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Teacher Absenteeism: An Examination of Patterns and Predictors

Kristy Pitts
Virginia Commonwealth University

Teacher Absenteeism: An Examination of Patterns and Predictors

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

by
Kristy L. Pitts

B.A. Mary Washington College, 1980
M.Ed. George Mason University, 2001

Director: Cheryl C. Magill, Ph.D.
Assistant Professor, School of Education

Virginia Commonwealth University
Richmond, Virginia
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Abstract

TEACHER ABSENTEEISM: AN EXAMINATION OF PATTERNS AND PREDICTORS

By Kristy Lee Pitts, Ph.D.

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University, 2010

Major Director: Dr. Cheryl C. Magill, Ph.D., Assistant Professor, School of Education

Since the passage of the No Child Left Behind Act (NCLB) in 2001, public school systems have been engaged in a system of educational reform fueled by a level of accountability that includes not only the performance of the students, but also the performance of the teachers and the administrators. Recent studies have found that student achievement has been negatively impacted by teacher absenteeism; however, there have been scant studies conducted in the United States regarding teacher absence behaviors.

The purpose of this study was to examine the teacher absence data of a school division in central Virginia in order to determine teacher absence behaviors. This study focused on two specific research questions: What is the frequency of teacher absence? What are the predictors of teacher absence?

The design of this quantitative study was secondary data analysis. The data set included absence data for 1,198 classroom teachers who were continuously employed for the 2005-06, 2006-07, and 2007-08 school years. Data analysis included running

descriptive statistics in order to determine the frequency of teacher absence, and by performing bivariate and multivariate analyses to determine the predictors of teacher absence. The dependent variable was the total number of absences taken, and the independent variables included demographic information, days of absence, teaching assignments, and types of leave.

Analysis of the data found that absences occurred most frequently on Fridays and that sick leave accounted for most of the absences. There is evidence that teachers use leave to extend weekend or holiday leisure time. The use of leave under the Family Medical Leave Act rose from .1 percent to 1 percent of the total leave days over the course of the study. The total number of absences increased by almost 4 percent after the introduction of an electronic absence reporting system.

Women are more likely to be absent than are men. Teachers at the specialty schools had the highest rates of absenteeism, and high school teachers had the lowest absence rates. As age advanced, teachers were less likely to be absent, but as years of experience advanced, teachers were more likely to be absent.

Chapter I: Introduction

With the passage of the No Child Left Behind Act (NCLB) in 2001, public school systems have been engaged in a system of educational reform designed to change American school culture and to improve student achievement. That reform is fueled by a level of accountability that includes not only the performance of the students, but also the performance of the teachers and the administrators. School divisions must meet stricter qualifications for the quality of their teaching staff and for their performance. Some of the greatest challenges facing those school divisions include hiring and retaining qualified teachers, maintaining excellent curricula, providing the necessary resources, providing continual professional development of the staff, and procuring the necessary financial resources to meet these challenges. As school leaders search for effective methods of meeting the rigorous demands of NCLB, it is imperative that they continually examine the facets of their organizations which impact the performance of those accountability measures.

One such facet is the subject of teacher absenteeism. Why is teacher absenteeism important in this age of accountability? Teacher absenteeism has the potential to be very costly, not only in terms of finances, but also in terms of student achievement.

First, the financial cost of teacher absenteeism is significant. According to Miller (2008), providing substitute teachers and the associated administrative costs amount to $4 billion annually. This amount represents approximately one percent of federal, state, and

local spending on K-12 public education (Miller, 2008). The rate of absenteeism for American teachers averages about five percent, or about nine days per 180-day school year (Ehrenberg, Ehrenberg, Rees, & Ehrenberg, 1991; Clotfelter, Ladd, & Vigdor, 2007). While those rates may be lower than teachers in other countries, they are higher than the rate of absenteeism for the rest of the American workforce, which averages about three percent (Clotfelter et al., 2007).

Second, teacher absence often means that students have lost opportunities to learn. Studies have shown that teacher absence translates to lower student achievement (Miller, Murnane & Willett, 2007; Clotfelter et al., 2007). Further, substitute teachers are often less qualified than regular teachers. Thirty-seven states do not require a bachelor's degree for some substitute teachers, and only North Dakota requires substitutes to have the same credentials as regular teachers (Miller, 2008). The qualifications of substitutes typically mean that they have less instructional knowledge than the regular teachers, and regular teachers typically leave plans which require much instructional burden for the substitute. Further, teacher absences disrupt the routines and relationships which support the learning process (Miller, 2008).

Third, student achievement gaps in the nation's low-income schools exist partially because of teacher absence. Teachers at schools with fewer than 24 percent of students from low-income families are absent at a rate of five percent or less, while teachers at schools serving higher percentages of students from low-income families are absent 5.5 percent of the time, on average (Miller, 2008). A study of schools in North Carolina

found that teachers in schools with high poverty rates appear to be absent one day more per year than teachers in low-poverty schools (Clotfelter et al., 2007).

School division administrators may consult research in order to understand the causes of teacher absence and its effect on student achievement. While research has clearly demonstrated that teacher absence has a negative effect on student achievement (Ehrenberg et al., 1991; Clotfelter et al., 2007; Miller et al., 2007), the research has not been as demonstrative about the causes or predictors of teacher absence. Conflicting evidence exists about the effects of characteristics such as gender, age, experience, time of week and school culture. For instance, some studies have shown that female teachers are absent more frequently than male teachers (Scott, 1990; Clotfelter et al., 2007), while others have found that men are absent more frequently than women (Chaudhury, Hammer, Kremer, Muralidharan, & Rogers, 2006) or that there was no association between absenteeism and gender (Rosenblatt & Shirom, 2005). Teachers' use of discretionary days on particular days of the week also presented conflicting results. While some researchers found that teachers were more likely to use discretionary days on days associated with weekends in order to extend leisure time (Miller et al., 2007; Alcazar, Rogers, Chaudhury, Hammer, Kremer, & Muralidharan; Winkler, 1980), Unicomb and others (as cited in Norton, 1998) found that teachers were absent more frequently on Wednesdays. The results of various studies appear to be contextual in nature, and therefore, are conclusive for the environs in which they were conducted. As a result, division administrators must consider combining a review of research on the

subject of teacher absence with a study of the teacher absence behaviors present in their localities.

The purpose of this study, therefore, is to examine the teacher absence data of a school division in central Virginia in order to determine teacher absence behaviors. This study will focus on two specific research questions: What is the frequency of teacher absence? What are the predictors of teacher absence?

The setting of the study is one of the fifteen largest school divisions in the state of Virginia. The school division is located in a county with a population of about 119,000 residents. The school system has 33 schools which serve the educational needs of more than 24,000 students. Twenty-six percent of those students are classified as economically disadvantaged, and 13 of the schools are designated as Title I schools.

The school division employed more than 1,700 teachers for the 2008-09 school year. Teacher absence data will be examined for the 2005-06, 2006-07, and 2007-08 school years, which provides a three-year longitudinal survey of absence behaviors. That examination will include only 10 and 11-month contract teachers who were employed continuously during that three year period, which will result in a sample size of approximately 1,200 teachers.

In order to answer the research questions, it is necessary to examine the rates of teacher absence in relation to various characteristics of its occurrence. For instance, on which days of the week do absences peak? Are higher absences associated with days immediately preceding or following a holiday? Are absences greater on teacher workdays or teacher professional development days? Is there a prevalence in the type of

leave taken? Is there an increase in the amount of leave taken under the Family and Medical Leave Act? What are the rates of leave used from the sick leave bank? Does the use of an electronic absence reporting system have an effect on the number of days that teachers will be absent?

Specific teacher characteristics might also shed light on teacher absence behaviors. Does gender, age, or race play a part in teacher absenteeism? Does the level of education of a teacher or the number of years of experience have an impact on the number of days that he or she will take off during the course of a school year? Does the specific teaching assignment or the school level have an effect on absence behavior? These characteristics must be examined in conjunction with the overall frequency of absence in order to paint a clear picture of the absence behaviors of teachers.

This research is important for several reasons. First, since teacher absence leads to lower student achievement (Miller et al., 2007; Clotfelter et al., 2007), it is important to find ways to lower absence rates or to mitigate the effects of absence. Second, research on the predictors or causes of teacher absence in the United States has been scant and mixed. Current research on teacher absence includes studies conducted in both industrialized and developing nations. It is difficult to arrive at reasonable conclusions about teacher absence behavior based on studies conducted in foreign cultures with differing policies and accountability measures. Further research might bolster previous findings or suggest new areas of research based on the culture of American schools. Finally, it is important to examine the contextual nature of absence culture as it applies in specific localities. If school administrators are expected to mitigate the effects of teacher

absence and to implement the accountability measures of NCLB, it is important to recognize the predictors of absence behavior in a contextual way.

Teacher absenteeism has the potential to rob school divisions of precious resources that may be better used in other instructional areas. It also has the potential to rob students of valuable instructional time with highly qualified teachers. The demands for increased student achievement for all students require a careful examination of the causes, predictors, and effects of teacher absenteeism.

Definitions

In order to provide clarity for the review of this research, it is important to define terms that will be used in the study. First, the term *teacher* refers to any employee of the school division who has been awarded a 10- or 11-month teacher contract and who is a classroom teacher who would require a substitute when absent. Second, the term *absence* refers to any period of time which necessitates a teacher's use of some form of leave from work. That leave would include unplanned leave, such as sick leave, and planned leave, such as personal leave, professional development leave, and, in some instances, leave under the Family Medical Leave Act (FMLA). The terms *absence* and *absenteeism* will be used synonymously to indicate use of leave from work. Third, absence that is taken under the *Family Medical Leave Act* is defined as up to twelve working weeks of unpaid leave for eligible employees for the birth of a child, for the placement of a son or a daughter for adoption or foster care, for the care of an immediate family member who has a serious health condition, and for taking medical leave when the employee is unable to work because of a serious health condition. Further, immediate

family members or next of kin may take up to 26 working weeks of unpaid leave to care for a member of the armed services who is undergoing medical treatment, recuperation or therapy for a serious injury or illness (United States Department of Labor).

Chapter II: Literature Review

Overview

Teacher absenteeism is a constant concern in most American school divisions. The absences negatively impact not only school budget processes, but also student learning. In an era of accountability codified by the No Child Left Behind Act, school officials can ill afford to maintain systems in which students miss valuable instructional time under the auspices of substitute teachers who may not be highly qualified.

