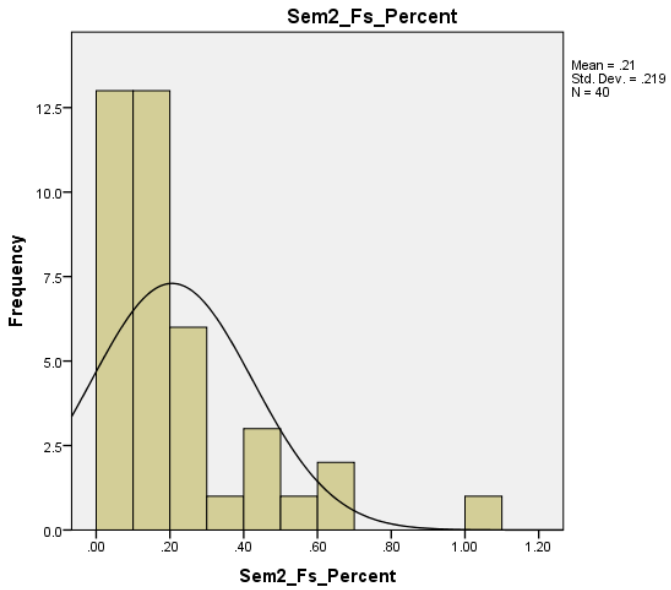

Figure 5. Semester two secondary failing grades and elementary below reading grade level histogram.

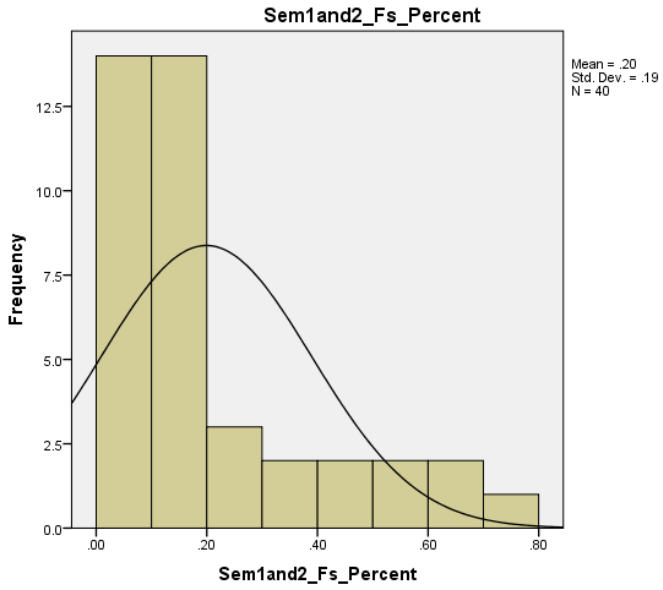

Figure 6. Yearlong percent secondary failing grades and elementary below reading grade level histogram.

However, the skewedness was under two and the kurtosis was under seven which indicated the distribution fell within normal ranges and met the assumptions of normality (Mertler & Vannatta, 2017).

Table 1.2
Descriptive statistics for semester one, semester two, and yearlong secondary failing grades and elementary below reading grade level.

	Percent of Semester 1 and 2 Fs	*Percent of Semester 1 Fs*	*Percent of Semester 2 Fs*
N	40	39	40
Mean	.1993	.1928	.2059
Median	.1324	.1269	.1439
Mode	.00[a]	.00	.00
Standard Deviation	.19047	.18216	.21862
Sample Variance	1.1	.051	.981
Kurtosis	.817	.172	3.606
Std. Error Kurtosis	.733	.741	.733
Skewness	1.332	1.083	1.785
Std. Error Skewness	.374	.378	.374
Minimum	.00	.00	.00
Maximum	.70	.62	1.0

a. Multiple modes exist. The smallest value is shown

Levene's test for equality of variances was noted to determine if equal variances are assumed or not. The results were not significant at <0.05 which indicates equal variance. An F-test was also calculated in order to determine variance. This test was conducted with all data points in SPSS and indicated F>0.05, 0.051 (semester one), 0.981 (semester two), and 1.1 (yearlong), and were not significant at <0.05, which is good because this means there is no significant difference between the two groups and we can compare them. This result lead the researcher to look at equal variances assumed.

Table 1.3
Semester one, semester two, and yearlong secondary failing grades and elementary below reading grade level t-test results.

Levene's Test for Equality of Variance	*Percent of Semester 1 and 2 Fs*	*Percent of Semester 1 Fs*	*Percent of Semester 2 Fs*
F	1.099	.051	.981
Sig	.301	.822	.328
t	.862	.657	.896
df	38	37	38

The homoscedasity tests with box plots are depicted, which show trends in the data and met the assumption of variance and outliers.

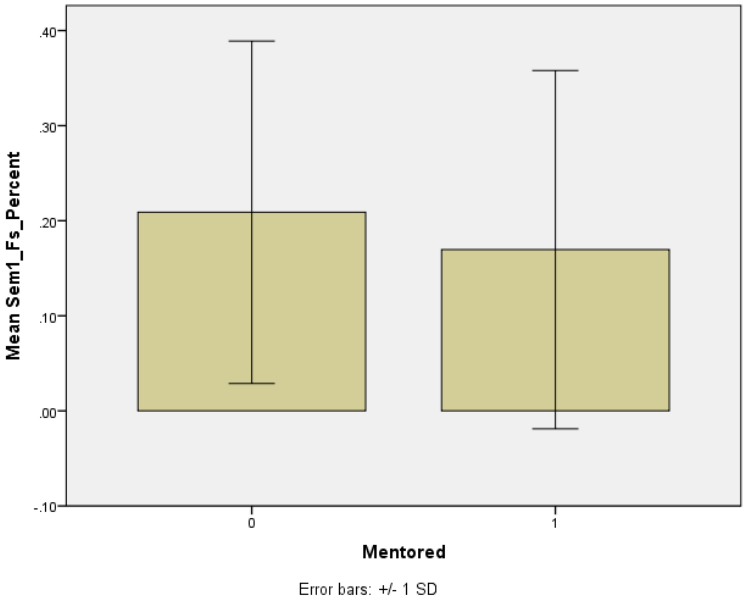

Figure 7. Semester one percent secondary failing grades and elementary below reading grade level bar graph.

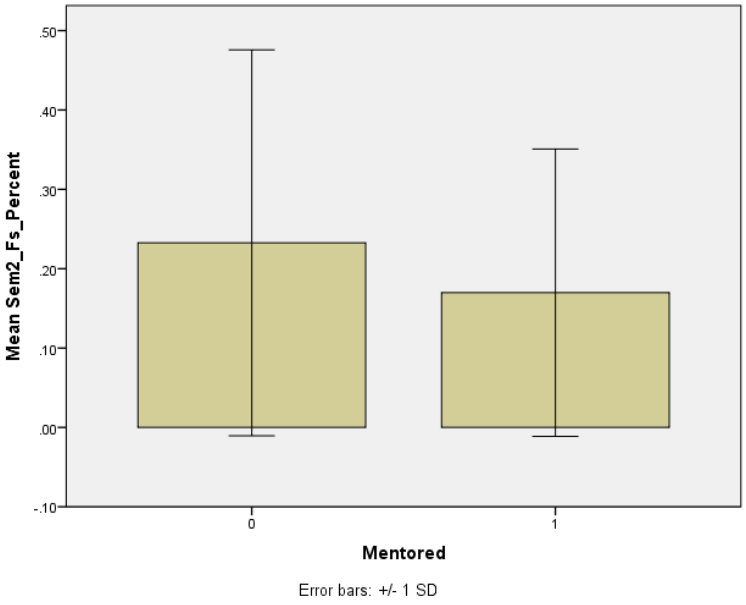

Figure 8. Semester two percent secondary failing grades and elementary below reading grade level bar graph.

