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The relationship between teacher absenteeism and fourth-grade student mathematical achievement

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**THE RELATIONSHIP BETWEEN TEACHER
ABSENTEEISM AND FOURTH-GRADE
STUDENT MATHEMATICAL
ACHIEVEMENT**

by

Charles Michael Brouillette, B.A., M.S.

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

COLLEGE OF EDUCATION
LOUISIANA TECH UNIVERSITY

May 2012

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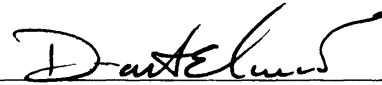
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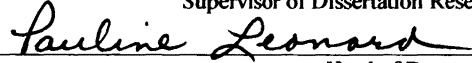
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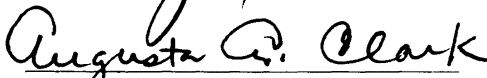
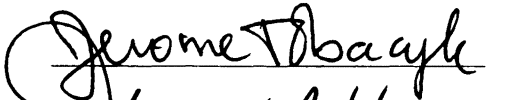


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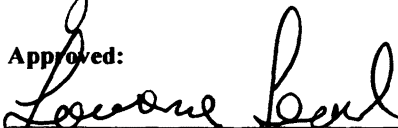
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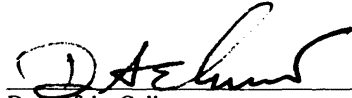


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ABSTRACT

Within public schools throughout the United States, an emphasis has been placed on improving education for all students. In turn, this has resulted in legislators and policymakers placing an emphasis on assessing student learning and holding the education community accountable. In this study, the researcher examined one variable in the accountability effort: teacher absenteeism. The major purpose of this study was to examine the relationship between teacher absenteeism and fourth-grade student mathematical achievement.

Data for this study were generated from nine school districts located in northern Louisiana. Data consisted of attendance records of fourth-grade teachers and student performance on the mathematics portion of the fourth-grade Louisiana Education Assessment Program (LEAP). It was hypothesized that teacher absences would negatively impact student performance on the mathematics portion of the LEAP. Hypotheses were tested and analyzed using a one-way analysis of variance (ANOVA) and two multiple regressions.

Teachers were classified into four groups based on absenteeism rates of less than five days, five to ten days, eleven to fourteen days, and fifteen or more days per school year. The results of the one-way analysis of variance (ANOVA) found no statistically significant relationship between teacher absenteeism groups and student mathematical performance on the LEAP. In the two multiple regressions, neither the demographic

characteristics (i.e., teacher age, years of teaching experience, level of education, and certification type) nor the organizational variables (i.e., school socioeconomic status and student mathematical achievement) were significant predictors of teacher absenteeism.

Several potential explanations for the lack of relationship between teacher absenteeism and student performance on the mathematics portion of the LEAP were discussed.

Recommendations for future research were made, including the replication and extension of this study in other settings.

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Author Charles M. Brouillette

Date 03/25/2012

DEDICATION

This dissertation is dedicated to the members of my family. The process of writing this dissertation did not start with my entry into the Louisiana Education Consortium doctoral program. Rather, it began with the guidance of my first “teacher,” my mother, Rhonda Borland Brouillette. She has been my biggest supporter, and without her I would not be the man I am today. She has guided me through the darkest moments, helped me celebrate all my accomplishments, and always supported me through my problems. Mom, thank you for being there and supporting all my endeavors. I would also like to thank my fiancée and future wife, Natalie Dawn Keen. You are my best friend. Though you have not been with me throughout this experience, I have had you and our future in my mind the entire time. I look forward to our future together and know you will always continue to be my everything. To my father, Larry James, and brothers, Matthew Joseph and Larry Christopher “Beau,” you all have allowed me to see the importance of family. We have laughed together, cried together, and, yes, even fought together. I know that I have tested your patience throughout the years, but together we have made it through so much. Thank you for giving me the strength I needed when I needed it the most. To the Harlan family, Mr. Paul, Mrs. Lou, Lindsay, and Stratton, thank you for making me feel welcome. I hope to one day return your generosity. I would also like to thank all my friends, teachers, mentors, colleagues, and

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CHAPTER I

STATEMENT OF THE PROBLEM

Throughout the United States, the public school teacher is absent an average of nine days per year (Miller, 2008). Educational leaders face the ongoing problem of teacher absenteeism on a daily basis. On a given school day, it has been estimated that over 200,000 school employees are absent from work, resulting in an annual loss of 75,000,000 hours of instructional time for students (Roza, 2007). Miller (2008) estimated teacher absenteeism to cost American schools \$4,000,000,000 annually. The problem of teacher absenteeism is only intensified by current issues in education. With the passage of the *No Child Left Behind Act of 2001* (NCLB), public schools throughout the nation have engaged in a system of educational reform to improve student achievement and school cultures. Schools must meet stricter levels of accountability not only for the performance of students, but also for the performance of teachers and educational leaders. Educational leaders are faced with the challenge of hiring and retaining quality teachers, providing the necessary professional development and resources to maintain quality instruction, and improving the performance of all student groups. As educational leaders continue to meet the demands of NCLB, it is paramount that they examine areas to improve student achievement and teacher accountability.

Educational leaders throughout the United States struggle to confront the problem of teacher absenteeism and its relationship to student achievement. Classroom teachers

are commonly considered to be the cornerstone for student achievement. They are responsible for delivering quality instruction to students, and when instructional time is interrupted by teacher absences, student achievement is considered to be negatively impacted (Pitkoff, 2003). Educational leaders must examine the causes of teacher absenteeism and develop ways to improve teacher attendance in schools.

The causes of teacher absenteeism are as diverse as teacher populations. Due to this fact, studies have failed to ascertain any one factor that influences teacher absenteeism. Some educational leaders pinpoint demographic characteristics of the teacher for the problem of excessive absenteeism (e.g., Clotfelter et al., 2009; Scott & McClellan, 1990). Others highlight organizational characteristics, such as school board policies and teacher unions (e.g., Miller et al., 2007; Das et al., 2007). Regardless of the specific factors, most educational leaders agree that teacher absenteeism has the potential to negatively impact student achievement (Miller, 2008).

In this chapter, a background of teacher absenteeism is introduced. In addition, the purpose of the study, justification for the study, and theoretical framework are provided. The limitations for the study and definition of terms are also presented.

Background of Teacher Absenteeism

Absence from the workplace occurs for multiple reasons. If an individual is unable to attend the workplace, the absence is considered to be “legitimate.” Most employers allot a specified number of sick and personal leave days for each employee. Education is no exception, and most teacher contracts make such provisions. However, if an employee is unwilling to work, the absence is considered to be “illegitimate.” These absences are considered to be voluntary or discretionary absences and imply the employee has a

choice in making the decision not to go to work. Teacher absenteeism typically implies a voluntary choice by a teacher to be absent from the workplace (Jacobson, 1989).

Educational leaders throughout the nation are in search of ways to improve student achievement. With the enactment of NCLB, the focus for most public schools is on continuous improvement. Inability for schools to meet the requirements for NCLB carries severe penalties (Bausell, 2007). According to Chiang (2009), penalties include: (a) loss of federal funding, (b) reassignment of faculty and staff members, and (c) school closure. In addition to the penalties of NCLB, over two-thirds of states enforce additional penalties for underperforming schools (Bausell, 2007). In order to meet the demands of NCLB, educational leaders must identify available resources and seek ways to improve these resources. Classroom teachers are the primary and most important available resource for schools. They are the key to school improvement. It is paramount that educational leaders identify and examine the characteristics of quality, successful classroom teachers and, therefore, deal with the absenteeism rate in their schools.

Purpose of the Study

The purpose of this study was to investigate the relationship between teacher absenteeism, student achievement, and other teacher characteristics. Teacher absentee rates and other teacher characteristics were examined in nine school districts located in northern Louisiana to determine if a relationship exists between them and student achievement as measured by the Louisiana Educational Assessment Program (LEAP) in mathematics for fourth-grade students.

Information gained through this research may be beneficial to educational leaders by assessing the impact of teacher absenteeism on student achievement. It may assist educational leaders in determining if current leave policies need revisions.

Justification for the Study

Several outcomes result from teacher absenteeism. While many of the outcomes are difficult for researchers to quantify, the general public will agree that a relationship exists between teacher absenteeism and student achievement (Jacobson, 1989). Manlove and Elliot (1979) conducted a national survey of school principals to identify major outcomes associated with teacher absenteeism. The researchers found six major outcomes. They were: (a) credibility outcomes, (b) financial outcomes, (c) instructional outcomes, (d) management outcomes, (e) organizational outcomes, and (f) program outcomes. The researchers found that as teacher absenteeism increases, the ramifications of each outcome increase.

Teacher absenteeism alters the credibility of a school. According to Elliot (1982), “Public knowledge about greater absences on Mondays, Fridays, before holidays, and at the end of school year is costing teachers and the school serious credibility with parents and the community at large” (p. 8). Teachers cannot assume that parents and students ignore frequent absences of teachers. In other words, the poor attendance of a teacher will destroy his or her credibility with students and parents. It may also seem hypocritical to parents and students when schools and teachers advocate for improved student attendance when teacher absenteeism is less than improved. Instructionally, teacher absenteeism results in a loss of 75,000,000 instructional minutes, or 143 years of instruction (Roza, 2007). This loss ultimately alters the credibility of a school.

The financial outcomes for teacher absenteeism are also significant. According to Miller (2008), \$4,000,000,000 are spent annually by school districts to cover teacher absenteeism. This amount represents not only wages for substitute teachers, but also wages for absent teachers, and administrative costs for contacting, training, and evaluating substitute teachers. This amount also represents approximately 1% of spending for public kindergarten through twelfth-grade in education. Student achievement might improve if the money spent on teacher absenteeism could be applied to materials and resources to improve student achievement.

Instructionally, research shows that teacher absenteeism negatively impacts student achievement (e.g., Miller et al., 2007; Clotfelter et al., 2007). Roza (2007) estimated the annual loss of instructional time to be 75,000,000 hours per year. Teacher absenteeism disrupts the routines and relationships which support the learning process. When teachers are absent, students are often unable to get the continuity and quality of instruction they need from substitute teachers. Regular, certified classroom teachers are often replaced with substitute teachers who often are less qualified. Miller (2008) reported that 37 states do not require substitute teachers to possess bachelor's degrees. The researcher also found that substitute teachers typically have less instructional knowledge than regular classroom teachers. For school leaders, recruiting quality substitute teachers is often problematic and results in managerial outcomes.

At the school level, teacher absenteeism alters the management of the school and the quality of the programs and organizations of a school. When teachers are absent from the classroom, educational leaders are faced with several tasks. They are to not only locate quality substitute teachers, but also train and evaluate them (Das et al., 2007). In

addition, this may be a potential source of conflict between the educational leader and parents. Educational leaders can defend the actions of a teacher in the classroom. However, they cannot defend the persistent and unexcused absences of a teacher. In schools throughout the country, teachers are also responsible for various school organizations. When teachers are absent, these organizations must be delayed or continue in a less organized fashion. The same assumption can be made for the special programs schools offer to students. When specialty trained, highly qualified teachers are absent, the programs they supervise are altered (Jacobson, 1989). The entire educational setting is greatly altered by teacher absenteeism.

Theoretical Framework

Absenteeism is not a problem exclusive to education. Leaders in business and industry have also identified absenteeism as a problem that reduced productivity and increases managerial costs. Due to this fact, absenteeism has been the topic of several research studies. Researchers have developed many theoretical explanations to explain the phenomenon of absenteeism. The following section examines the economic and psychological theories of teacher absenteeism.

Economic Theories for Absenteeism

Economic theorists focus their research on the financial impact of teacher absenteeism and ways to improve the economic productivity of an employee. The reasons why employees miss work are the main concerns of economic theorists. In order to understand absenteeism, the causes for absences must be known, and economic theorists have developed models to explain the phenomenon. The most common model involves the balance of two elements: (a) labor and (b) leisure. This model is known as

the labor-leisure choice model and was first advocated in the work of Allen (1981). Allen pioneered this model through an empirical investigation of work attendance. This work is still mentioned in current research regarding employee absenteeism. Foxall (2007) expanded upon this model and applied it to consumer choice. The researcher compared absenteeism to consumer tradeoffs.

The labor-leisure choice model stresses the choice an individual makes in determining to be absent. Personal income is a balancing element. The model works like a balanced equation: when labor increases, income increases and leisure decreases; when leisure increases income, decreases and labor decreases (e.g., Allen, 1981; Foxall, 2007). For example, an employee misses work and goes to the movie for leisure time. The employee has made a choice not to earn income for that day. That employee has increased leisure. As a result, labor and income have decreased. The labor-leisure choice model is the predominate theory used in the field of economics to explain absenteeism.

The labor-leisure model also includes two effects that alter the equation. The first effect, the income effect, increases the use of leisure time. In this situation, an individual increases leisure and income, but labor is decreased. This effect can occur in a variety of situations, most notably is the use of personal or sick leave. For example, an employee uses a personal leave day to see a movie. In this situation, the leisure time for the employee has increased, labor has decreased, but income has remained the same. In theory, the income effect could result in a greater use of leisure time because the cost of absenteeism is significantly reduced (e.g., Allen, 1981; Foxall, 2007).

The second effect, the substitution effect, decreases the use of leisure time. In this situation, individual income increases for the same amount of labor. This effect occurs

when incentives are in place for attendance, such as a bonus for working holidays. For example, an employee does not go to the movie because he or she wants an incentive for perfect attendance. In this situation, labor remains the same, leisure decreases, and income increases. In theory, the substitution effect could result in a reduction in the use of leisure time because the cost of absenteeism is significantly increased due to incentives (e.g., Allen, 1981; Foxall, 2007).

The labor-leisure choice model applies to teacher absenteeism. This model provides justifications as to why teachers are absent from the workplace. The theory suggests that organizational variables play a major role in teacher absenteeism. Examples of organizational variables include school board leave policies, provisions in teacher contracts, and teacher tenure. School districts are generally characterized as having centralized organizational variables. These variables influence the organizational culture of a school. Though one school district may have centralized organizational variables, the organizational culture may differ greatly among schools in one district. This fact only heightens the need to understand the nature of organizational variables.

Research suggests that organizational variables influence teacher absenteeism. This is evident in the work of Rosenblatt and Shirom (2005), Bruno (2002), and Gaziel (2004). Rosenblatt and Shirom (2005) examined the relationship between teacher absenteeism and organizational variables. These variables included: (a) age, (b) gender, (c) marital status, (d) number of children, (e) teacher seniority, (f) teaching assignment, and (g) salary. The researchers found that the marital status and number of children of a given teacher had no relation to rates of teacher absenteeism. They also found that the

customs, traditions, and gender roles of the United States and Israel may account for the differing empirical finding of the two studies previously mentioned.

Gaziel (2004) examined absentee culture. An absentee culture is a state of mind shared by a group of people concerning absenteeism. This study analyzed the absentee culture of schools in Jerusalem. The researcher found that teachers that expressed high levels of commitment to their school exhibited accrued voluntary absences. The principal was believed to be the key to teacher commitment. If the principal exhibited restrictive behaviors towards absenteeism, voluntary absences increased. If the principal promoted a collegial, professional environment, teachers exhibited lower rates of absenteeism.

Bruno (2002) examined the relationship between the geographic location of a school and the rate of teacher absenteeism. The researcher found a correlation between the low socioeconomic location of a school and high rates of teacher absenteeism. Higher rates of teacher absenteeism were found among teachers in urban areas. This finding poses a significant threat to the equity of educational experiences for students in urban areas. The researcher found that urban area schools often failed to provide students with effective, equitable instructional programs. This was attributed to the assumption that teachers in urban schools operated in a more stressful environment than their suburban counterparts. The researcher attributed the stressful environment to the obstacles these teachers face. The theoretical framework of this study is partially based on the labor-leisure choice model.

Psychological Theories for Absenteeism

Psychological theorists also attempt to explain absentee behavior. However, in psychological theory more emphasis is placed on the individual than on the economic effects of absenteeism. Though several psychological theories exist, the work of Rhodes and Steers (1978) is considered to be very influential in the field of absenteeism and is frequently cited in professional writing. Rhodes and Steers conducted a landmark study of factors that influence absentee behaviors. The study encompassed a multitude of studies on employee absenteeism and resulted in the formation of a process model to explain employee absenteeism.

The Rhodes and Steers (1978) process model consists mainly of two variables to be present in the workplace: (a) employee motivation and (b) employee ability. In this model, employees are more likely to be present at work if they are motivated and able to attend and perform their assigned duties. In addition to the two variables, the process model is a multivariable approach to analyze employee absenteeism, encompassing several psychological and personal characteristics. These characteristics include age, gender, family dynamics, education level, values, job expectations, job satisfaction, and incentive programs. Rhodes and Steers also found that job satisfaction was the single, most important factor influencing employee absenteeism. They also found that job satisfaction improved with increases in responsibilities and challenges.

Upon examining employee motivation, Rhodes and Steers (1978) found it to be influenced by the employee characteristics of attitudes, values, and goals. These influences are applicable to the educational setting. Reinforcements, operant

conditionings, and punishments are predominately used by school districts to modify employee absentee behaviors and are expanded upon in the next two paragraphs.

Of the methods listed above, reinforcements are the most popular. Four types of reinforcements are commonly incorporated into the workplace. The first type of reinforcement, the continuous schedule, centers on rewards. Attendance at work is rewarded each day, either monetarily or in some other fashion. Based on this fact, it is difficult to incorporate rewards into the context of absenteeism based on the reward requirements. The second type of reinforcement, the fixed interval schedule, is the most often used type of reinforcement. This consists of rewards being offered on a fixed schedule. Examples of this schedule include pay schedules and payments for unused sick and/or personal leave. The third type of reinforcement, the ratio schedule, also involves the use of rewards. The ratio schedule involves the granting of rewards to employees in a predetermined fashion. For example, employers identify a positive behavior, such as attendance. A ratio to determine when to reward the behavior is established, for example, seven times. If an employee is observed performing the positive behavior seven times, the employee is rewarded. The final type of reinforcement, the random schedule, involves the granting of rewards at random. For example, an employer randomly rewards a behavior. This process motivates other employees to display the same behavior in hopes of random positive reinforcement (Rhodes & Steers, 1978).

Operant conditionings consist of models used to analyze the work environment and develop clear behavioral goals. Management determines the use of operant conditionings by altering behavior to meet the behavioral goals. For example, this can involve school districts establishing a clear code of conduct at new employee

orientations. Punishments 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, 1978).

Several researchers have expanded on the Rhodes and Steers (1978) process model. Brooke (1986) applied the model and integrated organization behavior and occupational health. The researcher placed more emphasis on the work environment, as opposed to the individual. Erickson, Nichols, and Ritter (2000) incorporated the work of both Brooke and Rhodes and Steers. The researchers focused on family structure and its relationship to employee attendance, either directly or interactively. The researchers were consistent in findings with Steers and Rhodes, citing a relationship between family demands and job burnout on absence frequency.

The Rhodes and Steers (1978) process model also applies to teacher absenteeism. The theory suggests that teacher demographic variables play a major role in teacher absenteeism. Examples of teacher demographic variables are the age, certification status, gender, family dynamic, level of education, and years of experience of a given teacher. In order to combat these variables, the process model factors in methods to modify employee absenteeism. These methods are based on psychological principles and include reinforcements, operant conditions, and punishments.