Research suggests that the rate of absenteeism for American teachers averages about five percent, or about 9 days per 180-day school year (Ehrenberg et al., 1991; Clotfelter et al., 2007). While those rates may be lower than teachers in other countries, they are higher than the rate of absenteeism for the rest of the American workforce, which averages almost three percent (Clotfelter et al., 2007). Because the presence of an effective, highly qualified teacher is so important to gains in student learning, it is important to study both the causes and the effects of teacher absenteeism. According to Ehrenberg and others (1991), the lack of research on the causes of teacher absenteeism is unfortunate because of the effects that those absences may have on the classroom.

Several researchers have attempted to draw conclusions about teacher absence behavior based on external factors rather than on cultural or organizational factors. These factors often include years of experience, gender, and age. The prevailing theory often appears to focus on the presumption that the amount of absence time consumed by teachers is dependent on the stage at which they are in their educational career.

The Duke University study of teachers in North Carolina examined absenteeism rates using the variables of gender, age and years of experience (Clotfelter et al., 2007). The data on gender indicated that female teachers, like female workers in the larger workforce, were absent more often than men at a varying rate based on age. The data on experience indicated that novice teachers took an average of 1.8 more days during their second year of teaching than their first, 2.8 more days in their third and fourth years, and more than 3 more days after four years of experience (Clotfelter et al., 2007).

Scott's (1990) study of gender differences in absenteeism for secondary teachers found that while women did not have significantly higher occurrences of absenteeism than men, the duration of those occurrences accounted for a significant difference in the mean number of days taken by women (6.92) and by men (4.83). Further, results indicated that the most significant difference in occurrence of absence for men (3.04) and women (3.99) occurred between the ages of 21 and 39, or the childbearing years (Scott, 1990). In his review of absence data from the Current Population Survey in May, 1985, Klein supports the concept that the absence rate of women increases in their prime years while the rate falls for men at the same age. Women who had children under six, or women who maintained families alone had relatively high absence rates, while men who had children garnered relatively low absence rates. However, past the age of 55, absence rates for men and women were not significantly different (Klein, 1986).

Recent studies at Duke University and Harvard University have shown that teacher absences significantly reduce student achievement (Clotfelter, et al., 2007; Miller, Murnane & Willett, 2007). However, researchers' findings have lacked consistency in

the causes or the predictors of teacher absenteeism. The research questions for this study focus on two areas. What is the frequency of teacher absence? What are the predictors of teacher absence?

Methods for literature search

The initial search for data about teacher absenteeism began with information presented in educational journals. Studies conducted at Duke and Harvard Universities provided the original impetus for study in this area. In a June, 2008, article in the electronic version of *Education Week*, the work of these researchers was highlighted. Those articles had not yet been published, but the working papers could be located at the National Bureau of Economic Research. While those studies focused largely on the use of leave and its effect on student achievement, they brought forth questions about the causes of teacher absenteeism.

In order to find additional studies, a search of several educational databases was conducted, including ABI/INFORM Complete, Academic Search Complete, Education Research Complete, ERIC Index to Education Materials, and JSTOR. Using the terms *teacher absence* and *student achievement* additional studies were found. Inspection of those studies, however, garnered similar information about the impact of teacher absenteeism on student achievement; typically, there was a negative impact on student learning. There were not, however, sufficient discussions of the causes of teacher absenteeism.

The search for additional studies took a different path at that point. First, continued searches of educational databases were limited to the terms associated with

teacher absence or *employee absence*. Second, upon further investigation of those studies, sources mentioned in their literature reviews produced additional studies. While some of those studies focused specifically on the characteristics of teacher absenteeism, others focused on subjects such as organizational culture and the resulting employee absence, stress-related absence, and absence-control policies. Further, these studies included work done in other countries, which provided an avenue for comparison of absence culture and leave-taking habits. Inevitably, some of the studies proved more useful than others. Studies that were retained for the literature review were those that illustrated the behaviors associated with teacher absence culture, while those that were rejected focused more generally on the absence behaviors of the larger work force.

Review of Literature

In order to synthesize the literature, the findings have been organized into three conceptual themes: teacher absenteeism and student outcomes, predictors of teacher absenteeism, and conflicting evidence about teacher absence behavior. Student outcomes will be examined from the standpoint of both student absenteeism and student achievement. The predictors of teacher absenteeism will be examined according to organizational structure, organizational policies, absence culture, and the demographic nature of absence behaviors. Conflicting evidence about teacher absence behavior will include discussions of gender, age, typical occurrences of absence, and incentive programs.

Teacher Absenteeism and Student Outcomes

Research has shown that teacher absenteeism can impact student behaviors in a number of ways. Teacher absenteeism can have an effect on student absenteeism, which ultimately means diminished capacity to learn due to limitations on time in the classroom. Further, a teacher's absence from the classroom can have a negative impact on student achievement. In addition to diminished learning opportunities for students, that negative impact may have deleterious consequences for schools and school divisions according to the accountability measures in place in the No Child Left Behind Act.

Student absenteeism

In order to garner information about the determinants and effects of teacher absenteeism, Ehrenberg and others (1991) sent surveys to the superintendents of the 722 public school districts in New York State, excluding New York City, requesting information on a number of variables including teacher usage of leave days during the 1986-87 school year. A total of 419 districts, nearly 60 percent, of the school districts responded. Additional data used in the analyses consisted of demographic data about both teachers and students from the New York State Education Department (NYE) and the U. S. Bureau of Census. Data on student absenteeism were obtained from the *NYE Annual Education Summary: 1986-87*, and student achievement results were garnered from the *NYE 1987 Comprehensive Assessment Report* (Ehrenberg et al., 1991).

Ehrenberg and others (1991) suggest that student absenteeism may be categorized in three different ways. First, students may suffer serious illness which prevents them from attending school. Second, students may have minor illnesses which may or may not

necessitate absence from school. Third, some are not ill and are simply truant from school. Unlike the first type of absence, the second and third types involve some measure of student choice (Ehrenberg et al., 1991).

The findings of this study indicate that higher teacher absenteeism is associated with higher student absenteeism. Also, larger districts and districts with a higher proportion of teachers aged 55 or older had higher student absentee rates. Two hypotheses were formulated for these results. First, the behavioral hypothesis suggests that increased teacher absence from the classroom may reduce students' motivation to attend school, which, in turn, increases student absentee rates. Second, the contagion hypothesis suggests that incidence of illness affecting large numbers of both students and teachers might account for larger numbers of absences for each. Ehrenberg (1991) contends, however, that the behavioral hypothesis has greater support in the study.

Student achievement

According to Ehrenberg's (1991) study, student absenteeism has a much greater effect on achievement than does teacher absenteeism. For every three additional days on average that students are absent, performance on state standardized tests falls by about 1.0 to 2.5 percentage points. Conversely, they found no evidence that teacher absenteeism had any effect on students' performance on the state's preliminary competency test (Ehrenberg et al., 1991)

More recent studies, however, have found that teacher absenteeism does have a negative impact on student achievement. In a recent study of a large, urban school district in the northern part of the United States, Miller et al. (2007) studied the effects of

teacher absenteeism on the performance of fourth grade students on the Stanford Achievement Tests (Series-9) of mathematics. The district has nearly 80 elementary schools with approximately 200 teachers and 4,000 students at each elementary grade level. The researchers collected data, including demographic characteristics, home zip code, absences, experience, licensure and employment status, on 2,594 teachers who were employed at least one of the school years between 2002-03 and 2004-05 (Miller et al., 2007).

While this data set was used to document important patterns of absence, the researchers chose to focus their study of the impact of teacher absences on student achievement using a subset of data from the fourth grade only (Miller et al., 2007). In order to measure that impact on achievement, the researchers used a sample of 8,631 students who were in the fourth grade in one or more of the three academic years studied. Student achievement scores were obtained from the *Stanford Achievement Tests* (Series-9) of mathematics and reading that students took in the third grade, and from mathematics and English language arts examinations that are a part of state-sponsored assessments administered to fourth-graders in early May. The third-grade scores were used as covariates in regression analyses. The electronic report card system used by the school division enabled the researchers to match students to individual classroom teachers (Miller et al., 2007).

Miller, Murnane and Willet (2007) found that 10 additional days of teacher absence reduced student achievement in fourth grade mathematics by 3.3 percent of a standard deviation, which they contend is significant enough to be of policy relevance.

They posit three reasons for the significance of the impact of their findings. First, teacher absences directly affect the achievement of as many as 25 students. Second, small differences in the performance of small numbers of students on the state's mathematics exam can result in the school not meeting the "Adequate Yearly Progress" mandate of No Child Left Behind. And third, by reducing the efficacy of regularly scheduled team planning and professional development sessions, teacher absenteeism may have in indirect impact on the students of a teacher's colleagues (Miller et al., 2007).

Duke University researchers conducted a study of the effects of teacher absenteeism on student achievement in the state of North Carolina (Clotfelter et al., 2007). Teacher absence data were collected for the school years 1994-95 through 2003-04, which yielded a sample of more than 492,000 observations. Researchers were able to match North Carolina students in grades 4 and 5 to the classroom teachers who taught them math and English. Using state achievement test scores, that matching enabled a comparison of the academic achievement of students whose teachers differed in the number of days of leave taken (Clotfelter et al., 2007).

Like the Harvard study, the Duke researchers found that having a teacher who took ten additional sick-leave days would mean a reduction in the student's score on the state math test by 2.3 percent of a standard deviation. For reading, however, the same teacher absence circumstances lowered student achievement about one percent of a standard deviation (Clotfelter et. al, 2007). And, like the Harvard researchers, the Duke researchers agreed that the failure of small numbers of students to pass state examinations

in reading and math achievement can prevent schools from achieving the "Adequate Yearly Progress" mandate of the No Child Left Behind Act.

In addition to their study of specific reading and mathematics achievement, Clotfelter et al. (2007) focused on two additional variants of the achievement model. First, they considered the effect of the time of year in which teacher absences typically occurred. They divided teacher absences into two separate time spans—July to December and January to June. They found that teacher absences in the second semester produced effects about three times as large as the first semester in math achievement. Second, they considered the effect of the use of different types of substitutes. While the effects were smaller, they found that absences covered by uncertified substitutes were associated with larger declines in achievement than those covered by certified substitutes (Clotfelter et al., 2007).