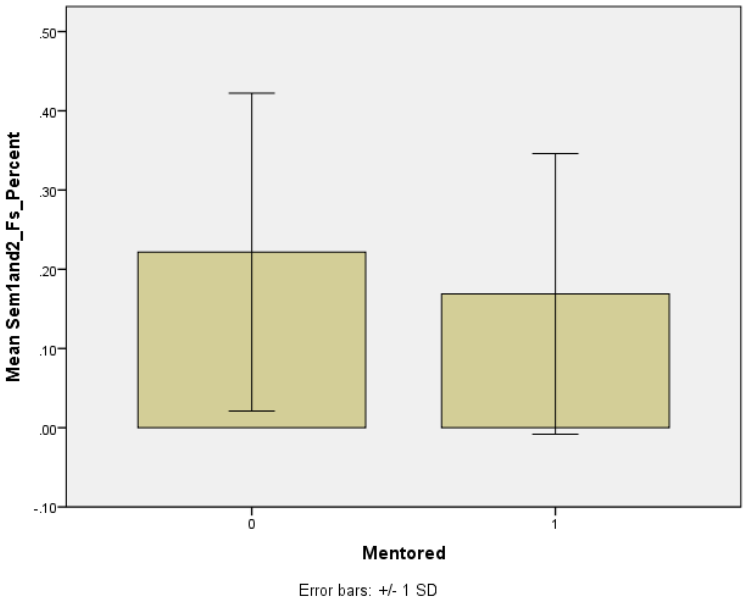

Figure 9. Yearlong percent secondary failing grades and elementary below reading grade level bar graph.

Descriptive statistics are reported in Table 1.3 and indicated similar mean percentile scores for each group (Semester 1 Not Mentored = 0.21, Semester 1 Mentored = 0.17, Semester 2 Not Mentored = 0.23, Semester 2 Mentored = 0.17, Yearlong Not Mentored = 0.22, Yearlong Mentored = 0.17).

Table 1.4
Semester one, semester two, and yearlong secondary failing grades and elementary below reading grade level group statistics.

	Mentored	*N*	*Mean*	*Standard Deviation*	*Standard Error Mean*
Percentage of Semester 1 Fs	0	23	.209	.180	.038
	1	16	.170	.188	.047
Percentage of Semester 2 Fs	0	23	.232	.243	.050
	1	17	.170	.181	.044
Percentage of Semester 1	0	23	.222	.201	.042
and 2 Fs	1	17	.170	.178	.043

For research question four, a histogram, generated in SPSS, was run to check the distribution of the data, see Figure 10. The histogram was slightly negatively skewed

and revealed a slightly uneven distribution of data showing there were more scores at the higher end of the scale.

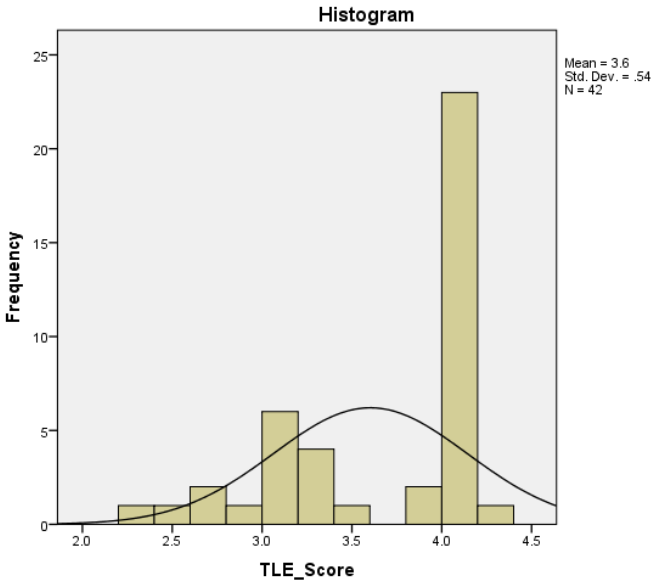

Figure 10. TLE score histogram.

However, the skewedness was under two and the kurtosis was under seven which indicated the distribution fell within normal ranges and passed the assumptions of normality.

Table 2.0
TLE score statistics.

	TLE Score
N	42
Mean	3.60
Median	4.00
Mode	4
Standard Deviation	.540
Sample Variance	12.897
Kurtosis	-.735
Std. Error Kurtosis	.717
Skewness	-.849
Std. Error Skewness	.365
Minimum	2
Maximum	4

Levene's test for equality of variances was used to determine if equal variances are assumed or not. The results were significant at <.05, indicating unequal variances. An F-test was also calculated in SPSS to determine variance, and indicated F>0.05, 12.897, and was significant at <.05, which means there is a significant difference between the two groups indicating unequal variances.

Table 2.1
TLE score t-test results.

Levene's Test for Equality of Variance	*TLE Score*
F	12.897
Sig	.001
t	-3.98
df	37.512

The homoscedasity test with box plots are depicted which show trends in the data and met the assumption of variance and outliers.

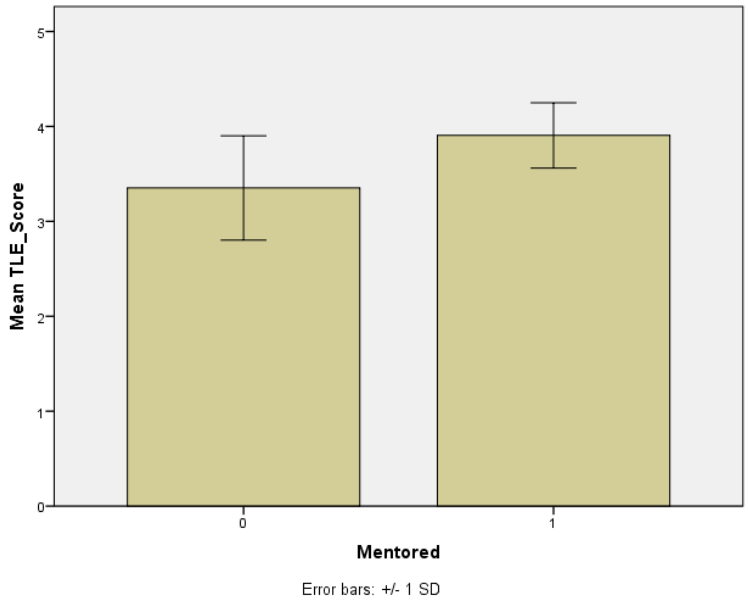

Figure 11. TLE score bar graph.

