THE IMPACT OF TEACHER ABSENTEEISM ON STUDENT ACHIEVEMENT IN MATHEMATICS AND READING AMONG 8th GRADERS: A CAUSAL-COMPARATIVE INQUIRY

A Dissertation

by

MIREYA (MICKEY) MEDRANO

BS, Texas A&M University–Corpus Christi, 2009
MS, Texas A&M University–Corpus Christi, 2011

Submitted in Partial Fulfillment of the Requirements for the Degree of

DOCTOR of EDUCATION

in

EDUCATIONAL LEADERSHIP

Texas A&M University-Corpus Christi
Corpus Christi, Texas

August 2019

THE IMPACT OF TEACHER ABSENTEEISM ON STUDENT ACHIEVEMENT IN MATHEMATICS AND READING AMONG 8th GRADERS: A CAUSAL-COMPARATIVE INQUIRY

A Dissertation

by

MIREYA (MICKEY) MEDRANO

This dissertation meets the standards for scope and quality of
Texas A&M University-Corpus Christi and is hereby approved.

Kamiar Kouzekanani, PhD
Chair

Dessynie Edwards, PhD
Co-Chair

Doyne Elliff, EdD
Committee Member

Alexandra Theodossiou, PhD
Graduate Faculty Representative

August 2019

ABSTRACT

Since the passing of the No Child Left Behind (NCLB) in 2001, schools receiving federal funding must administer a state standardized assessment annually and meet performance standards in selected grade levels and content areas. Although it seems reasonable to assume frequency of teacher absenteeism affects student achievement, research has not consistently supported this assumption. Within the limited existing literature on the relationship between teacher absenteeism and student achievement, conflicting findings have been reported. The purpose of the study was to test the hypotheses that 8th graders whose mathematics and reading teachers had been absent for less than 10 days per school year (low absenteeism) would outperform those whose teachers had missed more than 10 days of being away from the classroom (high absenteeism) based on academic achievement in mathematics and reading, as measured by the 2017 - 2018 State of Texas Assessments of Academic Readiness (STAAR) test data. Results supported the hypothesis in mathematics, but not in reading. Mean difference effect sizes were computed to evaluate the practical significance of the findings. Due to non-experimental nature of the study, no causal inferences were drawn. The external validity of the study was limited to the participants. Theoretical and practical implication are discussed.

DEDICATION

This dissertation is lovingly dedicated to my Mom. Her support and constant love have sustained me throughout my life. Mom, te amo y aprecio todo lo que has hecho por mí.

ACKNOWLEDGEMENTS

I would like to thank my dissertation chairperson, Dr. Kamiar Kouzekanani, for the guidance, encouragement, and support he has given me during this journey. Dr. Kouzekanani, thank you for keeping me on track and focused on doing what needed to be done. Thank you for helping me navigate my way through the writing process. I could not have done this without you. I would also like to thank my committee members, Dr. Dessynie Edwards, Dr. Doyne Elliff, and Dr. Alexandra Theodossiou for their support, guidance, encouragement, feedback, and expertise; each brought something unique to this experience.

I would like to thank my families, both at home and work. At home, my siblings, Juan (and Imelda), Delia (and Sal), Sergio (and Julie), Pancho (and Laura), and Nelly (and Tony), because of you, I have always worked harder. At work, the lunch bunch, you made work not feel like work. I am deeply grateful for your encouragement and support throughout this journey.

My best friend Ashley Diaz, words will never be enough to thank you. Your morning phone calls helped me more than you know.

I would also like to thank my best friends Donna Alvarez and April Mayberry. Thank you for being there for me when I really needed you. I appreciate you so much. Donna, I will always cherish our Sundays – thank you for allowing me to share them with you, Art, and Blaise.

TABLE OF CONTENTS

CONTENTS PAGE

LIST OF TABLES

Chapter I

Introduction

Background and Setting

Across societies, education affects everyone in some way. Education has always been a concern, a perpetual issue of debate and an important challenge for all sectors. Education is an interdisciplinary issue that can be approached through the lens of economics, psychological theories, and political science. Teachers and principals provide education, the government funds and regulates it, parents and students consume it, and society at large benefits from its impact. Education promotes better societies, creates new jobs, and prepares people to work in manufacturing, service sector, and government (Addams & Woodbury, 2009).

The debate on education has been present since the beginning of civilization, which includes how it is provided, who should receive it, what should be taught, and when it should be provided. In previous decades, the debate was focused on inclusion, because half of the society was not able to participate in the education system (Weedon & Riddell, 2012). Today, a main concern is on quality. In America, it is possible for everyone to attend schools but not all receive the same quality education. The debate has been guided by various questions (Balfanz & Byrnes, 2012). How can we improve teaching? How can teachers be more effective? How can we increase students' attention? What gives students more opportunities? How can we engage parents in students' education?

Student achievement in mathematics and reading continues to be a topic of discussion in school districts across the country. Since the passing of the No Child Left Behind (NCLB) in 2001, schools receiving federal funding must administer a state standardized assessment annually and meet performance standards in selected grade levels and content areas. In Texas, the standardized assessment is the State of Texas Assessments of Academic Readiness (STAAR), which measures student performance on the Texas Essential Knowledge and Skills (TEKS) (STAAR Resources, n.d.). Since the implementation of the STAAR in 2012, student proficiency in mathematics and reading learning standards has been assessed, and are included in the accountability system created by the NCLB.

Specifically, the STAAR measures: (1) mathematics and reading in grades three to eight, (2) writing in grades four and seven, (3) science in grades six and eight, (4) social studies in grade eight, and (5) end-of-year examinations in English I, English II, Algebra I, Biology, and U.S. History (STAAR Resources, n.d.). Since mathematics and reading are heavily tested in all grades beginning with third grade, their impact on accountability calculations is significant. Thus, the achievement of students on STAAR assessments in mathematics and reading alone may determine whether a school meets the state accountability standard or not.

The No Child Left Behind Act of 2001 is a significant force behind school accountability, and is complete with the belief that teachers impact student learning. While there is strong consensus between researchers, educators, and policy makers that teacher quality is one of the most important components to improving student learning, the research is not as clear regarding which teacher factors encompass teacher quality.

In the past, debate surrounding the quality of education had focused on principal responsibility, framed as the principal-agent theory (Ross, 1973). Nowadays, teacher impact can be studied through multiple avenues, namely, salaries, training, school environment, and parent engagement with teachers. The specific characteristics that constitute an effective teacher continue to be questioned, in large part because teacher quality is extremely difficult to measure. As a result, most studies resort to measurable proxies, such as certification, academic degrees, and years of experience. Most of these characteristics bear some relationship to student scores, but on the whole, they explain only a fraction of teacher quality (Rivkin, Hanushek, & Kain, 2005). The present study focused on teacher absenteeism and its relation to student academic achievement.

Statement of the Problem

Despite the focus on reducing teacher absenteeism, it continues to be a major issue for education leaders and policymakers (Tingle, Schoenberger, Wang, Algozzine, & Kerr, 2012). There remains a lack of empirical research to address the problem of excessive teacher absenteeism and its impact on student achievement. Although articles have been written in local and national newspapers and other periodicals, the most recent research study in the United States of America (USA) was published in 2012 (Darling-Hammond, 2006; Tingle et al., 2012).

Theoretical Framework

The study's theoretical framework, Teacher Quality (TQ), was guided by the work of Darling-Hammond. According to Darling-Hammond, the importance of powerful teaching is increasingly important in contemporary society (2006). The TQ is one of those elusive terms that everyone believes to, and yet are challenged to define clearly (Michelli, Dada, Eldridge, Tamim, & Karp, 2016). Standards for learning are now higher than they have ever been before, as citizens and workers need greater knowledge and skill to survive and succeed. Education is increasingly important to the success of both individuals and nations, and growing evidence demonstrates that, among all educational resources, teachers' abilities are especially crucial contributors to students' learning. Furthermore, the demands on teachers are increasing (Darling-Hammond & Bransford, 2005). Teachers not only must be able to keep order and provide useful information to students but also have to remain increasingly effective in enabling a diverse group of students to learn complex subject matters (Darling-Hammond, 2006). In previous decades, teachers were responsible to prepare only a small minority for ambitious intellectual work, whereas they are now expected to educate virtually all students for higher-order thinking and performance skills once reserved for a few (Darling-Hammond, 2006).

Both the apparent ease of teaching to the non-initiated and the range of subject matters teachers must know to be successful with all students are relevant to the dilemmas that teacher education programs face on a daily basis (Hammerness, Darling-Hammond, & Shulman, 2002). There is a fallacy that anyone with some formal education can teach, which derives from a lack of understanding of what good teachers actually do behind the scenes and tacit standards for teaching that are far too low, may lead to pressures for backdoor routes into teaching that deny teachers access to much of the knowledge base for teaching as well as supervised clinical practice that would provide them with models of what good teachers do and how they understand their work (Hammerness, Darling-Hammond, & Shulman, 2002).

Most researchers agree that TQ is strongly correlated with student achievement; however, there is no clear agreement on the specific characteristics that contribute to teacher quality (Goe, 2007). Berliner (2005) explained that when defining TQ, a judgment of value must be made, which may ultimately lead to disagreements among researchers. The term TQ has been used to explain a range of characteristics or variables that have a positive impact on student achievement. Key quality indicators can work to shape programs aimed at improving teacher quality. But Darling-Hammond (2006) cautioned against defining TQ too narrowly. Teaching is both a profession and a vocation, and quality teachers demonstrate professional attributes that go beyond a formal qualification (Darling-Hammond & Youngs, 2005).

Whatever other worthwhile results are achieved because of teacher’s work, teacher effectiveness is most commonly expressed in terms of students’ academic achievement, something that is more easily measured than some of the other essential outcomes of good education (Darling-Hammond, 2006). Substantial evidence suggests that, among all school resources, teachers are the most important determinant of student achievement (Darling-Hammond, 2000; Wilson, Floden, & Ferrini-Mundy, 2001). Although there are obvious problems in focusing on academic achievement as the sole indicator of teacher effectiveness, the complex factors that define effective teaching usually contribute strongly to an increase in student academic achievement in addition to increases in other desired skills and behaviors. While districts focus on improving student achievement, they may be overlooking one aspect of teacher effectiveness: every teacher being regularly on the job, teaching. No matter how engaging or talented they are, teachers can only have an impact if they are in the classroom.

Operant Conditioning (OC) was another theoretical framework that was investigated. B.F. Skinner, one of the most renowned behavioral theorists of his time, defined operant conditioning as a form of learning in which the motivation for a behavior happens after the behavior is demonstrated (Skinner, 1938), which is based on the assumption that teacher absenteeism is a behavior that may be attributed to a direct response to his/her environment. Skinner introduced the term "operant" to distinguish between reflexes and responses operating directly on the environment. Behavior that weakens harmful stimuli may not be acquired from conditional reflexes but perhaps is a result of operant conditioning. The theory of Operant Conditioning asserts that behavior, followed by a particular kind of consequence, is more likely to occur again; a consequence having this effect is called a "reinforcer" (Skinner, 1938, p. 15).