School systems in Iowa and Minnesota participated in a School Improvement Model (SIM) consortium which used both formative and summative performance evaluation criteria in order to improve teacher performance and bolster student achievement (Manatt, 1987). The goal of the consortium was to demonstrate the effect of an articulated system of administrator and teacher performance appraisal on pupil achievement in mathematics and reading at the elementary and secondary school levels as measured by both norm- and criterion-referenced tests. One of the lessons learned from their focus on performance appraisal, supervision and staff development was that teacher and student attendance has a significant impact on student achievement, particularly in

math but less so in reading. Student absences of five to seven days had a negative impact, while teacher absences of seven to ten days were significant (Manatt, 1987).

In Zambia, researchers sought to understand the effect of teacher absences on student achievement in a country where the ravages of the AIDS epidemic often meant increased absenteeism for both students and teachers (Das, Dercon, Habyarimana, & Krishnan, 2007). In 2002, the researchers surveyed 182 schools in four provinces of the country. Questionnaires were administered to teachers and head-teachers in order to gather data about their demographics, personal characteristics, absenteeism, outside options and classroom conditions. Further, they obtained information about each school's financing and receipts of educational inputs during the academic year. Data were collected on the identity of each student's teacher for both the 2000-2001 and 2001-2002 school years. The questionnaires were administered to all of the matched teachers, resulting in a sample of 541 teachers in 182 schools. Student achievement results were collected by administering math and English achievement tests to a maximum of 20 students who were randomly selected in Grade 5 at each school in 2001. The same tests were administered to the same students one year later (Das et al., 2007).

By focusing on those students who remained with the same teacher in two consecutive years, Das et al. (2007) found that a 5 percent increase in the teacher's absence rate resulted in an approximately 4 percent decline in achievement in English and mathematics across the two years. Researchers found that the reduction in learning was reflective of the joint effect of the teacher's time away from the class, decreased

teaching quality in the classroom, and less lesson preparation when at home (Das et al., 2007).

Woods and Montagno (1997) conducted a study on the effects of teacher absenteeism on the achievement of students in Elkhart, Indiana, and Gillette, Wyoming. Their sample included 817 students who successfully moved from the third to the fourth grade, and 45 third grade teachers. Students were given the Iowa Test of Basic Skills in the fall of both their third and fourth grade years in order to determine the level of their achievement for their third grade year. The results indicated that students whose teachers were absent four days or fewer netted a grade equivalency change of 1.0. Students whose teachers were absent between 5 and 11 days netted a grade equivalency change of .69. Students whose teachers were absent between 11.5 and 29 days netted a grade equivalency change of .79. The results supported their hypothesis that teacher attendance has an impact on student learning (Woods & Montagno, 1997).

Predictors of Teacher Absenteeism

Organizational Characteristics

For the purposes of this study, the researcher defines organizational structure as the conditions and structures under which the school operates. These may include characteristics of the students served such as enrollment numbers, level of education, socioeconomic status, or attendance rates. They may also include characteristics of the staff such as staff size or staff leadership. In addition, the infrastructure of the facility or the school division may be considered a portion of the organizational structure. Each of

these conditions may have an impact on the amount of leave that teachers consume each school year.

Increased enrollment figures can have an impact on teacher absenteeism. The Harvard study found that discretionary absence, or absence that teachers choose to take in order to extend leisure time, increases as enrollment increases (Miller et al., 2007). Rosenblatt's and Shirom's (2006) study of Israeli public schools also found that school size affected teacher absenteeism. Using data made available by the Israel Ministry of Education, researchers studied the absence behavior of teachers in public elementary and middle schools in the 2001-02 school year, a sample of 52,056 teachers affiliated to 2,145 schools. Absence frequency rather than duration was selected for the study because the measure would include voluntary absences other than sickness. School size had a significant effect on absenteeism (coefficient 0.038, $p<.000$). A comparison of two teachers who shared the same characteristics except for school size demonstrated that a teacher in a school with 100 more students would on average be absent 1.039 times more than the teacher in a smaller school. While teachers in larger schools were found to be absent more frequently than teachers in smaller schools, there was no similar effect for school administrators (Rosenblatt & Shirom, 2006).

The grade configuration of the school also appears to affect teacher absenteeism. Miller and others (2007) found that teachers in schools with K-8 grade configurations had lower rates of discretionary absences than teachers in schools with K-5 grade configurations. In North Carolina, teacher absence rates were higher in elementary schools than they were in middle schools, while the rates in middle schools were higher

than they were in high schools (Clotfelter et al., 2007). Teachers in Israeli public schools demonstrated similar trends in that teachers were more absent in elementary schools than in middle schools (Rosenblatt & Shirom, 2006).

The socioeconomic status of the students in a school and the rate of attendance by students are additional aspects that may affect teacher absenteeism. Clotfelter and others (2007) found that low-income students in North Carolina were much more likely to face the consequences of teacher absence than students in the more affluent regions of the state. By ranking schools by the fraction of students receiving free or reduced-price lunch, the researchers found that teachers working in schools in the lowest quartile averaged one extra sick day per school year as opposed to teachers working in schools in the highest quartile (Clotfelter et al., 2007).

A study of Peruvian schools indicated that the overall absence rate of teachers in the poorest and remotest communities was higher than the rate for all teachers (Alcazar, Rogers, Chaudhury, Hammer, Kremer, & Muralidharan, 2006). The data for this study were provided by surveys used in a multi-country World Bank study of absence of among service providers in education and health in Peru, Bangladesh, Ecuador, India, Indonesia, and Uganda. The specific data used for the study of Peruvian schools used the methodology used in the multi-country project, specifically direct physical observation of provider attendance, followed by interviews with school directors and individual teachers. These observations and interviews were carried out during unannounced visits to a random sample of 100 public primary schools distributed in seven regions representative of the coast, mountain region, and jungle of Peru. Results indicated that

while teachers in Peru's public primary schools were absent 11 percent of the time, teachers in the poorest communities were absent 16 percent of the time, and teachers in the remotest communities were absent 21 percent of the time (Alcazar et al., 2006).

The Harvard study also found that discretionary teacher absences occurred more frequently in schools with relatively low student attendance than in schools with high student attendance rates (Miller et al., 2007).

The job role of teachers has also been shown to have an influence on teacher absence behavior. Rosenblatt (2006) hypothesized that a study of Israeli schools would demonstrate that teachers who were also in administrative positions would have lower rates of absenteeism. According to the researchers, job design theories show that more enriched, better designed, and better controlled jobs favorably affect work outcomes. Not only did the results confirm the hypothesis, but they also showed that the control variable of workload was significantly related to absenteeism frequency. In other words, the higher the workload, the greater the frequency of absenteeism (Rosenblatt et al., 2006).

Another characteristic of a teacher's job that has an effect on absenteeism is the size of the staff (Winkler, 1980). In a study of 57 elementary schools in California and Wisconsin, teacher absence data were examined in order to estimate the effects of sick-leave policy on short-term absenteeism. Winkler (1980) hypothesized that the larger the employment unit, the higher the absenteeism because increases in size resulted in decreased communication and group cohesiveness. Winkler (1980) determined that a staff of twenty teachers would have .92 more short-term absences than a staff of ten, and

a staff of twenty would have .34 more Monday-Friday absences on average than a staff of ten.

Imants and Zoelen (1995) suggested that administrative leadership styles and collegial relations had an effect on teacher absenteeism. A comparison of 16 Dutch primary schools was conducted. Sixty-six teachers from 16 schools completed a 32-item school climate survey. Eight of the schools were characterized as low absenteeism schools, while eight were characterized as high absenteeism schools. Results indicated that collegial relations are positively correlated to high absenteeism in schools while directive leadership is positively correlated to low absenteeism. The researchers explained that in schools where there was a familial and informal school climate, there was also a high degree of tolerance for absenteeism. On the other hand, they explained, in highly directive schools where the rules and norms express a commitment to tasks and procedures, low absenteeism resulted (Imants & Zoelen, 1995).

Organizational policies

Organizational policies are those rules and procedures which govern the terms of employee contracts. Those policies may include, but are not limited to, tenure or continuing contract status, sick leave use, income protection plans, use of sick leave banks, incentive programs for use of sick leave and buy-back programs for unused sick leave. The use of each of these policies has the potential to affect the rate of teacher absenteeism.

Ehrenberg's (1991) study of 772 school districts in the state of New York examined the idea that teacher absenteeism depends only on the leave provisions found in

their contracts. The provisions that they studied included the annual number of leave days permitted, whether a sick leave bank is present, the number of days of bereavement leave permitted for one family member, the maximum dollar per day buyout of unused cumulative leave days at retirement, the maximum number of days to which unused leave can cumulate, and the annual number of visitation, professional and conference days specified in the contract (Ehrenberg et al., 1991). The researchers found that these variables all significantly influence teacher usage of leave days. Higher usage of leave was attributed to higher numbers of permissible annual leave, use of sick leave banks, and the use of bereavement leave that was not deducted from other leave categories. Lower usage of leave was attributed to more generous provisions for the buyback of unused sick leave days, increasing the number of unused days to accumulate by an additional 30 days, increasing the dollar per day buyout by $50, and providing for an explicit number of days of annual visitation, conference, and professional days (Ehrenberg et al., 1991).

As part of their 2007 study, Duke University researchers examined the effect of leave policies in school districts across North Carolina (Clotfelter et al.). In North Carolina, sick leave is credited at a flat rate of one day per month of work, and this leave can accumulate in a teacher's account indefinitely and without limit. At the time of retirement, unused sick leave is converted to additional service credit which translates into higher pension benefits. Teachers who have exhausted their sick leave can take up to 20 additional days of extended sick leave at a cost of $50 per day. Teachers may also take personal leave which covers voluntary absences other than sick leave at a cost of $50

per day. Vacation, or annual leave, is credited to teachers' accounts according to the number of years of teaching experience beginning with 10 days per year for the first two years and increasing as experience increases. The data from the study indicate that the number of leave days used increases with experience. 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 sick leave per year. Vacation leave also rose with experience. Only personal leave remained constant across all experience groups (Clotfelter et al., 2007).

Like the Duke University researchers, researchers at Harvard University also found that usage of leave correlated to years of teaching experience (Miller et al., 2007). Lower rates of discretionary absence were claimed by very new and very experienced teachers than by teachers with moderate levels of experience. Additionally, they found that permanent employment status could be used to predict absence behavior. Teachers with permanent status took 3.7 more days of discretionary absence than teachers without such status (Miller et al., 2007).