Descriptive statistics are reported in Table 2.2 and indicated similar mean percentile scores for each group (Mentored = 3.35 and Not Mentored = 3.91).

Table 2.2
TLE score group statistics.

	Mentored	*N*	*Mean*	*Standard Deviation*	*Standard Error Mean*
TLE Score	0	23	3.35	.549	.115
	1	19	3.91	.344	.079

Internal Validity

Validity is the approximate truth or accuracy of an inference (Shadish, Cook, & Campbell, 2002). Internal validity has been used to indicate reproducibility and whether the researcher measured what the study intended to measure, but Shadish, Cook, and Campbell (2002) refer to it in relation to covariation between variables that reflect a causal relationship due to how the variables were manipulated or measured. Mass distribution of the survey to all teachers in both districts aimed to address the internal threat to validity of selection bias. The threat to internal validity based on history, or passage of time, and maturity was addressed through the use of a control group with a similar sample in terms of participants and work setting. Instrumentation validity was addressed through the use of a nationally tested survey instrument designed by the NCES. Teacher quality is measured by the teacher's evaluation score and both districts in the study utilize the same evaluation instrument which has a high rate of inter-rater reliability. Additionally, student achievement is measured by the percentage of secondary students receiving failing grades per teacher with both districts using the same grading scale, and elementary students who are below reading grade level per teacher.

External Validity

External validity is the extent to which inferences and causal relationships will remain across differing circumstances with varying individuals (Shadish, Cook, & Campbell, 2012). External validity of the study was considered in relation to the specific sample. Based on Cohen (1992) the sample size was within the guidelines (a minimum N=26) for a large effect size to be generalizable to the current district and districts of similar demographic make-up. The results can be applied to a district of similar size and demographics, but are not generalizable to all other districts. The strength of generalizability of the findings are somewhat diminished, because of the small sample size and the absence of a random sample to make the strongest causal claims based on treatment effect (Schalock, 2002). However, because there was careful consideration of the study design paired with statistical analyses, external validity and the strength of causal inferences are increased (Shadish & Cook, 1999). The deliberate design features of this study including a control group in a local market, matching school levels with best demographic fit for comparison, all participants taking the same survey, and achievement and effectiveness measured in the same way, met the strengthened design rules of quasi-experimental procedures (Shadish & Cook, 1999; Shadish, Cook & Campbell, 2002). Finally, there are concerns about the percentage of failing grades for each teacher, and the ability to isolate all confounding variables to isolate the effect mentoring had on student learning. Although there was great effort to control for confounding variables through the use of matching school levels and with the best demographic fit within the two districts, readers should be cautious in large-

scale inferences of this particular measure without consideration of additional studies supporting these results.

Summary

Chapter three began with an introduction to tie-in the relevant information for the study, including the research questions and the theoretical perspective. Then, the details of how the study was set up and data was collected was described exactly so another researcher can replicate the study in the future. The specific statistical tests used for each research question was explained, followed by a description of how the assumptions were checked for each test. Next, chapter four will report the results of the study with descriptive tables and figures.

Chapter 4

Results

The purpose of a results section is to report the findings of the study, including statistical information with tables and figures (Ravid, 2011). Results of this study were analyzed and reported according to the research questions. First, results of having a mentor on retention were analyzed with a chi square and reported. Second, results of induction supports on retention were analyzed with separate chi squares and reported. Third, results of mentoring on student achievement were analyzed with a *t*-test and reported. Last, results of mentoring on teaching effectiveness were analyzed with a *t*-test and reported.

Results and Findings

Research question 1: Does having a mentor teacher positively influence teachers remaining in the profession?

The first research question sought to determine if having a mentor positively resulted in teachers remaining in the profession. A chi square test was performed to determine if there was a difference in frequency between teachers who participated in mentoring or not and their intent to remain a teacher, see Table 3.0. The relationship between these variables was significant, X^2 (1, N=35) = 3.53, p<.1, with the exact Pearson chi square significance at p = .060. The findings were not below the .05 α level indicating results not significant at the .05 level; however, due to the small sample size, and previous researchers in education reporting results at a 10% confidence level, an alpha of less than .10 was also established and reported (Bryk & Raudenbush, 1988; Ingersoll & Kralik, 2004; Raudenbush & Bryk, 1986; Sampson & Raudenbush, 1999;

Sampson & Raudenbush, 2004; Smith & Ingersoll, 2004). The significant chi square results at the p<.1 level indicate that teachers who received mentoring responded likelihood to stay in the profession at higher outcomes than not mentored teachers.

Table 3.0
Chi Square Mentored Teacher Results.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.534[a]	1	.060
Likelihood Ratio	3.602	1	.058
Linear-by-Linear Association	3.433	1	.064
N of Valid Cases	35		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.31.
b. Computed only for a 2x2 table.

Due to the small sample size, the chances of a type II error, accepting the null hypothesis when the results are actually significant, are more likely. However, unequal frequencies were expected because previous research indicates mentoring increases retention and satisfaction (Ingersoll, 2012; Paris, 2013; Shockley et al., 2013). Descriptive statistics show the teachers with a mentor had a 78% chance to remain in the profession compared to teachers without a mentor, who had a 47% chance to remain in the profession. An odds ratio calculation indicates that mentored teachers compared to not mentored teachers were four times more likely to report intent to remain in the profession than not mentored teachers, see Table 3.1.

Table 3.1
Chi Square Mentored Teacher Odds Ratio.

	Total of teachers who intend to remain in the profession	Total of teachers who intend to leave the profession	
	Observed	Observed	Total
Mentored	14	4	18
Not Mentored	8	9	17
Total	22	13	35
Mentored Grouping Calculations	Mentored & Stay – 14/18=0.77/ 1-.23=3.35	Not Mentored & Stay – 8/17=0.47/ 1-.53=0.89	
	Final Odds Ration Calculation = 3.35/0.89 = 3.76		

Table 3.2
Chi Square Mentored Actual and Expected Counts.

Mentored Status		Undecided, Leave asap, Unless Better	Until retirement, As long as Able	Total
Not Mentored	Count	9	8	17
	Expected Count	6.3	10.7	17.0
Mentored	Count	4	14	18
	Expected Count	6.7	11.3	18.0
Total	Count	13	22	35
	Expected Count	13.0	22.0	35.0

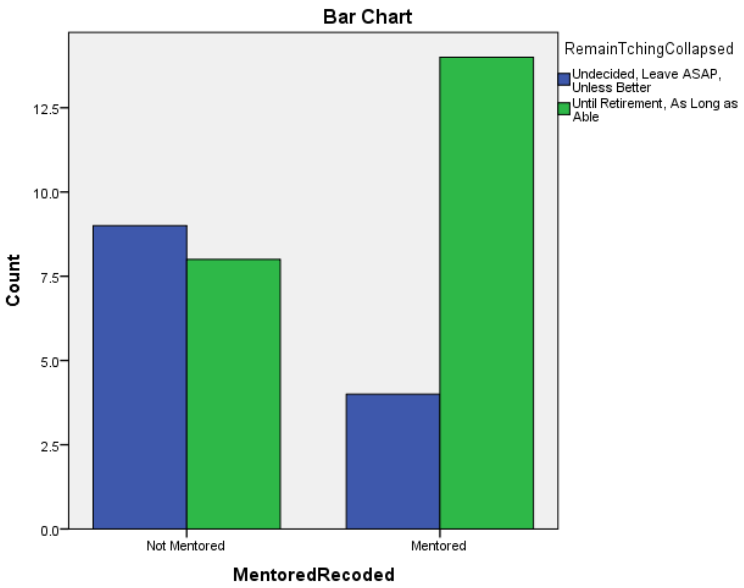

Figure 12. Mentored and not mentored teachers bar chart.