Excessive teacher absenteeism is a behavior that may be attributed to a direct response to the teacher's environment. The behavior of excessive absenteeism may unwittingly reinforce the negative stimuli in the classroom/school environment, which directly leads to the absence behavior. Likewise, a lack of reinforcement for consistent attendance behavior may unwittingly be reinforcing the absence behavior of teachers who are excessively absent from school and classroom responsibilities (Miller, 2012)

Reinforcements, operant conditionings, and punishments are predominately used by school districts to modify employee absentee behaviors. District leaders determine the use of operant conditionings by altering behavior to meet the behavioral goals. For example, it may involve school districts establishing a clear code of conduct at new employee orientations. Punishments may consist of attempts to suppress undesired behaviors through negative reinforcements. Examples of punishments include requiring doctor verification of illness and docking pay after sick leave has been used (Rhodes & Steers, 1990).

Ultimately, teacher quality was considered a more suitable theoretical framework for the study. Literature suggests that the classroom teacher is the primary mediator of increased student achievement (Darling-Hammond, 2000; Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005; Ingersoll, 1999; Jerald, 2002; Marzano, 2003; Nye, Konstantopoulos, & Hedges, 2004; Rivkin, et al, 2005). Researchers and policymakers believe that improved teacher quality is a successful means of increasing student achievement (Darling-Hammond, 2002; Greenberg, Rhodes, Ye, & Stancavage, 2004).

Purpose of the Study

The purpose of the study was to examine the impact of teacher absenteeism on academic achievement in mathematics and reading, as measured by the 8th grade STAAR. Eighth grade was chosen, because the standardized state assessment in this grade level provides the most thorough coverage of core content areas, enabling a comprehensive examination of the potential influence of teacher absenteeism. The a priori hypothesis was that students with teachers who were absent 10 days or less per academic year would academically outperform students with teachers who were absent 10 days or more per academic year. The setting was an urban school district in South Texas. The following research questions guided the study:

1. Does teacher attendance impact student achievement as measured by eighth grade STAAR Mathematics?

2. Does teacher attendance impact student achievement as measured by eighth grade STAAR English Language Arts?

Operational Definitions

Achievement in mathematics was measured by the proportion of correct answers to questions in each of the following STARR categories: (1) Numerical Representations and Relationships, (2) Computations and Algebraic Relationships, (3) Geometry and Measurement, and (4) Data Analysis and Personal Financial Literary. Achievement in reading was measured by the proportion of correct answers to questions in each of the following STARR categories: 1) Understanding and Analysis Across Genres, 2) Understanding and Analysis of Literary Texts, and 3) Understanding and Analysis of Informational texts. Absenteeism was measured by the total number of days missed during the academic year.

Glossary of Terms and Acronyms Used Throughout the Document

Absences: Days in which teachers are absent from their classrooms and substitute teachers are in charge (Bayard, 2003).

Achievement: A student's performance as measured by his or her score on the State of Texas Assessments of Academic Readiness (STAAR).

Criterion-Referenced Competency Tests (CRCT): Designed to measure how well students acquire the skills and knowledge described in the state mandated content standards in reading, English/language arts, mathematics, science and social studies.

Florida Comprehensive Assessment Test (FCAT): A test given annually to all students in grades 3 through 11, which measures academic achievement in reading, writing, mathematics, and science based on the state's grade-level standards.

Limited English Proficient (LEP): Individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English can be limited English proficient, or "LEP." These individuals may be entitled to language assistance with respect to a particular type or service, benefit, or encounter.

National Council on Teacher Quality (NCTQ): Is a nonpartisan, not-for-profit research and policy organization that is committed to modernizing the teaching profession by conducting research to assist states, districts, and teacher preparation programs with teacher quality issues.

No Child Left Behind Act (NCLB): A law that was enacted in January 2002 (Stephenson, 2006) to hold schools accountable for how students learn and achieve.

Operant Conditioning: A type of learning in which behavior is controlled by positive and negative consequences.

Texas Assessment of Academic Skills (TAAS): A criterion-referenced assessment program based on the state's essential elements with subtests in reading, writing, and mathematics. In 2003, the TAAS was replaced by the Texas Assessment of Knowledge Skills (TAKS).

Texas Education Agency (TEA): The Texas agency that provides leadership, guidance, and resources to help schools meet the educational needs of all students. Located in Austin, Texas, the TEA is the administrative unit for primary and secondary public education.

Teacher Quality: The knowledge, skills, abilities, and dispositions of teachers. Darling-Hammond (2000) also suggested policies adopted by states regarding teacher education, licensing, hiring, and professional development may impact the quality of teachers.

Delimitations, Limitations, and Assumptions

The study was delimited to (1) 2017-18 8^{th} grade students in two middle schools and their teachers, (2) the outcome measures of academic achievement in mathematics and reading, and (3) the independent variable of teacher absenteeism (low or high). Due to the non-experimental nature of the study, no causal inferences were drawn. Due to the non-probability nature of the sampling technique, external validity was be limited to the study's participants. It was assumed the existing data obtained from the Texas Education Agency (TEA) are accurate and that researcher will remain objective throughout the course of the study.

Significance of the Study

Considering the current economic conditions in our country and state, the study has the potential to benefit school officials and policy makers. In this era of increased educational costs, dollars spent due to employee absences for salaries and fringe benefits need closer examination. By conducting this research study, the researcher's intent was to inform district officials and other personnel who are involved in making and enforcing attendance policies for teachers by expanding the understanding of the possible link between excessive absenteeism and student achievement, and to provide recommendations to district administrative decision-makers on ways to alleviate teacher absenteeism. Additionally, the researcher hoped to add to the evidence for improving teacher attendance practices by informing attendance policies, which include but is not limited to incentives for improved attendance behavior.

Chapter II

Review of the Literature

Introduction

This chapter provides a systematic review of the literature and research related to teacher absenteeism and student achievement. The chapter is organized into three major categories: (1) the need for classroom teachers, (2) historical overview of the relationship between teacher absenteeism and student achievement, and (3) how teacher absences may affect student achievement.

The Need for Classroom Teachers

The consistent presence of the teacher in the classroom is of supreme importance to provide effective instruction to students. Research shows that when a teacher is absent from the classroom, student learning is disrupted. Finlayson (2009) found that when a teacher is repeatedly absent, student performance could be significantly impacted negatively. She measured the relationship between third grade teacher absenteeism and third-grade student scores on the mathematics and reading sections of the Criterion Reference Competency Test (CRCT). Her study showed that the more days a teacher is out of the classroom, the lower his/her students score on every test. She also reported that, nationally, teachers were absent from the classroom, on average, ten days per year.

Teacher absenteeism studies are generally focused on local school districts. For example, the previously reported study by Finlayson was delimited to Cobb County, Georgia. Another important study's focus (Miller et al., 2008) was an urban school district in Camden City, New Jersey, which used highly detailed data on teacher absences to shed light on the determinants and consequences of teacher absenteeism. The authors estimated the impact of teacher absences on academic student achievement and concluded that 10 additional days of teacher absence per year would reduce mathematics achievement of fourth-grade students by 3.20%.

The 2013 National Council on Teacher Quality (NCTQ) report provided a broader picture of teacher absenteeism in the USA. The study included data for the 2012 - 2013 school year from 40 of the biggest urban school districts in the country, representing more than 200,000 teachers. The average teacher missed 11 school days out of 186. Also, one in six teachers was chronically absent (i.e., missing 18 or more days or about 10.00% of the school year), and 44.00% of teachers missed more than 10 days (equivalent to one day every two weeks). Together, the 40 districts spent $424 million on substitute teachers (average of $1,800 per teacher) to cover absences for the period analyzed.

Similarly, Miller (2012) studied 56,837 schools and reported that, on average, 36.00% of teachers were absent for more than 10 days during the 2009 - 10 school year, the first period when absenteeism was reported. The percentages ranged from 0.00% to 100.00%, with 62.00% of variation occurring between districts and 38.00% occurring within districts. He noted that the latter statistic was significant because all schools within a given district operated under the same leave-of-absence policies and above-average absenteeism levels were indicative of a dysfunctional professional culture at the building level.

Relationship Between Teacher Absenteeism and Student Achievement

On average, public school teachers in the USA are absent 11 days out of a typical 186-day school year (Sawchuk, 2014). This rate of absenteeism is low relative to those in the developing world (Chaudhury, Hammer, Kremer, Muralidharan & Rogers, 2016), but three times higher than the ones for managerial and professional employees (Podgursky, 2012). However, there are factors specific to the teaching profession that lead to higher levels of time away from the classroom, outside of the required training and development days. Teachers, particularly in the lower grades, are in close contact with children; thus, they are more likely to catch colds and flu. Also, women, who make up about 75.00% of the nation's teachers (Pew Research Center, 2013) are more likely than men to miss work due to family obligations; for example, skipping school to take care of their own kids. There is a limited research on the impact of teacher absenteeism on student achievement (Colquitt, 2009). An extensive search of the literature revealed only 22 empirical studies within the last 30 years, and the conflicting nature of the findings was noteworthy.

No Relationship Between Teacher Absenteeism and Student Achievement

Since the 1980s, eight studies were found that reported no effect of teacher absenteeism on student achievement. Dilworth (1987) examined teacher attendance and achievement test results of over 6,000 first graders in St. Louis, Missouri and concluded there were no statistically significant associations.

Ehrenberg et al. (1991) studied school district leave policies, teacher absenteeism, and student achievement in 700 New York School districts during the 1986-87 school year. Specifically, the researchers focused on how teacher absenteeism affected student pass rates on standardized reading and mathematics tests, and reported no associations.

Webb (1995) investigated the relationship between teacher attendance and student achievement in three different schools in Texas. The study involved 72 teacher and 1,163 students in third, fourth, and fifth grades. Academic achievement in reading and mathematics was measured by the Texas Assessment of Academic Skills (TAAS). Webb had hypothesized that achievement scores would be higher for students of teachers with fewer absences; the results did not support the hypothesis.

Occhino (1997) examined teacher absenteeism and performance in reading and mathematics on the New York State Pupil Evaluation Program Test of 4,563 students in third, fourth, fifth, and sixth grades. No correlation was found.

Kirk (1998) investigated the relationship between teacher absenteeism and student achievement in reading during the 1996 - 97 school year in Broward County, Florida. Using attendance data from 881 fourth-grade and seventh-grade teachers and reading achievement score of 18,802 4th and 7th graders, as measured by the Stanford Achievement Test, Kirk found no significant relationship between teacher absences and student achievement.

How teacher absences, student attendance, and teacher certification affected middle school and elementary student achievement in reading and mathematics was the focus of the study conducted in 2000 by the Division of Assessment and Accountability at New York Public Schools. While the report found student attendance and teacher certification significantly impacted student achievement in mathematics and reading, there was no similar relationship between teacher absence and student achievement (Brooks, 2000).

Clay (2007) investigated teacher absenteeism and student achievement data over three school years, 2002 - 2003, 2003 - 2004, and 2004 - 2005, in the St. Louis County school district. Absence data from 89 first, second, third, and fourth grade teachers, and reading and mathematics achievement data of 654 fourth-grade students who had been enrolled in the district from first grade through fourth grade were examined. Clay's investigation involved determining the number of absences incurred by students' teachers from their first-grade through fourth-grade years and matched this to individual student achievement scores. All teacher absences from the classroom, regardless of the reason, were included. Student achievement was measured, using reading and mathematics scores on the Missouri Assessment Program test. Comparisons of student scores to frequency of teacher absence (i.e., missing 15 or more days of school, 10 or more days of school, and five or more days of school) showed no statistically significant differences.