In addition to examining the personal characteristics which might predict absence behaviors, Winkler (1980) examined the effects of sick-leave policies on short-term absenteeism for public school teachers in California and Wisconsin, specifically the use of income protection plans, reporting absences directly to principals, and providing proof of illness. Data were collected from 57 school observations collected from a stratified random sample of elementary schools. Data on teacher absenteeism for the 1974-75 school year were obtained from official attendance records maintained by each school.

Data on the personal characteristics of teachers were provided by teachers' responses to a questionnaire (Winkler, 1980).

The most common type of income protection plan for teachers in these two states is insurance against the loss of salary if the length of illness exceeds accumulated sick-leave days (Winkler, 1980). Results of this study indicate that the use of income protection plans result in higher short-term absenteeism. A district having an average of 2.80 short-term absences per teacher could expect to see an average of 2.87 if the percentage of teachers covered by income protection plans increased by 10 percent. Requiring the teacher to demonstrate proof of illness leads to lower absenteeism, particularly in those absences associated with weekends. A district having an average of 1.22 days per teacher of absence associated with weekends could reduce that number by 20 percent by requiring proof of illness. Finally, requiring teachers to report absences directly to the principal results in a large reduction in short-term absenteeism. A district with an average of 2.80 days of absence per teacher could reduce that number by almost 25 percent by requiring the teacher to report absenteeism directly to the principal (Winkler, 1980).

Jacobsen (1989) studied the effects of the Excellence in Teaching (EIT) program that was enacted in the state of New York. While the program was instituted to improve entry-level teacher salaries, one district, Sugar Hill Central School District, implemented an attendance incentive plan. Teachers could earn shares of money in a pool created by EIT funds based on their use of less than seven days of sick leave per year for the 1986-87 school year. The mean number of days that teachers were absent dropped from 7.21

days in 1985-86 to 5.34 days in 1986-87. Further, the use of teacher sick days dropped from 5.96 days in 1985-86 to 3.84 days in 1986-87. On the other hand, teacher use of personal leave increased from 1.23 days to 1.51 days. Seventy-one percent of the teachers in that district earned at least one share of the incentive pool in 1986-87, while only 58 percent of the teachers missed fewer than 7 sick days in 1985-86. In addition, the number of teachers who had perfect attendance rose from 25 teachers in 1985-86 to 108 teachers in 1986-87 (Jacobsen, 1989).

Absence culture

Absence culture can be defined as the beliefs and practices of employees on the amount and duration of absence taken within an employee group or organization (Martocchio, 1994). In a study of 264 clerical employees from five locations of a Fortune 500 corporation, Martocchio (1994) examined the impact of absence culture on individual absence using demographic variables such as unit size, tenure, age and race; work attitude variables such as job satisfaction, job involvement, and organizational commitment; absence beliefs measure at the individual level; and absence culture variables such as encouraging and deterrent outcomes. Researchers concluded that employees were either sensitive or insensitive to absence outcomes, and that the longer an individual is employed in an organization, the less frequently he or she is absent. In other words, newer employees are insensitive to the possible costs and benefits of absence from work where employees with more longevity are sensitive to both acceptable and unacceptable absence (Martoccio, 1994).

Similarly, Farrell and Stamm (1988) examined absence culture by conducting a quantitative review of employee absence correlates that were categorized as psychological, demographic work environment, or organization-wide factors. This examination included 96 empirical studies of employee absence. They were analyzed using both total time absent and absence frequency. Findings indicate that job involvement and work environment have significant effects on absence behavior. In addition, control policies such as those stressing sanctions (verbal warnings, written notices, and dismissals) and those stressing positive actions (commendations or bonus pay) are strong absence correlates which add to the understanding of absence culture (Farrell & Stamm, 1988).

A study of all junior and senior high schools in a county school system located in an urban area in the mid-Atlantic region of the United States was conducted to determine if men and women had different reasons for being absent (Scott, 1990). The research location was selected because there were substantial numbers of both men and women in comparable jobs and income levels at the 5 high schools and 5 junior high schools. The sample included 466 of the 539 teachers employed in these 10 schools. Absenteeism data and information about employee characteristics was supplied by the division from personnel records. While the study included comparisons of demographic and basic absenteeism data, it also included absence culture information such as job satisfaction and job involvement measures. Scott (1990) found that attitude toward pay presented the only significant interaction between gender and job satisfaction, and that women were more likely to have higher rates of absenteeism as they became more satisfied with their

pay. Job involvement and age were the only two variables which significantly contributed to the level of absence for men. The more involved a man was with his job at a younger age, the less the number of absences he would accrue (Scott, 1990).

Another aspect of absence culture centers on a teacher's commitment to the profession, which has been found to be a critical predictor of work performance, absenteeism, burnout, and turnover. Experienced teachers in England and Australia were interviewed about their perceptions of commitment, particularly as it pertained to educational reforms, changes across time, and factors which sustain and diminish commitment (Day, Elliot, & Kington, 2005). The sample included 20 experienced teachers who were engaged in various forms of professional development activity at the authors' respective institutions. The research indicated that for both Australian and English respondents, the most important factors that contribute to the practice of commitment are a clear set of values which inform practice regardless of school context, a clear sense of standards, a continuing willingness to reflect upon experience and the context in which practice occurs, and intellectual and emotional engagement (Day et al., 2005).

In order to identify the predictors of absenteeism in primary schools, organizational commitment, organizational school climate, and absence culture were also the foci of a study conducted among 148 teachers in Jerusalem (Gaziel, 2004). Teachers from 20 primary schools were surveyed on organizational commitment, primary school climate, and the culture of absence. Three months later specific absence data were collected, including both objective school personnel records and subjective self-reported

measures of absence. Gaziel (2004) found that teachers who expressed a high level of commitment to their school accrued fewer voluntary absences from school. Further, restrictive behavior on the part of the school principal is related to higher rates of voluntary absence, while support and directive behavior from the principal is related to lower rates of voluntary absence. Finally, a collegial atmosphere between the school's teachers is positively associated with lower rates of absenteeism (Gaziel, 2004).

Gaziel (2004) also hypothesized in this study that in schools where values with respect to acceptable reasons for absenteeism, or voluntary absence that is viewed as somewhat legitimate, higher rates of absenteeism and an absence culture are encouraged. Findings indicated that in those schools two days of illegitimate absence were ultimately accepted as if they were legitimate and unavoidable, consequently driving up the rate of teacher absenteeism (Gaziel, 2004).

In addition to the concepts of job satisfaction and career commitment, teacher stress has been found to have a significant effect on absenteeism. Borg and Riding (1991) conducted a study of both part-time and full-time teachers in Malta in order to examine the self-reports of teacher stress, job satisfaction, absenteeism, career intention, career commitment and self-image. A total of 1,043 full- and part-time teachers from all 23 state secondary schools were invited to participate in a survey by completing an anonymous, self-administered questionnaire. In all, 545 usable surveys were returned. Results indicated that teachers who reported greater stress were less satisfied with teaching, reported greater frequency of absences, were more likely to leave teaching, and were less likely to take up a teaching career again (Borg & Riding, 1991).

A study of non-government Catholic schools in New South Wales examined the perceptions of job-related stress (Solmon & Feld, 1989). In order to ensure that all areas of the state were represented proportionately, 82 schools were chosen to receive 20 copies each of the survey. Principals were asked to randomly distribute the survey to the staff in each school, which was approximately 30 to 40 percent of the staff. While 800 surveys were distributed, 437 usable ones were completed, or approximately 55 percent of those teachers surveyed. Results indicated that absenteeism was generally high and was predicted by the stress factor of poor school tone. Researchers suggested that improving the tone of the school by involving teachers in decision making, by recognizing their contributions, and by ensuring effective administration and management would improve the general well being of the teachers and consequently reduce the rate of absenteeism (Solmon & Feld, 1989).

Conflicting evidence of absence behavior

While studies have indicated a variety of factors which influence teachers' consumption of absence days, there have been several instances of conflicting results. In some cases, those conflicts may be attributed to differences in culture based on studies being conducted in different sections of the United States or in different countries. However, the overarching themes of absence behavior and its effect on student achievement tend to center on the same general concepts. It is important to examine those differences in findings.

Gender

While it appears to be a generally accepted view that female teachers are absent more frequently than male teachers (Scott, 1990; Clotfelter et al., 2007), other studies have shown that is not always the case. A study of the population of elementary and middle school teachers in the Israeli public education system found that there was no association between absenteeism and gender (Rosenblatt & Shirom, 2005). Even more compelling is the idea that one set of surveys might present disparate findings depending on the analysis of the data. Chaudhury, Hammer, Kremer, Muralidharan and Rogers (2006) examined the same World Bank surveys of absence behaviors in teachers and health workers in Bangladesh, Ecuador, India, Indonesia, Peru and Uganda that Alcazar and others (2006) examined. While Chaudhury and others examined the data in its totality, Alacazar and others narrowed their examination to information as it pertained solely to Peru. The results of the all of the surveys collected in those six countries indicated that men were absent more often than women (Chaudhury et al., 2006). Data from a nationally representative survey of public primary schools in Peru indicate that there are no significant gender differences in absence rates (Alcazar et al., 2006).

Age

Examination of the effects of age on teacher absenteeism is often confounded by the inclusion of other factors in the results. Findings are often contradictory as a result. For instance, Scott's (1990) study of junior and senior high school teachers found that age was a significant factor in predicting the absence of men and women during the child bearing years. On the other hand, Unicomb and others 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 (as cited in Norton, 1998). In their study of teachers in Maltese secondary schools, Borg and Riding (1991) found that teachers under 31 years of age had a higher frequency of absenteeism than teachers in any other age category. In their study of teachers in Israeli elementary and middle schools, Rosenblatt and Shirom (2005) found that teachers who were absent more frequently tended to be younger and less educated.

Day of week

Several researchers have found that teachers' use of discretionary days in order to extend leisure time peaks on days associated with weekends (Miller et al., 2007; Alcazar et al., 2006; Winkler, 1980). On the other hand, Unicomb and others found that teachers were absent on Wednesdays more frequently than any other day (as cited in Norton, 1998).