Considering the small sample size and the odds ratio, these results are consistent with findings that mentoring on its own increases teacher retention (Ingersoll, 2012; Paris, 2013; Shockley et al., 2013). The analysis of mentored teacher turnover suggested mentored teachers were more likely to stay in the teaching profession.

Research question 2: Do induction structures within a school positively influence teacher retention?

Previous research indicates a bundle of supports for new teachers increases their intent to stay in the profession, and conversely decreases their intent to leave the profession. The second research question aimed to explore this research with the current sample, and examined the effect of supports new teachers received on their intent to remain a teacher. An attempt to use SPSS and develop an ordinal regression model was not possible because there were not enough teachers in each cell to run the logistic regression; for example, out of 35 teachers, only three reported a reduced number of preparations. As a result of the small sample size, separate chi square tests

of independence were run in SPSS to examine the effects of the independent variables: teachers who had support from a mentor, a reduced number of preparations, and a common planning period with teachers in the same subject area on their intent to remain in the profession.

The relationship between intent to remain in the profession and having support from a common planning period with teachers in the same subject area were not significant in the chi square test of independence, X^2 (1, N=35) = 0.55, p>.05, p>.1 and did not exceed the critical value of 3.841.

Table 4.0
Chi square Test Results for Common Planning Period.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.551[a]	1	.458
Likelihood Ratio	.551	1	.458
Linear-by-Linear Association	.535	1	.464
N of Valid Cases	35		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.94.
b. Computed only for a 2x2 table.

As shown in Table 4.1 and Figure 13, descriptive statistics show the teachers who did not have a common planning period with teachers of the same subject area intended to stay in the profession more than the teachers who did.

Table 4.1
Chi square Actual and Expected Counts for Common Planning Period.

			Undecided, Leave asap, Unless Better	Until retirement, As long as Able	Total
Common Subject Planning Period	No	Count	6	13	19
		Expected Count	7.1	11.9	19.0
	Yes	Count	7	9	16
		Expected Count	5.9	10.1	16.0
Total		Count	13	22	35
		Expected Count	13.0	22.0	35.0

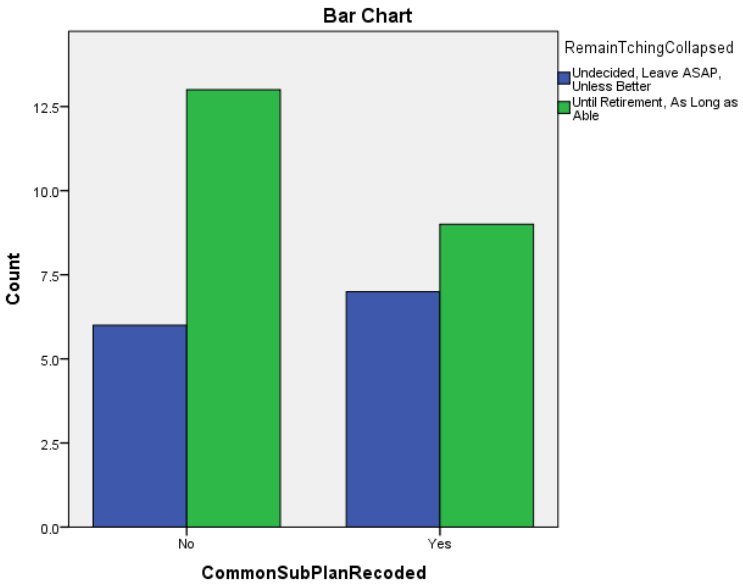

Figure 13. Common subject planning period bar chart.

The relationship between intent to remain in the profession and having support from a reduced number of classes to prepare for were not significant in the chi square test of independence, X^2 (1, N=35) = 1.94, p>.05, p>.1 and did not exceed the critical value of 3.841. As shown in the Table 4.4 and Figure 14, there were two cells with

counts less than 5 in the row indicating the teachers had a reduced number of preparations, only three teachers out of 35 reported to have had this as a support. Due to the small number of teachers receiving this support, the significance results cannot be considered valid, because only three teachers from the mentored and not mentored group combined had this support, and chi square analyses should have five responses in each cell. Similarly, Smith and Ingersoll (2004) found this support was rarely provided to teachers, and when it was there was a positive association with attrition.

Table 4.2
Chi square reduced number of classes to prepare.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.939[a]	1	.164
Likelihood Ratio	2.950	1	.086
Linear-by-Linear Association	1.884	1	.170
N of Valid Cases	35		

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.11.
b. Computed only for a 2x2 table.

Table 4.3
Chi square reduced number of classes to prepare actual and expected counts.

			Undecided, Leave asap, Unless Better	Until retirement, As long as Able	Total
Reduced Preps	No	Count	13	19	32
		Expected Count	11.9	20.1	32.0
	Yes	Count	0	3	3
		Expected Count	1.1	1.9	3.0
Total		Count	13	22	35
		Expected Count	13.0	22.0	35.0

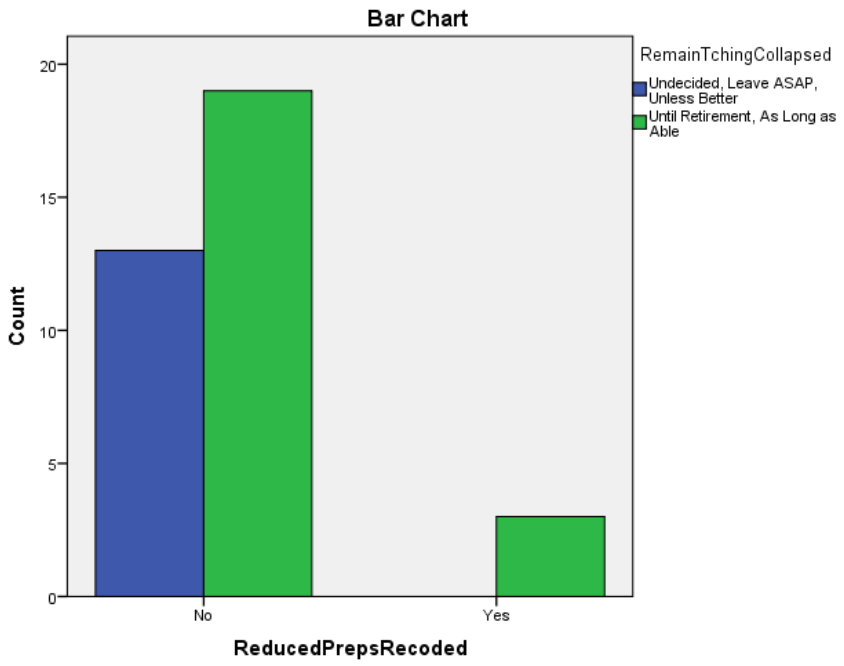

Figure 14. Reduced preps bar chart.