Colquitt (2009) investigated the relationship between teacher absenteeism and student achievement, but unlike Clay (2007), he controlled for teachers' demographic variables of age, gender, degree level, certification status, and experience. Colquitt's study included mathematics achievement of 3,141 fifth graders and 135 fifth-grade teachers in a suburban Georgia school district, categorized the absenteeism as (1) less than five absences per year, (2) 5 - 10 absences, (3) 11 - 14 absences, and (4) 15 or more absences, and reported no negative impact on student achievement.

<u>Significant Relationship Between Teacher Absenteeism and Student Achievement</u>

In the Texas school district of Garland, Beavers (1981) found a statistically significant relationship between teacher absenteeism and student achievement of 1,902 fifth graders in reading and mathematics on the Iowa Tests of Basic Skills.

Azumi and Madhere (1982) examined the link between teacher absenteeism and student achievement at various grade levels in 52 elementary schools in Newark, New Jersey. The focus was on third-grade and sixth-grade student achievement scores in mathematics and reading, as measured by the Metropolitan Achievement Test. The authors concluded higher rates of teacher absenteeism negatively affected the outcome measures.

Similar to Azumi and Madhere's study, Smith (1984) investigated the relationship between teacher absenteeism and student achievement in reading and mathematics in several grades, but over a two-year period of time, rather than just one school year. The study took place in Lansing, Michigan. Smith found conflicting results from one school year to the next and among different grade levels. From an aggregate view, no relationship between teacher absenteeism and student achievement in reading and mathematics was found. When disaggregated by grade level, the nature of the results was conflicting. Smith found negative relationships between teacher absenteeism and student achievement in reading and mathematics in the second and fourth grades, a negative relationship at third grade in reading only, and no relationship between teacher absenteeism and student achievement in either reading or mathematics in first, fifth, and sixth grades.

Manatt (1987) used the data from his study in Iowa and Minnesota to develop a model teacher evaluation program, suggesting that seven to ten days of teacher absence was significantly related to student achievement, more so in mathematics than in reading. Contrary to Smith (1984), Manatt considered teacher absences due to professional development as well as other reasons and urged caution regarding the amount of time away from students to spend on training activities.

The purpose of Eldridge's (1988) study of first graders was twofold: (1) examining the relationship between class size and teacher absenteeism and (2) assessing the link between teacher absenteeism and student achievement. Eldridge analyzed the attendance rate of teachers whose students demonstrated low, medium, and high achievement in reading and mathematics, as measured by the Stanford Primary I Achievement Test. Results showed students who did not do very well in reading had teacher who attendance was 94% or less.

In his study of employee absences in 17 high schools in Brooklyn, New York, Pitkoff (1989) calculated the mean number of employee absences, including teachers and other personal (administrators, counselors, and secretaries) and found a high negative correlation between employee absenteeism and the percentage of students reading below grade level.

Woods and Montagno (1990) examined the link between the number of absences per teacher and his/her students' growth in reading achievement from the fall of third grade to the fall of fourth grade, as measured by the Iowa Test of Basic Skills, and found that students whose teachers missed 4.50 days of school or more scored less than did students whose teachers missed less than 4.50 days of school. This study included 817 students and 45 teachers in two school districts in Indiana and Wyoming.

Boswell (1993) collected statewide date on teacher absenteeism, student achievement, student socio-economic status, and student enrollment in South Carolina. He found a weak but statistically significant relationship between teacher absenteeism and student achievement.

Bayard (2013) conducted a study of the total number of days absent of 324 middle school and high school mathematic teachers and mathematic achievement as measured by the Florida Comprehensive Assessment Test (FCAT). The test scores of 9,427 8th and 10th graders in Florida's Broward County School District during the 2001 - 2002 school year were obtained. Bayard found a small negative relationship between teacher absenteeism and student achievement in mathematics when the teacher was absent for more than two days in the school year. Bayard also took into consideration the demographic variables of age, gender, degree level, and teaching experience, and found the only teacher attribute associated with teacher absences and student achievement in mathematics was gender. Specifically, she reported that males' absences affected the outcome more than did females' absenteeism.

Cantrell (2003) conducted an analysis of teacher absenteeism in the Los Angeles Unified School District. The study included absences of all elementary teachers over a three-year period of time. Cantrell found that students whose teachers were absent less than four days per school year performed higher on language, reading, and mathematics assessments than did students whose teachers were absent more frequently. "Students in classes taught by teachers with the lowest absences rates outperformed their peers in classes taught by teachers with the higher absence rates by 1.5 to 2 NCEs" (p. 7).

Clotfelter et al. (2009) obtained student achievement and teacher absenteeism data in North Carolina for a 10-year period of time from 1993 - 1994 through 2003 - 2004. When 4th and 5th graders' mathematics and English achievement scores were matched to their teachers' absence rates, the researchers found that students whose teachers missed 10 days of school or more in a year scored lower in mathematics and reading than did the comparison group. Clotfelter et al. were the first to establish a causal link between teacher absenteeism and teacher achievement in the United States (Miller et al., 2008).

While Clotfelter et al. (2009) considered statewide data encompassing rural, suburban, and urban school districts, the study by Miller et al. (2008) was context-specific. Specifically, it focused on one large urban school distinct with a diverse student population of which over 80.00% qualified for free or reduced price lunch. The researchers collected student achievement and teacher absence data from 8,631 students and 285 teachers over three years, and reported 10 days of teacher absence reduced mathematics achievement scores by approximately 3.30%.

Finlayson (2009) investigated the impact of teacher absenteeism on student's mathematics and reading achievement, as measured by the Criterion Reference Competency Test, in Cobb County, Georgia. Data analysis of 454 third-grade teachers' attendance rates and 7,683 students' reading and mathematics achievement showed a weak but statistically significant relationship between teacher absences and mathematics scores. No relationship between teacher absences and reading scores was found.

Speas (2010) analyzed teacher absences and student achievement in the Wake County Public School System, North Carolina. She found a statistically significant negative, but low, correlation between teacher absence and mathematics achievement at the sixth and seventh grades. She did not find a relationship between teacher absence and mathematics achievement at other grades, nor did she find a relationship between teacher absence and reading achievement at any grade level.

How Teacher Absenteeism May Affect Student Achievement?

There are many ways by which teacher absenteeism may affect student achievement. First, instructional intensity may be radically reduced when a regularly assigned teacher is absent (Banchero, 2011). Schools' primary strategy for coping with teacher absence is to place substitute teachers in classrooms (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2009). Substitutes, however, are mainly concerned with classroom management (Duncan, 2010). Sometimes they simply show videos or monitor busywork rather than seeking to have students make academic progress (Duncan, 2010). To be fair, substitutes' efforts are frequently undermined by poor organization on the part of the absent teachers. For instance, when they are absent, many teachers fail to leave usable lesson plans and seating charts for the substitute (Marszalek, Odom, LaNasa, & Alder, 2010).

States' requirements for the academic qualifications of substitute teachers are also generally modest. Nineteen states do not require that substitutes hold a Bachelor's degree (Henderson, Protheroe, & Porch, 2012), a standard requirement for regular teachers. Furthermore, since the No Child Left Behind Act of 2001 exempts substitutes from its otherwise ambitious requirements around teacher quality (US Department of Education, 2014), substitutes who have weak qualifications relative to regular teachers are liable to maintain the norm.

The second way that teacher absences may affect student achievement is through the disruption of the regular flow of classroom events. Termed discontinuities of instruction (Rundall, 1986; Turbeville, 1987), such disruptions may affect student achievement in one or more of the following ways. First, a teacher's dozen or so absences may be covered by as many as a dozen different substitutes, resulting in the reality that students may have difficulty forming meaningful relationships with multiple, mobile substitutes. Furthermore, upon their return from absences, teachers may need to reallocate instructional time to activities designed to rebuild students' trust. Second, even if substitutes deliver brilliant isolated lessons, they may not be able to implement a regular teacher's long-term instructional strategies. Third, because differentiated instruction addressing the needs of individual students often depends on periodic consultation with specialists, substitute teachers are at a disadvantage in implementing this technology.

Staffing problems arising from teacher absence threaten student achievement in a third way. Many school districts are routinely unable to muster enough substitutes to cover all teacher absences (Bayard, 2013; Henderson, Protheroe, & Porch, 2012). Consequently, teachers within subject-area departments or grade-level clusters often scramble to cover classes themselves by combining classes or by foregoing preparation time to stand in for absent colleagues (Bayard, 2013). Administrators may even teach, or sometimes, classrooms are simply monitored for safety by neighboring teachers until other arrangements are made. The quality and delivery of instruction may suffer under such circumstances. Furthermore, these emergency strategies may induce stress among teachers who are present, and stress itself has been linked to absence (Henderson, Protheroe, & Porch, 2012). Thus, teacher absences may feed into a vicious feedback cycle from which diminished student achievement is a plausible outcome.

Finally, absent teachers forego opportunities to supervise recess, meals, student drop-off and pick-up, and after-school activities. This consequence of absence is important, because interaction with and encouragement from teachers outside the classroom can have profound impact on students' motivation to work hard in the classroom or even to attend school. In addition to missing supervisory duties, absent teachers are less available for collaboration with colleagues, an especially important consequence since the advent of data-driven school-wide strategies to improve student achievement (Ronfeldt, Farmer, McQueen, & Grissom, 2015).

Summary

The literature presented a compelling need to learn more about teacher absenteeism and its impact on student achievement. When teachers are absent from school, there is a substantial financial cost to the district. Teacher absenteeism also results in disruption to the continuity and quality of teaching and learning. Findings related to the impact of various teacher demographic variables on both teacher absenteeism and student achievement were reviewed.

While it may be intuitively attractive to assume when teachers do not report for work regularly, their students will perform less well academically, there is no consistent evidence that this is so. Within the limited existing literature on the relationship between teacher absenteeism and student achievement, conflicting findings have been reported. An examination of the existing studies on the relationship between teacher absenteeism and student achievement was presented. Several studies found no relationship while others found significant albeit weak relationships between teacher absences and student achievement.

Chapter III

Method

Introduction

The purpose of the study was to examine the impact of teacher absenteeism on academic achievement of 8th grade students, as measured by the reading and mathematics sections of the State of Texas Assessments of Academic Readiness (STAAR). The following questions guided the study:

1. Does teacher attendance impact student achievement as measured by eighth grade STAAR Mathematics?

2. Does teacher attendance impact student achievement as measured by eighth grade STAAR English Language Arts?

Research Design

The study employed an ex post facto, causal-comparative/group comparison research design. Ex post facto studies are retrospective in nature. During an ex post facto study, the researcher attempts to better understand an occurrence or condition that already exists (Cohen, Manion, & Morrison, 2000). Causal-comparative/group comparison research is a “type of quantitative investigation in which groups that differ on the independent variable are compared to determine whether they also differ on the dependent variable or in which groups that differ on the dependent variable are compared to determine whether they also differ on the independent variable” (Gall, Gall, & Borg, 2015, p. 575). A causal-comparative/group comparison research design was chosen because the absence or presence of the independent variable, high/low absenteeism, already existed. In causal-comparative research/group comparison studies, causal inferences are not drawn because the independent variable is not manipulated.

In this study, the independent variable was teacher absenteeism, delimited to mathematics and reading teachers, with two levels: (1) low absenteeism (less than 10 absences per academic year, the characteristic-present group; specifically, the mathematics and reading teachers had 3 and 4 absences, respectively) and (2) high absenteeism (10 or more absences per academic year, the comparison group; specifically, both teachers had 11 absences). The outcome measures were the students' achievement scores on mathematics and reading.