The study of teacher absenteeism has produced both consistent and inconsistent findings. Clearly, teacher absenteeism results in lower student achievement (Miller et al., 2007; Clotfelter et al., 2007). Further, absentee rates appear to be affected by characteristics of the teachers, the schools, the work environment, and the students. While some researchers have found that increased enrollment impacts teacher absenteeism (Miller et al., 2007; Rosenblatt & Shirom, 2006), others have found that the grade configuration is a factor (Miller et al., 2007; Clotfelter et al., 2007, Rosenblatt & Shirom, 2006). The socioeconomic status of students is an important factor (Clotfelter et al., 2007; Alcazar et al., 2006, Miller et al., 2007), and higher student absenteeism

generally leads to higher teacher absenteeism (Ehrenberg et al., 1991). Job design (Rosenblatt and Shirom, 2006), the size of the teaching staff (Winkler, 1980), and the leadership styles and collegial relations of the teachers (Imants & Zoelen, 1995) also contribute to absence behavior. Finally, leave provisions create situations which can increase leave-taking behavior (Winkler, 1980; Jacobsen, 1989; Ehrenberg et al., 1991; Clotfelter et al., 2007, Miller et al., 2007). What is not clear, however, is the extent to which these characteristics influence teacher absenteeism. Both the causes and predictors of teacher absenteeism appear to be contextual according to the setting. In the age of accountability dictated by the No Child Left Behind Act, school division administrators need information which leads to an understanding of the absence culture using data on the absence behaviors of teachers in their localities.

Chapter III: Research Methods

Previous research regarding teacher absenteeism yields various conclusions about the nature and effects of this phenomenon. While some researchers have focused on the costs of teacher absenteeism and the effects of incentive programs, others have focused on its effects on student achievement. While the results almost uniformly point to the negative effects of teacher absenteeism on student achievement (Clotfelter, Ladd & Vigdor, 2007; Woods & Montagno, 1997; Miller, Murnane & Willett, 2007), there have been fewer definitive answers regarding the causes.

Purpose of the Study

Though the predictors of teacher absenteeism may vary in their significance across studies, it is the case that patterns of teacher absenteeism may be identifiable within the context of a local school division. Therefore, the purpose of this study is to examine the predictors of teacher absenteeism over a three-year period in a school division in central Virginia.

The specific research questions addressed are listed below:

1. What is the frequency of teacher absenteeism?
2. What are predictors of teacher absenteeism?

Research Design

This quantitative study is a secondary data analysis. Barrett (2006) differentiates secondary data analysis from primary data analysis in that the data user had no involvement in the data collection effort. The use of secondary data analysis does have

benefits, such as time efficiency, cost effectiveness, data quality, and increased sample size. Further, secondary data sets are often coded so that the identification of any single individual is not possible. The use of such data sets where the subjects' identities are shielded typically exempts the researcher from needing the subjects' informed consent. It does not, however, preclude the researcher's need to submit study protocols to the Institutional Review Board in order to guarantee the protection of human subjects (Barrett, 2006).

According to Barrett (2006), there are important considerations for the use of secondary data. For instance, the researcher must establish that the data set does, in fact, contain the variables that are necessary to answer the research questions. Further considerations should include the population from which the data was collected, the manner of collection, the accessibility of the data, the necessary documentation of the authenticity of the data, the structure of the data file, and the computing capacity to work with the data set (Barrett, 2006).

For this study, data analysis focused on teacher absenteeism data that had been collected about employees in a central Virginia school division. The data had been collected daily and amassed electronically for approximately 20 years for each employee by the Information Systems staff for use by both the Payroll and Human Resources departments in the school division. The data set contained all of the information necessary to answer the research questions as they relate to frequency and patterns of absenteeism. In addition to demographic information such as race, gender, and age, contract information such as specific dates of absence, types of leave taken, school level

assignments and teaching assignments were available. Participant identities were coded by employee number, which were generated to protect employees from identity theft, rather than by name or by social security number.

The school division is responsible for tracking this information for both contractual purposes and state reports, so the data set can be considered reliable. It is accessible and was made available in the form of an Excel spreadsheet. Members of the Information Systems staff were available to provide information as well as to support with technical assistance. Analysis can be performed in Excel, but the data may also be imported into PASW Statistics 17.0 in order to perform more sophisticated analyses.

The first step in conducting the study was to secure written permission to obtain the data from the superintendent of the school division. In order to garner that permission, it was necessary to articulate the understanding that the data and the identity of the school division and the participants will be protected.

Once written permission was secured, the data was secured from the Information Systems staff. Teacher absence data was entered into an Excel spreadsheet using numbers rather than names to protect confidentiality of the participants. The data was stored on the researcher's computer, which is not attached to networks at either the school system or the university, thus limiting vulnerability to unauthorized access.

In order to conduct the appropriate analyses, the Excel spreadsheet was imported into PASW Statistics 17.0 software. That software was used to perform more sophisticated regression analyses than are available in the Excel format. When the study was completed and defended, the database was deleted from the researcher's computer.

Setting

The setting for this study was one of the fifteen largest school divisions in Virginia. This school division is located in central Virginia midway between Washington, D.C., and Richmond, Virginia. It has a population of about 119,000 residents, and over 24,000 students are educated in 33 schools, including five high schools, seven middle schools, 17 elementary schools, and four specialty schools. Thirteen of the 33 schools are labeled Title I schools, and 26.02 percent of the student population is considered economically disadvantaged. Special education services are provided to 11.71 percent of the student population, while 7.97 percent of the students receive gifted services and 3.61 percent of the students receive services for learning English as a Second Language. During the 2008-09 school year, the division employed 1725 teachers. Ninety-nine percent of those teachers are considered highly qualified according to the standards set by the federal No Child Left Behind Act, and 846 of those teachers have earned advanced degrees. Thirty-six teachers in the division are nationally board certified. The average years of teacher experience in the division is eleven, and student-teacher ratios are 21:1 in grades K-2, 22:1 in grades 3-5, 23:1 in grades 6-8, and 24:1 in grades 9-12 (School Division [name redacted to protect confidentiality] At-A-Glance).

Sample

Analysis of data focused on a sample of employees who have contracts designated as 10-month or 11-month classroom teachers. The 10-month teacher is contracted for 200 days, and the 11-month teacher is contracted for 220 days. Teachers who have 12-

month contracts were not included for two reasons. First, they may earn annual leave that may be taken during the summer months, which is contrary to the regular leave-taking habits of 10- and 11-month contract teachers. Second, there are not a sufficient number of 12-month contract teachers to present significant results for that group.

Analyses of the data were conducted from those teachers who have been continuously employed by the school division for the 2005-06, 2006-07, and 2007-08 school years, which resulted in a sample of approximately 1,200 employees. The inclusion of three years of data provided a longitudinal study of the absence behaviors of these employees. It was important to take into consideration both the typical and the atypical behaviors of these employees with respect to absence from the classroom. Further, the school division instituted the use of an electronic absence reporting system for the 2007-08 school year, so inclusion of that data was important in order to determine if behaviors were altered as a result of this absence reporting system. Research has also indicated that the use of electronic absence reporting systems has increased absence levels in some school divisions (Miller et al, 2007). This school division began using AESOP, an electronic absence reporting system, during the 2007-08 school year. Teachers may log absences by using either a specific website or by using a telephone entry system. The data set included absence information that demonstrated the traditional method of reporting absence and the electronic method of reporting absence.

Additional information that was available in the data set included demographic information for each employee. These demographics included age, gender, and race. Further information that were used to predict factors affecting teacher absenteeism

included the number of years of experience in the profession, the highest degree earned, the level of school assignment, and the teaching assignment.

Data Management and Data Analysis

According to McMillan and Schumacher (2006), there are many situations in education where making predictions is necessary; therefore, conducting regression studies provides a more accurate estimation of prediction. When researchers make predictions based on two variables, the statistical procedure is known as a bivariate regression. The regression determines how well scores from the independent variable predict scores on the dependent variable. In some cases, using multiple independent variables may allow the researcher to make a more accurate prediction. Multiple regression is a statistical procedure which measures the predictive power of several independent variables on one dependent variable (McMillan & Schumacher, 2006).

For this study, the dependent variable is the total number of absences for each teacher in the division for a three-year period. The independent variables which were used to examine absence behaviors are described in Table 1.

Table 1

Description of Independent Variables

Independent variable	Description
Age	Ages of the teachers in the sample
Gender	Gender of the teachers in the sample
Race	Racial makeup of the teachers in the sample
Years of experience	Number of years of teaching experience
Degree earned	Highest degree earned for each of the teachers
Day of week	Absence occurrence by day of the week
Holidays	Absence occurrence on days attached to holidays
Workdays	Absence occurrence on teacher workdays
Professional development days	Absence occurrence on professional development days
School level	School level assignment (i.e. elementary, middle, high)
Teaching assignment	Subject or grade-level assignment
Type of leave	Occurrence of types of leave taken by each teacher

Constructing a thematic hierarchy of the independent variables allowed the researcher to navigate predictive results more effectively. The first of three themes focused on the demographic nature of the data, including age, gender, race, years of experience, and highest degree earned. The second theme focused on the nature of the days of absence, including days of the week, days associated with holidays, workdays, or professional development activities, and types of leave taken. The third theme focused

on professional assignments, including school level assignments and teaching assignments.

In order to analyze the data set effectively, it was necessary to recode some variables. For instance, gender were recoded from "M" for male and "F" for female to a numerical value of "0" for male and "1" for female. Age was recoded from the year of birth to the age in years at the time of the collection of the data set. Once the variables were recoded, the data set was imported into PASW Statistics 17.0. Further aggregation of data in PASW allowed for more efficient use of specific data such as number of days absent.

The first step in the data analysis was an examination of the frequency of a number of absence variables. What was the frequency distribution of different types of leave (i.e. sick leave, personal leave, professional conferences, FMLA leave, etc.)? What was the frequency distribution of absences on particular days of the week? What was the frequency of particular types of absence on particular days of the week? What were the overall frequencies of absence over the three year period? Had that frequency increased since the implementation of the electronic reporting system during the 2007-08 school year. An examination of these frequencies may garner particular patterns of leave-taking behaviors. Second, the mean, median and mode were run for the dependent variable.

The next step in data analysis was to perform a series of bivariate analyses. Using an analysis of variance (ANOVA), the dependent variable, teacher absence, was combined with a series of independent variables in order to find significant effects.

Further, descriptive statistics that were generated by running the ANOVA were used to identify patterns of absence or to support the size of the effect.