The relationship between intent to remain in the profession and receiving support from a mentor who taught the same subject was not significant, X^2 (1, N=17) = 1.61, p>.05, p>.1, and did not exceed the critical value of 3.841.

Table 4.4
Chi square mentor taught the same subject.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.609[a]	1	.205
Likelihood Ratio	2.502	1	.114
Linear-by-Linear Association	1.515	1	.218
N of Valid Cases	17		

a. 3 cells (75.0%) have expected count less than 5. The minimum expected count is .94.
b. Computed only for a 2x2 table.

Table 4.5 and bar chart Figure 15 show three cells with counts less than 5; of teachers who did not have a mentor in the same subject area, there were zero teachers who reported intent to leave the profession and four who intended to remain, of teachers who had a mentor in the same subject, four reported intent to leave the profession and nine who intended to stay. Due to the small number of teachers receiving this support, the significance results cannot be considered valid. However, descriptive statistics show the teachers with a mentor of the same subject were 69% more likely to remain in the profession than the mentored teachers with a mentor in another subject area. In a nation-wide study, Smith and Ingersoll (2004) found mentors from the same field yielded a statistically significant result in increased retention, and perhaps with a larger sample size the results of this study would have been similar.

Table 4.5
Chi square mentor taught the same subject actual and expected counts.

			Undecided, Leave asap, Unless Better	Until retirement, As long as Able	Total
Mentor Teaches Same Subject	No	Count	0	4	4
		Expected Count	.9	3.1	4.0
	Yes	Count	4	9	13
		Expected Count	3.1	9.9	13.0
Total		Count	4	13	17
		Expected Count	4.0	13.0	17.0

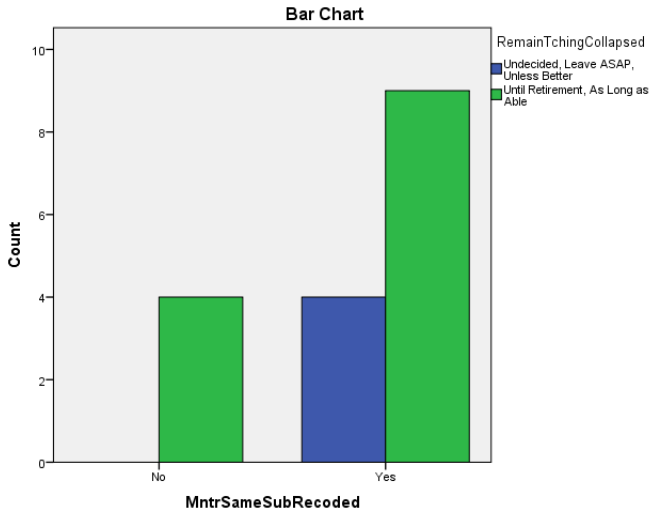

Figure 15. Mentor taught same subject planning period bar chart.

Research question 3: Does teacher participation in mentoring have a positive influence on student achievement?

The third research question to determine if there was a relationship between student achievement and participation in mentoring was analyzed through three *t*-tests (N=42) comparing the means of the number of semester one and semester two failing grades assigned (in secondary) and number of students below reading grade level (in

elementary) between two groups: mentored teachers and non-mentored teachers, to determine if participation in mentoring increased student achievement. As reported in Table 5.0, the means and standard deviations for each group were all similar, ranging from M = 0.17 (SD = 0.18) to M = 0.23 (SD = 0.24) respectively. Mentored teachers assigned fewer failing grades first semester, second semester, and on average for the whole year, but the results were not significant at the .05 or .10 level.

Figures 16-18 also depicts the variance between mentored and not mentored teachers is very similar in semester one, but mentored teachers have fewer secondary failing grades and elementary students below reading grade level in semester two and for the entire year with less variance than the not mentored group. As reported in Table 5.1, the distributions for the mentored and not mentored groups were sufficiently normal for conducting a *t*-test, because skewness was less than two and kurtosis was less than 7. Additionally, the assumption of homogeneity of variances was tested and satisfied through Levene's F test, semester one $F(37) = 0.05$, semester two $p > 0.05$, yearlong $F(38) = 0.98$, $p > 0.05$, $F(38) = 1.1$, $p > 0.05$, Table 5.2; as a result the researcher used the data from variances assumed.

The independent samples *t*-test was associated with no statistically significant effect, semester one $t\ (37) = 0.66$, $p>0.05$, $p>.10$, semester two semester one $t\ (38) = 0.90$, $p>0.05$, $p>.10$, and yearlong semester one $t\ (38) = 0.86$, $p>0.05$, $p>.10$, which meant the mentored group was associated with no statistically significant secondary percentage of failing grades and elementary students who were below reading grade level (student achievement measure) compared to the not mentored teachers, Table 5.2. Although the results were not statistically significant, there were numerical differences

that could be significant with a larger sample, as was found in Ingersoll & Strong, 2011; Rockoff, 2008).

Table 5.0
Semester one, two, and yearlong secondary failing grades or elementary below reading grade level group statistics.

	Mentored	*N*	*Mean*	*Standard Deviation*	*Standard Error Mean*
Percentage of Semester 1 Fs	0	23	.209	.180	.038
	1	16	.170	.188	.047
Percentage of Semester 2 Fs	0	23	.232	.243	.050
	1	17	.170	.181	.044
Percentage of Semester 1 and 2 Fs	0	23	.222	.201	.042
	1	17	.170	.178	.043

Table 5.1
Semester one, two, and yearlong secondary failing grades or elementary below reading grade level statistics.

	Percent of Semester 1 and 2 Fs	*Percent of Semester 1 Fs*	*Percent of Semester 2 Fs*
N	40	39	40
Mean	.1993	.1928	.2059
Median	.1324	.1269	.1439
Mode	.00[a]	.00	.00
Standard Deviation	.19047	.18216	.21862
Sample Variance	1.1	.051	.981
Kurtosis	.817	.172	3.606
Std. Error Kurtosis	.733	.741	.733
Skewness	1.332	1.083	1.785
Std. Error Skewness	.374	.378	.374
Minimum	.00	.00	.00
Maximum	.70	.62	1.0

a. Multiple modes exist. The smallest value is shown

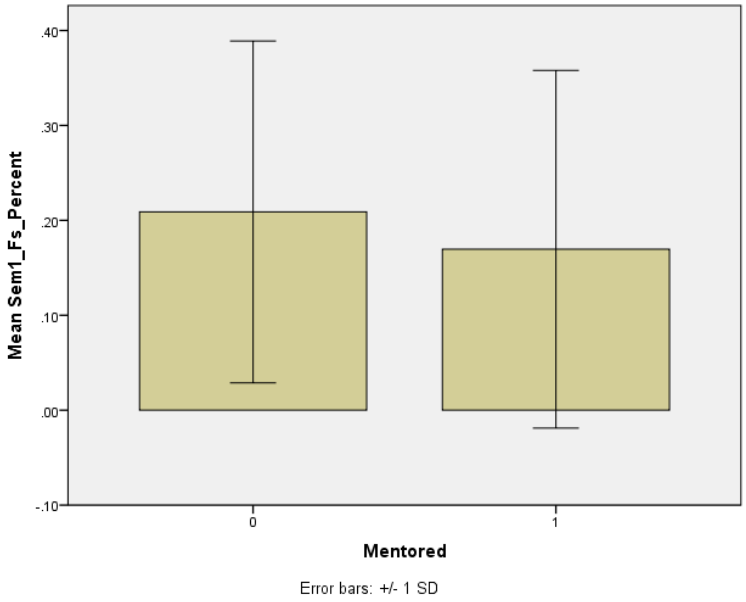

Figure 16. Semester one bar chart.