Research suggests that demographic variables influence teacher absenteeism. This is evident in the work of Darling-Hammond (2000), Buddin and Zamarro (2009), and Angrist and Guryan (2008). Darling-Hammond (2000) examined teacher preparation and teacher certification as predictors of student achievement. In the study, the researcher found that teacher performance on licensure assessments did not have a

relationship to student achievement or teacher observation ratings. However, the study found a significant relationship between educational coursework and teacher effectiveness. Darling-Hammond advocated for improved teacher quality, especially for students identified as at-risk.

Buddin and Zammarro (2009) conducted a study of the relationship between student language arts and mathematics achievement and the background of the teacher. Teacher background information consisted of teacher licensure assessments, levels of education, and years of teaching experience. The researchers found large variations of student achievement throughout the school district. However, Buddin and Zammarro concluded that the background of the teacher could not explain the variations. The study found that the licensure assessments and degree level of the teacher had no relation with student achievement. In addition, the researchers found that the years of teaching experience of the teacher were weakly correlated to student language arts and mathematics achievement. Buddin and Zammarro concluded that the results of the study were skewed by deficiencies resulting from teachers in their first two years of employment.

Angrist and Guryan (2008) focused their study on certification requirements as predictors of student achievement. The researchers theorized that stricter licensure assessments have increased the cost of attaining certification. This has resulted in an increase in the cost to enter the teaching profession and an increase in the demand for teachers. The questionnaire utilized in the study included information regarding teacher salaries and teacher backgrounds. Teacher background information consisted of information regarding teacher level of education, teacher certification status, teacher

subject assignment, and credentials from the educational institution that the teacher attended. The researchers found that increases in teacher certification requirements resulted in increases in revenues for licensure assessments and increases in teacher salaries. Angrist and Guryan also noted that the increases in teacher certification requirements did not correspond with increases in teacher quality. They concluded that the selectiveness of the educational institution the teacher attended may be a strong measure of teacher quality. This is illustrated in the concept of value-added education. The study also noted that certification status may not be a predictor of student achievement. The theoretical framework for this study is partially based on the Rhodes and Steers (1978) process model.

Research Questions

1. Are there significant differences in student achievement scores on the mathematics portion of the LEAP among the four teacher absentee groups (less than 5 days of absence versus 5 to 10 days of absence versus 11 to 14 days of absence versus more than 14 days of absence)?
2. Are the demographic characteristics of teacher age, years of teaching experience, level of education, and certification type predictors of teacher absenteeism?
3. Are the organizational variables of school socioeconomic status and student mathematical achievement predictors of teacher absenteeism?

Null Hypotheses

- H₀₁: There will be no statistically significant difference in student mathematical achievement scores on the mathematics portion of the LEAP among the four teacher absentee groups (Group 1: less than 5 days of absence, Group 2: 5 to 10 days of absence, Group 3: 11 to 14 days of absence, and Group 4: more than 14 days of absence).
- H₀₂: Teacher age, years of teaching experience, level of education, and certification type will be non-significant predictors of teacher absenteeism.
- H₀₃: School socioeconomic status and student mathematical achievement will be non-significant predictors of teacher absenteeism.

Limitations of the Study

This study had the following limitations:

1. The study did not consider the relationship between the rate of absenteeism for students and their fourth-grade mathematical achievement.
2. The study did not consider the teacher absences due to illness as a causal effect on student academic achievement.
3. The study was limited to studying regular elementary education classroom teacher attendance data in northern Louisiana.
4. The study was limited to the subject matter of mathematics.

Definition of Key Terms

Absence- The state of being absent or away from a place; the time duration of such state (Oxford English Dictionary, n.d.).

Absentee Culture- A state-of mind shared by a group of individuals and concerning absences (Gaziel, 2004).

Absenteeism- Being absent from the workplace over a period of time, often voluntary or discretionary in nature (Jacobson, Gibson, & Ramming, 1993).

Alternative Certification- Refers to state-defined routes through which an individual who already has at least a bachelor's degree can obtain certification to teach without necessarily having to go back to college and complete a college, campus-based teacher education program (Clotfelter, Ladd, Vigdor, & Urban, 2009).

Certification Status- The credentials of an individual teacher who has met the requirements for certification of an authoritative source, such as a state department of education (Goldhaber & Brewer, 2000).

Demographic Variables- Teacher characteristics that include, but are not limited to: age, certification status, gender, family dynamic, level of education, and years of experience (Rhodes & Steers, 1978).

Experience- A teacher characteristic measured as a numerical value in years of teaching experience (Darling-Hammond, 2000).

Family Dynamic- An umbrella term that, in this case, refers to the marital status and family member makeup of a given teacher.

Grade-Level- The instructional level assigned to teachers and students or the grade configuration of the school in which a teacher is employed (Clotfelter, Ladd, Vigdor, & Urban, 2009; Rosenblatt & Shirom, 2005).

Learning Environment- The setting in which learning takes place (Roza, 2007).

Level of Education- The teacher characteristic measured by degree(s) and coursework earned from an institution of higher learning. This term may also refer to the professional development attainments of an individual teacher (Hill, Rowan, & Ball, 2005).

Louisiana Educational Assessment Program (LEAP)- A criterion-referenced, high-stakes standardized assessment given throughout the state of Louisiana. The assessment measures student achievement of grade-level expectations (GLEs) in the areas of English/language arts, mathematics, social studies, and science (Louisiana Department of Education, 2011).

Organizational Variables- Characteristics of a school or organization that include, but are not limited to: grade-level of the teacher; organizational characteristics and policies of the school; and socioeconomic status of students served by a school (Allen, 1981).

Practitioner's License- A type of teaching license issued for one school year, renewed annually and held a maximum of three years while the holder completes an approved alternate program for teacher preparation (Louisiana Department of Education, 2011).

Student Achievement- The score of a student on the Louisiana Educational Assessment Program (LEAP) assessment.

Socioeconomic Status- Refers to the social and economic position of an individual or family. It is strongly correlated with the concepts of education attainment, income, and occupation (Bruno 2002).

Substitute Teacher- An individual who is assigned the responsibilities of an absent teacher. Substitute teachers may or may not be certified to meet the assigned responsibilities (Das, Dercon, Habyarimana, & Krisham, 2007).

Teacher- Any employee of a school district with an active teaching contract (Das, Dercon, Habyarimana, & Krisham, 2007).

Teacher Absenteeism- The state in which a teacher is absent from his or her assigned teaching position (Roza, 2007).

Tenure- Refers to a provision made in several public school teacher contracts. It is generally granted to teachers after their first 3 years of employment and is a form of job protection derived from the efforts of teacher unions (Miller, Murnane, & Willett, 2007).

Traditional Certification- Refers to a teacher who obtains a traditional college, campus-based teacher education program (Clotfelter, Ladd, Vigdor, & Urban, 2009).

CHAPTER II

LITERATURE REVIEW

The purpose of this review of literature was to examine the causes and effects of teacher absenteeism and the relationship between teacher absenteeism and student academic achievement in mathematics. This chapter offers a review of the literature currently in existence regarding this issue. Three areas were studied in this review: (a) demographic variables of the teacher, (b) organizational variables, and (c) student outcomes. Although the research questions focus primarily on the relationship between student achievement and teacher attendance, a further investigation of the areas noted above was essential in determining the relationship between student achievement and teacher attendance. This chapter is divided into these major sections: (a) Introduction, (b) Demographic Variables, (c) Organizational Variables, (d) Student Outcomes, and (e) Summary.

Introduction

Absence is defined by the Oxford English Dictionary (2011) as the state of being “away from a place” and “the time duration of such state.” According to Jacobson, Gibson, and Ramming (1993), absence may take a variety of forms, ranging from failing to make it home from dinner to not being present at the workplace. Absenteeism implies

absence from the workplace. Research suggests the rate of absenteeism for professions in the American workforce is almost 3% of the calendar year (Clotfelter et al., 2009).

Teacher absenteeism is a constant concern for most American school districts and ultimately has a negative impact on the educational setting. The negative impact ranges from monetary to instructional. Monetarily, teacher absenteeism forces the operating budget of a school to increase. This increase occurs when the school district employs substitute teachers. Instructionally, teacher absenteeism results in the loss of instructional time provided by certified teachers. Research suggests the rate of absenteeism for American teachers is about 5%, or nine days per 180 day school year (e.g., Ehrenberg et al., 1991; Clotfelter et al., 2009). Compared to the American workforce, the American teacher is absent 2% more often. Though this 2% difference may seem marginal, it can have a profound impact on the educational setting.

Historical Perspective of Absenteeism

According to Jacobson, Gibson, and Ramming (1993), a concern about absenteeism first began to emerge during the Industrial Revolution. As civilizations became more modernized and industrialized, the need for attendance policies in the workplace became more important. One early form can be found in national armies. National armies established an attendance policy with absences and leaves. Absences were considered illegitimate excuses. Leaves were considered to be legitimate excuses. The Oxford English Dictionary (2011) traces the use of “leave of absence” to 1771 and “sick-leave” to the early nineteenth century. This system is still present today with the military term “to be absent without leave” (AWOL), which carries severe sanctions.

As the Industrial Revolution continued to develop, a systematic approach to attendance in the workplace was needed. Employers in industry appointed “social secretaries” to reduce turnover rates and increase employee job satisfaction. As the workforce began to unionize and become more bureaucratic, these secretaries eventually evolved into “personnel administrators.” American public schools mirrored the development of industry. By the twentieth century, schools were organized into school districts with a bureaucratic central office and unionized workforce. “Employee absenteeism” is a twentieth century concept used to illustrate a concept regarding employee performance in the workplace (Jacobson, et al., 1993).

Teacher Absenteeism and High Stakes Testing

In any organization, excessive absenteeism is problematic. In the areas of business and industry, excessive absenteeism can lead to a reduction in productivity. Productivity, in business and industry, is often measured in a quantitative method, with an input-output ratio. Like business and industry, excessive absenteeism in education can also lead to a reduction in productivity. However, productivity in education is not as measurable as in business and industry. In its simplest form, productivity in education can be defined as student growth or progress in a given field of study (Chiang, 2009). Measuring such growth can be very difficult given the subjective nature of education.

Currently, productivity in education is measured through standardized assessments in the core academic subject areas of mathematics, English/language arts, science, and social studies. In Louisiana, the current form of standardized assessments fails to examine non-core subjects, like foreign languages and elective courses, and non-tested grades, such as kindergarten, first, second, and twelfth grades. The present

method of assessment provides a quantitative method of measuring student achievement in core academic areas (Louisiana Department of Education, 2011). The process of developing this method of assessment has developed within the last 60 years through several acts of legislation.

During recent history, lawmakers and other government officials have enacted laws to assess student growth and hold teachers accountable for student growth. The origins of high stakes testing and teacher accountability can be traced back to the enactment of the Elementary and Secondary Act of 1965 (ESEA). This was the first legislation passed providing federal funding for the education of students from low socioeconomic backgrounds. Prior to this point, states primarily controlled the funding of schools. The passage of ESEA marked the beginning of federal influence over local schools throughout the nation, a trend still present today. With federal funding in place, local schools are mandated to conform to federal legislation or risk losing federal funding (Miller, 2008).

The publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983) also influenced current practices in education. *A Nation at Risk* is a report issued by the National Commission on Excellence in Education and was intended to assess how American students compared with students from around the globe. Findings of the report were extremely disappointing. The basic message of the report was that American schools were failing miserably. *A Nation at Risk* sparked a wave of reform efforts at the federal, state, and local levels. It also preceded the passage of both the Goals 2000: Educate America Act of 1994 and the Improving America's Schools Act

of 1994 (IASA). These acts set high standards for student achievement and encouraged better teaching and learning (Miller, 2008).

In 2001, the enactment of the *No Child Left Behind* (NCLB) legislation drastically changed the face of education. The Act was a reauthorization of previous federal education legislation. It demanded more accountability among school systems. The purpose of NCLB was to provide parents with more options for educating their children; require teachers to implement data driven instruction into the classroom; and require schools to maintain a greater degree of accountability for student achievement. The legislative force of NCLB also required schools to administer standardized tests to students in order to measure achievement quantitatively, and it required schools to provide annual reports to parents and communities regarding student achievement. The policy has ushered in this era of high stakes testing and teacher accountability (Chiang, 2009).

Recently, policymakers have enacted *Race to the Top* (RTTT). The policy is a \$4,000,000,000 educational initiative offered by the United States Department of Education. The primary focus of RTTT is to spur educational reform. It requires states to: (a) adopt standards and assessments that prepare students to achieve in college, the workplace, and the global economy; (b) build data systems that measure student success and growth, and use this information to help teachers and educational leaders improve instruction; (c) recruit, develop, reward, and retain effective teachers and educational leaders where they are most needed; and (d) improve the lowest performing schools. As a result of this Act of legislation, 48 states adopted common educational standards in order to earn points towards incentives. Due to the ramifications of NCLB and RTTT,

school officials cannot afford to not address the issue of teacher absenteeism and its effect on student achievement.

Demographic Variables

Research suggests that the rate of teacher absenteeism is dependent upon demographic variables (e.g., Clotfelter et. al., 2009; Scott & McClellan, 1990). These variables often include: (a) age, (b) certification status, (c) family dynamics, (d) gender, (e) level of education, and (f) years of experience. The prevailing theory among researchers appears to focus on teacher absenteeism as dependent upon the career stage of each teacher as an educator (e.g., Alcazar et. al., 2006; Imants & Zoelen, 1995). Research aimed at identifying particular demographic variables related to teacher absenteeism has lead to conflicting results. The following is an examination of the relationship between teacher absenteeism and age, certification status, family dynamics, gender, level of education, and years of experience.

Age

With the aging of the baby boom generation, the need to study the effects of age on teacher absenteeism has never been greater. A belief among educators is that age is directly correlated with teacher absenteeism (Norton, 1998). Many researchers have attempted to demonstrate this belief empirically (e.g., Scott & McClellan, 1990; Rossenblatt & Shirom, 2005). Unfortunately, the empirical findings from such research designs have been mixed. As noted below, the correlation between age and teacher absenteeism remains uncertain.

Martocchio (1989) conducted a meta-analysis of the age related differences in employee absenteeism. A meta-analysis was employed to statistically correct variance in

artifacts, provide more precise interpretations of the literature, and overcome incorrect interpretations of qualitative literature reviews. The meta-analysis included 34 samples. The samples were correlated to illustrate the age-absenteeism relationship, and the samples were categorized into two groups of voluntary and involuntary absentees based on the frequency index and time-lost index. A meta-analysis was conducted on both the frequency and time-lost index. Results indicated that both voluntary and involuntary absences were inversely related to age. In other words, older teachers were less likely to be absent both voluntarily and involuntarily. Martocchio (1989) also found that older teachers were able to meet their job requirements better than younger teachers. This study carried certain implications for personnel directors. It recommended greater attention to the absentee behaviors of younger teachers. This recommendation was based on the results of the study which suggested that younger teachers tend to exhibit greater rates of absenteeism than their older counterparts.

On the same note, Ehrenberg, Ehrenberg, Ress, and Ehrenberg (1991) had similar results. This study consisted of an econometric analysis and was conducted during the 1986-87 school year in 700 school districts in New York State. Ehrenberg and others (1991) found that teachers older than 55 years of age used less sick leave than teachers in other age categories. The researchers speculated that these teachers intended to use sick leave to benefit their retirement.

Several other studies have found similar results. Scott and McClellan (1990) studied faculty members from five middle and five secondary schools employed at an urban Mid-Atlantic school district. The researchers found age was a significant factor in predicting the absence of men and women during the child bearing years. Borg and

Riding (1991) studied a sample of 555 secondary teachers from Malta. The sample was divided into five categories: (a) under 31, (b) 31-40, (c) 41-50, and (d) 51-60 years of age. The researchers found teachers under the age of 31 had a higher frequency of absenteeism than teachers in any other age category. Norton (1998) found that the number of absences claimed by female teachers increased with age and that male teachers claimed more days in their thirties than at any other age.

Other research designs have resulted in conflicting empirical findings. Rosenblatt and Shirom (2005) conducted a study aimed at predicting teacher absenteeism based on the personal background factors of teachers. The sample for the study consisted of 52,000 public elementary and middle school Israeli teachers. The study was conducted during the 2000-2001 school year. Data were generated using personnel files located through the Israeli Ministry of Education. In addition to examining age, the researchers collected data concerning the school assignment, salary, position level, education, and number of children for each of the participating teachers. Data were analyzed using a multi-level analysis of the variables. In regards to age, the researchers found that rates of teacher absenteeism to be greater with teachers who were younger than 35 years old. They also found higher rates of teacher absenteeism with less educated teachers. These teachers were either not certified or held the lowest levels of certification. The researchers concluded by recommending that policymakers examine age as a factor in lower rates of student achievement and teacher absenteeism.

Certification Status

Certification status refers to the credentials of an individual teacher. A certified teacher has met the credentials of an authoritative source, such a state department of education. A certified teacher has also been granted a license to teach specific subjects and/or grade-levels. Most states require that classroom teachers be certified to teach in his or her assigned position. While the notion of teacher quality is often associated with education and years of experience, the certification status of a teacher is an important component of teacher quality. It has also been used as a predictor of student achievement.

Goldhaber and Brewer (2000) examined the certification status of secondary school teachers and its relationship to twelfth-grade student mathematics and science achievement. Data for the study were generated from a large national database of teacher credentials and certification statuses from the National Center for Educational Statistics. The researchers placed teachers into five categories of certification. The five categories were (a) typical certification, (b) provisional certification, (c) emergency certification, (d) private school certification, and (e) no certification. Teachers with typical certifications met the requirements for initial teacher certification in their respective states. These teachers generally attained certification by graduating from state-approved teacher preparation programs. These programs required teachers: (a) held an academic degree, (b) passed state-approved licensure assessments, and (c) took additional educational coursework. Teachers with provisional certifications typically held a bachelor's degree and had also passed state-approved licensure assessments. These provisionally certified teachers generally lacked additional coursework. Emergency certified, private school

certified, and non-certified teachers were difficult to classify. These teachers entered the profession through non-traditional routes that varied according to context.

In the work of Goldhaber and Brewer (2000), the sample teacher population consisted of 2,098 mathematic teachers and 1,371 science teachers from throughout the United States. The sample student population consisted 3,786 twelfth-grade student mathematics scores and 2,524 twelfth-grade student science scores. Goldhaber and Brewer found that typically certified teachers exhibited higher student mathematics achievement than private and non-certified teachers. However, the researchers found no significant difference between the student mathematics achievement of typical, emergency, and provisional certified teachers.

Darling-Hammond (2000) suggested teacher preparation and certification to be the largest predictors of student achievement. This study was based on a comprehensive analysis of teacher quality and effectiveness based on student outcomes and supervisory ratings. The researcher found that teacher performance on licensure assessments did not have a relationship to student achievement or teacher observation ratings. However, a significant relationship was found between educational coursework and teacher effectiveness. Darling-Hammond advocated for improved teacher quality, especially for students identified as at-risk. Recommendations were to increase professional development offerings to classroom teachers.