Keeping in mind the thematic approach, the first set of ANOVAs focused on the demographic nature of the data. Were there differences in teacher absence by demographic characteristics such as age, race, gender, years of experience or highest degree earned? The second set of ANOVAs focused on the nature of absence. Were there differences in teacher absence by different days of the week, days associated with holidays, workdays, or professional development activities, and the types of leave taken? The third set of ANOVAs focused on professional assignments. Were there differences in teacher absence by school level assignments and teaching assignments?

In order to bolster the predictions that may be made from the significant effects found by performing the initial series of bivariate analyses, it is necessary to consider a combination of those significant effects. Performing a series of multivariate analyses, or factorial ANOVAs, adds together the predictive power of several independent variables. The performance of the factorial analysis of variance (ANOVA) allowed the researcher to find simultaneous effects of those independent variables. In other words, were there predictors of teacher absenteeism? While a thematic approach to the bivariate analyses may have made data analysis more efficient, it was appropriate to combine themes in order to locate those simultaneous effects.

For instance, the initial series of ANOVAs may have revealed significant effects in several demographic areas such as teacher absence by gender, by age, or by years of experience. A multivariate analysis may combine the dependent variable, teacher

absence, with the demographic independent variables along with additional independent variables such as days of the week or types of leave taken. The performance of a factorial ANOVA may reveal one or more significant effects of the independent variables on the dependent variable or an interaction between independent variables.

A combination of the thematic areas of analysis provided simultaneous effects. For instance, were there predictors of teacher absence that are related to demographics by days of the week, type of leave taken, or days associated with holidays, workdays, or professional development days? Were there predictors of teacher absence that are related to demographics by school-level assignment or by teaching assignment? Were there predictors of teacher absence that are related to school-level assignment by days of the week?

While the use of bivariate analyses points to initial significant effects, it is possible, however, that performing multivariate analyses on all combinations of the dependent and independent variables might reveal significant effects that were not present in bivariate analyses. In order to determine the feasibility of performing more extensive multivariate analyses, the researcher must ensure that sufficient bivariate analyses have been performed, consider the strength of the effects, and use the results of previous research to inform decisions about including additional factorial ANOVAs.

Chapter IV: Findings

Purpose

School division administrators may consult research in order to understand the causes of teacher absenteeism and its effect on student achievement. While research has clearly demonstrated that teacher absenteeism has a negative effect on student achievement (Ehrenberg et al., 1991; Clotfelter et al., 2007; Miller et al., 2007), the research has not been as demonstrative about the causes or predictors of teacher absenteeism. The results of various studies appear to be contextual in nature, and therefore, are conclusive for the environs in which they were conducted. As a result, division administrators must consider combining a review of research on the subject of teacher absenteeism with a study of the teacher absence behaviors present in their localities.

The purpose of this study, therefore, was to examine the teacher absence data of a school division in central Virginia in order to determine teacher absence behaviors. This study focused on two specific research questions: What is the frequency of teacher absence? What are the predictors of teacher absence?

Design Overview

This quantitative study was a secondary data analysis. This data analysis focused on teacher absenteeism data that have been collected about employees in a central Virginia school division. The data have been collected daily and amassed electronically

for approximately 20 years for each employee by the Information Systems staff for use by both the Payroll and Human Resources departments in the school division. The data set contained all of the information necessary to answer the research questions as they related to frequency and patterns of absenteeism. In addition to demographic information such as race, gender, and age, contract information such as specific dates of absence, types of leave taken, school level assignments and teaching assignments were available. Participant identities were coded by employee number, which were generated to protect employees from identity theft, rather than by name or by social security number, which ultimately shielded participant identities.

The data set was designed to include classroom teachers who had 10 or 11-month contracts and who had been continuously employed for the 2005-06, 2006-07, and 2007-08 school years. Due to some inaccuracies between the requested information and the data supplied, the data set required some alterations. The initial data set included all employees who had 10 or 11-month teacher contracts. In this school division, teacher contracts are awarded to employees who are not strictly classroom instructors, such as librarians, guidance counselors, Instructional Technology Resource Teachers, math specialists, and reading specialists; therefore, some participants had to be excluded. The initial data set included all teachers who had been employed during the three years of the study, but not all of those participants were continuously employed for all three of those years, which necessitated the exclusion of more participants in the sample. As data analyses began, one further alteration had to be made to the data set. Employees in this school division may have more than one hire date which is dependent on their movement

from one type of position to another. Rather than using the original hire date in order to generate the number of years of experience for each participant in the sample, the latest hire date had been used. As a result, some participants who had three years of absence data had zero, one or two years of experience. Information management staff rewrote the program to include the original hire date, and the data set was generated a second time. Exclusions were performed again to include only classroom teachers who were continuously employed for the three years of the study. The data set was provided as an Excel spreadsheet. The data were exported to PASW Statistics 17.0 in order to run statistical analyses.

Results

Sample Statistics

Frequency distributions were run in order to identify the demographic characteristics of the sample and to determine the patterns of absenteeism among the participants. The sample includes absence data for 1,198 classroom teachers who were continuously employed in the school system during the 2005-06, 2006-07, and 2007-08 school years. Of those teachers, 91.4 percent are white, 6.3 percent are black, 1.3 percent is Hispanic, and 1.1 percent represents other races (see Table 2.) The majority of these teachers—58.7 percent—hold bachelor's degrees. The other 41.3 percent either hold advanced degrees or are working toward advanced degrees (see Table 3.) Elementary school teachers make up 41 percent of the sample population, while high school teachers account for 31.7 percent and middle school teachers account for 25 percent. The other

2.3 percent are teachers located in specialized schools for career and technical education, special education and alternative populations (see Table 4.) Teachers who instruct in the core areas of English, math, social studies and science account for 76.3 percent of the sample, while non-core teachers make up 23.7 percent of the population (see Table 5.) There are 77.9 percent women in the sample and 22.1 percent men (see Table 6.)

Table 2

Ethnic Composition of Sample

Ethnicity	Frequency	Percent
Asian	9	.8
Black	75	6.3
Hispanic	16	1.3
Indian	3	.3
White	1,095	91.4
Total	1,198	100.0

Table 3

Frequency of Highest Degree Earned

Degree earned	Frequency	Percent
Bachelors	703	58.7
Bachelors + 15	54	4.5
Doctorate	5	.4
Masters	427	35.6
Masters + 15	9	.8
Total	1,198	100.0

Table 4

Frequency of School Type Placement

School type	Frequency	Percent
Special/Alternate Education	8	.7
Elementary	491	41.0
High	380	31.7
Middle	300	25.0
Career/Technical Education	19	1.6
Total	1,198	100.0

Table 5

Frequency of Core Versus Non-core Teachers

Core/non-Core	Frequency	Percent
Non-Core	284	23.7
Core	914	76.3
Total	1,198	100.0

Table 6

Frequency of Gender

Gender	Frequency	Percent
Male	265	22.1
Female	933	77.9
Total	1,198	100.0

Descriptive statistics of the sample indicate that the mean age of the 1,198 teachers was 41.60, with a range of 23 years to 69 years of age (see Table 7.) The mean number of years of experience was 10.25, with a range of 1 year to 40 years of experience (see Table 8.) In this school division, teachers who are in the first year of teaching experience are coded as 0 years of experience. Teachers who were hired after the beginning of the school year are coded 0 for two years in a row. As a result, teachers who are in their third year of teaching could have been coded as 1 year of experience.

Table 7

Mean of Teacher Age

	N	Minimum	Maximum	Mean	Std. Dev.
Age	1,198	23	69	41.60	10.716

Table 8

Mean of Years of Experience

	N	Minimum	Maximum	Mean	Std. Dev.
Yrs. Experience	1,198	1	40	10.25	8.436

Descriptive Statistics

A total of 48,148 absences were reported for the teachers in the sample for the three years of the study. The mean number of absences taken per day was 68.29, with a standard deviation of 39.428. In order to find days of absence that would be considered outliers, five dates were identified as being two or more standard deviations above the mean (see Table 9.) While there are reasons for increased absenteeism on some of those days, others do not stand out as unusual. For instance, September 29, 2005, was not unusual in nature. On the other hand, April 11 and April 25, 2008, were planned makeup/teacher workdays for school closures due to weather earlier in the year. Those days were not used as makeup days, and they were not associated with the end of a

grading period. March 10, 2006, and March 9, 2007, each occurred at the end of the state Standards of Learning Writing test window.

Table 9

Identification of Outliers

Absence date	Number of absences
March 10, 2006	148
September 26, 2006	207
March 9, 2007	147
April 25, 2008	189
April 11, 2008	168

The number of absences was comparable for the 2005-06 and 2006-07 school years, but there was a marked increase for the 2007-08 school year. While no cause-effect relationship can be established with a frequency distribution, it is interesting to note that a 3.9 percent increase occurred between the last two years when an electronic absence reporting system (AESOP) was instituted (see Table 10.) Teachers had to request substitutes by an automated phone system or an online request system rather than speaking directly to an administrator.

Table 10

Frequency of Absence by Year

Year	Frequency	Percent of absences over 3 years
2005-06	15,147	31.5
2006-07	15,567	32.3
2007-08	17,434	36.2
Total	48,148	100.0

Frequency distributions also indicated that absences occurred most frequently on Fridays, with Thursdays and Tuesdays being the next highest days of absence. Friday absences accounted for 24.4 percent of the total absences, while Thursday absences totaled 20.4 percent and Tuesday absences totaled 18.6 percent of the total absence. The lowest rate of absenteeism occurred on Saturday workdays (.2 percent) and Mondays (18.0 percent) (see Figure 1.)