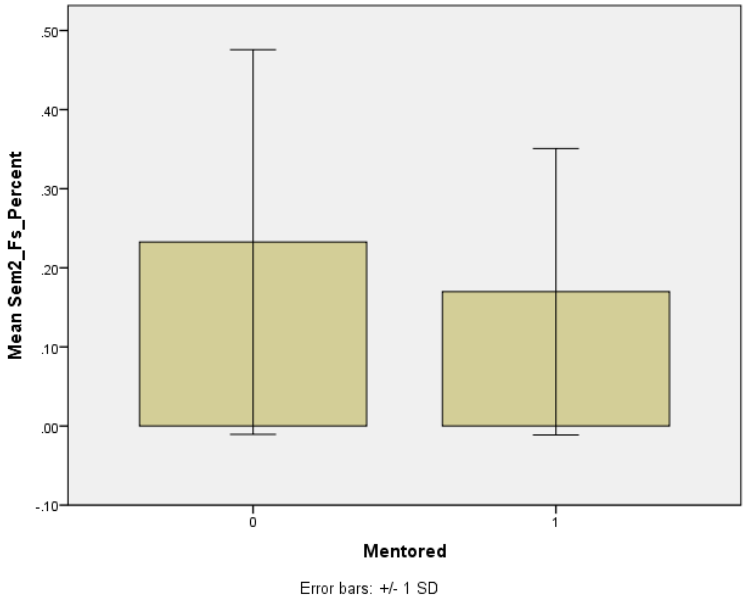

Figure 17. Semester two bar chart.

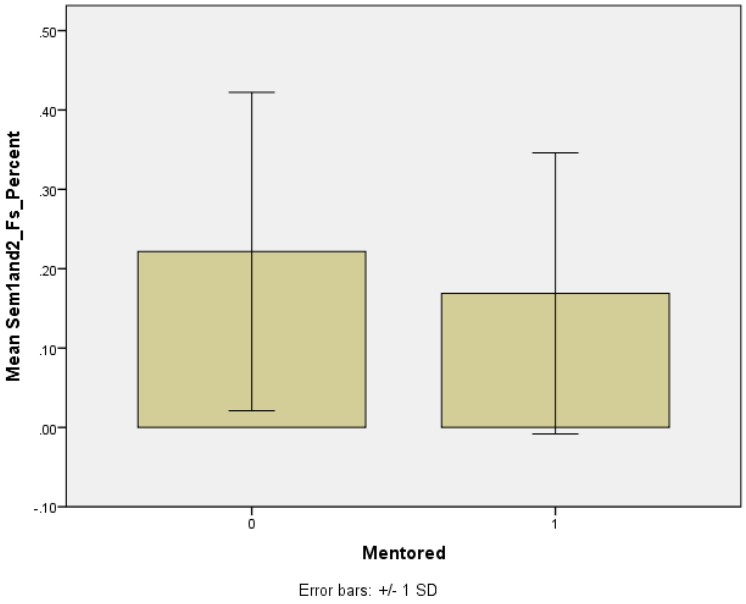

Figure 18. Yearlong percentage two bar chart.

Table 5.2
Semester one, two, and yearlong secondary failing grades or elementary below reading grade level t-test results.

Levene's Test for Equality of Variance	*Percent of Semester 1 and 2 Fs*	*Percent of Semester 1 Fs*	*Percent of Semester 2 Fs*
F	1.099	.051	.981
Sig	.301	.822	.328
t	.862	.657	.896
df	38	37	38

Research question 4: Does teacher participation in mentoring have a positive influence on teacher effectiveness?

The results of research question four, teacher effectiveness and participation in mentoring, was determined by using a *t*-test (N = 42) to compare the means of mentored and not mentored teacher's final overall evaluation scores. The mentored group (n = 19) was associated with TLE score M = 3.91 (SD = 0.34). By comparison, the not mentored group (n = 23) was associated with a numerically smaller TLE score M = 3.35 (SD = 0.55), see Table 6.0. The assumption of homogeneity of variances was tested

and not satisfied through Levene's F test, $F(37.51) = 12.90$, $p < 0.05$; the results indicated unequal variances. Additionally, as reported in Table 6.1, the distributions for the mentored and not mentored groups were sufficiently normal for conducting a *t*-test, because skewness was less than two and kurtosis was less than 7.

As reflected in Table 6.2, the independent samples *t*-test was associated with a statistically significant effect, $t\ (37.51) = -3.98$, $p<0.05$, which meant the mentored group was associated with a statistically significant larger TLE score, than the not mentored teachers; this indicated mentored teachers were more effective than not mentored teachers, and is consistent with previous research (Rockoff, 2008). The bar chart in Figure 19 also depicts the mentored teachers with higher TLE scores than the not mentored teachers and the variance in the scores from the mentored group is smaller. Effect size was calculated with Cohen's *d* by subtracting the mean from the treatment group from the mean of the control group divided by the calculation of the standard deviation of the treatment group plus the standard deviation of the control group divided by two [(3.91-3.35)/(0.34+0.55/2) = 1.25], which is a large effect (Cohen, 1992).

Table 6.0
TLE score group statistics.

	Mentored	*N*	*Mean*	*Standard Deviation*	*Standard Error Mean*
TLE Score	0	23	3.35	.549	.115
	1	19	3.91	.344	.079

Table 6.1
TLE score overall statistics.

	TLE Score
N	42
Mean	3.60
Median	4.00
Mode	4
Standard Deviation	.540
Sample Variance	12.897
Kurtosis	-.735
Std. Error Kurtosis	.717
Skewness	-.849
Std. Error Skewness	.365
Minimum	2
Maximum	4

Table 6.2
TLE score t-test results.

Levene's Test for Equality of Variance	*TLE Score*
F	12.897
Sig	.001
t	-3.98
df	37.512

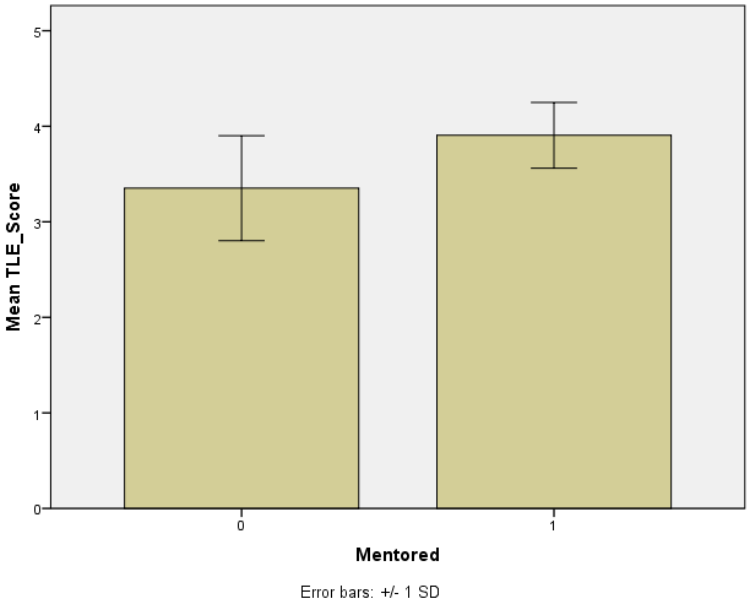

Figure 19. TLE score bar chart.