Wayne and Youngs (2003) conducted a study focused on the certification status of teachers. This study consisted of a comprehensive review of 20 studies regarding teacher characteristics and student achievement. The researchers found the mathematics certification status of teachers to be a predictor of student mathematics achievement. In

other words, increases in student mathematics achievement were found with teachers who held certifications in specific areas of mathematics instruction. For example, teachers certified in geometry had higher levels of student achievement than teachers not certified. This relation was only found in mathematics. The researchers recommended that policymakers require the alignment of teacher degree content area to the teacher subject matter assignment.

Kane, Rockoff, and Stager (2008) examined the relationship between teacher certification status and student mathematics and language arts achievement in New York City Public Schools. The sample teacher population consisted of 50,000 teachers hired by the New York City Public Schools from 1999 to 2005. Within the teacher population, 20% of the teachers were alternatively certified and 34% were non-certified. The study targeted alternative and non-certified teachers. The researchers employed a correlation analysis to examine the student achievement of teachers. They found the certification status of the teacher had a small effect on student achievement. The researcher noted that wide variations of student achievement were present among teachers with the same experience and certification status. The study concluded by stating that the first two years of teaching experience were the greatest predictors of student achievement.

Buddin and Zammarro (2009) conducted a similar study of the Los Angeles Unified School District. This study examined the relationship between student language arts and mathematics achievement and the background of the teacher. Teacher background information consisted of teacher licensure assessments, level of education, and years of experience. The student population consisted of 300,000 students in the third, fourth, and fifth grades. Student language arts and mathematics achievement data

were generated from the California Achievement Test, Sixth Edition. Teacher data were generated from central office personnel files. The researchers employed a regression analysis to determine the relationship. Upon analysis, they found large variations of student achievement throughout the school district. However, the researchers concluded that the background of the teacher could not explain the variations. The study found that the licensure assessments and degree level of the teacher had no relation with student achievement. In addition, Buddin and Zammarro found that the years of experience of the teacher were weakly correlated to student language arts and mathematics achievement. The study concluded that the results of the study were skewed by deficiencies resulting from teachers in their first two years of employment.

Angrist and Guryan (2008) focused their study on certification requirements as predictors of student achievement. The researchers theorized that stricter licensure assessments have increased the cost of attaining certification. This has resulted in an increase in the cost to enter the teaching profession and an increase in the demand for teachers. Data for the study were generated from the Schools and Staffing Survey. The survey was administered throughout the United States during the 1987-1988, 1993-1994, and 1999-2000 school years. The survey included information regarding teacher salaries and teacher backgrounds. Teacher background information consisted of information regarding teacher level of education, teacher certification status, teacher subject assignment, and credentials from the educational institution that the teacher attended. The researchers found that increases in teacher certification requirements resulted in increases in revenues for licensure assessments and increases in teacher salaries. The researchers also noted that the increases in teacher certification requirements did not

correspond with increases in teacher quality. Angrist and Guryan concluded that the selectiveness of the educational institution the teacher attended may be a strong measure of teacher quality. The study also noted that certification status may not be a predictor of student achievement.

Family Dynamics

Family dynamics is an umbrella term that in this case refers to the marital status and family member makeup of a given teacher. A belief among educators is that higher absentee rates are found among female teachers with children as compared to those of male teachers and female teachers without children. This belief is based on the assumption that females are more likely to be absent in order to care for their own family, particularly young children. Researchers have attempted to demonstrate this belief empirically, and the empirical findings in current educational research agree somewhat with this belief.

Englander-Golden and Barton (1983) investigated gender differences in the workplace of both parents and non-parents. The sample for the study consisted of 49 females and 47 males with children and 40 females and 45 males without children. Data for the study were generated from personnel records and participant questionnaires. The researchers found that females with children took significantly more sick leave than males with and without children and females without children. Rather than personal illness, the results of the study indicated child care as the major variable that influences gender differences in the workplace.

Rosenblatt and Shirom (2005) examined the relationship between teacher absenteeism and various factors. These factors included (a) age, (b) gender, (c) marital

status, (d) number of children, (e) teacher seniority, (f) teaching assignment, and (g) salary. The study was conducted during the 2000-2001 school year in Israel and utilized personnel files of 52,000 public elementary and middle school teachers. In order to report findings, data were analyzed using a multi-level analysis of the variables. In regard to family dynamics, the researchers found that the marital status and number of children of a given teacher had no relation to rates of teacher absenteeism. In comparison with the work of Englander-Golden and Barton (1983), the work of Rosenblatt and Shirom was conducted in Israel and not in the United States. The customs, traditions, and gender roles of these two nations may account for the differing empirical findings of the two studies.

As the dynamics of the American family continue to change, research in the area of teacher absenteeism and family dynamics has also changed. According to Miller (2008):

This finding may highlight the lingering effect of historical gender roles in the United States, which still expects women to act as the primary caretakers for sick children and family members. They also expect females to be absent more often than males after the birth of a child. (p. 5)

Instead of studying solely family dynamics, educational researchers combine it with studies of gender.

Gender

In recent history, the American workplace has changed. The number of employed females has drastically increased as a result of inflation, the feminist movement, civil right legislation, and an increase in female-led, single-parent households. Females have

started to hold positions traditionally held by males (Miller, 2008). As a result of this change, researchers have begun to study gender and its effect on the American workplace. A number of studies have focused on the relationship of gender and teacher absenteeism. However, empirical findings from educational research in this area remain unclear.

Several researchers suggest that female teachers are absent more frequently than male teachers (e.g., Scott & McClellan, 1990; Clotfelter, et al., 2009). These studies suggest that female teachers have greater demands than their male counterparts. Scott and McClellan (1990) studied the gender differences in teacher absenteeism. Data for the study were generated from personnel records and employee surveys. Data were analyzed using a t-test, hierarchical regression, and stepwise regression. These research methods were employed to allot for differences among the research participants and to identify the variables related to absenteeism. The researchers found a number of differences between males and females. Females tended to be more satisfied with work produced, more satisfied with their pay, and wanted to work fewer hours than their male counterparts. Teacher absenteeism was found to be the greatest for female participants in the childbearing years (i.e., 21-39 years of age). The study also found that female teachers took significantly greater numbers of days off than male teachers. The researchers found that role conflicts, the number of dependents of the teacher, and job involvement were important factors in explaining the gender difference in teacher absenteeism.

Clotfelter, Ladd, and Vigdor (2009) examined a large, urban school district in the United States. The sample population consisted on 285 elementary school teachers that were studied over a 10-year period. Data were collected using central office personnel

records. The researchers conducted a causal-comparison study of the data in order to determine factors that influenced teacher absenteeism. The researchers found that female teachers were absent more than their male counterparts. Though female teachers were absent more, the researchers found that females were ill roughly the same amount of time as their male counterparts. They speculated that the increase in absenteeism for females was a result of traditional American gender roles.

Chaudhury, Hammer, Kremer, Muralidharan, and Rogers (2006) and Alcazar, Rogers, Chaudhury, Hammer, Kremer, and Muralidharan (2006) both conducted studies using data from participants in a World Bank survey of absence behaviors. The work of Chaudhury, Hammer, Kremer, Muralidharan, and Rogers consisted of primary schools and health clinics in six countries. The researchers found men were absent more than women. On the other hand, Alcazar, Rogers, Chaudhury, Hammer, Kremer, and Muralidharan (2006) used the same World Bank survey, solely examining primary schools and health clinics in Peru. The researchers found no significant gender difference in the rate of absenteeism.

In addition to examining gender, Alcazar, Rodger, Chaudhury, Hammer, Kremer, and Muralidharan (2006) focused on absence behaviors in relation to: (a) the grade configuration of schools, (b) socioeconomic status of schools, and (c) the location of schools. Results from the study were alarming. The results indicated that primary teachers in public schools were absent 11% of the school year, teachers from the poorest communities were absent 16% of the school year, and teachers from the most remote communities were absent 21% of the school year.

Rosenblatt and Shirom (2005) conducted a study of elementary and middle school teachers from public schools across Israel. The researchers found that there was no association between absenteeism and gender. Rosenblatt and Shirom also found a positive correlation between increased workload and increased teacher absenteeism. Initially, the researchers hypothesized that teachers with administrative positions would have lower rates of absenteeism. The study examined current job design theories which stress the importance of job enrichment, design, and control. The researchers found that the higher the workload for a teacher the higher the rate of absenteeism. They speculated that the higher rates of absenteeism were a direct result of teacher burn out.

Level of Education

The level of education refers to the degree(s) and coursework earned by a given teacher from an institution of higher learning. In addition to degrees and coursework, this term may also refer to the professional development attainments of an individual teacher. Most states require teachers to attain education-related degrees and/or coursework for full certification. They may also require teachers to continuously pursue professional development to maintain certification. The following research examined the level of education of a given teacher as a predictor of student achievement.

Wayne and Youngs (2003) specifically targeted the degree attainment of teachers in their research. This study was a review of 20 studies examining relationships between teacher characteristics and student achievement. The researchers made key recommendations to policymakers based on the findings from their review. They found a correlation between the degree attained by teachers and the specific subject area of teachers. The strongest, most consistent and clear relationship was found in the subject

area of mathematics. Mathematics teachers with degrees in mathematics had the highest gains in student outcomes and achievement. The study was unable to note a relationship between teacher degrees and student achievement for the elementary school setting. The researchers concluded by supporting prevailing school district policies that reward teachers with advanced degrees and certifications.

Hill, Rowan, and Ball (2005) examined the effects of teacher knowledge of mathematics pedagogy and student mathematics achievement. The researchers targeted teachers and students from the first and third grades. The sample for the study consisted of 115 schools located in high-poverty areas. The study also required that sample schools be engaged in specific instructional improvement initiatives. The sample schools were located in 15 states and 42 school districts. The student population consisted of 1,190 first-grade students and 1,773 third-grade students. The teacher population consisted of 334 first-grade teachers and 375 third-grade teachers. Student achievement data were generated from the Terra Nova Complete Battery and the Basic Battery. Teacher mathematics pedagogy was assessed using the Study of Instructional Improvement survey. The researchers found a positive correlation between increased teacher mathematics pedagogy and increased student mathematics achievement. They highlighted the use of pedagogy coursework in teacher preparation programs for this correlation. Hill, Rowan, and Ball concluded by recommending additional professional development for elementary school teachers in the area of mathematics pedagogy.

Croninger, King, Rathbun, and Nishio (2007) conducted a similar study of first-grade student achievement. Data for the study were generated from the Early Childhood Longitudinal Study (ECLS). The ECLS was administered to 33,000 kindergarten

students during the 1998-1999 school year and follow-up data were collected during the next school year. The researchers divided the data into four areas: (a) student achievement, (b) measures of individual teacher quality, (c) measures of teacher qualifications, and (d) measures of student, teacher, and school characteristics. The data were analyzed using a regression analysis. The researchers found that the degree level attained by the teacher and years of experience of the teacher had a significant statistical impact on student achievement in the area of language arts. Students whose teacher held a degree in elementary education and possessed more than five years of teaching experience significantly outperformed their counterparts. The researchers highlighted the need for content specific pedagogical coursework in teacher preparation programs. They noted that this coursework was a significant predictor of student achievement in both mathematics and language arts.

Years of Experience

A belief among educators is that the years of experience of a teacher directly impact student achievement. Educators believe that the weakest teachers are those beginning their careers in teaching and those nearing retirement (Darling-Hammond, 2000). Several researchers have attempted to prove this belief empirically (e.g., Okpala, Smith, Jones, and Ellis, 2000; Darling-Hammond, 2000; Day, Elliot, and Kington 2005). Unfortunately, research findings, concerning the rate of teacher absenteeism and the number of years of experience, have not been consistent.

Okpala, Smith, Jones, and Ellis (2000) conducted a study to determine factors that relate to student achievement. The sample for the study consisted of 42 public elementary schools in one North Carolina county school district. Data for the study were

collected from the North Carolina Department of Public Instruction and data taken from district personnel and instructional files. Data were analyzed utilizing measures of central tendency and the Pearson Product-Moment Correlation. The researchers found an increase in mathematics achievement for students taught by teachers with more than ten years of teaching experience. The researchers found the educational level of the teacher and the years of experience of the teacher to have a significant effect on student mathematics achievement. Students whose teacher possessed a master's degree or higher and 10 years of teaching experience outperformed their peers.

On the other hand, Clotfelter, Ladd, Vigdor, and Urban (2009) examined North Carolina teachers over a span of 10 years. Data for the study were generated from the North Carolina Department of Public Instruction. Administrative data from throughout the state were used to examine the frequency, incidence, and consequences of teacher absenteeism in public schools. The researchers found that teachers with four or five years of experience were absent 29% more often than teachers with two and three years of experience.

Darling-Hammond (2000) conducted a study of teacher qualities that relate to student achievement. Data for the study were generated from a 50-state survey of policies, state case study analyses, the School and Staffing Surveys, and the National Assessment of Educational Progress. Data were analyzed using both qualitative and quantitative methods of analysis. The researcher found that the relationship between teaching experience and student achievement was not relevant. This finding was based on results which illustrate the effects of experienced teachers leveled off after five years.

Day, Elliot, and Kington (2005) examined the relationship between teacher experience and teacher commitment and dedication. Teacher commitment is a critical factor in job performance, employee attrition, and teacher burnout. The researchers suggested providing support in order to sustain teacher commitment. The study examined current accountability policies that have resulted in teachers spending more time at work and accepting greater responsibilities. These policies have also broadened the role of the classroom teacher, but provided less time to meet new obligations. The potential result is often added stress for the teacher. Day, Elliot, and Kington examined the perceptions of two groups of teachers on current accountability policies. The two groups consisted of 10 teachers each. Teachers were between the ages of 45 and 55. Upon selection, the teachers were interviewed. Teacher interviews revealed that personal and school context factors were most influential in sustaining levels of commitment. These factors included personal beliefs about the importance of education and school practices that nourish the needs of the teacher. The study suggested an intervention program designed at focusing on the intrinsic characteristics of the teacher. Such programs would be intended to decrease teacher absenteeism as well as increase teacher commitment.

Several studies have been conducted to determine the relationship between teacher absenteeism and demographic variables. Unfortunately, a lack of empirical findings in educational research has decreased the probability of determining whether demographic variables are significant predictors of student achievement. Recent research in the area (e.g., Das et al., 2007; Miller et al., 2007) has also failed to address demographic variables as they relate to student achievement.

Organizational Variables

In addition to demographic variables, researchers have also conducted studies to determine the relationship between various organizational variables and teacher absenteeism. These variables often include grade-level of the teacher, organizational characteristics and policies of schools, the socioeconomic status of the students a teacher serves, and work environment of the teacher. Like research conducted on demographic variables, research aimed at identifying particular organizational variables related to teacher absenteeism has led to conflicting results. The following is an examination of: (a) the relationship between teacher absenteeism and the grade-level of the teacher, (b) organizational characteristics and policies of schools, (c) the socioeconomic status of the students a teacher serves, and (d) work environment of the teacher.

Grade-Level

The term grade-level can be used to describe both the grade-level assignment and the school configuration of a given teacher. Research suggests a relationship between the grade-level of the teacher and the rate of teacher absenteeism (e.g., Rosenblatt & Shirom, 2005; Miller et al., 2007; Das et al., 2007). The following is an investigation of such a relationship.

Clotfelter, Ladd, Vigdor, and Urban (2009) studied teachers in elementary, middle, and secondary schools throughout North Carolina. The researchers divided the teachers into three groups: (a) elementary, (b) middle, and (c) secondary. They found that elementary teachers were absent more frequently than middle school teachers, middle school teachers were absent more than secondary teachers, and secondary teachers were absent less frequently than elementary and middle school teachers.

Rosenblatt and Shirom (2005) conducted a study of Israeli elementary and middle schools. The researchers used information from personnel records to find their results. The study also found that elementary teachers were absent more frequently than middle school teachers.

Research has also noted the relationship of grade configuration of schools and teacher absenteeism. Miller, Murnane, and Willett (2007) examined the impact of teacher absenteeism on student achievement. The sample for the population consisted of one urban school district located in the northern United States. Eighty public elementary schools with either kindergarten through fifth or kindergarten through eighth grade configurations were examined. Data for the study were generated from standardized test scores and information from teacher personnel records. Findings for the study were generated using an analytic dataset containing teacher and student demographic data. The researchers concluded that teachers employed at schools with a kindergarten through eighth-grade configuration had lower rates of discretionary absences than teachers employed at schools with a kindergarten through fifth-grade configuration.

Das, Dercon, Habyarimana, and Krisham (2007) conducted a study of looping. Looping is a term used to describe when students remain with the same teacher for consecutive years. The researchers found teacher absenteeism increased 5% as a result of looping. In addition to an increase in absenteeism, looping resulted in a 4% decline in English and mathematics student achievement. The researchers speculated that the reduction in student achievement was reflective of teacher absenteeism, a reduction in quality instructional time, and less effort invested by the teacher in lesson planning.

Organizational Characteristics

Research suggests a relationship between organizational characteristics and the rate of teacher absenteeism (e.g., Rossenblatt & Shirom, 2005; Miller et al., 2007).

Organizational characteristics are the conditions under which a school operates. The prevailing theory among researchers appears to focus on the organizational characteristics of enrollment configurations, staff sizes of schools, and leadership styles of principals.

The following is an examination of the relationship of teacher absenteeism and enrollment configurations, staff sizes of schools, and leadership styles of principals.

Research shows increased classroom student enrollment has an impact on teacher absenteeism. Miller, Murnane, and Willett (2007) found a positive correlation between increased classroom enrollment configurations and increased teacher discretionary absences. Discretionary absences are absences allotted to teachers to be used at their discretion, presumably to extend leisure time. The study examined 80 schools in the Ormondale School District, located in Portola Valley, California. Data were generated from the personnel records of approximately 200 teachers. The researchers found that teachers with larger student populations to serve were absent significantly more than those teachers with smaller student populations.

Okpala, Smith, Jones, and Ellis (2000) also examined the relationship between classroom student enrollment and student achievement. The study was an examination of fourth-grade student achievement in North Carolina. Data for the study were generated through the North Carolina Department of Public Instruction. The researchers incorporated the Pearson Product-Moment Correlation to analyze data. Like the work of

Miller, Murnane, and Willett (2007), the study found class size and school size were significant predictors of student language arts performance.

Research also shows that the total enrollment size of a school has an impact on teacher absenteeism. Rosenblatt and Shirom (2005) found that school size had a significant effect on teacher absenteeism. The sample for the study consisted of 50,056 teachers affiliated with 2,145 public elementary and middle schools in Israel. Comparisons were made of teachers with comparable demographic and background variables. The only difference between teachers was the total enrollment of the schools where the teachers were employed. Using this information, the researchers concluded that teachers employed at larger schools were absent more frequent than teachers employed at smaller schools. The researchers found, that for a student enrollment increase of 100 students, teachers would be absent 1.039 times more than their counterparts at smaller schools.

Research suggests that the total size of the faculty at a school has an impact on teacher absenteeism. Winkler (1980) examined the effects of staff size on teacher absenteeism. The sample for this study consisted of 47 elementary schools in California and Wisconsin. The researcher hypothesized that the larger the staff, the higher the rate of absenteeism. This hypothesis was based on the assumption that as the size of the staff increased the communication levels and group cohesiveness decreased. The results of the study confirmed the hypothesis.