The subjects for the study were from two middle schools in an urban district in South Texas. At the time of conducting the study, Schools A (characteristic-present group) and B (comparison group) had an enrollments of 555 and 474 students, respectively, with similar demographic characteristics. The overwhelming majority of the students in both schools were socioeconomically disadvantaged, 71.50% and 74.90% in A and B, respectively. Ethnicity percentages for School A were 93.20% Hispanic, 1.70% White, and 3.70% African American. School B's ethnicity percentages were 92.30% Hispanic, 3.30% White, and 2.70% African American. The average teaching experience in both campuses was 9 years. Both campuses were rated Met Standard for state accountability for the 2017 - 2018 school year. Permission to conduct the study was obtained from the Institutional Review Board at Texas A&M University-Corpus Christi (Appendix A).

Instrumentation

In the state of Texas, the core subject areas of reading, writing, mathematics, science, and social studies in grades 3 – 11 are tested, using the State of Texas Assessments of Academic Readiness (STAAR). The STAAR is a rigorous standardized testing program that emphasizes readiness standards, which are the knowledge and skills considered most important for success at the next grade level and for college and career (TEA, 2018). For the purpose of the study, the

2017 - 2018 STAAR scores in mathematics and reading for 8th grade students will be used. The proportion of correct answers will be used to measure each STAAR Reporting Category.

The eighth grade STAAR mathematics test has four categories with a total of 42 items, measuring student knowledge of mathematics TEKS. The mathematics categories are listed in Table 1. The eighth grade STAAR reading test has three categories with a total of 52 items, measuring student knowledge of reading TEKS. The reading categories are listed in Table 2.

Table 1

STAAR Grade 8 Mathematics Categories

Categories	Number of Questions
Category 1: Numerical Representations and Relationships	4
Category 2: Computations and Algebraic Relationships	16
Category 3: Geometry and Measurement	15
Category 4: Data Analysis and Personal Financial Literacy	7
Total Questions on Test	42

Table 2

STAAR Grade 8 Reading Categories

Categories	Number of Questions
Category 1: Understanding and Analysis Across Genres	10
Reporting Category 2: Understanding and Analysis of Literary Texts	22
Reporting Category 3: Understanding and Analysis of Informational Texts	20
Total Questions on Test	52

In accordance with HB 734, the STAAR test has been evaluated by an independent organization to ensure external validity and reliability. Human Resources Research Organization (HumRRO) was contracted by the TEA to ensure test validity and reliability. Each item was reviewed for appropriateness, level of difficulty, potential bias, and reporting category/student expectation match. After an extensive evaluation of the STAAR test, HumPRO reported that test results can be interpreted as representing what a student knows and can do with on grade curriculum requirements. Further, HumRPO determined that STAAR sores met the requirements for validity and reliability (HumPRO, 2016)

Data Collection

The data were obtained from the TEA, which included raw scores for each of the STAAR categories as well as data on gender, ethnicity, special education status, and Limited English proficiency (LEP) status. The TEA did not provide the researcher with any other demographic information. There were complete data for 124 and 109 8th graders in the characteristic-present and comparison groups, respectively.

Data Analysis

The raw data were exported into the Statistical Package for the Social Sciences (SPSS) Version 25 (IBM Corp, 2017), which was used for data manipulation and analysis. Descriptive statistics were utilized to organize and summarize the data, including frequency and percentage distribution tables, measures of central tendency, and measures of variability. The proportion of the total number of test questions answered correctly to the total number of questions in each reporting category was used to measure student achievement in mathematics and reading. The level of significance was set, a priori, at 0.01.

A series of chi-square test of independence was performed to compare the two groups on the basis of gender, ethnicity, special education status, and LEP status (Field, 2018). The non-parametric test involves inferences about the independence of the modes of classification in a contingency table (a two-way table showing the contingency between two variables where the variables have been classified into mutually exclusive categories and the cell entries are frequencies). The null hypothesis is that the two modes of classification on which the contingency table is based are independent of each other.

The four demographic characteristics were coded as binary variables. A series of Point-biserial Correlation Coefficient (Field, 2018) was performed to examine the significance of the associations between them and each of the STAAR mathematics and reading category scores. For mathematics scores, none of the bivariate associations was statistically significant; thus, the four characteristics were ruled out as potential confounding/extraneous variables. For reading scores, the associations with special education status were statistically significant; the interaction effect of special education status and absenteeism on various reading scores was not statistically significant; consequently, it was treated as a confounding variable and was used to adjust the outcome measures.

A series of Pearson's Product Moment Correlation Coefficient (Field, 2018) showed that the mathematics and reading scores were correlated with each other; thus, the use of multivariate statistical techniques was deemed appropriate. Due to approximately equal sample sizes, largest n/smallest $n < 1.50$, $124/109 = 1.14$, the general linear model (GLM) was considered robust with respect to the homogeneity of variances and equality of covariance matrices assumptions (Stevens, 2009).

A Multivariate Analysis of Variance (MANOVA) was performed to test whether there were statistically significant differences between the characteristic-present and the comparison groups based on STAAR mathematics scores (Stevens, 2009; Field, 2018). There is a mathematical expression called a *vector*, which represents each subject's score on more than one response variable. The mean of the vectors for each group is called a *centroid;* MANOVA is used to differentiate between/among groups with respect to their group centroids. Univariate F tests were performed for the purpose of post hoc analysis.

A Multivariate Analysis of Co-variance (MANCOVA) was performed to test the group differences based on STAAR reading categories, adjusted by special education status. Adjusted means were computed by: Adjusted mean = Unadjusted mean for level j – b (the mean of the covariate for level j – the grand mean of the covariate), where b is the common regression coefficient (Stevens, 2009).

To examine the practical significance of the findings and report the effect size, Cohen's d was computed and described as 0.20 = small, 0.50 = medium, and 0.80 = large (Cohen, 1988).

Summary

The study was non-experimental in nature; thus, no causal inferences were drawn. Existing data were used to answer the research questions. Univariate and multivariate statistical techniques were employed to analyze the data. With respect to mathematics scores, none of the demographic characteristics were found to be confounding variables. Special education status was correlated with the reading scores, did not interact with absenteeism status, and was used as a co-variate to adjust the outcome measures. Mean difference effect sizes were used to examine the practical significance of the findings. All analyses were conducted at the 0.01 level of significance.

Chapter IV

Results

Introduction

The purpose of the causal-comparative study was to examine the impact of teacher absenteeism on mathematics and reading achievement of 8th grade students in an urban school district in South Texas. The achievement scores were measured by the STAAR. The a priori hypotheses were that students with mathematics and reading teachers who were absent 10 days or less during the school year would outperform students with teachers who were absent 10 days or more on the basis of the outcome measures. The study was guided by the following research questions:

1. Does teacher attendance impact student achievement as measured by eighth grade STAAR Mathematics?
2. Does teacher attendance impact student achievement as measured by eighth grade STAAR English Language Arts?

The data were obtained from the TEA, coded, entered into the computer, and analyzed by using the Statistical Package for the Social Sciences (SPSS). The demographic data were obtained for the following variables: gender, ethnicity (Hispanic or Non-Hispanic), special education status, and limited English proficiency status. The level of significance was set, a priori, at 0.01 to reduce the probability of making Type I errors due to performing multiple tests.

Mathematics Results

<u>A Profile of the Subjects</u>

The characteristic-present group (n = 124) included 8th grade students whose mathematics teacher had low absenteeism (less than 10 absences per academic year) and the comparison group (n = 109) included students whose mathematics teacher had high absenteeism (10 or more absences per academic year). The characteristic-present group included more females (47.70%, n = 68) than males (45.20%, n = 56). The comparison group included more males (52.30%, n = 57) than females (47.70%, n = 52). The majority of all students were Hispanic, non-special education, and none-limited language proficiency. The results are summarized in Table 3.

Table 3

A Profile of the Subjects, Mathematics

Demographic Characteristic	Characteristic-Present Group (n = 124) f	%	Comparison Group (n = 109) f	%
Gender				
Female	68	54.80	52	47.70
Male	56	45.20	57	52.30
Ethnicity				
Hispanic	101	81.50	92	84.40
Non-Hispanic	23	18.50	17	15.60
Special Education				
Special Education	11	8.90	23	21.10
Non-Special Education	113	91.10	86	78.90
Limited English Proficiency (LEP)				
LEP	12	9.70	10	9.20
Non-LEP	112	90.30	99	90.80

Characteristic-present group = low teacher absenteeism
Comparison group = high teacher absenteeism

The outcome measures were the four STAAR Mathematics Reporting Categories, namely, Category 1: Numerical Representations and Relationships (4 questions), Category 2: Computations and Algebraic Relationships (16 questions), Category 3: Geometry and Measurement (15 questions), Category 4: Data Analysis and Personal Financial Literacy (7 questions). Academic achievement in mathematics was measured by the proportion of correct answers to the total number of questions in each of the four Reporting Categories. The means and standard deviations for the mathematics category scores are shown in table 4.

Table 4

STAAR Mathematics Achievement Measures

	Characteristic Present Group (n = 124)		Comparison Group (n = 109)	
STAAR Reporting Category	M*	SD	M*	SD
Mathematics Category 1	0.49	0.25	0.37	0.15
Mathematics Category 2	0.48	0.24	0.39	0.15
Mathematics Category 3	0.50	0.21	0.32	0.14
Mathematics Category 4	0.38	0.26	0.33	0.19

*Proportion of correct answers, theoretical range: 0.00 to 1.00
Mathematics Category 1: Numerical Representations and Relationships
Mathematics Category 2: Computations and Algebraic Relationships
Mathematics Category 3: Geometry and Measurement
Mathematics Category 4: Data Analysis and Personal Financial Literacy
Characteristic-present group = low teacher absenteeism
Comparison group = high teacher absenteeism

A series of Point-biserial Correlation Coefficient showed that gender, ethnicity, special education status, and limited English proficiency status, all coded as binary variables, were not associated with any of the STAAR mathematics category scores. The magnitude of the bivariate association ranged from 0.02 to 0.15 and none was statistically significant at the 0.01 level. Thus, all were ruled out as potential confounding variables.

The mathematics reporting category test scores were correlated with each other. All associations were statistically significant at 0.01 level. Results are shown in table 5.

Table 5

Correlation Matrix for STAAR Mathematics Category Scores

	Math1	Math2	Math3	Math4
Math1	1.00			
Math2	0.58*	1.00		
Math3	0.58*	0.63*	1.00	
Math4	0.40*	0.50*	0.38*	1.00

*p < 0.01

Math1: Numerical Representations and Relationships, Math2: Computations and Algebraic Relationships, Math3: Geometry and Measurement, Math4: Data Analysis and Personal Financial Literacy

The mathematics achievement scores were correlated with each other. A MANOVA was used to compare the characteristic- present group and comparison group on the basis of the group centroids. The MANOVA showed that the group differences were statistically significant, favoring the characteristic-present group, *Wilks' Lamba* = 0.79, $F(4,228) = 15.23$, $p < 0.01$. The post hoc analysis showed that the characteristic-present group outperformed the comparison group on the basis of Category 1, Numerical Representations and Relationships, Category 2: Computations and Algebraic Relationships, and Category 3: Geometry and Measurement. Results are summarized in Table 6.