Summary

The results from research question one indicate teachers with a mentor were more likely to remain in the profession. Research question two examined induction supports on teacher retention, and indicated teachers who had a common planning period with a teacher of the same subject were not significant. Teachers who received a reduced number of classes to prepare for were too few in all cells for the chi square analysis results to be valid; there were only three teachers out of 35 who reported receiving this support. There were more teachers who reported having a mentor that taught the same subject, but there were cells that included less than five responses so the results are not viable. However, descriptive statistics show the teachers with a mentor of the same subject were 69% more likely to remain in the profession than the mentored teachers who had a mentor from another subject area.

Research questions three and four explore the effect of mentoring on student achievement and teacher effectiveness. There were no significant results between mentored teachers and not mentored teachers on student achievement; however, descriptive statistics indicate mentored teachers had fewer students with failing grades and below elementary reading level than not mentored teachers. Teaching effectiveness was measured by teachers final evaluation score. The result of the t-test was significant and indicated mentored teachers were more effective than not mentored teachers. Next, chapter five provides a detailed discussion of the results related to the literature.

Chapter 5

Discussion

The purpose of the study was to determine the effects of mentoring and induction supports on teacher's intent to leave the profession, teaching effectiveness, and student achievement. Research question one explored the relationship between teachers who participated in a formal mentoring program and intention to leave the profession. A chi square test of independence was used. The results were significant and indicate that teachers who received mentoring responded likelihood to stay at higher outcomes than expected, as well as at a higher percentage than not mentored teachers. These results are consistent with previous research findings that mentoring on its own increases teacher retention (Eby, et al., Dubois, 2008; Ingersoll, 2012; Paris, 2013; Shockley et al., 2013). In addition, the results align to the theoretical perspective that despite lower level needs, hygiene factors, or dissatisfiers being met, teachers need more to remain in the profession. Herzberg (1974), stated the absence of a dissatisfier is not enough for an employee to remain in their profession and their higher level needs must be met to decrease attrition.

Research question two focused on the supports districts and schools provide new teachers and their relationship to teacher's intent to leave the profession. The new teacher supports were a mentor that teaches the same subject, reduced number classes to prepare for, and a common planning period with teachers in the same subject. Separate chi square tests of independence were run on each support. Teachers with a mentor of the same subject, a common planning period, and a reduced number of preparations were not statistically significant. However, teachers who had a mentor in the same

subject had twice as many teachers respond they intended to stay compared to the not mentored group. There were very few teachers who reported a reduced number of preparations as a support they received. However, of the three teachers who received this support zero reported intent to leave and all of the three who received the support responded they intended to stay. Finally, teachers who did not have a common planning period with teachers who of the same subject had more teachers' report they intended to remain in the profession than the group with the common plan support.

The results of mentoring alone as a support in reducing attrition have been supported in previous research; however, Smith and Ingersoll (2004) found that a bundle of supports resulted in the lowest rates of attrition. Common plan time and a reduced number of preparations should result in reduced attrition according to the theoretical perspective; however Herzberg (1974) details the necessity of meeting one need before a person can focus on a higher order need. The amount of value for each level of support could vary from person to person, and similarly each person could be at a different level on the hierarchy, resulting in a variety of effectiveness of each individual support. However, despite the small sample size it is noteworthy that mentoring alone showed a significant impact on teacher's intent to remain in the profession. In relation to the weighted balance satisfier model, mentoring alone is farther up on the hierarchy as a satisfier, and therefore could simultaneously encourage fulfillment of lower level needs (Shockley et al., 2013).

Research question three explored the relationship between teachers who participated in a formal mentoring program on student achievement, and was measured by chi square tests of independence. The results were not significant and indicate that

students of teachers who received mentoring did not perform better than teachers who did not receive mentoring. This may be related to the small sample size, because the mentored teachers had fewer secondary students who received a failing grade and elementary students below grade level numerically. The rates were more parallel in first semester, but in second semester and yearlong there was more variance in the distribution of each group. This is consistent with previous research, which found support for the relationship between mentoring and student achievement, with varying results depending on the structure and intensity of the mentoring program (Fletcher, Strong, and Villar, 2008; Rockoff, 2008). Villar and Strong (2007) found that mentoring increases student achievement, and an increase in teacher retention has been found to reduce the gap in student achievement. Once people reach the motivational factors or satisfiers ranging from esteem needs (self-esteem and mastery), self-actualization (self-fulfillment, personal potential and growth), as well as transcendence (helping others achieve self-actualization) they are able to have a greater impact on others and influence student achievement. This is consistent with the numerical results in the study; similar rates of secondary failing grades and elementary students below reading grade level were found in semester one, and a drop shown in semester two with mentored teachers having fewer rates compared to not mentored teachers.

Research question four was analyzed with a *t*-test and sought to determine if there was a relationship between two groups (the mentored group and not mentored group) on teaching effectiveness. The results were significant and suggest mentored teacher's effectiveness is greater than not mentored teachers. This is consistent with previous studies and meta-analyses literature (Eby, et al., 2008, Darling-Hammond,

2010; Duncan, 2010; Luekens, Lyter, & Fox, 2004; Watlington et al., 2010). The results showing increased teaching effectiveness relate to the theoretical perspective by showing that satisfaction is achieved by motivational factors being met, and are more related to motivational factors than hygiene factors (Gocke, 2010; Shockley et al., 2013). Thus, teachers who are mentored are fulfilling their motivation factors and move on to higher levels, achieving greater teaching effectiveness through self-actualization and transcendence, see figure 1.

Research based mentoring reduces teachers' feelings of professional isolation, helps them feel supported, improves instruction, increases student achievement, and provides pedagogical ideas, like classroom management strategies (Darling-Hammond, 2010; Duncan, 2010; Ingersoll, 2012; Paris, 2013). Teacher attrition due to the revolving door phenomenon and retirement of baby boomers increases the need to recruit quality mentors to develop new teachers who will stay in the profession (Duncan, 2010; Ingersoll, 2012; Paris, 2013). However, mentors are often difficult to recruit, are of varying quality, and are hard to sustain (Ingersoll, 2012; Paris, 2013; Shockley et al., 2013). While new teachers' needs continue to grow with new standards, legislative changes, and normal beginning needs, the burden and responsibility of mentors is ever increasing; however, mentors needs are neglected, because they do not receive support through training or incentives for their service (Devos, 2010; Shockley et al., 2013). Mentoring programs need to meet teachers where their individual needs are and not be standardized to the point of a formal, mechanical process of completing paperwork (Devos, 2010).