Imants and Zoelen (1995) suggested that administrative leadership styles and collegial relations had an effect on teacher absenteeism. The sample for this study consisted of 66 teachers from 16 primary schools in the Netherlands. Data were collected

using a 32-item school climate survey. Results indicated that collegial relationships are positively correlated with teacher absenteeism and directive leadership is positively correlated with low absenteeism. The researchers concluded that in schools with high levels of collegiality and an informal school climate a higher degree of tolerance toward absenteeism was accepted. They also found lower absenteeism at schools with directive administrative styles and rules that expressed commitment to tasks and procedures.

Marzano, Waters, and McNulty (2005) addressed the relationship between teacher absenteeism and student achievement. The researchers identified 21 school-level leadership responsibilities with specific correlations with student achievement. The work noted that these leadership responsibilities were found to be essential to produce high levels of student achievement. Of the 21 leadership responsibilities, seven are directly related to improving teacher attendance in schools. These responsibilities were (a) communication, (b) culture, (c) input, (d) relationships, (e) order, (f) monitoring and evaluating, and (g) contingent rewards. In the following paragraphs, each of these responsibilities is highlighted.

Effective communication is essential when making changes in schools and establishing a common purpose (Marzano et al., 2005). In relation to teacher absenteeism, effective communication allows educational leaders to clearly disseminate expectations in regard to teacher absences. This also allows for teachers to know and understand district policies regarding teacher absenteeism. For example, Roza (2007) recommended that educational leaders require teachers to report anticipated and unanticipated absences to their direct supervisors. The researcher speculated that this increase in communication would reduce rates of teacher absenteeism.

Fostering a positive, collegial school culture improves teacher attendance and positively impacts student achievement (Marzano et al., 2005). For example, Galdwell (2000) advocated creating a school culture where new beliefs could be practical, expressed, and nurtured. This new culture would positively influence teachers, who, in turn, would influence students. This would also promote continuity and create a shared vision with all stakeholders.

Marzano, Waters, and McNulty (2005) define the leadership responsibility of input as involving teachers in the design and implementation of important decisions and policies. In regards to teacher absenteeism, allowing teachers to have input into the policies and procedures surrounding teacher attendance is critical. When teachers have an active voice in the decision-making process, they are more likely to adhere to the policies.

Developing effective professional relationships allows educational leaders opportunities to demonstrate an awareness of the personal lives of the school faculty (Marzano et al., 2005). It also helps promote a shared vision among all stakeholders, especially during times of need. By developing such relationships, the educational leader will be more likely to work through issues such as teacher absenteeism.

Order is an environment created by structure (Marzano et al., 2005). It facilitates organization within the workplace. Educational leaders create order by establishing clear boundaries and rules for both students and faculty. Educational leaders need to understand order and set clear expectations for teacher attendance. Creating order often involves reshaping the policies and procedures associated with teacher absenteeism.

Monitoring and evaluating practices are essential for functioning schools (Marzano et al., 2005). Feedback is the key to any system involving monitoring and evaluating. A teacher or student must know areas of concern in order to improve. Feedback provides this type of support. Monitoring and evaluating practices through feedback also allow educational leaders to monitor the practices of teacher that impact student achievement.

Contingent rewards are the extent to which an educational leader rewards and recognizes individual accomplishments (Marzano et al., 2005). Contingent rewards can take several forms. For example, an educational leader can formally recognize a staff member during a faculty meeting, or an educational leader can informally write a letter of congratulations to the teacher. Regardless the method, the goal of this system is to reward and recognize hard work and results.

Rosenblatt and Shirom (2005) found a positive correlation between increased workload and increased teacher absenteeism. Initially, the researchers hypothesized that teachers with administrative positions would have lower rates of absenteeism. Their study examined current job design theories which stress the importance of job enrichment, design, and control. The researchers found that the higher the workload for a teacher, the higher the rate of absenteeism. They speculated that the higher rates of absenteeism were a direct result of teacher burn out.

Bradley, Green, and Leeves (2007) examined the effects of an absentee culture on rates of teacher absenteeism. Their study consisted of an examination of a large database of all personnel records in the large region of Queensland, Australia. The study employed count data techniques to examine the effects of organizational variables on

teacher absenteeism. The researchers sought to examine the relationship between individual teacher absentee behavior and peer behavior. They found a strong correlation between increased teacher absenteeism and the location of the school, health status of the teacher, tenure status of the teacher, and contract provisions of the teacher. More importantly, Bradley, Green, and Leeves found a stronger correlation between group-interactions and frequency of individual teacher absences. They found the individual absentee rate to increase one day when the overall peer group absentee rate increased. This increase occurred when the overall peer group absentee rate increased from 11 to 12 days.

Organizational Policies

Organizational policies are those structures which govern the terms of an employee contract. They can include: (a) rules and procedures of a school, (b) tenure or continuing contract status, (c) policies regarding sick leave, (d) incentive programs, and (e) income protection plans. Research suggests that each of these policies has a potential affect on teacher absenteeism.

Pitkoff (2003) examined the relationship between teacher absenteeism and local district policies. The study consisted of an examination of a large urban school district located in California. Data for this study consisted of student achievement data and teacher attendance records. The researcher noted a statistically significant relationship between increased teacher absenteeism and three areas. These areas were: (a) lower student achievement in language arts and mathematics, (b) poor student attendance, and (c) higher student dropout rates. Pitkoff suggested a specific change to local district polices would decrease teacher absentee rates throughout the nation. The following eight

weaknesses in local districts were highlighted: (a) personal days, (b) generous sick-leave allowances, (c) sick-leave banks, (d) conference leave, (e) failure to address the problem of absenteeism, (f) failure to report absences directly to the principal, (g) compensation for salary differences, and (h) vacation during the school year.

Pitkoff (2003) provided suggestions to address each of the noted weaknesses. Personal days should be limited and redefined as “emergency leave days.” The researcher noted that having personal leave days expire at the end of the school year promoted a “use it or lose it” mentality. Personal days should be granted by the principal in emergency situations and closely monitored to prevent abuse of the policy. Sick leave should also be limited and, instead of being granted by state-level authorities, be granted by local school districts. The researcher also noted the effect of sick leave banks on teacher absenteeism. Sick leave banks were intended to be used in case of extreme illness. The researcher found that teachers often took advantage of sick leave banks. This was based on an observed belief among teachers of the need to save sick leave in the event of extreme illness was unnecessary.

Conference leave is a form of professional development where teachers are absent from the classroom in order to attend professional development conferences. Pitkoff (2003) suggested that conference leave be eliminated and that professional development be scheduled around or outside the mandated number of instructional days. The researcher advocated that educational leaders promote awareness of teacher absenteeism and require direct communication with absentee teachers. Pitkoff posited that teachers are aware of the costs of their absences and are required to report directly to their supervisor

concerning absences, they are less likely to take advantage of sick leave policies (Pitkoff, 2003).

Furthermore, Pitkoff (2003) stressed the importance of the classroom teacher in school improvement efforts and discouraged district policies that allowed teacher absences beyond the allotted leave days. These policies generally required teachers to pay the cost of substitute teachers. However, this does not factor in the cost of the loss of quality instruction. The researcher also discouraged district policies that allowed teachers to use sick or personal leave for vacations during the school year. This often occurred when districts shorten prescheduled breaks because of changes in the school calendar due to inclement weather. Pitkoff noted that districts should stress the importance of the fluidity of the school calendar and not allow vacations when school is in session.

Roza (2007) examined the relationship between teacher absenteeism and provisions in teacher contracts throughout the United States. The researcher identified provisions that did not have a clear link to student achievement. Eight common provisions were identified: (a) increases in teacher salaries based on years of experience, (b) increase in teacher salaries based on educational credentials and experiences, (c) professional development leave days, (d) amount of allotted paid sick days and personal leave days, (e) class size limitation, (f) utilization of teacher aides, (g) generous health and insurance benefits, and (h) generous retirement benefits. The researcher suggested that local school districts examine provisions in teacher contracts in order to improve student achievement and decrease teacher absenteeism. Roza also highlighted the amount of money spent by local school districts on teacher salaries and benefits. Of the

\$500,000,000,000 spent on public education each year, he estimated that 60 to 80% was spent on teacher salaries and benefits.

Miller, Murnane, and Willett (2007) also examined the relationship between teacher absenteeism and local school board policies. This study consisted of three examinations: (a) the cost of teacher absenteeism, (b) the negative effect of teacher absence on student achievement, and (c) the effect on students of low socioeconomic status. Based on the examinations, the researchers made specific policy recommendations. The federal government should hold state and local school districts accountable for teacher absenteeism. One suggestion from the researchers was to include school-specific data on teacher absenteeism in school report cards. Miller, Murnane, and Willett also suggested that states lower the yearly allotment of teacher personal and sick leave days. Another suggestion involved local school districts implementing co-payments and incentive programs. This system would place additional value on utilizing leave days and lower absentee rates.

Miller, Murnane, and Willett (2007) also found a correlation between use of sick leave and the tenure status of teachers. Tenure is a provision made in several public school teacher contracts. In most school districts, tenure is granted to teachers after their first three years of employment. It is a form of job protection derived largely from the efforts of teacher unions. Tenure originated from university employment policies and was meant to grant professors instructional and research freedom. The researchers found lower rates of discretionary absence among teachers with less than a year of teaching experience. They found that permanent employment or tenure status can be used as a

predictor for absentee behavior. The researchers found that tenure teachers took 3.7 more days of discretionary absences than teachers without tenure.

Clotfelter, Ladd, Vigdor, and Urban (2009) also examined the use of sick leave and the tenure status of teachers. In North Carolina public schools, each public school teacher is awarded one day for sick leave each month of employment. Sick leave accrues indefinitely and without limits. Teachers who exhaust their allotted amount of sick leave may purchase an additional 20 days at the cost of \$50 per day. Also, retiring teachers can convert unused sick leave into service credits, which translates into higher pension benefits. Using data generated from personnel records, Clotfelter, Ladd, Vigdor, and Urban found that usage of leave days increase with years of service. Novice teachers used an average of 4.8 days of sick leave per year, whereas teachers with 5 to 10 years of experience used an average of 8 days of leave per year.

Jacobson (1989) conducted a study to examine the impact pay incentives had on teacher absenteeism. The study was conducted using one school district located in New York. The sample population consisted of 292 teachers. Data for the study were generated using teacher personnel files and attendance records. The study compared rates of teacher absenteeism before and after the induction of a pay incentive program. Data were analyzed using a paired t-test of teacher absentees. The analysis revealed that teacher absentees declined slightly and perfect attendance rose. Perfect attendance rose from 8% to 34% during the first year of implementation. The researcher suggested that pay incentives can play an important role in reducing rates of teacher absenteeism. Jacobson also noted the success of the first year of implementation. The study cited that monetary rewards for the program were divided based on teacher attendance. In other

words, teachers with perfect attendance received a larger percentage of monetary rewards than their competitors, and, as a result of this, teacher attendance increased.

Vegas (2007) examined various incentive programs found in developing countries and their impact on student achievement. The study emphasized similarities of urban schools located throughout the United States and schools in developing countries. These similarities revolve around the difficulties these schools have with staffing. Vegas linked staffing difficulties with teacher compensation and described various strategies used to compensate teachers. For example, in Chile, average teacher salaries have doubled and resulted in higher qualified teachers and improved student achievement. Similar findings were located in Brazil where the government has increased spending in education. The researcher also examined performance-based pay. Performance-based pay is the act of rewarding teachers for increased student academic achievement. Results on performance-based pay have been mixed. For example, in Mexico, this system failed to show positive results. Vegas concluded by emphasizing the critical nature of teacher incentive programs. Effective incentive programs give teachers a desire to make an extra effort.

Keller (2008) examined several unsuccessful incentive programs from throughout the United States. In Chicago, Illinois, school officials offered a \$400 incentive to teachers with perfect attendance. In this program, the incentive decreased \$50 for each sick and/or personal day used by the teacher. In other words, incentives were rewarded to teachers with fewer than four days of absences per school year. The researcher reported that the Chicago incentive program for teacher attendance lowered rates of teacher absenteeism. However, the program only reduced the average rate of teacher

absenteeism from seven days to six days per school year. This was not a significant change, and the program was discontinued.

Keller also reported an incentive program in used Dallas, Texas. This unnamed district had a student population of 6,200. In this program, teachers were offered a chance to win a new car for perfect attendance. The program was offered to teachers who used less than two days of personal and/or sick leave. The qualifying teachers were entered into a raffle for a new car. The researcher reported that the rate of teacher absenteeism was not altered by this incentive program.

Keller also noted an incentive program offered by the Palm Beach County School District, located in the State of Florida. In this program, teachers were offered \$50 for each sick day not used during the course of the school year. As a result, individual attendance rates improved for certain teachers, but overall the attendance rate of teachers did not improve. The district eliminated the program after one year.

In contrast, Say and Miller (1982) reported results from an incentive program offered by the Houston Independent School District. In this program, teachers were rewarded for attendance. They received monetary rewards ranging from \$50 to \$500. The rewards were based on the number of days the teacher missed. In this program, teachers could miss up to five days and still receive a reward. During the first year of the program, the rate of teacher absenteeism decreased 14% within the school district. This reduction saved the school district over \$400,000 in substitute pay alone.

Winkler (1980) conducted a study on the relationship between sick leave policies and teacher absenteeism in California and Wisconsin. Data for the study consisted of teacher questionnaires, official school attendance records, and 57 school observations

collected from a random sample of elementary schools. The study focused primarily on the use of income protection plans. Income protection plans insure against the loss of salary. Loss of salary often occurs if the length of an illness exceeds accumulated sick leave days. In cases where income protection plans were in place, the researchers found an increase in short term absenteeism. Data revealed that districts without income protection plans averaged 2.8% of short term absentees per teacher, whereas districts with the plans averaged 2.87% of short term absentees per teacher.

Winkler (1980) also noted the benefits of requiring teacher proof of illness. A district with an average teacher absentee rate of 1.22 could reduce absentees by 20% by requiring teacher proof of illness. In addition, the researcher also found that requiring teachers to report absences directly to the principal resulted in a large reduction in short term absentees. Winker found that a district with an average teacher absentee rate of 2.80 could reduce absentees by 25% by requiring teachers to report directly to the principal.

Gaziel (2004) also examined absentee culture. An absentee culture is a state of mind shared by a group of people concerning absenteeism. The researcher analyzed the absentee culture of schools in Jerusalem. The study consisted of surveys from 148 elementary teachers, data from personnel records, and teacher reported measures of absenteeism. Gaziel found that teachers that expressed high levels of commitment to their school exhibited less voluntary absentee behavior. The principal was believed to be the key to teacher commitment. If the principal exhibited restrictive behaviors towards absenteeism, voluntary absences increased. If the principal promoted a collegial, professional environment, teachers exhibited lower rates of absenteeism. Unlike the work of Winkler (1980), Gaziel found higher rates of teacher absenteeism in schools

possessing principals with restrictive behaviors. The researcher noted a sense of animosity, resulting in an absentee culture.

Black (2009) highlighted the concern for improving teacher attendance through the examination of organizational policies. According to the study, local school districts can take several actions to decrease teacher absenteeism. The researcher presented five actions. First, school districts could adopt policies that require teacher to contact the principal or immediate supervisor in case of anticipated and unanticipated absences. Second, educational leaders could closely monitor teacher absentees by examining data collected by the school. Third, school districts could raise expectations in the area of teacher attendance. Black noted that this may be accomplished by discussing with teachers, teacher union officials, and parents the impact of teacher absenteeism on not only student achievement but also the operating budget for the school. Fourth, school districts could adopt incentive programs known to reduce teacher absenteeism. The researcher discouraged programs with just one winner, such as lotteries and raffles. Finally, Black recommended scheduling meetings, professional developments, and workshops at times when teachers would not require substitute teachers.

Socioeconomic Status of the Students

The socioeconomic status of a student refers to the social and economic position of the family in which a student is a member. It is compared with the status of other individuals and families. The concept is generally divided into three parts: (a) low, (b) middle, and (c) secondary. Socioeconomic status is correlated with the concepts of education attainment, income, and occupation. In other words, an individual with a low

socioeconomic status has a lower income, lower-level of education, and a lower-level occupation (Bruno 2002).

Schools are reflective of the neighborhoods and communities they serve. Thus, the socioeconomic status of students is reflective in schools. Research suggests a relationship between teacher absenteeism and the socioeconomic status of students in a school (e.g., Clotfelter et al., 2009; Alcazar et al., 2006; Bruno, 2002). The following is a review of this apparent relationship.

Clotfelter, Ladd, Vigdor, and Urban (2009) found a correlation between high teacher absenteeism and low socioeconomic status of the students served by a given teacher. The sample population for the study consisted of administrative data from the North Carolina Department of Public Instruction and was taken from public schools throughout the state. The researchers found that students from low socioeconomic backgrounds were more likely to be a victim of higher teacher absenteeism than their affluent counterparts. Clotfelter, Ladd, Vigdor, and Urban established socioeconomic status by ranking schools based on students receiving free or reduced lunches. The findings from the ranking were divided into quartiles. The researchers found that teachers employed at the lowest quartile averaged one additional sick day per school year compared with teachers employed in the highest quartile.

Alcazar, Rodger, Chaudhury, Hammer, Kremer, and Muralidharan (2006) found alarming results in the area of absentee rates for primary teachers, teachers working in the poorest communities, and teacher working in remote communities. The results for the study indicated that primary teachers in public schools were absent 11% of the school year, teachers from the poorest communities were absent 16% of the school year, and

teachers from the most remote communities were absent 21% of the school year. This study of Peruvian schools was conducted using data collected from a World Bank study of schools and health clinics.

Bruno (2002) examined the relationship between the geographic location of a school and the rate of teacher absenteeism. The sample consisted of public secondary schools located in the Los Angeles urban area. Data for the study were generated from teacher absentee data obtained through central office personnel files. In addition, Geographic Information System (GIS) was incorporated to determine the socioeconomic environment of school populations. The researcher found a correlation between the low socioeconomic location of a school and high rates of teacher absenteeism. Higher rates of teacher absenteeism were found among teachers in urban areas. This finding would seem to pose a significant threat to the equity of educational experiences for students in urban areas. The researcher found that urban area schools often failed to provide students with effective, equitable instructional programs. This was attributed to the assumption that teachers in urban schools operated in a more stressful environment than their suburban counterparts. Bruno attributed the stressful environment to the obstacles these teachers faced. Obstacles included: (a) teaching students with developmental delays, (b) teaching in an area of high crime, (c) teaching larger class, and (d) lacking the necessary materials to develop quality instruction. These obstacles make urban teachers more likely to be absent from the classroom. Bruno found these obstacles only magnified the inequalities between urban and suburban schools and intensified the risk factors for students from low socioeconomic backgrounds.

In addition to examining the socioeconomic status of students, Bruno (2002) also examined the relationship between teacher absenteeism, school performance, and the need for substitute teachers. The researcher found that teachers from schools with positive geographic location, or school with higher percentages of students from low socioeconomic backgrounds, were absent more often than teachers from negative geographic locations. Bruno also found a relationship between the geographic location of a school and the number of unfilled substitute positions. The number of unfilled substitute teacher positions ranged from 9 to 106. Furthermore, the researcher found that schools with a negative geographic area had lower school performance scores. These schools also had higher rates of teacher absenteeism and higher numbers of unfilled substitute positions.