Mean difference effect sizes, as computed by Cohen's d, were used to examine the practical significance of the findings. Results were summarized in Table 7.

Table 6

Post Hoc Analysis, STAAR Mathematics Achievement Measures

Mathematics Reporting Category	SS	df	MS	F
Mathematics Category 1	0.73	1	0.73	16.63*
Mathematics Category 2	0.57	1	0.57	13.40*
Mathematics Category 3	1.90	1	1.90	59.78*
Mathematics Category 4	0.18	1	0.18	3.37

*p < 0.01
Mathematics Category 1: Numerical Representations and Relationships
Mathematics Category 2: Computations and Algebraic Relationships
Mathematics Category 3: Geometry and Measurement
Mathematics Category 4: Data Analysis and Personal Financial Literacy

Table 7

Mean Difference Effect Sizes, STAAR Mathematics Achievement Measures

STAAR Reporting Category	Mean Difference	p	Effect Size*
Mathematics Category 1	0.11	< 0.01	0.54
Mathematics Category 2	0.10	< 0.01	0.49
Mathematics Category 3	0.18	< 0.01	1.02
Mathematics Category 4	0.06	0.07	0.24

*0.20 = small effect, 0.50 = medium effect, >0.80 = large effect
Mathematics Category 1: Numerical Representations and Relationships
Mathematics Category 2: Computations and Algebraic Relationships
Mathematics Category 3: Geometry and Measurement
Mathematics Category 4: Data Analysis and Personal Financial Literacy

Reading Results

A Profile of the Subjects

The characteristic-present group (n = 124) included 8th grade students whose reading teacher had low absenteeism and the comparison group (n = 109) included students whose mathematics teacher had high absenteeism (10 or more absences). The characteristic-present group included more females (54.80%, n = 68) than males (45.20%, n = 56).

The comparison group included more males (51.40%, n = 56) than females (48.60%, n = 53). The majority of all students were Hispanic, non-special education, and none-limited language proficiency. The results are summarized in Table 8.

Table 8

A Profile of the Subjects, Reading

Demographic Characteristic	Characteristic-Present Group (n = 124) f	%	Comparison Group (n = 109) f	%
Gender				
Female	68	54.80	53	48.60
Male	56	45.20	56	51.40
Ethnicity				
Hispanic	101	81.50	92	84.40
Non-Hispanic	23	18.50	17	15.60
Special Education				
Special Education	11	8.90	23	21.10
Non-Special Education	113	91.10	86	78.90
Limited English Proficiency (LEP)				
LEP	8	6.50	7	6.40
Non-LEP	116	93.50	102	93.60

Characteristic-present group = low teacher absenteeism
Comparison group = high teacher absenteeism

The outcome measures were the three Reading STAAR Reporting Categories, namely, Category 1: Understanding/Analysis Across Genres (8 questions), Category 2: Understanding/Analysis of Literary Texts (19 questions), Category 3: Understanding/Analysis of Informational Texts (17 questions). Academic achievement in reading was measured by the proportion of correct answers to the total number of questions in each of the three Reporting Categories. The means and standard deviations are shown in table 9.

Table 9

STAAR Reading Achievement Measures

STAAR Reporting Category	Characteristic Present Group (n = 124) M*	SD	Comparison Group (n = 109) M*	SD
Reading Category 1	0.46	0.18	0.41	0.18
Reading Category 2	0.51	0.18	0.48	0.19
Reading Category 3	0.46	0.20	0.46	0.23

*Proportion of correct answers, theoretical range: 0.00 to 1.00
Reading Category 1: Understanding/Analysis Across Genres
Reading Category 2: Understanding/Analysis of Literary Texts
Reading Category 3: Understanding/Analysis of Informational Texts
Characteristic-present group = low teacher absenteeism
Comparison group = high teacher absenteeism

A series of Point-biserial Correlation Coefficient showed that gender, ethnicity, and limited English proficiency status were not associated with any of the reading scores; thus, were ruled out as confounding variables. The associations with special education status ranged from -0.15 to -0.24, were statistically significant and showed the 8th graders who were not classified as special education students scored higher on reading scores than did the special education students; thus, special education status was treated as a confounding variables and used to adjust the outcome measures. The observed and adjusted means are summarized in Table 10.

The bivariate associations among the reading scores were statistically significant, as shown in Table 11. Thus, the use of multivariate analysis of the data was justified. The special education status was treated as the co-variate, requiring the use of a Multivariate Analysis of Variance (MANCOA) to analyze the reading data. The MANCOVA showed that the group differences were not statistically significant, *Wilks' Lamba* = 0.99, $F(3, 228) = 1.08$, $p = 0.36$.

Mean difference effect sizes, as computed by Cohen's d, were used to examine the practical significance of the findings. Results, as summarized in Table 12, show that the effect sizes were negligible.

Table 10

Observed and Adjusted Means for STAAR Reading Category Scores*

	Characteristic Present Group (n = 124)		Comparison Group (n = 109)	
STAAR Reporting Category	Obs. M	Adj. M	Obs. M	Adj. M
Reading Category 1	0.46	0.45	0.41	0.42
Reading Category 2	0.51	0.50	0.48	0.49
Reading Category 3	0.46	0.46	0.46	0.47

*Proportion of correct answers, theoretical range: 0.00 to 1.00
Reading Category 1: Understanding/Analysis Across Genres
Reading Category 2: Understanding/Analysis of Literary Texts
Reading Category 3: Understanding/Analysis of Informational Texts
Characteristic-present group = low teacher absenteeism
Comparison group = high teacher absenteeism

Table 11

Correlation Matrix for STAAR Reading Category Scores

	Reading1	Reading2	Reading3
Reading1	1.00		
Reading2	0.45*	1.00	
Reading3	0.33*	0.51*	1.00

*$p < 0.01$
Reading Category 1: Understanding/Analysis Across Genres
Reading Category 2: Understanding/Analysis of Literary Texts
Reading Category 3: Understanding/Analysis of Informational Texts

Table 12

Mean Difference Effect Sizes, STAAR Reading Achievement Measures

STAAR Reporting Category	Mean Difference	p	Effect Size*
Reading Category 1	0.04	0.13	0.16
Reading Category 2	0.02	0.51	0.03
Reading Category 3	0.01	0.74	0.01

*0.20 = small effect, 0.50 = medium effect, >0.80 = large effect
Reading Category 1: Understanding/Analysis Across Genres
Reading Category 2: Understanding/Analysis of Literary Texts
Reading Category 3: Understanding/Analysis of Informational Texts

Summary

The study's hypotheses were that 8th graders whose mathematics and reading teachers had been absent for less than 10 days per school year would outperform those whose teachers had missed more than 10 days of being away from the classroom in academic achievement in mathematics and reading as measured by the 2017 - 2018 STAAR test data. Results supported the hypothesis in mathematics, but not in reading. Mean difference effect sizes were computed to evaluate the practical significance of the findings. Due to non-experimental nature of the study, no causal inferences were drawn.

Chapter V

Summary, Conclusions, and Discussion

Introduction

In spite of various educational initiatives that the United States has undertaken, measures of academic achievement in the nation are still cause for concern. Abundant of research suggests that teachers are one of the most influential factors affecting student academic achievement. While teachers are responsible for delivering quality instruction, the Office of Civil Rights (2016) reported that 27.00% of the nation's school teachers missed at least 10 days of school during the 2013– 2014 school year, which must have resulted in a loss in high quality instructional time. However, most of the research on teacher absenteeism has focused on understanding and explaining it in terms of teacher demographics and the financial costs to school districts. The research that has examined teacher absenteeism and its relationship to student academic achievement has been inconsistent and narrowly focused.

The purpose of the study was to examine the impact of teacher absenteeism on academic achievement in mathematics and reading, as measured by the 8th grade STAAR. The study was guided by the following research questions:

1. Does teacher attendance impact student achievement as measured by eighth grade STAAR Mathematics?

2. Does teacher attendance impact student achievement as measured by eighth grade STAAR English Language Arts?

Summary of the Results

Analysis of the data showed students with teachers absent less than 10 days, compared to those who teachers had been absent for more than 10 days, performed at a higher academic achievement on mathematics outcome measures and after adjusting for special education status, there were no statistically significant differences based on academic achievement in reading.

With respect to achievement in mathematics, the characteristic-present group (less than 10 absences per academic year) outperformed the comparison group on the basis of Category 1: Numerical Representations and Relationships, Category 2: Computations and Algebraic Relationships, and Category 3: Geometry and Measurement; the mean difference effect sizes ranged from 0.49 to 1.02. With respect to achievement in reading, none of the group differences based on Category 1: Understanding and Analysis Across Genres, Category 2: Understanding and Analysis of Literary Texts, Category 3: Understanding and Analysis of Informational Texts, adjusted by special education status, was statistically significant and mean difference effect sizes ranged from 0.01 to 0.16.

Conclusions

The researcher had hypothesized that 8th grade students in the characteristic-present group (less than 10 days of teacher absenteeism) would outperform the 8th grade students in the comparison group (more than 10 days of teacher absenteeism) on the basis of academic achievement in mathematics and reading, as measured by the 2017-2018 STAAR test results. The results supported the hypothesis on mathematics but not reading; thus, it was concluded that mathematics teachers' absenteeism has the potential to impact academic achievement.

Due to non-experimental nature of the study, no causal inferences were drawn and the external validity was limited to the study's participants due to non-probability nature of sampling.

Discussion

The study was an ex post facto, causal-comparative research design to examine the impact of teacher absenteeism on academic achievement. Within the limited existing literature on the relationship between teacher absenteeism and student achievement, conflicted findings have been reported (Miller et al., 2008). In the current study, a link between teacher absenteeism and academic achievement in mathematics was found, which is supported by other studies. For example, Beavers (1981) found a statistically significant relationship between teacher absenteeism and student achievement in reading and mathematics amongst fifth graders. Azumi and Madhere (1982) focused on 3rd and 6th graders and found a link between teacher absenteeism and student achievement. Similar to Azumi and Madhere's study, Smith (1984) investigated the relationship between teacher absenteeism and student achievement in reading and mathematics in several grades, but over a two-year period of time, rather than just one school year. Speas (2010) found a statistically significant negative correlation between teacher absenteeism and mathematics achievement at sixth and seventh grades.

On the other hand, this study found no link between teacher absenteeism and academic achievement in reading, which is also supported by the literature. For example, Dilworth (1987) concluded no statistically significant association between teacher absenteeism and student academic achievement amongst first graders. Ehrenberg (1991) reported no associations between teacher absenteeism and student pass rates on standardized tests. Webb (1995) concluded there was no relationship between teacher attendance and student achievement in three different schools in Texas. Clay (2007) investigated teacher absenteeism and student achievement data over three school years and concluded there was no statistically significant differences between the number of teacher absences and student scores.

A review of literature indicated that teacher absenteeism is a significant problem. In schools throughout the nation, over a third (27.00%) of the teachers missed at least 10 days of school (Office of Civil Rights, 2016). Since the primary goal of education is to prepare students to become productive members of the society, public schools must place student achievement as the primary objective. Nevertheless, teacher absences have shown to have a negative impact on student achievement in some contexts (Miller et al., 2008; Tingle et al., 2012). Certain teacher characteristics (e.g., gender, years of teaching experience, degree and certification) have also been shown to impact student achievement (Clotfelter et al., 2009).