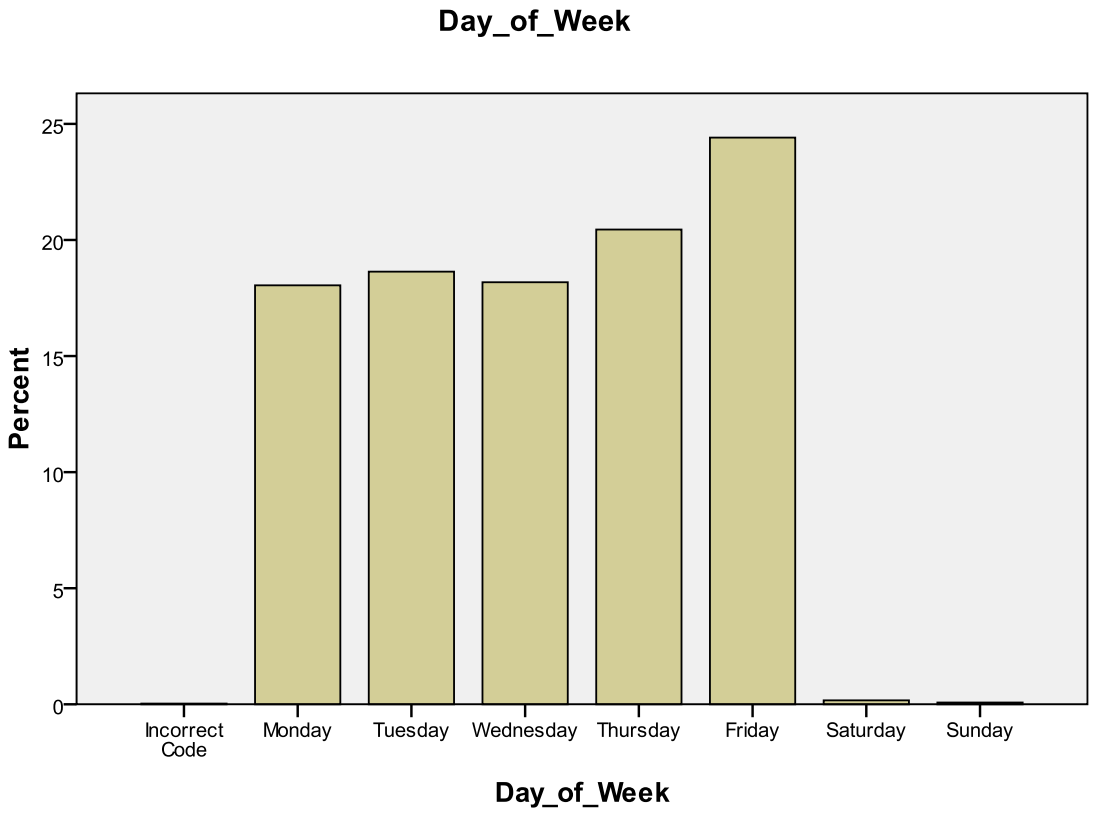

Figure 1. Percentage of absences by day of the week for 2006-07, 2007-08, and 2008-09.

Frequency distributions further indicated that sick leave accounted for 30,009 of the 48,148 absences, or 62.3 percent. Personal leave was the second most frequently used type of leave with 5,820 absences, or 12.1 percent of the total. All types of professional development leave (PROFD, PROFDA and PROFDP) accounted for 9.1 percent of the total absences, and professional conference leave accounted for 5.5 percent of the total absences (see Figures 2 through 5.)

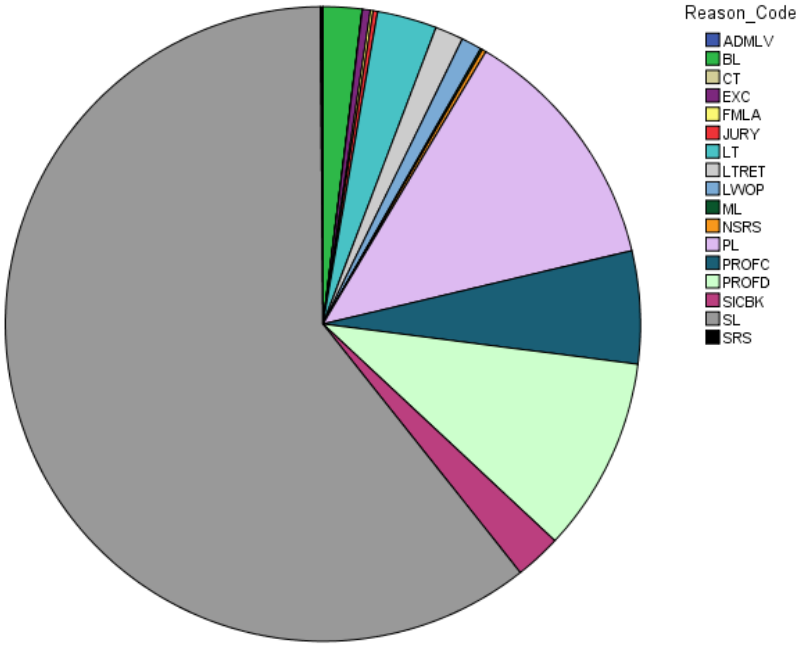

Figure 2. Absence by reason code for 2005-06 school year.

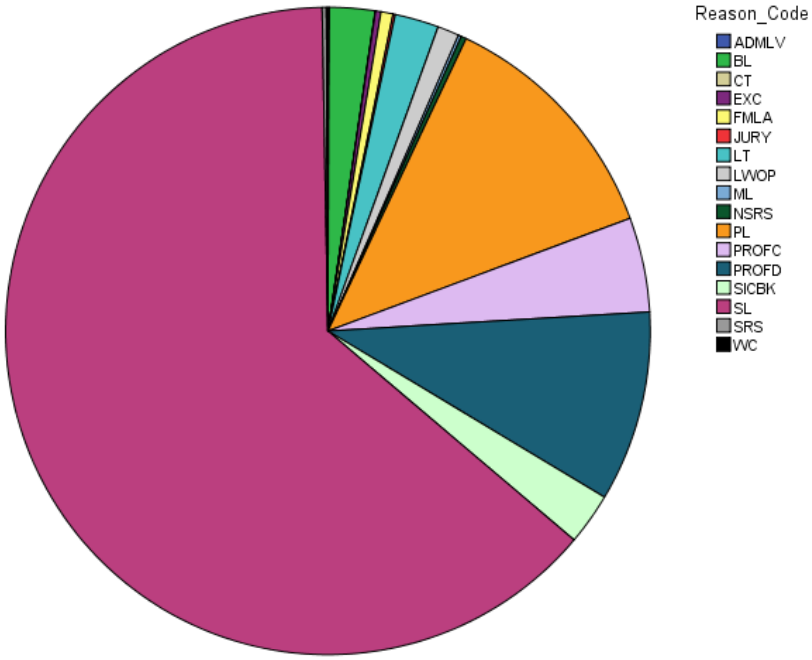

Figure 3. Absence by reason code for 2006-07 school year.

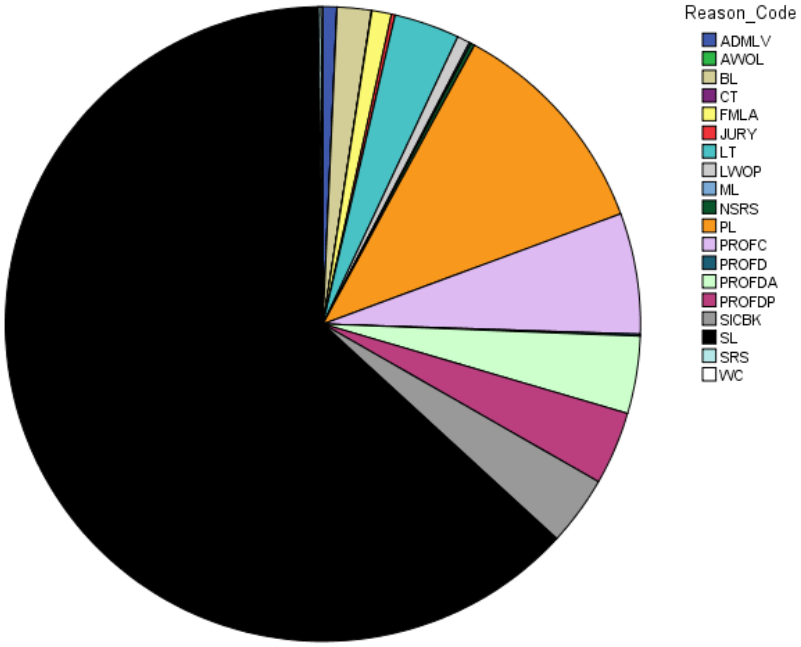

Figure 4. Absence by reason code for 2007-08 school year.

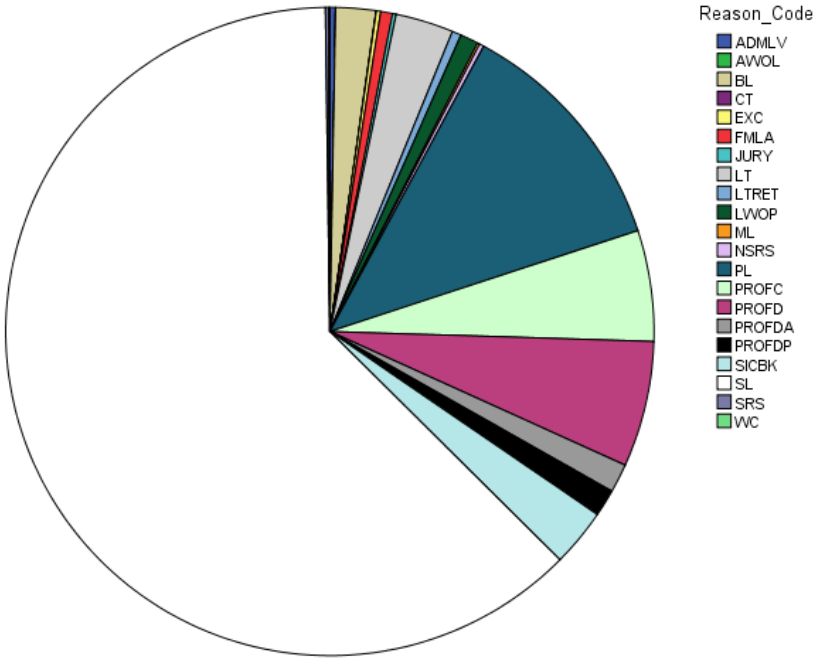

Figure 5. Total absences by reason for 2006-07, 2007-08, and 2008-09.