Work Environment

Research suggests a relationship between work environment and the rate of teacher absenteeism (e.g., Tye & O'Brien, 2002; Haberman, 2005). The work environment of a teacher can be described as the area in which a teacher works. It is more than the physical location of a school and encompasses attributes of the school which lead to teacher stress, burnout and turnover. The following is an examination of the relationship between teacher absenteeism and the work environment of teachers.

According to Tye and O'Brien (2002), it is "impossible to overestimate the degree of job intensification that has taken place in teaching within the past decade, as society asks its schools to do more and more" (p. 28). In the last 40 years, the work environment has changed drastically for most Americans. Hospitals and manufacturing facilities across the United States have become immersed in the latest technologies. Compared to

them, American public schools have not developed to this extent. American public school teachers may incorporate technology into their lesson plans, but ultimately the work environment for the American teacher has changed very little in the last 40 years.

Bruno (2002) linked the work environment of teachers to higher rates of teacher absenteeism and teacher burnout. The researcher examined school and teacher data collected from the Los Angeles Unified School District. The study focused on stressors faced by teachers in the urban setting. Bruno described stressors as the factors that lead to negative, unpleasant emotions that are associated with stress. He found that schools in urban settings had several stressors. These included: (a) large populations of students from low socioeconomic backgrounds, (b) higher rates of disciplinary behaviors and referrals, and (c) higher levels of students performing below grade-level expectations. Based on this, the researcher concluded that these stressors lead to higher rates of teacher absenteeism.

Haberman (2005) noted the teaching profession as a high stress job. The researcher highlighted the conditions that are used to determine the effectiveness of a teacher. These conditions are often outside the control of the teacher, such as the socioeconomic status of the students, the leadership style of the principal, and resources available to the teacher. The researcher noted that the way in which an individual deals with stress is important in maintaining good health. When teachers use personal or sick days, they may be using this time to cope with the work environment or several other external variables. Some of these external variables include ambiguous role expectations, unreasonable time demands, large classes, poor staff relations, inadequate facilities, salary considerations, lack of materials, and fear of violence. Haberman concluded that

prolonged exposure to these environments and variables may lead to teacher burnout. Teacher burnout was described as a condition in which a teacher remains as a paid employee but stops performing as a professional.

Bryne (1998) also focused on the impact of stressors on teacher populations. The sample for this study consisted of 173 secondary teachers. The teachers were employed in 70 secondary schools located throughout the State of New York. Data for the study were generated from teacher surveys. The surveys required teachers to determine factors that cause stress and burnout among teachers. Upon analysis, the researcher found a correlation between teacher burnout and administrative support. The participating teachers consistently ranked the lack of support from supervisors as the number one cause of teacher burnout. Bryne found that burnout typically occurred somewhere between the seventh and tenth year of teaching. The researcher highlighted the negative consequences of teacher burnout. The consequences included higher rates of teacher absenteeism and decreased student achievement. Bryne also suggested that additional research be conducted in this field.

Van Dick and Wagner (2001) examined the relationship between administrator support and the ability of a teacher to cope with stress. The sample for this study consisted of 557 teachers from Germany. The study found that at least one-third of teachers suffered from extreme stress as a result of their workplace. However, the researchers found a correlation between high levels of administrative support and high levels of teacher ability to handle stress. In other words, when administrators supported their teachers, teachers were more able to meet job requirements and lower stress. In contrast with the work of Bryne (1998), Van Dick and Wagner conducted their study in

Germany. German schools require administrators to not only perform administrative responsibilities, but also to perform instructional responsibilities in the classroom. This is unlike the American schools of the previous study and may explain some of the differences. Also, the administrators in this study were supportive, and the administrators in the previous study were not supportive.

Marley (2009) reported on the increase of teacher stress as a result of the workplace. The article highlighted a survey of 1,000 teachers. The researcher noted that the use of teacher sick leave had doubled from 2007 to 2009. Marley hypothesized that this was a direct result of stress in America public schools. However, he also reported that 40% of teacher surveyed were too embarrassed to report stress as the cause of leave.

Guin (2004) examined teacher turnover rates in urban schools. Data for the study were generated from staff climate surveys and case studies conducted in the urban school settings. The researcher found teacher turnover rates as an indicator of problems within a given school. The study also highlighted rates of teacher absenteeism as an early sign of teacher turnover. Guin noted problems associated with secondary teacher turnover. These problems included: (a) greater challenges for schools to plan and implement instructional programs, (b) greater feelings of isolation between and among teachers, (c) greater challenges sustaining a positive work environment for students, teachers, and educational leaders. The study also highlighted the prevalence of high rates of teacher turnover in urban schools. These schools often service students from low socioeconomic backgrounds and are labeled as “at-risk.” Guin recommended providing incentives for teachers to work and remain in “at-risk” schools.

Berry and Hirsch (2005) also conducted a study of the relationship between teacher absenteeism and higher rates of teacher turnover. The study was conducted using data from the North Carolina Department of Public Instruction. The researchers pinpointed teacher certification as a factor in determining rates of teacher absenteeism and turnover. Schools were divided into four quartiles based on standardized test scores. The researchers made several observations of the schools located in the lowest quartile. Berry and Hirsch found that these schools (a) served students from the lowest socioeconomic backgrounds, (b) had the lowest number of certified teachers, (c) had the highest averages of teacher absenteeism, and (d) had the highest rates of teacher turnover.

Student Outcomes

Research suggests that teacher absenteeism has a profound impact on students (e.g., Miller 2008; Roza 2007). The greatest impact is on the learning environment of students. The learning environment is the setting in which learning takes place. Absence from school implies being away from the learning environment. When one is away from the learning environment, learning does not occur. Absenteeism also limits and diminishes the time capacity of the classroom and results in fewer instructional minutes. In addition to the learning environment, absenteeism adversely impacts not only the culture of the classroom, but also the culture of the school, district, and community. The following discussion addresses the impact of teacher absenteeism on student behavior, student attendance, and student achievement.

Student Behavior

Inappropriate student behavior has consistently rated as the most significant problem facing local public schools. It is the most cited source of teacher stress and has been diagnosed as a major cause of teacher resignations. It has also been determined to be the most influential reason why parents decide to send their children to private schools (Rudasill et al., 2010). Due to its significance, it has been the subject of attention in the area of educational research. Despite this, current research linking teacher absenteeism and student behavior is limited.

Rudasill, Reio, Stipanovic, and Taylor (2010) examined student-teacher relationships, student temperament, and student risky behavior. The sample consisted of 1,156 students from throughout the United States. Students were in the fourth, fifth, and sixth grades. Data were generated from the Student-Teacher Relationship Scale that was administered as part of a study conducted by the National Institute of Child Health and Human Development (NICHD) (NICHD Early Child Care Research Network, 2001). In the NICHD study, emphasis was placed on nonmaternal care and family factors. The scale was part of a multitude of instruments used as part of the research design. Rudasill and others used the scale to examine the student-teacher relationship.

The researchers found that closer student-teacher relationships resulted in less student risky behavior. The study also found that negative student-teacher relationships resulted in increased student risky behavior. The researchers describe risky behavior as actions that result in potential harm for an individual or group. Rudasill, Reio, Stipanovic, and Taylor highlighted the importance of student-teacher relationships on the learning

environment and that increased teacher attendance promotes closer student-teacher relationships.

Student Attendance

As previously noted, absenteeism is associated with several outcomes. In the area of student attendance, research suggests teacher absenteeism results in lower student attendance. If teachers are not present in the classroom, they are setting a poor example to their students (Bui, 2005). Several researchers have noted a relationship between teacher attendance and student attendance (e.g., Ehrenberg et al., 1991; Wilkins, 2008; Bui, 2005). The following is an overview of this relationship.

Jonasson (2011) examined student absenteeism. The study focused on potential ways to prevent student absenteeism. The sample for the study consisted of 850 students. Data for the study were generated from researcher observations and interviews with students, teachers, and educational leaders. Jonasson found that student absenteeism was directly correlated with student behavior and student achievement. Students with poor behavior and academic achievement were labeled as at-risk. The study suggested that teachers and educational leaders take actions towards improving the attendance rates for at-risk students.

Ehrenberg, Ehrenberg, Rees, and Ehrenberg (1991) found a positive correlation between increased student absenteeism and increased teacher absenteeism. The sample of the study consisted of public schools throughout New York State. A total of 419 districts comprised the sample. Data for the students were generated from central office personnel files, school attendance data, and information provided by the United States Census Bureau. The researchers suggested that student absenteeism be categorized in

three different ways. The first category consisted of student illness which prevented them from attending school. The second category consisted of student illness that may or may not have prevented them from attending. The third category consisted of voluntary or discretionary absences where the student chose not to attend. Ehrenberg, Ehrenberg, Rees, and Ehrenberg found that school districts with the highest rate of student absenteeism showed a statistical tendency to have higher rates of teacher absenteeism. The researchers proposed that “increased teacher absences from the classroom may reduce students’ motivation to attend school and thus increase student absentee rates” (p. 90).

Ehrenberg, Ehrenberg, Rees, and Ehrenberg (1991) also determined student absenteeism has a greater impact on achievement levels than teacher absenteeism. This statement was based on empirical findings. Empirical findings for the study were generated from data collected during the 1986-1987 school year. Student achievement was assessed using a state-mandated standardized assessment. The researchers found that, for every three additional days a student was absent, student achievement fell 1%-2.5% of a standard deviation.

Wilkins (2008) examined factors that influence student attendance. The study focused on four students attending a kindergarten through eighth-grade alternative school in the northeastern portion of the United States. These students had previously refused to attend their traditional schools. The students found that the alternative setting was better able to meet their needs. Wilkins used three sources to collect data for the study: (a) interviews with the four students, (b) researcher observations, and (c) attendance data. The interviews provided the researcher with the most insight into the situation. The study

found four themes that emerged from the data. These four themes motivated students to attend school. The themes were (a) the climate of the school, (b) the academic requirements of the classrooms, (c) teacher and administrator discipline, and (d) the relationships between students and teachers. Of all the themes, Wilkins emphasized the relationships formed by students and teachers as the ultimate motivator for students to attend school.

Bui (2005) conducted a study of middle school variables that predict college attendance for first-generation students. Variables studied included (a) school structure, (b) student statistics, (c) school atmosphere, (d) academic offerings of the school, and (e) teacher statistics. The sample for the study consisted of 24,599 middle school students. Data were generated from student questionnaires, student performance on a curriculum-sensitive standardized assessment, principal questionnaires, teacher questionnaires, and parent surveys. One of the major findings of the study involved teacher absenteeism. The researcher found that teachers who missed more than 10 days of school per year lowered the probability of student college attendance rates. Increased teacher absenteeism resulted in a 23% decrease in the odds of first generation student college attendance rates. The researchers hypothesized that teacher attendance impacted student attendance. They found that teachers with lower absentee rates modeled to their students the importance of attendance on the learning environment.

Gottfried (2011) examined the impact of student absenteeism on the urban school setting. The sample for the study consisted of the entire elementary school system of the Philadelphia School District. Data for the study were generated through central office student and teacher records. In addition, the study also considered information collected

by the United States Census Bureau to determine additional demographic information concerning the students served by district schools located within the district. The study utilized data collected from the 1994-1995 school year to the 1999-2000 school year. Data were analyzed considering both student achievement, in language arts and mathematics, and several input variables. Input variables included information pertaining to students, neighborhoods, teachers, classrooms, and schools. Gottfried found evidence suggesting that missing school negatively impacted student achievement. However, the researcher found it difficult to empirically estimate the influence several variables had on student achievement. He noted one challenge was determining the impact of the family environment on student achievement and student absentee behaviors. Though Gottfried understood the importance of teacher absenteeism, he stressed family variables as a factor in determining student attendance. The researcher based this assumption on empirical results from the study. The study employed a model of family fixed effects on a sample of siblings from the same household. Results from the study supported this assumption.

Student Achievement

The greatest impact of teacher absenteeism is not the financial cost of it, or the credibility cost for the school, or even the administrative cost. The greatest impact of teacher absenteeism is the possible impact teacher absenteeism can have on student achievement. According to Miller, Murnane, and Willett (2007), the rate of teacher absenteeism has been found to be the highest in elementary schools, schools with lower student achievement, schools with the highest recipients of free and reduced lunch, and urban school districts. Ironically, the schools that need the most quality instructional

time and the highest rate of teacher attendance are the very schools with the highest rates of teacher absenteeism.

Woods and Montagno (1997) examined the relationship between student achievement and teacher absenteeism. The study was conducted using the achievement data of students from both Elkhart, Indiana and Gillette, Wyoming. The sample population consisted of 817 third-grade students and 45 third-grade teachers. The study was designed to measure the academic progress made in one academic school year. Students were studied during their third and fourth-grade school years. In order to assess academic progress, students were administered the Iowa Test of Basic Skills twice. The assessment was given once in the fall of their third grade year, and once in the fall of their fourth-grade year.

Using this information, Woods and Montagno (1997) found several impacts to student achievement based on teacher absenteeism. Teachers who were absent fewer than four days had a student grade equivalency change of one grade. In other words, the students had met all the standards for the third-grade and were ready to progress to the fourth grade. Teachers who were absent 5 to 11 days of school had a student grade equivalency change of 0.69. Teachers who were absent 12 to 29 days had a student grade equivalency change of 0.79. Woods and Montagno concluded that teacher attendance has an impact on student achievement.

Miller, Murnane, and Willett (2007) stressed the importance of teacher attendance. The researchers compared the elementary school teacher to the highly skilled employee. They cited the work of Nicholson, Pauly, Polsky, Sharda, Szrek, and Berger (2006) who found that losses in productivity were greater among highly skilled

employees. This is due to the fact that finding competent replacements for highly skilled employees is very difficult for supervisors to accomplish. Miller et al., (2007) related this to an urban elementary school teacher who had been trained in a special mathematics curriculum. The curriculum required a great deal of professional development on the part of the urban elementary school teacher. By the end of the professional development, the teacher possessed specific skill sets and experiences that were required to implement the curriculum. Due to this fact, the researchers highlighted the causal effects of teacher absenteeism. They stressed that substitute teachers would not have the professional development needed to implement the curriculum and noted that student achievement would inevitably be faltered.

Miller, Murnane, and Willett (2007) continued to stress the importance of teacher attendance and provided empirical finding to support this notion. The study was conducted using a large, urban school district. The sample consisted of nearly 80 elementary schools with approximately 200 teachers and 4,000 students. Teacher data for the study were generated from the central office personnel files. This information included the age, gender, race, home zip code, number of absences, certification status, and employment status of the teacher. Student data for the study were generated from student performance on the Stanford Achievement Test (Series 9). Information was collected from three consecutive school years. The researchers focused the attention of the study on the impact of teacher absenteeism on fourth-grade students.

Following analysis of the data, the researchers suggested that a teacher absentee rate of 10 days per school year would reduce student fourth-grade mathematics achievement by 3.2% of a standard deviation (Miller et al., 2007). Three reasons were

provided to account for the reduction in student performance. First, teacher absenteeism impacts a large percentage of students. The researchers found that teacher absences directly impact the achievement levels of as many as 25 students in a class of 30. Second, reductions in student performance have a significant impact on the funding of schools throughout the nation. Reductions, even small reductions, in student performance can result in a school not meeting “Adequate Yearly Progress”, mandated by NCLB legislation. Third, when the teacher is absent in the classroom, student achievement is usually altered. This applies to multiple contexts of teacher absenteeism. The study discouraged professional development and other activities from being planned during allotted instructional minutes. In addition, the researchers also speculated that unexpected teacher absences would have a greater negative effect than anticipated absences. This is due to the fact that, in the event of an anticipated absence, the teacher would produce more organized substitute lesson plans.

Clotfelter, Ladd, Vigdor, and Urban (2009) also found teacher absenteeism resulted in a reduction of student mathematics and language arts achievement. The researcher speculated that, for every 10 days of sick leave used by a teacher, student mathematics achievement decreased 2.3% of a standard deviation and student language arts achievement decreased 1% of a standard deviation. Data for this study were generated from the North Carolina Department of Public Instruction and consisted of a 10 year time span, from 1994 to 2004.

In addition to studying the relationship between teacher absenteeism and student performance on a standardized assessment, Clotfelter, Ladd, Vigdor, and Urban (2007) examined two additional variants of the achievement model. First, the researchers

considered the impact time of the year has on student achievement. In order to measure this, teacher absentee data were divided into two groups. The first group consisted of teacher absentees from July to December. The second group consisted of absentees for January to June. The researchers found that absences during the second semester (i.e., January to June) impacted student mathematics achievement three times more than absences during the first semester. Second, they considered the impact of substitute teachers on student achievement. The study noted that absences covered by uncertified teachers were associated with larger declines in student achievement than those covered by certified teachers.

Miller (2008) also studied the impact of teacher absenteeism on student achievement. The sample for this study consisted of 5,189 teachers employed at 106 schools. The study was conducted in a large urban school district located in the northern portion of the United States. Data for the study were generated from central office personnel files and student performance on a standardized assessment. Miller found that schools serving large concentrations of student living in poverty tended to have the highest levels of teacher absenteeism. This, in turn, resulted in equity problems within the school district. He also found that students of poverty are not receiving an equitable education.

Like the work of Clotfelter and others (2007), Miller (2008) found that the credentials of the substitute teacher impacted student achievement. The study noted that only North Dakota required substitute teachers to have the same credentials as the regular teacher. Also, only 20 states required substitute teachers to hold a bachelor's degree. Miller noted that this only contradicts the requirements of highly-qualified teachers,

advocated in NCLB legislation. The study also found that unanticipated absentees were some of the worst in regards to student achievement. This is a result of a lack of highly-qualified substitute teachers, well-developed lesson plans, and coordination between the teacher and the substitute. These factors combined result in a greater negative impact on student achievement. The researcher also found that the effect of teacher absenteeism was greatest in the area of mathematics. This was considered to be due to the fact that most students have limited exposure to mathematics. Students get less exposure in mathematics outside the classroom, especially compared to language and literature.

Summary

Teacher absenteeism has a profound impact on the educational setting, although the study of teacher absenteeism has resulted in conflicting empirical findings. Some researchers claim that certain demographic variables predict rates of absenteeism among teachers (Rhodes & Steers, 1978). These researchers stress the age, certification status, family dynamics, gender, level of education, and years of experience of a given teacher. They claim that these demographic variables can be used to predict teacher absentee behaviors and ultimately student achievement (e.g., Clotfelter et al., 2009; Scott & McClellan, 1990; Alcazar et al., 2006; Imants & Zoelen, 1995). Other researchers suggest certain organizational variables predict rates of absenteeism (Allen, 1981). These researchers stress the grade-level assignment, socioeconomic status of students, local school board policies, and school district characteristics of a given teacher. They claim that organizational variables can be used to predict teacher absenteeism and ultimately impact student learning (e.g., Winkler, 1980; Roza, 2007; Miller et al., 2007; Pitkoff,

2003). Regardless, research shows that teacher absenteeism negatively impacts student achievement (Miller, 2008).

With enactment of NCLB legislation, educational leaders are faced with tremendous responsibilities. One of the greatest responsibilities for educational leaders revolves around student achievement. Students must excel in the classroom in the core academic areas of mathematics, English, language arts, science, and social studies (Chiang, 2009). Teachers are the key to student achievement. They are responsible for providing quality instruction. Maintaining the continuity of instruction is difficult when teachers are not present in the classroom (Miller, 2008). In order to meet the high standards set forth by the state and federal governments, it seems apparent that educational leaders must address the issue of teacher absenteeism.