Participation in mentoring also showed broader program value and worth in the areas of Schalock's (2002) model, including organizational performance outcomes from TLE scores and decreased attrition rates. Comparisons between mentored and not mentored teachers between semester one and two began with a similar number, however second semester the number of secondary failing grades and elementary students below grade level decreased in the mentored group and perhaps the reason is because as the year progressed teachers received more mentoring,.

Limitations and Future Research

There are limitations related to the sample. Future studies should continue the use a control group to compare the effects of a mentoring program, but more research with a larger number of participants is greatly needed. If a random sample were used constituting a large enough, representative, and proportional segment of the population, program impact could be more generalizable. Randomization could also help to reduce confounding variables. The researcher did try to address the lack of randomization by matching the schools in terms of demographics, including size, socioeconomic status, and ethnic make-up.

Teachers included in this sample were asked questions related to staying in the profession, teacher mentor participation, if the mentor taught the same subject as the mentee, and if the mentor and mentee had a common planning period, but there was no consideration for other internal factors or outside factors that could have attributed to staying in the profession. Factors such as school and district socioeconomic status, district salary schedule, amount of professional development opportunities, and discipline rates could also be examined to determine degree of influence on retention.

The student achievement measurements rely exclusively on secondary student's failing grades and elementary student's below grade level in reading, because little is known regarding the assignments and items that figure in to a student's overall failing grade, as well as students who are below grade level in elementary reading. There are also concerns about the number of students below grade level and number of failing grades assigned by teachers; differences in student achievement are difficult to link back to mentoring alone, as a result of the difficulty in minimizing confounding variables to isolate the effect mentoring had on student learning. As a result, there is lack of certainty that the student achievement outcomes/results were a result of the mentoring program itself. In addition, the number of failing students may also have more to do with fewer F's assigned overall, or a take-no-prisoners approach fostered by the mentor teacher; more investigation into the area is warranted. Finally, although there were results that indicated no significant result, a study with a greater sample size is needed to ensure the results were not due to a type II error. Future studies should also consider multiple measures of student achievement with sound technical specifications.

The indicator of teacher effectiveness was measured by teacher evaluation score, and there are concerns related to potential inflation or deflation of scores, or inter-rater reliability although the instrument has a high inter-rater reliability rate. Additionally, future studies would be well suited to track the mentored teachers for more than one year to gauge how lasting the effects are on the expected outcomes.

Furthermore, since the budget cuts in Spring of 2016 until the November 2016 election, there has been a particularly hostile educational climate in the state of Oklahoma. Teachers are frustrated with the financial shortfalls affecting students.

Some schools throughout the state have had to modify their schedules to four day school weeks, while many others have had to cut teaching positions and complete programs. Teachers, schools, and districts are forced to do more with less money and resources, and to make matters worse, teachers in Oklahoma are 48th and on track to be paid the lowest salary in the nation, once Mississippi and South Dakota's increases in teacher salary take effect in the 2016-2017 school year (MS Code § 37-19-7, 2013; National Education Association, 2016; South Dakota HB1182). This means that teachers in Oklahoma have a more difficult job and get compensated the least. This created a movement to elect state legislators and members of the house who are pro education. There was also a controversial state question, drafted mostly by University of Oklahoma President David Boren and endorsed by many, that would increase the state sales tax rate by one cent. The state question did not pass and many pro education candidates lost the election. This has led to a massive number of teachers feeling demoralized, meaning many teachers across the state feel they can no longer access the moral rewards of teaching (Santoro, 2011), and is an example of when a policy has a deleterious effect on a teacher's motivation and affect (Carlson-Jaquez, 2016). This research does not address the sense of demoralization overall and specifically related to the educational climate. Future studies could look at the effects of demoralization and retention, as well as effects of the political climate on retention. Survey questions should include multiple options for participants to indicate the reason they intend to leave the profession. Additionally, future studies would be well suited to track the mentored teachers for more than one year to gauge how lasting the effects are on the expected outcomes.

Implications for Practice

The higher TLE scores and decrease in attrition for teachers who participated in a mentoring program alone merit continuation or initial implementation of a mentoring program. It is clear that the mentoring program had an effect on teacher attrition, as the number of teachers who were mentored and intended to stay were greater than those who were not mentored. Districts must provide quality mentors with detailed, comprehensive, research-based training programs to provide an effective, quality service (Duncan, 2010; Shockley et al., 2013). Likewise, the state needs to fund the mentor stipend for their additional time investment.

Conclusion

During a tumultuous time in the education profession, it is more crucial now than ever before to find options to support and retain new teachers. Universities across the state of Oklahoma are implementing financial assistance programs to attract students into the teaching profession; for example, the University of Oklahoma has a program for teachers who are seeking a degree in education to receive a discounted tuition. In addition, this is not only an important to the state of Oklahoma. There are programs nationally that aim to recruit teachers into high need subject areas by paying all or a portion of the teacher's student loan debt. Mentoring has shown an effective method to support new teachers and increase retention, or reduce attrition, and increase teaching effectiveness. Formerly, Oklahoma law required new teachers to participate in a mentoring program, and provided a stipend to attract quality, dedicated mentors. With the reduction to state funding, there has been an exemption to compliance with the law. New teachers need many supports to feel successful in their early years. Mentoring is

one way to provide support, but a formalized structure is needed. Mentor training is also necessary to ensure fidelity and quality support. All schools and districts should have a formalized mentoring program in place with accountability to specific requirements to the program. While mentoring is only one support helpful to teachers, plans to support teachers in a variety of ways need to be thoughtfully planned and implemented. Only then can we realize an increase in student achievement with a decrease in teacher attrition (Rivkin et al., 2005; Darling-Hammond, 2010).

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Alternative Certification Process Table (OKSDE, n.d., 2011; 70 O.S. § 6-122.3)
Elementary-secondary, secondary, career-tech
Senate Bill 388 (Effective July 1, 2001)

Eligibility

- Candidate has at least a bachelor's degree with a major in a field of study that corresponds to an area of certification offered through the Alternative Placement Program (see part I of application)
- Has at least a 2.5 cumulative GPA.
- Candidate declares the intention to earn a standard certificate by means of the alternative program in not more than three years.
- Candidate has at least two (2) years of work experience which is related to the subject area of specialization if the person has only a baccalaureate degree with no post-baccalaureate work in a related area – HB 3259 – Effective July 1, 2010.
- Candidate Passes Oklahoma General Education Test and Oklahoma Subject Area Test(s) in their degree field
- Candidate applies to Teacher Competency Review Panel (TCRP) for evaluation of qualifications and career accomplishments. Applicant must complete fingerprint requirements before TCRP.
- TCRP makes favorable recommendation for licensure to the Oklahoma State Board of Education (OSBE)

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Certificate

Upon Employment

- Teacher successfully completes Resident Teacher Program **(waived for school years 2010-12)**
- Within three years of obtaining certification the applicant must:
    - Pass the Professional Education Examination
    - Complete a professional education component of between 6-18 semester hours or 90 to 270 clock hours as outlined in a plan approved by the Oklahoma State Department of Education and on file with the institution of higher education.

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Standard Certificate