Consequently, student achievement has been the forefront of both federal and state legislation. Since the passage of the NCLB in 2001, teachers, school administrators, superintendents, and school board members have sought out innovative interventions to increase student achievement on standardized assessments. Moreover, schools are now subject to higher levels of accountability, not only for students, but also for teachers and administrators. Nevertheless, school districts are charged with the responsibility of hiring and retaining highly qualified teachers, providing instructional materials, and improving the overall academic achievement of all students.

There is a general agreement that teachers make a difference in student achievement, but there is a lack of consensus regarding which characteristics of teachers matters the most. While many researchers have studied the characteristics that may affect student outcomes in mathematics and reading/language arts, varying results have been reported (Clofelter et al., 2007; Darling-Hammond, 2000; Jepsen, 2005; Kane, Rockoff, & Stagier, 2008). Teacher Quality, the study's theoretical framework, is a key element in improving primary and secondary education (Harris and Sass, 2011). As noted in Chapter I, the debate surrounding education focuses on quality (Sanchez Zinny et. al, 2011). Indeed, teachers' expertise and experience have been cited as very important school factors that influence student academic achievement (Hanushek, 2007; Haskins & Loeb, 2007; Gordon, Kane, & Staiger, 2006). One of the main goals of recent presidential administrations has been to have a highly qualified teacher in every classroom. This study focused on teacher absenteeism, a component of the Teacher Quality framework, is shown to impact student achievement. Teachers play one of the most important roles regarding the quality of education. Terhart (2011) noted that certain teachers with certain practices are highly effective. Although policy makers periodically have suggested that schools have little impact on student learning, there are studies indicating that they do make a difference, and much of that difference can be linked directly to teachers (Darling-Hammond, 2000). This study provided additional information on the impact of teacher absenteeism on academic achievement.

Therefore, as education leaders seek to meet the demands of current education legislation, it is imperative that they continue to investigate every measure to improve student achievement. It is crucial that school districts continue to explore the teacher absenteeism and how it may impact student performance. Most educators view teaching and learning as a reciprocal process, an equal partnership, in which teachers and students, alike, shape the environment and support the learning endeavor through their thoughts and behaviors (Harris & Sass, 2011). Hence, effective teaching and learning requires active participation by both the teachers and students; thus, if student attendance in the classroom is required, the same must be expected of the teachers. Teacher effectiveness requires a balance of the instructional practices of teachers that both enhance teaching and curriculum-based assessments of student learning.

Implications

The issue of teacher attendance can be addressed from many different aspects. A plausible solution at the local level can be the hiring of a few certified teachers who act as fill-in teachers when the actual teacher is absent (Miller et al., 2008). If well-qualified substitute teachers were available to fill in for teachers of mathematics, reading, and language arts, the negative consequences of the ill-prepared substitutes, as noted in the review of the literature, could be reduced. Such substitutes must be well-trained in specific subject matters, capable of establishing rapport with students, and keenly aware of the school's operational requirements. This would greatly compensate for many noted issues associated with teacher absenteeism, but not resolve the financial aspects or teacher absenteeism. Additionally, it has the potential to foster cultural changes, setting higher expectations for substitutes who, traditionally, have not been expected to perform at high levels by all stakeholders (Damle, 2009).

The researcher believes that administrators' and policy makers' focus should not be on the financial aspect of the cost associated with teacher absenteeism. Instead, the focus should be on what can be done to provide the students with high quality regular and substitute teachers. For example, as Carlsen (2012) pointed out, much of our problems during teacher absences are generated by the popular conception of the role of the substitute teacher. If we change that perception by recruitment, placement, and retention of quality people as substitutes, we may increase student achievement and promote a positive climate. In other words, the necessity for somatic and mental health and the legitimate need for the teaching professional to have release time should continue to be investigated and defined until a happy balance can be achieved between student performance, teacher wellbeing, and professional stature (Silva, 2010). When considering restructuring the organization of schools, policy makers and administrators should be mindful of the importance that the perception of fairness and trust has on the work ethic of the employee (Carlsen, 2012).

The thoughtful revision of policy could also make great differences in the use and abuse of leave provisions. Miller et al. (2008) described several incentive schemes that include buying back unused sick days, or substantial bonus pay for exceptional attendance. Jacobs and Kritsonis

(2007) suggested that contributions to retirement accounts are also excellent incentives to improve the attendance patterns of teachers. Rosenblatt and Shirom (2005) suggested a screening process for potential employees that could help diminish the hiring of individuals that have poor personality traits, lack established work habits, and demonstrate poor work ethic that are associated with chronic absenteeism.

Student achievement is the focal point of the current educational context. The legislation of the NCLB enforces penalties on schools and local districts that fail to meet the requirements of the federal mandate. Further pressure is now applied to districts by some states that have created additional policies to penalize consistently low-performing systems (Bausell, 2007). Meeting these requirements requires additional funds and resources, but many states and districts face severe budget constraints (Chiang, 2009).

To meet the accountability requirements of the current educational context, schools must examine their available resources and investigate and implement measures to best use them. The primary resource in the public school system is the teacher. The teacher characteristics of absenteeism, age, gender, degree level, certification status, and experience may affect student achievement, but these effects are context specific (Buddin & Zamarro, 2009; Clay, 2007; Croninger et al., 2007; Miller et al., 2008). It is, therefore, necessary to examine the relationship between these characteristics and student achievement within a particular context.

Recommendations for Further Research

The study's delimitations, limitations, and assumptions offer opportunities for further research. Specifically, (1) due to the non-probability nature of sampling, external validity was limited to study participants; (2) the study was delimited to 2017-18 8th grade students in two middle schools and their reading and mathematics teachers; (3) the study was delimited to the outcome measures of academic achievement in mathematics and reading based on the STAAR standardized test and the independent variable of teacher absenteeism (low or high); (4) it was assumed that the existing data had accurately measured the criteria and the participating schools had followed the curricula accordingly. To enhance the generalization of the results, the researcher recommends the replication of the study in other school districts in Texas, in other grade levels, and in other academic achievement subjects. The examination of graduation rates in relation to teacher absenteeism is noteworthy. Qualitative studies to better understand the impact of teacher absenteeism on school-related entities are recommended. Longitudinal studies are helpful in assessing consistency.

Additionally, the present study did not address the reasons for teacher absenteeism. There are different types of absenteeism; for example, planned vs. unplanned, with different consequences. It is possible that teachers with planned absences have the time to make detailed lesson plans and find high quality substitute teachers, which could alleviate the negative impact of the absenteeism on student achievement. Further studies must be conducted to examine the link between the type of teacher absenteeism and students' academic achievement.

References

Addams, L., & Woodbury, D. (2009). Teaching job search written and oral communication skills through an integrated approach. *American Journal of Business Education, 2(4)*, 13-18.

Azumi, J., & Madhere, S. (1982). *Characteristics of high achieving elementary schools in Newark (ORET Report No. 5).* Office of Research and Testing, Newark Board of Education, New Jersey. Retrieved from ERIC Document Reproduction Service (No. ED217099).

Balfanz, R., & Byrnes, V. (2012). The importance of being there: A report on absenteeism in the nation's public schools. *Baltimore, MD: Johns Hopkins University School of Education, Everyone Graduates Center, Get Schooled*, 1-46.

Banchero, S. (2011, October 26). Nearly half of states link teacher evaluations to tests. *Wall Street Journal (Online).*

Bausell, C. (2007). State of states. *Education Week, 26*, 305-331.

Bayard, S. R. (2013). *A study of the relationship between teacher absenteeism, teacher variables, school schedule, and student achievement.* (Doctoral dissertation). (Publication No. AAT 3120004).

Beavers, H.J. (1981). *The relationship between selected education variables and student achievement in a selected school district.* (Doctoral dissertation). Retrieved from Dissertations and Theses: Full Text database. (Publication No. AAT 8127363).

Berliner, D. C. (2005). The near impossibility of testing for teacher quality. *Journal of Teacher Education, 56*, 205-213.

Boyd, D. J., Grossman, P. L., Lankford, H., Loeb, S., & Wyckoff, J. (2009). Teacher preparation and student achievement. *Educational Evaluation and Policy Analysis, 31(4)*, 416-440.

Boswell, C.B. (1993). *The relationship between teacher absenteeism and student achievement in second schools in South Carolina.* (Doctoral dissertation). Retrieved from Dissertations and Theses: Full Text database. (Publication No. AAT 94400192).

Buddin, R., & Zamarro, G. (2009). Teacher qualifications and student achievement in urban elementary schools. *Journal of Urban Economics, 66*(2), 103-115.

Brooks, S. R. (2000). *How states can hold schools accountable*. Seattle: Center on Reinventing Public Education, University of Washington.

Cantrell, S. (2003). *Pay and performance: the utility of teacher experience, education, credentials, and attendance as predictors of student achievement at elementary schools in LAUSD.* Los Angeles: Los Angeles Unified School District, Program Evaluation and Research Branch.

Carlsen, B. (2012). From absence to absenteeism? A qualitative cross case study of teachers' views on sickness absence. *The Journal of Socio-Economics, 41,* 129-136.

Chaudhury, N., Hammer, J., Kremer, M., Muralidharan, K., & Rogers, F. H. (2006). Missing n action: teacher and health worker absence in developing countries. *The Journal of Economic Perspectives*, *20*(1), 91-116.

Chiang, H. (2009). How accountability pressure on failing schools affects student achievement. *Journal of Public Economics, 93*(10), 1045-1057.

Clay, C.R. (2007). *Teacher absenteeism and its relationship with student achievement.* (Doctoral dissertation). Retrieved from Dissertations and Theses: Full Text database. (Publication No. AAT 3280190).

Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2009). Are Teacher Absences Worth Worrying About in the United States? *Education*, *4*(2), 115-149.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: LEA.

Cohen, L., Manion, L., & Morrison, K. (2000). Action research. *Research methods in education*, *5*, 226-244.

Colquitt, G. T. (2009). *The impact of fifth-grade teacher absenteeism and teacher characteristics on fifth-grade student mathematics achievement.* (Doctoral dissertation). Retrieved from ProQuest UMI Dissertation Publishing. (UMI No. 3388488).

Croninger, R.G., Kind, J. K., Rathbun, A., & Nishio, M. (2007). Teacher qualifications and early learning: Effects of certification, degree, and experience on first grade student achievement. *Economic Review of Education, 26*(3), 312-324.

Damle, R. (2009). Investigating the impact of substitute teachers on student achievement: A review of literature. Retrieved October 18, 2018 from https://www.aps.edu/accountability-reporting/documents/2008-2009-publications/

Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives, 8*(1), 1-44.

Darling-Hammond, L. (2002). Research and rhetoric on teacher certification: A response to "Teacher Certification Reconsidered." *Education Policy Analysis Archives, 10*(36).

Darling-Hammond, L., Holtzman, D. J., Gatlin, S. J., & Heilig, J. V. (2005). Does teacher preparation matter? Evidence about teacher certification, Teach for America, and teacher effectiveness. *Education Policy Analysis Archives, 13*(42).

Darling-Hammond, L. (2006). *Developing learning-centered schools for students and teachers*. Thousand Oaks, CA: SAGE.

Darling-Hammond, L. (2006). Constructing 21st-Century Teacher Education. *Journal of Teacher Education 57*, 300-314.

Darling-Hammond, L., & Bransford, J. (with LePage, P., Hammerness, K., & Duffy, H.). (2005). *Preparing teachers for a changing world: What teachers should learn and be able to do*. San Francisco: Jossey-Bass.