CHAPTER III

METHODOLOGY/PROCEDURES

In this chapter, the research problem, research questions, and null hypotheses are again presented. A description of the research methodology is also provided. The study examined the relationship between teacher absenteeism and fourth-grade student mathematics achievement. Therefore, the teacher attendance records were examined in relationship to fourth-grade student achievement in mathematics on the Louisiana Education Assessment Program (LEAP). The chapter also discusses the research design, sample, instrumentation, data collection, and analysis techniques. In order to minimize threats to internal validity, this chapter also describes the procedures followed to minimize threats to internal validity.

Statement of the Problem

The purpose of this study was to examine the relationship between teacher absenteeism and fourth-grade student mathematics achievement in northern Louisiana elementary schools.

Research Questions

1. Are there significant differences in student achievement scores on the mathematics portion of the LEAP among the four teacher absentee groups

(less than 5 days of absence versus 5 to 10 days of absence versus 11 to 14 days of absence versus more than 14 days of absence)?

2. Are the demographic characteristics of teacher age, years of teaching experience, level of education, and certification type predictors of teacher absenteeism?
3. Are the organizational variables of school socioeconomic status and student mathematical achievement predictors of teacher absenteeism?

Null Hypotheses

- H_{01} : There will be no statistically significant difference in student mathematical achievement scores on the mathematics portion of the LEAP among the four teacher absentee groups (Group 1: less than 5 days of absence, Group 2: 5 to 10 days of absence, Group 3: 11 to 14 days of absence, and Group 4: more than 14 days of absence).
- H_{02} : Teacher age, years of teaching experience, level of education, and certification type will be non-significant predictors of teacher absenteeism.
- H_{03} : School socioeconomic status and student mathematical achievement will be non-significant predictors of teacher absenteeism.

Methodology

An *ex post facto* research design was used to test all hypotheses. Thorkildsen (2005) defines an *ex post facto* research design as one designed “after data have been collected” (p. 10). In this design, findings are more difficult to reproduce and variables cannot be manipulated. However, an *ex post facto* research design is often the only way

to study a certain problem. Data from this study were also non-parametric in nature. The structure of these data was fixed.

To test the first hypothesis, a one-way analysis of variance (ANOVA) was conducted to ascertain whether significant differences exist between student mathematics achievement across amounts of teacher absenteeism. Teachers were divided into four groups based on the number of absences. These groups consisted of less than 5 days of absence, 5 to 10 days of absence, 11 to 14 days of absence, and 15 or more days of absence.

The independent variable was the category of teacher absenteeism. Data for the independent variable were generated from personnel records. The dependent variable was the fourth-grade LEAP mathematics score. Data for the dependent variable were generated from the Louisiana Department of Education. This hypothesis examined the relationship between the independent variable, teacher absenteeism, and the dependent variable, student achievement.

To test the second and third hypotheses, a multiple regression analysis was conducted to determine whether the teacher characteristics of age, years of teaching experience, levels of education, and certification type and organizational variables of school socioeconomic status and student mathematics achievement were predictors of teacher absenteeism. The dependent variable was the amount of teacher absenteeism. Data for the dependent variable were generated from teacher personnel records. These data consisted of the total number of days absent for fourth-grade teachers during the 2010-2011 school year.

Six independent variables were used to test the second and third hypotheses. The six independent variables were: (a) fourth-grade student mathematics achievement data, as measured by the LEAP, (b) data regarding the age of the teacher, (c) data regarding the years of teaching experience of the teacher, (d) data regarding the certification type held by the teacher, (e) data regarding the levels of education of the teacher, and (f) data regarding the socioeconomic status of the school for the teacher.

Data for the independent variables were generated from both the Louisiana Department of Education and central office personnel records. Student achievement data were collected from the Louisiana Department of Education and consisted of the mean mathematics score of the students taught by each teacher or an average of school. This was dependent on the amount of data available from each of the nine school districts used in the study. School socioeconomic status data consisted of data regarding School Performance Score (SPS). The SPS is calculated for every public school in Louisiana and is reflective of student achievement, attendance, and dropout rates. Teacher age and years of teaching experience data were representative of the actual age and years of teaching experience of each teacher and varied among teachers. Teacher certification type data consisted of three categories: (a) Louisiana Elementary Education Certification, (b) Practitioner's License, and (c) Out-of-State Certification. Practitioner's License refers to individuals completing a state-defined route through which that individual, who already has at least a bachelor's degree, can obtain certification to teach without necessarily having to go back to college and complete a college, campus-based teacher education program. Louisiana Elementary Education Certification refers to a teacher with a certification to teach grades kindergarten through eighth grade, prekindergarten

through third grade, and/or first through fifth grade. Individuals with a Louisiana Elementary Certification and Out-of-State Certification have obtained a traditional college, campus-based teacher education program. Levels of education data consisted of the following three categories: (a) bachelor's degree, (b) master's degree, (c) further graduate coursework beyond the master's level (i.e., plus thirty, specialist degree, and/or doctorate degree).

Sample

The sample for this study included fourth-grade students and their teachers from nine school districts located in northern Louisiana during the 2010-2011 school year. The fourth-grade students attended one of the 41 elementary schools. Achievement data were taken from the 2010 – 2011 school year. The nine school districts combined serve approximately 68,000 kindergarten through twelfth grade students.

Instrumentation

Criterion-referenced assessments are considered by researchers to give a more accurate measure for student achievement (McMillan, 2004). This statement is based on the fact that criterion-referenced assessments measure students on a set of specified criteria. The counterpart to a criterion-referenced assessment is a norm-referenced assessment. Norm-referenced assessments compare the performance of one student with those of all test takers. They are a relative interpretation of student performance (Thorildsen, 2005). The LEAP is a criterion-referenced assessment used to measure state-required grade-level expectations (Louisiana Department of Education, 2011).

Researchers perform several stability procedures to address the reliability of criterion-referenced assessments. The most common forms of stability procedures include the test-retest procedure and the alternative-form method. The test-retest procedure involves assessing a population twice with the same assessment. Results from the two assessments are compared to determine reliability. The alternative-form method assesses a population with two alternative-form assessments. The two forms of assessment parallel one another in terms of content and difficulty. Results from the two alternative form assessments are compared to determine validity (McMillan, 2004).

The alternative-form method was used to assess the reliability of the LEAP (Louisiana Department of Education, 2011). Two forms of the LEAP were administered to fourth and eighth-grade students in March of 2011. These forms included a mathematics section, along with English-language arts, science, and social studies sections. The Cronbach's alpha reliability coefficient on the fourth-grade mathematics section of the LEAP was found to be 0.94 (Louisiana Department of Education, 2011).

The weight of each item of the LEAP was based on the weight of given content units and standards, as determined by the Louisiana Department of Education staff and teacher representatives from throughout the State of Louisiana. An independent testing contractor developed the assessment instrument. All the test items in the assessment were paired with matching content-specific criteria that were based on state-mandated grade-level expectations.

Data Collection

For the purpose of this study, student achievement data were collected from students who attended any of the 41 schools in the sample. The schools were located

within nine school districts throughout northern Louisiana. Student achievement data were obtained through the Louisiana Department of Education and were compiled into a data spreadsheet. Student achievement data were void of any personal identifiers and consisted only of LEAP scores in the core academic area of mathematics.

Teacher attendance records were attained from central office personnel records and were void of any personal identifiers. This study targeted fourth-grade teachers. Teacher absentee data were compiled into a data spreadsheet. To preserve anonymity, an arbitrary confidential code number was pre-assigned to each teacher and student, each class received a section number, and all teacher and student identifiers were deleted from district data files by school board officials. All teacher and student identifiers remained unknown to the researcher. Data from this study were statistically analyzed and presented in a group summary format. The data collected were stored in a secure location and destroyed upon conclusion of the study.

Data concerning student achievement, school socioeconomic status, teacher absences, and the teacher demographic variables of age, years of teaching experience, level of education, and certification type were analyzed using the computer program Statistical Package for Social Sciences (SPSS). To test the first hypothesis which examined differences in student mathematics achievement among the four teacher absence groups, tables were constructed of both the number of teacher absentees of each group and the student mathematics achievement for each teacher. The relationship was examined between the independent variable, teacher absenteeism, and the dependent variable, student achievement.

To test the second and third hypotheses, which examined the demographic and organizational variables as predictors of teacher absenteeism, tables were constructed of teacher age, teacher years of teaching experience, teacher certification types, teacher level of education, school socioeconomic status, student achievement, and teacher absenteeism. The data were analyzed by multiple linear regressions to determine if these variables were predictors of teacher absenteeism.

Procedural Details

Several sequential procedures took place to complete this study.

1. A request was made to the Human Use Committee Review Board at Louisiana Tech University for approval to conduct the study.
2. The researcher sent a letter requesting permission for school district participation in the study to each superintendent of the school districts examined.
3. Upon receiving consent from the superintendent, the socioeconomic status of each school was determined by obtaining demographic data from the Louisiana Department of Education website. Also, the attendance records for each of the fourth-grade teachers involved in the study were collected from the 2010-2011 school year.
4. In addition to collecting teacher attendance data, the researcher collected information pertaining to the age, years of teaching experience, certification type, and level of education for each teacher from the personnel office of each school district.

5. A letter was sent to the Louisiana Department of Education requesting fourth-grade mathematics student achievement data from the participating school districts.
6. All data were received, collected, and transferred into an Excel worksheet.
7. Fourth-grade teacher attendance data and fourth-grade mathematics student achievement data were analyzed for use in this study.
8. All student and teacher data will be archived for a period following conclusion of the investigation.

CHAPTER IV

RESULTS

The major purpose of this study was to compare the effects of fourth-grade teacher absenteeism on the mathematics achievement of fourth-grade students in nine school districts located in northern Louisiana. The purpose of this chapter is to examine data and present an analysis of the findings. This chapter contains descriptive statistics and frequencies that were derived from Louisiana Education Assessment Program (LEAP) subscales and absence rates, results of an ANOVA conducted to test research question one, results of two multiple regression analyses to test research questions two and three, and an evaluation of the findings.

Description of the Sample

Participants consisted of all fourth-grade teachers in regular, self-contained classrooms in nine school districts located in northern Louisiana. Archival data from all fourth-grade teachers ($N = 97$) were collected for data analysis. Descriptive analysis indicated that the participants had an average of 14.49 years of teaching experience. The majority of the teachers ($n = 79$; 81.4%) held certification in elementary education, and most had a level of education of a bachelor's degree ($n = 84$; 86.6%). The mean age of participants was 42.48 years. The basic descriptive statistics for age and years of

teaching experience are presented in Table 1, level of education in Table 2, and certification type in Table 3.

Table 1

Descriptive Statistics for Fourth-Grade Teacher Age and Teaching Experience

Characteristic	N	Min	Max	Mean	SD
Teacher Age	97	23.00	65.00	42.48	10.98
Years of Teaching Experience	97	< 1 yr.	40.00	14.49	9.69

Table 2

Descriptive Statistics for Fourth-Grade Teacher Level of Education

Degree	Frequency	Percent
Bachelor's	84	86.6
Master's	7	7.2
Above Master's	6	6.2
Total	97	100.0

Means and standard deviations were compiled for LEAP scores on the mathematics portion for the fourth-grade students of these teachers. As indicated in Table 4, the minimum LEAP score was 124 units and the maximum score was 393 units. These scores were the mean mathematics scores for each self-contained classroom or school in the study. In addition, the School Performance Score (SPS) for the school of each teacher was examined. As indicated in Table 5, the minimum SPS score was 65.8 and the maximum score was 130.6. The SPS is calculated for every public school in

Louisiana by the Louisiana Department of Education and is compiled from a formula using student achievement, attendance, and dropout rates.

Table 3

Descriptive Statistics for Fourth-Grade Teacher Certification Type

Certification	Frequency	Percent
Elementary Education (K-8; PK-3, 1-5)	79	81.5
Practitioner's License	17	17.5
Out-of-State Certification	1	1
Total	97	100

Table 4

Descriptive Statistics for Fourth-Grade Student Achievement on the Mathematics Portion of the LEAP

Test	N	Min	Max	M	SD
LEAP	97	124	393	337.28	36.45

Table 5

Descriptive Statistics for School Performance Scores for Participating Teachers

Score	N	Min	Max	M	SD
SPS	97	65.8	130.6	94.40	19.69

Statistical Analysis

The first step in the statistical analysis involved the researcher printing all the frequencies for all variables. The researcher inspected the frequency distributions for miscoded data and other anomalies. During this process, the researcher observed the LEAP scores associated with one teacher in the second absence group skewed the data for the entire group. As a result of this, the data for this teacher were eliminated from the statistical analysis.

Research Question One

Q1: Are there significant differences in student achievement scores on the mathematics portion of the LEAP among the four teacher absentee groups (less than 5 days of absence verses 5 to 10 days of absence versus 11 to 14 days of absence versus more than 14 days of absence)?

H₀: There will be no statistically significant difference in student mathematics achievement scores on the mathematics portion of the LEAP among the four teacher absentee groups (Group 1: less than 5 days of absence, Group 2: 5 to 10 days of absence, Group 3: 11 to 14 days of absence, and Group 4: more than 14 days of absence).

To test research question one, a one-way analysis of variance (ANOVA) was conducted to assess whether significant differences existed on the LEAP scores according to the four teacher absence groups (i.e., less than 5 days of absence, 5 to 10 days of absence, 11 to 14 days of absence, more than 14 days of absence). As indicated in Table 6, which lists the one-way ANOVA summary table, the independent variable was teacher absence group with four levels and the dependent variable was LEAP mathematics scores

of the students. The results of the ANOVA were not significant ($F_{3, 92} = .887$). Thus, mean differences on the LEAP scores by teacher absence days category were not statistically significant. As indicated in Table 6, the observed F value was smaller than the critical value; thus, the null hypothesis was not rejected. The means and standard deviations for the four teacher absence groups are presented in Table 7.

Table 6

ANOVA Results of Fourth-Grade Student Mathematics LEAP Scores by the Four Categories of Teacher Absences

Dependent Variable		SS	Df	MS	F	p
LEAP	Between Groups	2295.009	3	765.003	.887	.451
	Within Groups	79322.991	92	862.206		
	Total	81618.000	95			

Table 7

Descriptive Statistics: Fourth-Grade Student Mathematics LEAP Scores by Fourth-Grade Teacher Absence Categories

Number of Absent Days	N	M	SD
Less than 5	19	340.16	29.620
5-10	29	346.34	31.309
11-14	25	335.00	27.923
More than 14	23	335.22	28.100

Research Questions Two and Three

Q2: Are the demographic characteristics of teacher age, years of teaching experience, level of education, and certification type predictors of teacher absenteeism?

Q3: Are the organizational variables of school socioeconomic status and student mathematical achievement predictors of teacher absenteeism?

H₀₂: Teacher age, years of teaching experience, level of education, and certification type will not be predictors of teacher absenteeism.

H₀₃: School socioeconomic status and student mathematical achievement will not be predictors of teacher absenteeism.

To examine research questions two and three, two multiple regression analyses were conducted. The first multiple regression was performed to test whether the teacher demographic variables (i.e., teacher age, years of teaching experience, level of education, and certification type) would predict teacher absences. The second multiple regression was conducted to test whether the organizational variables (i.e., school socioeconomic status and student mathematics achievement) were predictors of teacher absenteeism.

The following regression equation was employed: $\hat{Y} = b_0 + b_1X_1 + b_2X_2 \dots + \epsilon$, where \hat{Y} is the estimated dependent variable; b_0 is the constant; b_n are the regression coefficients; and $X_1 \dots X_n$ are the independent variables.

Regression for Research Question Two

The number of teacher absences served as the outcome variable. The predictor variables were: (a) age, (b) years of teaching experience, (c) level of education (bachelor's degree = 1, master's degree = 2, further graduate coursework beyond the

master's level = 3), (d) certification type (Louisiana elementary education certification = 1, practitioner's license = 2, out-of-state certification = 3). The findings for this multiple regression analysis are listed in Tables 8 and 9. The overall model was not statistically significant ($F(4, 91) = .836, p > .05$). In this case, the null hypothesis was not rejected. The model with these four predictor variables accounted for only 3.5% of the variability (R^2) in the number of teacher absences.

Table 8

Multiple Regression Analysis Results of Number of Teacher Absences as Outcome Variables and the Four Demographic Variables as Predictor Variables

Model	R^2	SS	Df	MS	F	Sig.
Regression	.035	601.015	4	150.254	.836	.506
Residual		16357.899	91	179.757		
Total		16958.914	95			

Regression for Research Question Three

The number of teacher absences was predicted from mathematics LEAP scores and School Performance Score (SPS). Tables 10 and 11 list the results for this multiple regression analysis. The overall model was not statistically significant ($F(2, 93) = .012, p < .05$). In this case, the null hypothesis was not rejected. The model with these variables did not account for a statistically significant percentage of the variability (R^2) in the number of teacher absences.

Table 9

Results of Multiple Regression Analysis of Number of Teacher Absences as Outcome Variables and the Four Demographic Variables as Predictor Variables

Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	Sig.
	B	SE	β		
(Constant)	15.539	8.320		1.868	.065
Age	-.175	.191	-.144	-.915	.363
Years of Teaching Experience	.311	.220	.226	1.412	.161
Certification Type	1.596	2.308	.072	.691	.491
Level of Education	-2.025	4.458	-.048	-.454	.651

Table 10

Multiple Regression Analysis Results of Number of Teacher Absences as Outcome Variables and the Two Organizational Variables as Predictor Variables

Model	R ²	SS	Df	MS	F	Sig.
Regression	.000	4.316	2	2.158	.012	.988
Residual		16954.598	93	182.308		
Total		16958.914	95			

Evaluation of Findings

The data sets included in this study were collected from a variety of sources.

Teacher demographic data were collected from school district personnel files. Student achievement data were collected from the Louisiana Department of Education. The data

sets were analyzed to determine if a relationship exists between teacher absenteeism and fourth-grade student mathematics achievement. An ANOVA was employed to determine the impact of teacher absences on student achievement. Multiple regressions were also used to determine whether the demographic variables (i.e., teacher age, years of teaching experience, level of education, and certification type) and organizational variables (i.e., school socioeconomic status and student mathematics achievement) were related to the outcome variable of teacher absenteeism.

Table 11

Results of Multiple Regression Analysis of Number of Teacher Absences as Outcome Variables and the Two Organizational Variables as Predictor Variables

Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	Sig.
	B	SE	β		
(Constant)	11.368	19.781		.575	.567
LEAP	.001	.083	.003	.016	.988
SPS	.009	.123	.014	.075	.941

The ANOVA tables illustrate the degree to which the four groups defined by different ranges of teacher absences impacted student achievement. For this study, an alpha level ($\alpha = 0.05$) was chosen for the analysis. Results from the one-way ANOVA of the data for research question one found no significant relationship between teacher absenteeism groups and student achievement. This finding is contradictory to the work

of Miller (2008). Miller found that higher rates of teacher absenteeism had a negative impact on student achievement.

This difference between the finding of this study and that of Miller (2008) may conceivably be accounted for by the way in which data were analyzed. In the work of Miller, a correlation analysis was employed. In order to more closely parallel the work of Miller, this study completed a correlation between the two variables of the number of days absent for each teacher and the fourth-grade mathematics LEAP score for each teacher. The Pearson r correlation coefficient was found to be 0.01. Thus, it is clear that the differences between the findings of Miller and those of the present study are not due to differences in method of data analysis.

The results of the present investigation correlation may be due to several elements of this research design which will be discussed in detail, later. For example, this study was based on an *ex post facto* design and used an ANOVA to measure the impact of teacher absenteeism on student achievement. The findings from this study were clear: fourth-grade mathematics teacher absenteeism had no significant effect on student mathematics achievement.

The multiple regressions for this study also showed no significant results regarding the outcome variables of teacher absenteeism as predicted by either teacher demographic variables or organizational variables. Most studies on teacher absenteeism in the past 15 years (e.g., Clotfelter et al., 2009, Croninger et al., 2007, Darling-Hammond, 2000) have found that most predictors of teacher absenteeism are context specific. In the context of this study, none of the teacher demographic variables (i.e., teacher age, years of teaching experience, level of education, and certification type) and

organizational variables (i.e., school socioeconomic status and student mathematics achievement) were found to be significant predictors of teacher absenteeism.

Summary

In this study, the researcher found that fourth-grade teacher absenteeism did not have a significant effect on fourth-grade student achievement on the mathematics section of the LEAP. This statement is based on non-significant mean differences on LEAP mathematics scores of fourth-grade students across the four teacher absentee groups. The multiple regression analyses found the demographic variables (i.e., teacher age, years of teaching experience, level of education, and certification type), as well as the organizational variables (i.e., school socioeconomic status and student mathematics achievement) were not significant predictors of teacher absenteeism. These findings may have potential policy implication for the school districts examined in this study, and, possibly, other school districts. The research findings will be discussed at length in Chapter 5.

CHAPTER V

DISCUSSIONS AND CONCLUSIONS

The purpose of this study was to determine the relationship between teacher absenteeism and student achievement on the mathematics portion of the Louisiana Education Assessment Program (LEAP). In the review of literature for this study, teacher absenteeism was indicated as being a potential barrier to improving student achievement. A one-way analysis of variance (ANOVA) and two multiple regression analyses were conducted on data collected for this study to determine if such a relationship does exist. However, both the ANOVA and multiple regression analyses found no statistically significant relationship between teacher absenteeism and student mathematical performance on the LEAP. This concluding chapter contains the discussion of the findings, implications for education, overview of the study, limitations of the study, recommendations to the school districts examined, suggestions for future research, and conclusions.

Implications for Education

Notwithstanding the lack of a significant relationship between teacher absenteeism and student mathematics achievement found in this study, a review of the literature (Chapter 2) indicated that teacher absenteeism is a significant problem. In

public schools throughout the nation, an average of 5.3% of teachers are absent on any given day (Miller, 2008), and individual teachers average 9.36 absences per year (Miller et al., 2008). Despite the fiscal restraints placed on schools by teacher absenteeism, the potential impact on student achievement raises a more important concern. Because the commonly identified essential goal of education is to prepare students to become successful and productive members of society, public schools must place student achievement as a primary goal. Teacher absences have been shown to impact student achievement negatively in some contexts (Clotfelter et al., 2009). Also, certain teacher demographic characteristics (i.e., age, years of teaching experience, level of education, and certification type) and organizational variables of schools (i.e., student mathematics achievement and school socioeconomic status) have been shown to impact student achievement (Darling-Hammond, 2000).

Student achievement is the prevailing cornerstone of federal and state education legislation and is strongly reflected in school learning environments. With the passage of the *No Child Left Behind Act of 2001* (NCLB), public schools throughout the nation have become engaged in a system of educational reform intended to improve student achievement and the very culture of schools. Schools are subject to stricter levels of accountability, not only for the performance of students, but also for the performance of teachers and administrators. School systems are faced with the challenge of hiring and retaining quality teachers, providing the necessary professional development and resources to maintain quality instruction, and improving the performance of all student groups (e.g., students from different racial/ethnic backgrounds, students with disabilities, and students from different socioeconomic levels). As educators strive to meet the

demands of NCLB and related legislation, it is paramount that they examine all avenues to improve student achievement and teacher accountability.

School systems throughout the nation struggle to confront the problem of teacher absenteeism and its effect on student achievement. Classroom teachers are commonly considered to be the key to student achievement. They are responsible for delivering quality instruction to students and when instructional time is interrupted by teacher absences, student performance is considered to be negatively impacted (Pitkoff, 2003). Educational administrators and policymakers must examine the causes of teacher absenteeism and develop ways to improve teacher attendance in schools.

Overview of the Study

Teacher absenteeism is a costly problem for American public schools (Roza, 2007) and may negatively impact student achievement (Miller et al., 2008). Certain teacher characteristics (i.e., age, years of teaching experience, level of education, certification type, and school socioeconomic status) have been examined to determine which characteristics are predictors of student achievement and which teachers are most effective (Miller, 2007). The researcher examined the apparent effects of fourth-grade teacher absenteeism on fourth-grade mathematics student achievement, as measured by the LEAP. Nine school districts located in northern Louisiana were examined. An *ex post facto* research design was used due to the fact that the independent variable (i.e., teacher absenteeism) could not be manipulated (Thorkildsen, 2005). The sample for this study included fourth-grade students taught in regular, self-contained classrooms and fourth-grade mathematics teachers ($N = 97$) located in the nine school districts.

Prior to data collection, approval was obtained from the school district superintendents of the nine school districts investigated. A formal permission for research was presented and obtained from the Human Use Committee Review Board at Louisiana Tech University. Archival data were used from the teacher personnel files and the Louisiana Department of Education for the 2010-2011 school year. Student achievement was measured through student scores on the Spring 2011 LEAP, as provided by the Louisiana Department of Education. The data collected from student academic records and teacher personnel files were void of any personal identifiers. All teacher and student identifiers remained unknown to the researcher. The data from the study were statistically analyzed and presented in a group summary format. The data were stored in a secure location, archived, and will be destroyed after a suitable period of retention.

The purpose of this study was to determine the relationship between teacher absenteeism and student achievement on the mathematics portion of the LEAP. To determine the relationship, students were assigned to four groups according to the frequency of teacher absences (i.e., less than 5 days of absence, 5-10 days of absence, 11-14 days of absence, and more than 14 days of absence). A one-way ANOVA was used to examine the differences in the mean student achievement on the mathematics portion of the LEAP among the four absence groups. In addition to the primary purpose, the teacher demographic characteristics of age, years of teaching experience, level of education, and certification type, as well as the organizational variables of school socioeconomic status and student mathematics achievement were examined to determine the degree to which they were predictors of teacher absenteeism. In order to determine this, two multiple regression analyses were preformed.

The first research question, *Are there significant differences in student achievement scores among the four teacher absentee groups (less than 5 days of absence, 5-10 days of absence, 11-14 days of absence, and more than 14 days of absence)?*, was formulated to determine the effects of a range of fourth-grade teacher absences on fourth-grade mathematics achievement as measured by the LEAP. To test this research question, a one-way ANOVA was conducted to assess whether significant differences existed on LEAP scores by teacher absence groups. The results were not statistically significant, indicating there were no significant mean differences on student LEAP mathematics scores by teacher absence group. Due to the non-significant group differences in student LEAP mathematics scores, the null hypothesis was not rejected. It was concluded that, for this sample, teacher absences had no significant effect on student LEAP mathematics performance.

These findings of a non-significant effect may be explained through the presence of other potential confounding variables, such as the effectiveness of substitute teachers, instructional practices of the teacher, curricular alignment of the districts examined, school cultures, and leadership characteristics of the educational leaders. These confounding variables now become the residual focus of this study and are discussed further in this chapter.

Although teacher absenteeism was not shown to impact student achievement negatively in this study, the data analysis still revealed some causes for concern. In the teacher absentee groups, 19.6% of fourth-grade teachers had less than 5 days of absence, 30.0% had between 5 and 10 days of absence, 27.2% had between 11 and 14 days of absence, and 23.2% had more than 14 days of absence. In the districts examined,

teachers employed after the first day of the school year received a contract-specified portion of sick and personal leave days. Most of the school districts examined allotted 2 personal days and 10 sick days. As evident in the distribution of teacher absentee groups, the majority of teachers used their allotment of personal days, and some teacher used more than the total allotment of days. These results are consistent with findings of other studies (Roza, 2007; Miller, 2008) that teachers are likely to use all leave time earned over the course of a school year in the absence of attendance incentives.

The second research question was: *Are the demographic characteristics of teacher age, years of teaching experience, level of education, and certification type predictors of teacher absenteeism?* These demographic variables were used to predict teacher absenteeism. The third research question was: *Are the organizational variables of school socioeconomic status and student mathematical achievement predictors of teacher absenteeism?* These organizational variables were also used to predict teacher absenteeism. Thus, these two research questions were formulated to determine the effects of fourth-grade teacher demographic characteristics and school organizational variables on rates of teacher absenteeism.

To test these research questions, two multiple regression analyses were conducted. The first multiple regression used the demographic variables of teacher age, years of teaching experience, level of education, and certification type as predictor variables. The second multiple regression used the organizational variables of student performance on the mathematics portion of the LEAP and the school performance score for the school of each teacher as predictor variables. The results for both multiple regressions were not statistically significant, indicating that the four demographic and

two organizational variables were not significant predictors of teacher absenteeism. The null hypotheses for both research questions were not rejected.

The results of the two multiple regressions that were performed to test both research questions were contradictory to other research findings in the area of teacher absenteeism (Buddin & Zamarro, 2009; Jonasson, 2011; Keller 2009). However, given the nature of educational research, changes in the setting and variables from prior research might account for this inconsistency. In other words, the context for this study was different from other published research in the area of teacher absenteeism. These differences may account for the findings of this study.

Limitations of the Study

The limitations of this study must be considered in order to interpret its results and recommendations. This study was limited by the characteristics of the school districts, schools, individual classrooms, individual teachers, and individual students. These limitations are divided into two parts: (a) threats to internal validity and (b) threats to external validity. Each is discussed further, below.

Threats to Internal Validity

In the case of this study, internal validity refers to the authenticity of the obtained relationship between teacher absenteeism and student mathematics LEAP performance. Threats to internal validity are issues, limitations, challenges, and other variables in the research design that weaken the validity of the study.

Even though this study found no statistically significant relationship between teacher absences and student achievement, it is important to note that educational leaders encounter numerous variables that may influence both teacher absenteeism and student

achievement. Some of these variables are organizational in nature, and school districts may have some control over their impact. These organizational variables may include, but are not limited to: (a) the instructional practices of the teacher, (b) the quality of substitute teachers, (c) the curricular alignment between the LEAP and that of the curriculum of the school districts examined, (d) the workload of the teacher, (e) the absentee culture of the school, (f) the administrative leadership style of a school or school district, (g) the actual date of the absence in relation to the school calendar, (h) the temporal sequence of teacher absences, and (i) the practices of recording the LEAP in schools or school districts. These variables could be threats to the internal validity of this study and are discussed further in the section below.

This study was limited by the specific classroom teacher in relation to each absence and the instructional practices of the teacher. Some absences were anticipated, and the teacher was able to prepare detailed lessons plan. Other absences may be unanticipated, and the teacher was not able to prepare. In this context, the curriculum may have an influence on the relationship between teacher absenteeism and student achievement. In mathematics, the curriculum is generally taught in a sequential manner, in which concepts build upon one another. In the case of mathematics, if a teacher is absent, the curriculum cannot progress without establishing a concept. This requires adequate preparation on the part of the teacher.

The quality of substitute teachers who served as replacements for fourth-grade teachers may have impacted the results. In the nine districts examined, substitute teachers met two minimum requirements prior to entering the classroom. These requirements included the substitute teacher possessing a high school diploma and

passing a criminal background check. Though all substitute teachers must meet these requirements, some substitute teachers exceeded these requirements. For example, in one of the school districts examined, the pay scale of the substitute teacher was based on the educational attainment of the substitute. The pay scale had three tiers: non-degree, college degree, and certified teachers. Substitute teachers that were certified teachers earned the most on this compensation scale. This compensation scale reinforced the importance of quality substitute teachers in the classroom. Consequently, the effects of teacher absenteeism on student mathematics performance may have been ameliorated by the use of highly qualified substitute teachers.

The curricular alignment between the LEAP and that of the curriculum of school districts may also have impacted the results. The LEAP is the standardized assessment used to measure student achievement. A curriculum that is closely aligned to the standardized assessments increases the probability of strong student achievement. In other words, the optimal curriculum teaches the concepts to be assessed. Curricular alignment was not examined in this study.

The workload of a teacher refers to amount of responsibilities assigned to a teacher. Teachers with the largest workload are often involved with extracurricular activities and may not have the necessary time available to devote to proper preparations for absences and/or lesson planning. The absentee culture of the school refers to normative teacher absentee behavior and peer behavior. If excessive absences are deemed acceptable at a school, these schools might experience a greater number of teacher absences.

The administrative leadership style of a school or school district may refer to the way in which a school or school district is operated. Leadership style most likely varied at each school located within the nine school districts examined in this study. In other words, the administrative leadership style of each of the nine school districts could have played a role in the findings. Leadership style was not a focus of this study.

The actual date of the absence in relation to the school calendar may refer to when specifically an absence occurred. This is largely contextual in nature and can include the researcher closely examining the absentee behavior for each teacher in the sample. In-depth examinations of teacher absentee behavior may explain the findings of this study and others like it. For example, it may reveal that the majority of teacher absences occurred after administration of standardized assessments, such as the LEAP.

The temporal sequence of teacher absences may refer to the distribution of absentee behavior throughout the school year. An investigation of temporal sequence may determine if teacher absences were sporadic or massed. This may be important in determining the relationship between teacher absenteeism and student achievement.

LEAP scores are recorded differently among school district throughout the state. A large percentage of school districts in the state do not have the ability to distinguish individual classroom LEAP scores. In other words, some school districts only have an average LEAP score for the entire school and cannot distinguish the scores for each class or classroom. In this study, the individual teacher or classroom mathematics score for 53 of the 97 participants could not be determined. Consequently, the average LEAP mathematics score for the school was used. This inability to obtain the individual

mathematics LEAP score for each classroom could have seriously impacted the internal validity of this study.

When the individual mathematics LEAP score for each classroom could not be obtained, the study was limited to self-contained classrooms. Self-contained classrooms are those in which the teacher is responsible for teaching all the subjects assessed on the LEAP (i.e., English, language arts, mathematics, science, and social studies). In this case, all the teachers were represented in the school score. Also, this study included students enrolled in a school or classroom at the time of the LEAP. It did not factor in students who had been added late to a classroom or students who had relocated.

In addition, other variables, which are not directly related to the teacher or school district, may alter student achievement and thereby impact internal validity. These variables include: (a) the amount of parental involvement in the classroom or at the school level, (b) the demographic variables of the school, (c) the local economic variables related to the location of the school, (d) scoring of the LEAP, (e) accuracy of the data, (f) contract limitations of the amount of absences allotted to each teacher, and (g) presence or absence of LEAP remediation. All of these variables may alter student achievement and are potential threats to internal validity; none of these variables were investigated in this study.

The amount of parental involvement refers to the amount of involvement in learning support at home and the degree of active participation of parents in the classroom and/or school. Schools with greater parental involvement often have more resources available. The demographic variables of the school may refer to the racial, cultural, and economic context as well as the social environment of a school. Schools are

often mirrors of the communities they serve and often face social problems similar to those of the community at large. Thus, demographic variables may, at least in part, explain teacher absenteeism, student achievement, and the relationship between the two. The local economic variables related to the location of the school impact the tax base for the school. Schools located in affluent areas or in highly commercialized areas may have greater financial assets at their disposal as compared to schools without such a revenue base.

The way in which personnel files are managed may vary from school district to school district. Variations in data management are another potential threat to internal validity. The researcher also did not account for the way in which the LEAP was scored. In other words, this study did not examine the way in which individual student scores and school scores are calculated. In addition to personnel file management and the scoring of the LEAP, contract limitations may refer to the amount of absences allotted to each teacher. The limitation may have created a ceiling in the amount of absentee days allotted to each teacher and may also have altered a teacher's decision to be present or absent from work.

This study did not account for the presence or absence of LEAP remediation. LEAP remediation concerns any additional instruction given to a student in order to prepare that student for the LEAP. This study assumed that all students received the same amount of instructional minutes in the area of mathematics. Investigations of these variables would have required additional resources that were not available to the researcher. However, further investigations into these variables are suggested by the researcher.

Threats to External Validity

Threats to external validity are issues, limitations, challenges, and other variables in the research design that weaken the ability of a study to be generalized. Though the sample consists of nine school districts located in northern Louisiana, it is not representative of either Louisiana schools or American public education in general. Also, this study was limited to only nine school districts for data and sampling. Thus, the demographic characteristics of the teachers and students in this study may not be representative of teachers and students more generally. Due to this fact, the sampling and research context may not generalize to other school settings.

Recommendations for School Districts

Although this research did not demonstrate a significant relationship between teacher absences and student mathematical achievement, it is still recommended that the districts examined take steps to prevent absenteeism. This recommendation is based on the data concerning frequencies of absences and the financial outcomes as a result of teacher absenteeism. The presence and growth of an absentee culture has been identified and examined, but is largely ignored by educational leaders (Miller, 2008). Outside of public education, public policymakers have raised concerns over the absentee culture of schools (e.g., Roza, 2007; Miller, 2008). Roza (2007) advocated a plan requiring policymakers to make changes to the provisions in teacher contracts. It was estimated these changes could result in \$77 billion dollars of “frozen assets” (p. 8) being made available for materials and resources to improve student achievement. Two of these changes called for a reduction of paid professional, personal, and sick leave days. In addition, Miller (2008) suggested federal, state, and local government agencies include

teacher absences on school report cards and the provisions of Annual Yearly Progress (AYP), as mandated by NCLB. Such changes would cause state and local school officials to address the absenteeism problem by reducing the number of sick days provided in teacher contracts.

Ehrenberg, Ehrenberg, Rees, and Ehrenberg (1991) reported that teacher absentee rates were positively correlated with generous sick leave provisions found in teacher contracts. While reducing the number of sick leave days in teacher contracts may be a necessary change, such a policy may face teacher and union opposition. An alternative to changing contract sick leave provisions, would be implementing incentive and buy-back programs. Clotfelter, Ladd, Vigdor, and Urban (2009) reported a reduction in teacher absenteeism in schools with incentive programs. This study found that rates of teacher absences decreased when incentive programs, such as buy-back, provisions for unused sick leave, or bonuses for high attendance were implemented.

The researcher also suggests that the districts examined in this study investigate a district-wide employee wellness program to reduce teacher absenteeism. While this study did not provide the necessary support to link the need for this program directly to student achievement, an effective employee wellness program would most likely result in a healthier workforce which, in turn, might result in savings. Black (2009) found such programs to be successful in promoting employee wellness and improved work conditions.

Suggestions for Future Research

Replications of this study are needed in other settings in order to further define the relationship between teacher absenteeism and student achievement. This study examined

nine school districts located in northern Louisiana during the 2010-2011 school year. The majority of these school districts were located in rural areas. Future research could include data collected from different settings. In other words, another researcher might examine teacher absenteeism in different states, with different economic, social, and cultural environments. Such research might include an investigation of larger urban school districts.