Darling-Hammond, L., & Youngs, P. (2005). Defining ‘highly qualified’ teachers: What does scientifically-based research actually tell us? *Educational Researcher, 31*(9), 13-25.

Dilworth, R.E. (1987). The relationship between student achievement and the variables of teacher-perceived instructional leadership behaviors of principals and teacher attendance. (Doctoral dissertation). (Publication No. AAT 8806623).

Duncan, A. (2010). *Preparing teachers and school leaders of tomorrow: Secretary Arne Duncan’s remarks at the American association of colleges for teacher education conference*. Retrieved from http://www.ed.gov/news/speeches/preparing-teachersand-school-leaders-tomorrow-secretary-arne-duncans-remarks-american

Eldridge, J. W. (1988). A study of the relationship between class size and teacher absence. (Doctoral dissertation). Retrieved from Dissertations and Theses: Full Text database. (Publication No. AAT 9017231).

Ehrenberg, R. G., Ehrenberg, R. A., Rees, D. I., & Ehrenberg, E. L. (1991).*School district leave policies, teacher absenteeism, and student achievement* (No. w2874).

Field, A. (2018). *Discovering statistics using SPSS*. Thousand Oaks, CA: Sage.

Finlayson, M. (2009). The impact of teacher absenteeism on student performance: The case of the Cobb County School District.

Gall, M.D., Gall, J.P., & Borg, W.R. (2015). *Applying educational research (7th Ed)*. Boston, MA: Pearson.

Greenberg, E., Rhodes, D., Ye, X., & Stancavage, F. (2004). *Prepared to teach: Teacher preparation and student achievement in 8th grade mathematics.* Paper presented at the American Educational Research Association Annual Meeting, San Diego

Goe, L. (2007). *The link between teacher quality and student outcomes: A research synthesis*. Washington, DC: National Comprehensive Center for Teacher Quality.

Gordon, R., Kane, T.J., & Staiger, D.O. (2006). *Identifying effective teachers using performance on the job.* Washingtong, DC: The Brookings Institution.

Hammerness, K., & Darling-Hammond, L. (2002). Meeting old challenges and new demands: The redesign of the Stanford Teacher Education Program. *Issues in Teacher Education, 11*(1), 17-30.

Harris, D. N., & Sass, T. R. (2011). Teacher training, teacher quality and student achievement. *Journal of Public Economics, 95*(8), 798-812.

Hanushek, E.A. (2007). The single salary schedule and other issues of teacher pay. *Peabody Journal of Education, 82*(4), 574-586.

Haskins, R., & Loeb, S. (2007). A plan to improve the quality of teaching. *Education Digest, 73*(1), 51-56.

Henderson, E., Protheroe, N., & Porch, S. (2012). *Developing an effective substitute teacher program.* Arlington, VA.: Educational Research Service.

Human Resources Research Organization (2016). Independent Evaluation of the Validity and Reliability of STAAR Grades 308 Assessment Scores: Part 2 Final Report. Retrieved October 30, 2018 from https://tea.texas.gov/WorkArea/DownloadAsset.aspx?id=51539608145

IBM Corp. (2017). *IBM SPSS statistics for Windows, Version 25.0* [Computer software]. Armonk, NY: Author.

Ingersoll, R. M. (1999). The problem of underqualified teachers in american secondary schools. *Educational Researcher, 28*(2), 26-37.

Jacobs, K., & Kritsonis, W. (2007, Fall). An analysis of teacher and student absenteeism in urban schools: What the research says and recommendations for educational leaders. *The Lamar University Electronic Journal of Student Research*.

Jerald, C. D. (2002). *All talk, no action: Putting an end to out-of-field teaching*. Washington, DC: Education Trust.

Jepson, C. (2005). Teacher characteristics and student achievement: Evidence from teacher surveys. *Journal of Urban Economics, 57*(2), 302-319.

Kane, T. J., Rockoff, J. E., & Staiger, D. O. (2008). What does certification tell us about teacher effectiveness? Evidence from New York City. *Economics of Education Review, 27*(6), 615-631.

Kirk, C.L. (1998). *Teacher absenteeism and student achievement. (*(Doctoral dissertation). Retrieved from Dissertations & Theses: Full Text database. (Publication No. AAT 9839321).

Manatt, R. P. (1987). Lessons from comprehensive performance appraisal project. *Educational Leadership, 7*(44)*,* 8-14).

Marszalek, J., Odom, A., LaNasa, S., & Alder, S. (2010). Distortion or clarification: Defining highly qualified teachers and the relationship between certification and achievement. *Education Policy Analysis Archives, 18*(27), 1-28.

Marzano, R. (2003). *What works in schools: Translating research into action*. Alexandria, VA: ASCD.

Michelli, N. M., Dada, R., Eldridge, D., Tamim, R. M., & Karp, K. (Eds.). (2016). *Teacher quality and teacher education quality : Accreditation from a global perspective*. Retrieved from https://ebookcentral.proquest.com

Miller, R.T., (2012). *Teacher absence as a leading indicator of student achievement: New national data offer opportunity to examine cost of teacher absence relative to learning loss.* Center for American Progress. Retrieved October 30, 2018 from www.americanprogress.org

Miller, R. T., Murnane, R. J., & Willett, J. B. (2008). Do teacher absences impact student achievement? Longitudinal evidence from one urban school district. *Educational Evaluation and Policy Analysis*, *30*(2), 181-200.

Nye, B., Konstantopoulos, S, & Hedges, L.V. (2004). How large are teacher effects? *Educational Evaluation and Policy Analysis, 26,* 237-257.

Occhino, J. C. (1997). *Teacher absenteeism: its relationship to student attendance and performance on a standardized achievement test.* (Unpublished doctoral dissertation). University of Rochester, Rochester, New York.

Office of Civil Rights. (2016). *Revealing new truths about our nation's schools*. Retrieved from http://ocrdata.ed.gov/.

Pew Research Center. 2013. *On pay gap, millennial women near parity—for now.* Washington, D.C.: Social & Demographic Trends Project. Retrieved September 20, 2018 from http://www.pewsocialtrends.org/2013/12/11/on-pay-gap-millennial-women-near-parity-for-now/.

Phillips, K. (2010). What does highly qualified mean for student achievement? Evaluating the relationship between teacher quality indicators and at risk students' mathematics and reading achievement gains in first grade. *The Elementary School Journal, 110*(4), 464-493.

Pitkoff, E. (1989). School practices that encourage teacher absenteeism. *Personnel Management, 60*(6), 34.

Podgursky, M. (2012). Fringe benefits. *Education Next* (Summer).

Rhodes, S. R., & Steers, R. M. (1990). *Managing employee absenteeism*. Reading, MA: Addison-Wesley.

Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, schools, and academic achievement. *Econometrica, 73*(2), 417; 458;-458.

Ronfeldt, M., Farmer, S. O., McQueen, K., & Grissom, J. A. (2015). Teacher collaboration in instructional teams and student achievement. *American Educational Research Journal, 52*(3), 475-514.

Rosenblatt, Z., & Shirom, A. (2005). Predicting teacher absenteeism by personal background factors. *Journal of Educational Administration, 43*(2/3), 209-225.

Ross, S. A. (1973). The economic theory of agency: The principal's problem. *The American Economic Review*, 134-139.

Rundall, R. A. (1986). Continuity in Subbing: Problems and Solutions. *Clearing House, 59(5), 240.*

Sanchez Zinny, G, Bullrich, E. (2011). And now quality, insights into the education policy debate in Latin America. Formar Foundation.

Sawchuk, S. (2014). Teacher-absence rates found vary across big-city school districts. *Education Week, 33*(35), 5. Retrieved from https://manowar.tamucc.edu/

Silva, E. (2010). Rebuild it and they will come. *Educational Leadership*, *67* (8), 60-65.

Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis.* New York: Appleton-Century

Smith, D. B. (1984). *A study of the relationship between elementary teacher absenteeism and the achievement of elementary pupils in reading and mathematics.* (Unpublished doctoral dissertation). Michigan State University, East Lansing, Michigan.

Speas, C.M. (2010). *Teacher absences: Types, frequency, and impact on student achievement, Wake County Public School System.* Retrieved from www.wepss.net/evaluation-research

Stephenson, E. (2006). Evading the no child left behind act: State strategies and federal complicity, *Brigham Young University Education and Law Journal*, *2006*(1). Retrieved from https://digitalcommons.law.byu.edu/

Stevens, J.P. (2009). *Applied multivariate statistics for the social sciences*. NY, NY: Routledge.

Terhart, E. (2011). Has John Hattie really found the Holy Grail of research on teaching? An extended review of Visible Learning. *Journal of Curriculum Studies, 43*(3), 425-438.

Texas Education Agency (2018). Retrieved October 30, 2018 from Texas Education Agency website: www.tea.state.tx.us

Tingle, L. R., Schoeneberger, J., Wang, C., Algozzine, B., & Kerr, E. (2012). *An analysis of teacher absence and student achievement.* Project Innovation (Alabama).

Turbeville, I. F. (1987). *The Relationship of Selected Teacher Characteristics on Teacher Absenteeism in Selected School Districts of South Carolina.* Unpublished PhD, University of South Carolina.

U.S. Department of Education. (2014). *Highly qualified teachers for every child.* Retrieved from https://www2.ed.gov/nclb/methods/teachers/stateplanfacts.pdf

Webb, R. A. (1995). *Teacher absenteeism: the relationship between teacher absence due to illness and school performance level ranking on the 1998-1999 North Carolina ABC's accountability K-8 plan model.* (Doctoral dissertation). Retrieved from Dissertations & Theses: Full Text database. (Publication No. AAT 3002564).

Weedon, E., & Riddell, S. (2012). What counts as a reasonable adjustment? dyslexic students and the concept of fair assessment. *International Studies in Sociology of Education, 16*(1), 57-73. doi:10.1080/19620210600804301

Wilson, S. M., Floden, R. E., & Ferrini-Mundy, J. (2001). *Teacher preparation research: Current knowledge, gaps, and recommendations.* Seattle, WA: Center for the Study of Teaching and Policy.

Woods, R. C., & Montagno, R.V. (1990). Determining the effect of teacher attendance on student achievement. *Education Magazine, 118*(2), 307-316.

Appendix A

IRB Permission and Protocol

ORC USE ONLY	
HSRP #:	
Date Received:	
Level of Review	

Human Subjects Research Protocol for Exempt, Expedited, or Full Board Review

TEXAS A&M UNIVERSITY CORPUS CHRISTI
RESEARCH COMMERCIALIZATION OUTREACH

Instructions and Researcher Certifications (Failure to follow may result in a delay in processing)

Projects considered research involving human subjects require prior IRB approval. This applies regardless of whether the project is funded or unfunded.

Failure to secure IRB review **prior to performing research** involving human subjects is a serious non-compliance issue. A finding of non-compliance may result in suspension of the project, publication retraction, revocation of research privileges, and reporting to the project sponsors and/or sponsors.

Please submit your project with plenty of time to complete the review process. Please see our website for suggested submission deadlines.

What should I include in the submission?