This study was also limited in that it used data from only one school year. Other studies might take a more longitudinal perspective and collect data for several school years. Such investigations might illustrate longitudinal trends in teacher absenteeism and/or further explain reasons for teacher absenteeism. Examples of this might include investigations of schools with changing administrative leadership and/or curricular implementations. Furthermore, future research might also track the attendance records of a specific group of students and/or teachers for multiple years. This might better determine whether or not the type of students and/or teachers in the classroom environment impacts attendance rates.

Conclusions

The purpose of this study was to determine the relationship between teacher absenteeism and student achievement on the mathematics portion of the LEAP. Conclusions were based on results from the application of a one-way ANOVA and two multiple regressions. The data sets used in this study were constructed from nine school districts located in northern Louisiana. This study found that fourth-grade teacher absenteeism had no significant effects on the mathematics achievement of fourth-grade students. Student achievement was measured using a criterion-referenced assessment of

student LEAP mathematics performance. Teachers were assigned to four groups according to frequency of teacher absences (i.e., less than 5 days of absence versus 5-10 days of absence versus 11-14 days of absence versus more than 14 days of absence). A one-way ANOVA found no significant differences among any of the four teacher absence groups regarding student LEAP test scores in mathematics. This study contradicts the findings of research conducted over the past three decades (e.g., Ehrenberg et al., 1991; Miller et al., 2007; Woods & Montagno, 1997), which consistently found statistically negative significant effects of teacher absenteeism on student achievement.

In addition, this study also determined that teacher characteristics (i.e., age, years of teaching experience, level of education, and certification type) and organizational characteristics (i.e., school socioeconomic status and student mathematics achievement) were not predictors of teacher absenteeism. Conclusions were based on multiple regressions which found no significant relationship between these predictor variables and teacher absenteeism. In summary, a literature review of current research in the area of teacher absenteeism consistently found a statistically significant impact of teacher absenteeism on student academic performance. However, this study found no significant relationship between fourth-grade teacher absenteeism and student mathematics performance on the LEAP.

Notwithstanding the lack of a significant relationship between teacher absenteeism and student achievement, the descriptive analysis of the sample indicated a rate of teacher absenteeism that should cause concern. The school districts examined in this study may need to address this matter further. In particular, the districts might examine the direct financial cost of teacher absenteeism. Specifically, the following

aspects may need to be examined: (a) substitute and teacher pay, (b) incentive programs for teacher attendance, and (c) the absentee culture of the school or school district may need to be examined. In addition, recent evidence shows that health-based prevention programs may reduce the costs of teacher absenteeism (Black, 2009). It is also recommended that the districts make greater efforts to attract and retain teachers with the greatest positive impact on student achievement. While doing so may require substantial time, efforts, and resources for the districts, the revenues saved from interventions to reduce teacher absenteeism could be applied to materials and resources to improve student achievement.

APPENDIX A

HUMAN SUBJECT APPROVALS

A1: Human Subjects Consent Form

HUMAN SUBJECTS CONSENT FORM

TITLE OF PROJECT: The Relationship between Teacher Absenteeism and Fourth Grade Student Mathematical Achievement

PURPOSE OF STUDY/PROJECT: The purpose of this study is to investigate the relationship between teacher absenteeism and student achievement. Teacher absentee rates will be examined in three school districts located in north Louisiana to determine if a relationship exists between teacher absenteeism and student achievement as measured by the Louisiana Educational Assessment Program (LEAP) in mathematics for fourth grade students.

PROCEDURE: Data will consist of teacher personnel records regarding absenteeism and student achievement based on the Louisiana Educational Assessment Plan (LEAP). Upon permission from local school board official(s), teacher personnel data will be collected. Upon permission, student achievement data will be collected from the Louisiana Department of Education.

INSTRUMENTS: This will consist of the mathematics portion of the fourth grade Louisiana Educational Assessment Plan (LEAP). A short self-report instrument developed by the researchers will be used to collect attendance data for teachers.

RISKS/ALTERNATIVE TREATMENTS: The participant understands that Louisiana Tech is not able to offer financial compensation nor to absorb the costs of medical treatment should you be injured as a result of participating in this research.

The following disclosure applies to all participants using online survey tools: This server may collect information and your IP address indirectly and automatically via "cookies".

BENEFITS/COMPENSATION: None

I, _____, attest with my signature that I have read and understood the following description of the study, "An Examination of the Relationship between Teacher Absenteeism and Fourth Grade Student Mathematical Achievement", and its purposes and methods. I understand that my participation in this research is strictly voluntary and my participation or refusal to participate in this study will not affect my relationship with Louisiana Tech University or my grades in any way. Further, I understand that I may withdraw at any time or refuse to answer any questions without penalty. Upon completion of the study, I understand that the results will be freely available to me upon request. I understand that the results of my survey will be confidential, accessible only to the principal investigators, myself, or a legally appointed representative. I have not been requested to waive nor do I waive any of my rights related to participating in this study.

Signature of Participant or Guardian

Date

CONTACT INFORMATION: The principal experimenters listed below may be reached to answer questions about the research, subjects' rights, or related matters.

Chuck Brouillette (243-2753)

Dr. David Gullatt, Major Professor (257-3712)

Members of the Human Use Committee of Louisiana Tech University may also be contacted if a problem cannot be discussed with the experimenters:

Dr. Les Guice (257-3056)

Dr. Mary M. Livingston (257-2292 or 257-4315)

A2: Human Use Committee Approval Letter



LOUISIANA TECH UNIVERSITY

MEMORANDUM

OFFICE OF UNIVERSITY RESEARCH

TO: Mr. Chuck Brouillette and Dr. David Gullatt

FROM: Barbara Talbot, University Research

SUBJECT: HUMAN USE COMMITTEE REVIEW

DATE: October 3, 2011

In order to facilitate your project, an EXPEDITED REVIEW has been done for your proposed study entitled:

**“An Examination of the Relationship between Teacher Absenteeism
and Fourth Grade Student Mathematical Achievement”**

HUC 893

The proposed study's revised procedures were found to provide reasonable and adequate safeguards against possible risks involving human subjects. The information to be collected may be personal in nature or implication. Therefore, diligent care needs to be taken to protect the privacy of the participants and to assure that the data are kept confidential. Informed consent is a critical part of the research process. The subjects must be informed that their participation is voluntary. It is important that consent materials be presented in a language understandable to every participant. If you have participants in your study whose first language is not English, be sure that informed consent materials are adequately explained or translated. Since your reviewed project appears to do no damage to the participants, the Human Use Committee grants approval of the involvement of human subjects as outlined.

Projects should be renewed annually. *This approval was finalized on October 3, 2011 and this project will need to receive a continuation review by the IRB if the project, including data analysis, continues beyond October 3, 2012.* Any discrepancies in procedure or changes that have been made including approved changes should be noted in the review application. Projects involving NIH funds require annual education training to be documented. For more information regarding this, contact the Office of University Research.

You are requested to maintain written records of your procedures, data collected, and subjects involved. These records will need to be available upon request during the conduct of the study and retained by the university for three years after the conclusion of the study. If changes occur in recruiting of subjects, informed consent process or in your research protocol, or if unanticipated problems should arise it is the Researchers responsibility to notify the Office of Research or IRB in writing. The project should be discontinued until modifications can be reviewed and approved.

If you have any questions, please contact Dr. Mary Livingston at 257-4315.

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REFERENCES

- Absence (n. d.) In *Oxford English dictionary*. Retrieved June 17, 2011, from <http://oed.com>
- Alcazar, L., Rogers, F. H., Chaudhury, N., Hammer, J., Kremer, M., & Muralidharan, K. (2006). Why are teachers absent? Probing service delivery in Peruvian primary schools. *International Journal of Educational Research*, 45(3), 117-13.
- Allen, S. (1981). An empirical model of work attendance. *Review of Economics and Statistics*, 63, 77-87.
- Angrist, J. D., & Guryan, J. (2008). Does teacher testing raise teacher quality? Evidence from state certification requirements. *Economics of Education Review*, 27(5), 483-503.
- Bausell, C. (2007). State of states. *Education Week*, 26, 305-331.
- Berry, B., & Hirsch, E. (2005, October 27). *Recruiting and retaining teachers for hard-to-staff schools*. Washington, DC: National Governors Association.
- Black, S. (2009). The absentee teacher. *The American School Board Journal*, 196(9), 48-49.
- Bradley, S., Green, C., & Leeves, G. (2007). Worker absences and shrinking: Evidence from matched teacher-school data. *Labour Economics*, 14, 319-334.

- Brooke, P. P. (1986). Beyond the Steers and Rhodes model of employee attendance. *The Academy of Management Review*, 11(2), 345-361.
- Bruno, J. E. (2002). The geographic distribution of teacher absenteeism in large urban school district settings: Implications for school reform efforts aimed at promoting equity and excellence in education. *Educational Policy Analysis Archives*, 10(32), 1-21.
- Bryne, J. J. (1998). Teachers as hunger artist: Burnout: Its causes, effects, and remedies. *Contemporary Education*, 69(2), 86-91.
- Bourg, M. G., & Riding, R. J. (1991). Occupational stress and satisfaction I teaching. *British Educational Research Journal*, 17(3), 263-282.
- Buddin, R., & Zamarro, G. (2009). Teacher qualifications and student achievement in urban elementary schools. *Journal of Urban Economics*, 66(2), 103-115.
- Bui, K. T. (2005). Middle school variables that predict college attendance for first-generation students. *Education*, 126(2), 203-220.
- Chaudhury, N., Hammer, J., Kremer, M., Muralidharan, K., & Rogers, F. H. (2006). Missing in action: Teacher and health worker absence in developing countries. *Journal of Economic Perspective*, 20(1), 91-134.
- Chiang, H. (2009). How accountability pressure on failing schools affects student achievement. *Journal of Public Economics*, 93(10), 1045-1057.
- Clotfelter, C. T., Ladd, H. F., Vigdor, J. L., & Urban, I. (2009). *Are teacher absences worth worrying about in the U.S.?* Washington, DC, National Center for Analysis of Longitudinal Data in Education Research.

- Croninger, R. G., King, 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.
- Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Educational Policy Analysis Archives, 8*(1), 1-44. Retrieved June 14, 2011, from <http://epaa.asu.edu/epaa/v8n1>
- Das, J., Dercon, S., Habyarimana, J., & Krisham, P. (2007). Teacher shocks and student learning: Evidence in Zambia. *Journal of Human Resources, 42*(4), 820-862.
- Day, C., Elliot, B., & Kington, A. (2005). Reform, standards, and teacher identity: Challenges of sustaining commitment. *Teaching and Teacher Education, 21*(5), 563-577.
- Ehrenberg, R. G., Ehrenberg, R. A., Ress, D. I., & Ehrenberg, E. L. (1991). School district level policies, teacher absenteeism, and student achievement. *The Journal of Human Resources, 26*, 72-105. Retrieved June 14, 2011, from <http://www.jstor.org>
- Elementary and Secondary Act, Pub. L. No. 90-10. (April 11, 1965). Retrieved June 17, 2011, from <http://www2.ed.gov/policy/elsec/leg/esea02/index.html>
- Elliott, P. G. (1982). Update on teacher absenteeism. *The Practitioner, 8*(2), 1-12.
- Englander-Golden, P., & Barton, G. (1983). Sex differences in absence from work: A reinterpretation. *Psychology of Women Quarterly, 8*(2), 185-188.
- Erickson, R. J., Nichols, L., & Ritter, C. (2000). Family influences on absenteeism: Testing an expanded process model. *Journal of Vocational Behavior, 57*(2), 246-272.

- Foxall, G. R. (2007). *Explaining consumer choice*. New York: Macmillan.
- Gaziel, H. H. (2004). Predictors of absenteeism among primary school teachers. *Social Psychology of Education, 7*, 421-434.
- Gladwell, M. (2000). *The tipping point: How little things can make a big difference*. Boston, MA: Back Bay Books.
- Goals 2000: Educate America Act, Pub. L. No. 103-227. (March 31, 1994). Retrieved June 17, 2011, <http://www2.ed.gov/G2K/index.html>
- Goldhaber, D. D., & Brewer, D. J. (2000). Does teacher certification matter? High school teacher certification status and student achievement. *Educational Evaluation and Policy Analysis, 22*(2), 129-145.
- Guin, K. (2004). Chronic teacher turnovers in urban elementary schools. *Educational Policy Analysis Archives, 12*(42), 142-158.
- Haberman, M. (2005). Teacher burnout in black and white. *New Educator, 1*, 153-175.
- Hill, H. C., Rowan, B., & Ball, D. L. (2005). Effects of teachers' mathematical knowledge for teaching on student achievement. *American Educational Research Journal, 42*(2), 371-406.
- Imants, J., & Zoelen, A. V. (1995). Teachers' sickness absence in primary schools, school climate and teachers' sense of efficacy. *School Organization, 15*(1), 77-86.
- Improving America's Schools Act, Pub. L. No. 103-382. (October 20, 1994). Retrieved June 17, 2011, <http://lamar.colostate.edu/~hillger/laws/schools-94.html>

- Jacobson, S. L., Gibson, P. O., Ramming, T. (1993). *Toward a reconception of absence in the school workplace: Teacher absenteeism as invention and social exchange*. Paper presented at the annual meeting of the American Education Finance Association in Albuquerque, NM. (ERIC Document Reproduction Service No. ED 357502). Retrieved June 17, 2011, from ERIC database.
- Jacobson, S. L. (1989). Pay incentive and teacher absence: One district's experience. *Urban Education, 23*(4), 377-391.
- Jonasson, C. (2011). The dynamics of absence behavior: Interrelations between absence from class and absence in class. *Educational Research, 53*(1), 17-32.
- 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.
- Keller, B. (2009). Studies link teacher absences to lower student scores. *Education Week, 27*(28), 9.
- Louisiana Department of Education (2011). *Interactive guide: Grades 4, 8, 10 and 11 criterion-referenced tests*. Baton Rouge, LA: State Department of Education. Retrieved July 21, 2011, from <http://www.doe.state.la.us/testing>
- Leave (n. d.) In *Oxford English dictionary*. Retrieved June 19, 2011, from <http://oed.com>
- Lewis, J. (1981). Do you encourage teacher absenteeism? *American School Board Journal, 168*(11), 29-30.
- Manlove, D. C., & Elliot, P. (1979). Absent teachers: Another handicap for students. *Practitioner: NASSP, 5*(4), 1-13. Retrieved June 17, 2011, from ERIC database.

- Marley, D. (2009). Sick leave due to stress doubles. *The Times Educational Supplement*, 3. Retrieved August 10, 2011, from EBSCOhost.
- Martocchio, J. J. (1989). Age related difference in employee absenteeism: A meta-analysis. *Psychology and Aging*, 4(4), 409-414.
- Marzano, R. J., Waters, T., & McNulty, B. A. (2005). *School leadership that works: From research to results*. Portland, OR: Association for Supervision and Curriculum Development.
- McMillan, J. H. (2004). *Educational research: Fundamentals for the consumer* (4th ed.). Boston: Pearson Education.
- Miller, R. T. (2008). *Tales of teacher absence: New research yields patterns that speak to policymakers*. Washington, DC, Center for American Progress. Retrieved June 20, 2011, from http://www.americanprogress.org/issues/2008/10/teacher_absence.html
- Miller, R. T., Murnane, R. J., & Willett, J. B. (2007). *Do teacher absences impact student achievement? Longitude evidence from one urban school district*. Cambridge, MA, National Bureau of Economic Research. Retrieved June 19, 2011, from <http://www.nber.org/papers/w13356>
- National Commission on Excellence in Education. (1983). *A nation at risk*. Washington, DC: Government Printing Office. Retrieved June 17, 2011, <http://www2.ed.gov/pubs/NatAtRisk/index.html>
- NICHD Early Child Care Research Network. (2001). Nonmaternal care and family factors in early development: An overview of the NICHD Study of Early Child Care. *Applied Developmental Psychology*, 22, 457-492.

- Nicholson, N., Pauly, M. V., Polsky, D., Sharda, C., Szrek, H., & Berger, M. L. (2006). Measuring the effects of work loss on productivity with team production. *Health Economics, 15*, 111-123.
- No Child Left Behind Act of 2001, Pub. L. No. 107-110. (January 8, 2002). Retrieved June 17, 2011, from <http://www.nochildleftbehind.com/nclb-law-contents.html>
- Norton, M. S. (1998). Teacher absenteeism: A growing dilemma in education. *Contemporary Education, 69*(2), 95.
- Okpala, C. O., Smith, F., Jones, E., & Ellis, R. (2000). A clear link between school and teacher characteristics, student demographics, and student achievement. *Education, 120*(3), 487-494.
- Pitkoff, E. (2004). Teacher absenteeism: What administrators can do? *National Association of Secondary School Principals Bulletin, 77*(2), 39-45.
- Rhodes, S. R., & Steers, R. M. (1978). *Managing employee absenteeism*. Reading, MA: Addison-Wesley Publishing Company.
- Rosenblatt, Z., & Shirom, A. (2005). Predicting teacher absenteeism by personal background factors. *Journal of Educational Administration, 42*(3), 361-384.
- Roza, M. (2007, January 8). Frozen assets: Rethinking teacher contracts could free billions for school reform. Retrieved June 20, 2011, from the Education Sector website: http://www.educationsector.org/usr_doc/FrozenAssets.pdf
- Rudasill, K. M., Reio, T. G., Stipanovic, N., & Taylor, J. E. (2010). A longitudinal study of student-teacher relationship quality, difficult temperament, and risky behavior from childhood to early adolescence. *Journal of School Psychology, 48*(5), 389-412.

- Say, E., & Miller, L. (1982). The second mile plan: Incentive pay for Houston teachers. *Phi Delta Kappan*, 64(4), 270-271.
- Scott, K. D., & McClellan, E. (1990). Gender differences in absenteeism. *Public Personnel Management*, 19(2), 229.
- Thorkildsen, T. A. (2005). *Fundamentals of measurement in applied research*. Boston, MA: Pearson Education.
- Tye, B., & O'Brien, L. (2002). Why are experienced teachers leaving the profession? *Phi Delta Kappan*, 84(1), 24-32.
- United States Department of Education. (2010). Race to the top. Retrieved June 14, 2011, from www2.ed.gov/programs/racetothetop/final-priorities.pdf
- Van Dick, R., & Wagner, U. (2001). Stress and strain in teaching: A structural equation approach. *British Journal of Educational Psychology*, 71, 243-259.
- Vegas, E. (2007). Teacher labor markets in developing countries. *Future of Children*, 17(1), 219-232. Retrieved August 8, 2011, from EBSCOhost.
- Wayne, A. J., & Youngs, P. (2003). Teacher characteristics and student achievement gains: A review. *Review of Educational Research*, 73(1), 89-122. Retrieved June 15, 2011, from ERIC database.
- Wilkins, J. (2008). School characteristics that influence student attendance: Experiences of students in school avoidance program. *High School Journal*, 91(3), 12-24.
- Winkler, D. R. (1980). The effects of sick-leave policy on teacher absenteeism. *Industrial and Labor Relations Review*, 33(2), 232-240.
- Woods, R. C., & Montagno, R. V. (1997). Determining the negative effect of teacher attendance on student achievement. *Education*, 118, 307.