- IRB Initial Submission Form (this form) – Now only requires PI signature.
- Study staff:
  - A complete list of all persons who will be performing research involving human subjects.
  - Verification of human subjects training (700.04 FAQ, CITI Training Requirements)
- Recruitment Materials (flyers, advertisements, recruitment scripts)
- Informed consent forms (unless asking for a waiver)
- Copies of all study instruments, such as survey or interview questions included in the study, and/or other materials the participants will read, see, and/or hear/be told as part of the study.
- If performing the project at non-TAMU-CC locations, a from the site whletter of supportere the project will be performed.
- If performing research internationally, Cultural Evaluation of International Research
- If performing research with non-native English speaking persons or persons who have limited English-language literacy:
  - Translation Certificate Form
  - Interpreter Certificate Form

By submitting this IRB application, the Principal Investigator (PI) attests:

1. They have read and reviewed the form and all supporting documents;
2. The information submitted is accurate;
3. Attest that no research activities have or will begin until notification is received the study is approved; and
4. All personnel listed on this form have received human subjects training and accurately declared whether they have a conflict of interest for this study.

After completing this form, submit this form with supporting documentation via email to the IRB Mailbox: irb@tamucc.edu

For questions, email: Office of Research Compliance at irb@tamucc.edu

Page 1 of 6

Researchers *(all persons listed below must have CITI training completed)*

	Name	Email (use TAMUCC email)	College	Category	Conflict of Interest
PI	Kamiar Kouzekanani	kamiar.kouzekanani	Education	Faculty	
Researcher (1)	Mireya Medrano	mmedrano1@tamucc.edu	Education	Graduate Student	
Researcher (2)					
Researcher (3)					
Researcher (4)					
Researcher (5)					

Overview

A. Research Classification:	**Doctoral Dissertation**	Other:	
B. Externally funded:	**No**	Award Start Date:	Maestro #:

C. Title: The Impact of Teacher Absenteeism on Student Achievement in Mathematics and Reading Among 8th Graders: A Causal-Comparative Inquiry

D. Anticipated Start Date: *(Use pending IRB approval if date is <5 weeks in future)* Upon IRB Approval

E. Estimated Completion Date: December 2019

Purpose and Objective

A. Describe the purpose of the research **in layman's terms.**

The purpose of the study is to examine the impact of teacher absenteeism on student achievement in mathematics and reading among 8th graders as measured by the mathematics and reading sections of the State of Texas Assessments Readiness (STAAR). The eighth grade is chosen because the standardized state assessment in this grade level provides the most thorough coverage of core content areas, enabling a comprehensive examination of the potential influence of teacher absenteeism.

B. Describe the objective(s) and/or research questions **in layman's terms.**

The study is guided by the following questions: 1. Does teacher absenteeism impact student achievement as measured by eighth grade STAAR Mathematics? 2. Does teacher absenteeism impact student achievement as measured by eighth grade STAAR English Language Arts?

Participants; Recruitment

Participants

A. Indicate whether any of the following populations will be **specifically targeted** for inclusion in the research. Each category must be answered. *Additional protections for participants may be required.*

Adults over the age of 18 (**able** to legally consent)	**No**	Prisoners (adults or minors)	**No**
Minors under the age of 18	**Yes**	Individuals whose primary language is not English or who have limited English-language literacy (adults or minors)	**Yes**
Persons with mental disabilities (adults or minors)	**No**	Students enrolled in a researcher's course (adults or minors)	**No**
Persons with economical disadvantages (adults or minors)	**Yes**	Employees under the direct supervision of a researcher	**No**
Persons with educational disadvantages (adults or minors)	**Yes**	Pregnant women, fetuses, and/or neonates	**No**

Page 2 of 6

Other potentially vulnerable populations depending on the circumstances of the research (describe in "B")		If other, please specify:	

B. Describe the criteria to determine who is included or excluded in the final participant population *(e.g., minimum age, grade range, physical characteristics, learning characteristics, professional criteria, etc).*

The subjects for the study are from two middle schools in an urban district in South Texas. As of this writing, Schools A (characteristic-present group) and B (comparison group) have an enrollment of approximately 555 and 474 students, respectively, with similar demographic characteristics. The overwhelming majority of the students in both schools are socioeconomically disadvantaged, 71.50% and 74.90% in A and B, respectively. Ethnicity percentages for School A are 93.20% Hispanic, 1.70% White, and 3.70% African American. School B's ethnicity percentages are 92.30% Hispanic, 3.30% White, and 2.70% African American. The average teaching experience in both campuses is 9 years. Both campuses were rated Met Standard for state accountability for the August 2017 - June 2018 school year. The 8th graders in Schools A and B, whose available data will be used, are expected to be 187 and 189, respectively. None will be contacted personally. The Texas Education Agency(TEA) will provide the data via public information request.

C. Target number of participants *(The minimum numbers should be the minimum number you need to obtain statistically significant findings. The maximum number is the max amount you will be allowed to enroll without submitting an amendment to the IRB to ask for additional participants.*

Approximately 376 8th grade students. The August 2017 - June 2018 data will be used.

D. Non-TAMUCC Participants or Facility
Complete this section **only if** the research will be conducted at a third-party facility **or** participants will be recruited from a third-party site (non-TAMUCC).

☒ *Not applicable*

Provide the non-TAMUCC location or non-TAMUCC participants to be recruited here *(include letter of support as an attachment).*

Not applicable.

Recruitment

Recruitment Methods. Describe methods that will be used to identify the potential participants.

Not applicable, existing data will be used. Specifically, Texas Education Agency (TEA) will provide the data (test scores and selected demographic characteristics) for all 8th graders in the above-mentioned schools. There are no identifiers. Attached is an example of the data.

Recruitment Materials. Describe how potential participants will be recruited, what materials will be used *(include as an attachment)*, and how they will be distributed *(i.e., who, what, when, where, and how).*

Not applicable, existing data will be used. The August 2017 - June 2018 data for all 8th graders in the above-mentioned schools will be used.

Incentives. If applicable, provide the amount, type, and time of distribution of any payment/incentive to participants.

Not applicable, existing data will be used. The August 2017 - June 2018 data for all 8th graders in the above-mentioned schools will be used.

Data Collection Methodology

Describe the method(s) or procedure(s) for data collection **in step-by-step, layman's terms** *(include who will be collecting the data, frequency, duration, location, etc).* The use of audio or video recording must be justified by the research purpose/objective or future research.

The data will be obtained from the Texas Education Agency (TEA), including raw scores for each of the STAAR categories as well as data on gender, ethnicity, socioeconomic status, risk status, and bilingual status. Specifically, an Excel data file will be sent to the co-PI. No identifiers are included. Attached is an example of the data.

Identification of Participants; Data Collection and Storage; Equipment; Records Retention and Destruction

A. Identification of Participants. Indicate whether the data collected may contain individual identifiers (need for "confidentiality"), or whether the data will be collected anonymously.

Confidential

B. Equipment. Describe any equipment to be used *(e.g., audio, visual)*, ownership *(e.g., TAMUCC, personal)*, and methods of storage *(e.g., password, location)*.

The PI's and co-PI's computers will be used to store the data and perform data analysis. The PI's computer is located in his TAMUCC office, FC 223, which is locked and password-protected when not in use. The co-PI's computer is password-protected and located in her home.

C. Data Storage. Describe how the data collected will be stored, location(s), how the confidentiality of individually identifiable information will be maintained (if applicable), and who will have access. *(For audio and video recordings, address recordings and transcripts).*

The data will be sent to the co-PI by the TEA and will be saved in her and PI's password-protected computers.

D. Records Retention and Destruction. For data collected, describe how records will be maintained, duration *(justified by research design and/or future research)*, destruction mechanism, and responsible party for each. *(Include audio and video recordings and applicable transcripts).*

The coded data will be stored electronically in the PI's and co-PI's password-protected computers for a minimum of three years beyond the completion of the doctoral dissertation. Only the PI and co-PI will have access to the raw data.

Risk to Participants; Mechanism of Protection; Outside Assistance

A. Risk to Participants. Indicate the level of risk to participants.

Minimal risk Definition: the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.	**Yes**
Greater than minimal risk	**No**

B. Mechanism of Protection. Describe **every potential risk** to human subjects that may result from participation in the research ("Risk"), and indicate the method or procedure to be used to mitigate the potential risk ("Protection Mechanism"). Consider physical, psychological, social, legal, and economic risks *(e.g., breach of confidentiality, injury, psychological distress, pressure to conform, pressure to participate, etc)*.

	Risk	Protection Mechanism
1.	Breach of confidentiality	Only the PI & co-PI will have access tot he existing data from the TEA. The electronic version of all data will be stored in the PI's and co-PI's personal computers. Backup copies will be stored on the Microsoft OneDrive cloud-based storage system, which is password-protected with 2-factor authentication. Microsoft provides randsomware and other protections against hackers to OneDrive users. Both computers are kept locked and password-protected when not in use. The data received from the TEA should not include any identifiers (attached is an example of data). All data will be kept confidential.
2.		
3.		
4.		
5.		

C. Outside Assistance. If applicable, describe any outside assistance available to participants to mitigate the Risks stated above and how it will be provided *(e.g., medical care, counseling, etc).*

Not applicable

Benefits to Participants; Benefits to Society

A. Benefits to Participants. If applicable, describe the potential benefits to participants as a result of taking part in the research *(exclude payments/incentives)*. If there are no benefits, then state so.

There are no direct benefits to the participants whose already collected data will be used for the purpose of the study.

B. Benefits to Society. Describe the potential benefits to society or contribution to generalizable knowledge as a result of the research.

Results of the study will be used to examine the link between teacher absenteeism and academic achievement, which will be of theoretical and practical importance to educators and other concerned individuals.

Waiver of Informed Consent; Waiver of Signed Informed Consent; Informed Consent Process

A(1). Is a waiver or alteration of informed consent process requested? (i.e., entire process is waived, or basic element(s) are altered). If "yes," go to C.	Yes	**A(2).** If "no," is a waiver of documentation of informed consent requested? (i.e., informed consent will be obtained without participants' signatures) If "yes," go to C. If "no," go to B.	No

B. Informed Consent Process. If "no" to both A(1) and A(2), describe below step-by-step how informed consent will be obtained.

Not applicable.

C. Waiver of Informed Consent; Waiver of Documentation of Informed Consent. If "yes" to either A(1) or A(2), describe below why a waiver or alteration of informed consent and/or a waiver of documentation of informed consent is requested and how the applicable criteria are met based on the circumstances of the research

Existing data, which do not include any identifiers, will be obtained from TEA, utilizing public information request. Therefore, waiver of informed consent is requested.

Researcher Qualifications

A. Describe qualifications for **all personnel listed** on the HSRP or attach CV or resume documenting experience.

The co-PI is a doctoral student at Texas A&M University-Corpus Christi and has completed the CITI course on the protection of human research participants. Dr. Kamiar Kouzekanani is the faculty advisor and dissertation chair; he is a professor of quantitative methods in the College of Education & Human Development at Texas A&M-Corpus Christi and has completed the CITI on-line course.

☐ Please check if vitae/resumes are attached.

Researcher Signatures

By signing this form, the PI attests:

- They have read and reviewed the protocol as planned and the information provided is accurate.
- Confirm that no research activities have or will begin until notification is received that the study is approved.
- All personnel listed on the study have or will be trained on the protocol and human subject protection requirements.
- All personnel listed on this form have accurately declared whether they have a conflict of interest for this study.

	Name	Conflict of Interest (select one)	Date
PI	Kamiar Kouzekanani	Yes, Financial Conflict of interest with this project	
	Signature:	Kamiar Kouzekanani	Digitally signed by Kamiar Kouzekanani Date: 2018.11.28 10:51:03 -06'00'