Table 11

Definitions of Absence Reason Codes

Reason code	Definition
ADMLV	Administrative leave
AWOL	Absent without official leave
BL	Bereavement leave
CT	Court compensatory time
EXC	Excused
FMLA	Family & Medical Leave Act
JURY	Jury duty
LT	Long term leave
LTRET	Long term retirement
LWOP	Leave without pay
ML	Military leave
NSRS	Non-school related summons
PL	Personal leave
PROFC	Professional conference leave
PROFD	Professional development leave
PROFDA	Professional development approved by central administration
PROFDP	Professional development approved by principal
SICKBK	Sick leave bank
SL	Sick leave
SRS	School related summons
WC	Workers Comp

An examination of each of the three years of absence data demonstrates that trends hold true in each year. The greatest number of absences occurs on Fridays, and the most frequently used types of leave are sick leave and personal leave (see Figures 2-5.) It is interesting to note, however, that Family and Medical Leave Act (FMLA) leave has marked increases over the three years. In 2005-06, FMLA leave accounted for 22 of the total leave days, or .1 percent of the total leave days for that year. In 2006-07 there were 86 FMLA leave days, or .6 percent of the total leave days for the year, and in 2007-08

there were 175 FMLA leave days, or 1.0 percent of the total leave days.

A cross tabulation of the frequencies of absence by reason code and day of the week point to increased leave taking habits for both sick leave and personal leave. Like the overall pattern of higher numbers of absences on Friday, personal leave also spikes on Fridays. Unlike the overall pattern of absenteeism, personal leave is second highest on Mondays. In addition, sick leave patterns are similar to the overall patterns of absenteeism. The greatest number of sick leave days taken occur on Fridays (6,647), while Thursdays (6,103) and Tuesdays (5,861) are second and third in overall number. The only other types of leave which surge on Fridays are professional conference leave (PROFC,) professional development leave (PROFD,) and school-related summons leave (SRS.) All of the other types of leave remain fairly constant across the days of the week (see Figure 6.)

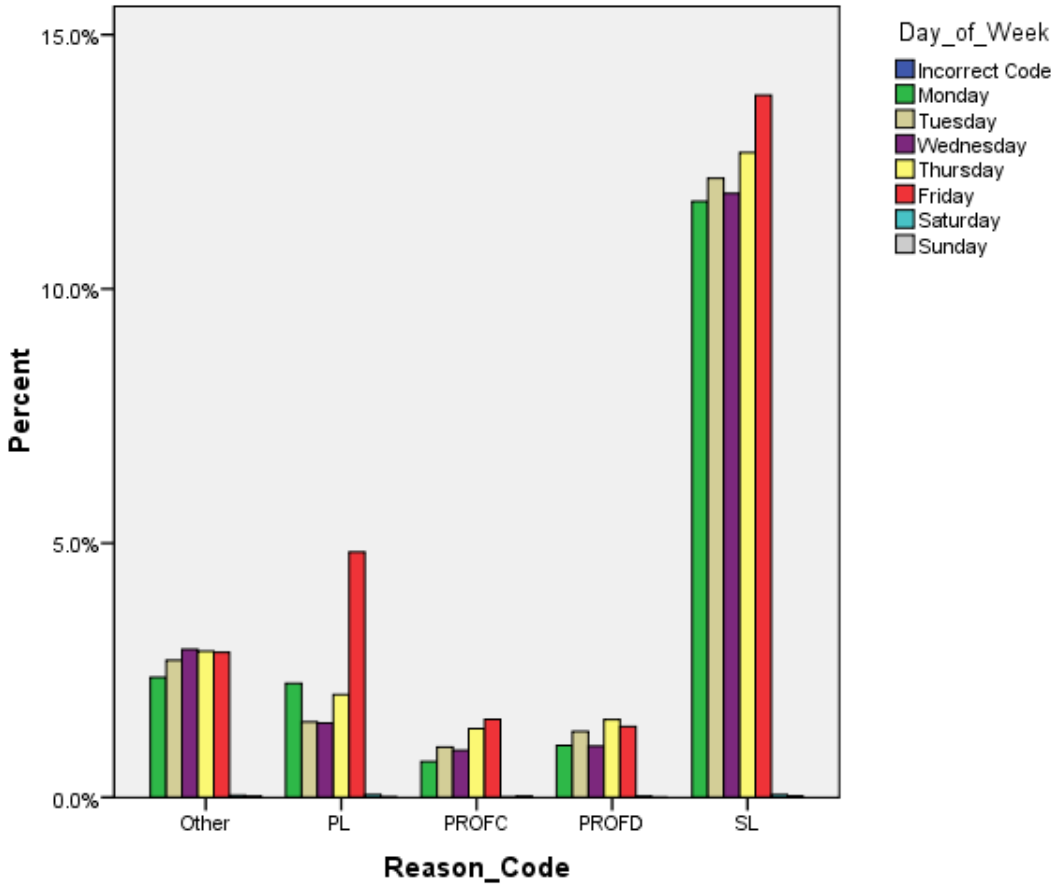

Figure 6. Percentage of absences by reason code and day of the week.

Frequency distributions indicate that there is no clear pattern of higher absenteeism on workdays than on the days immediately prior to or following those days. There is evidence of higher absenteeism on workdays that occur on Fridays, which may be attributed to the trend of higher absenteeism on Fridays throughout the school year (see Table 12.) There is no clear pattern of higher absenteeism on professional development days (see Table 13.) There is a pattern of higher absenteeism the day before a holiday than the days following a holiday (see Table 14.)

Table 12

Frequency of Absences on Workdays

Date	# abs. 2 days prior	# abs. 1 day prior	# abs. that date	#abs. 1 day after	# abs. 2 days after
11/08/05 (T)	128	79	67	76	99
1/23/06 (M)	53	64	40	61	66
4/03/06 (M)	88	96	90	80	68
6/10/06 (S)	48	53	57	3	3
10/27/06 (F)	67	79	108	95	53
1/02/07 (T)	75	55	46	55	69
3/23/07 (F)	76	87	89	71	65
6/08/07 (F)	36	37	37	1	4
11/05/07 (M)	87	128	96	87	59
1/28/08 (M)	71	82	60	67	79
2/15/08 (F)	99	94	138	94	107
2/29/08 (F)	104	91	118	79	73
4/11/08 (F)	79	126	168	92	86
4/25/08 (F)	109	113	189	85	122
6/13/08 (F)	65	61	65	6	6

Table 13

Frequency of Absences on Professional Development Days

Date	# abs. 2 days prior	# abs. 1 day prior	# abs. that date	#abs. 1 day after	# abs. 2 days after
10/10/05	84	103	104	65	56
4/03/06	88	96	90	80	68
11/07/06	132	89	77	76	89
2/19/07	77	74	94	74	79
10/08/07	67	104	81	50	67
11/06/07	128	96	87	59	70

Table 14

Frequency of Absences Before and After Holidays

Date	# abs. 2 days prior	# abs. 1 day prior	#abs. 1 day after	# abs. 2 days after
9/05/05	29	34	33	37
11/23-25/05	94	100	66	83
12/22/05-1/02/06	74	47	52	50
1/16/06	63	84	58	55
2/20/06	93	118	97	82
4/17-21/06	110	84	71	67
5/29/06	119	104	62	78
9/04/06	41	1	70	38
11/22-24/06	91	61	50	68
12/22/06-1/01/07	75	55	46	55
1/15/07	66	102	86	95
4/9-13/07	88	75	71	97
5/28/07	75	105	66	93
9/03/07	23	41	37	34
11/21-23/07	108	77	86	110
12/24/07-1/01/08	103	77	54	81
1/21/08	101	91	68	65
2/18/08	94	138	94	107
3/24-28/08	86	76	78	80
5/26/08	113	189	85	122

Frequency distributions also indicated that higher rates of absenteeism occur during the spring semester than the fall semester. There were a total of 22,092 absences taken in the fall, and there were 25,538 absences taken in the spring.

Bivariate Analyses

The next step in data analysis was to perform a series of bivariate analyses. Using an analysis of variance (ANOVA), the dependent variable, teacher absence over a three-year period, was combined with a series of independent variables in order to find significant effects. Further, descriptive statistics that were generated by running the ANOVA were used to identify patterns of absence or to support the size of the effect. Keeping in mind the thematic approach, the first set of ANOVAs focused on the demographic nature of the data, the second set focused on professional assignments. In order to determine significant relationships between total absences and the continuous variables of age and years of experience, correlations were performed.

The first set of ANOVAs demonstrated that there is no statistically significant relationship between the number of absences taken and the ethnicity of the teacher, or between the number of absences taken and the level of education of the teacher. Table 15 provides an examination of the means which indicates that women have a higher rate of absenteeism (41.99) than do men (33.84.) Table 16 demonstrates that a statistically significant relationship exists between men and women in the rate of absenteeism ($F=18.475$, $p<.05$.)

Table 15

Mean Difference of Absences by Gender

Gender	Mean	N	Std. deviation	Range
Male	33.84	265	22.046	155
Female	41.99	933	28.548	286
Total	40.19	1,198	27.444	286

Table 16

Analysis of Variance for Absences by Gender

		Sum of Squares	df	Mean Square	F	Sig.
Absences * Gender	Between groups (Combined)	13,715.303	1	13,715.303	18.475	.000
	Within groups	887,865.305	1,196	742.362		
	Total	901,580.608	1,197			

The second set of ANOVAs demonstrated that there is no statistically significant relationship between the number of absences taken and the specific teaching assignment of the teacher, or between the number of absences between core teachers and non-core teachers. Table 17 provides an examination of the means which indicates that teachers who are assigned to specialty schools have a higher rate of absenteeism (71.00, 49.37)

than do elementary teachers (42.77,) middle school teachers (39.83,) or high school teachers (36.03.) Table 18 demonstrates that a statistically significant relationship exists between teachers who are assigned to various types of schools in the rate of absenteeism ($F=6.452$, $p<.05$.) In other words, teachers who are working with special populations at the alternative school, the autism center, the center for emotionally disturbed students, or the career and technical school have the highest rate of absenteeism. In the regular school setting, elementary teachers have higher rates of absenteeism than do middle school teachers, and high school teachers have the lowest rate of absenteeism.

Table 17

Mean Difference of Absences by School Type

Gender	Mean	N	Std. Deviation	Range
Alternative/Special Education	71.00	8	40.953	127
Elementary	42.77	491	27.891	205
High	36.03	380	28.717	203
Middle	39.83	300	24.100	203
Career/Tech Education	49.37	19	13.684	54
Total	40.19	1,198	27.444	286

Table 18

Analysis of Variance for Absences by School Type

		Sum of Squares	df	Mean Square	F	Sig.
Absences * School_Type	Between groups (Combined)	19,091.269	4	4,772.817	6.452	.000
	Within groups	882,489.339	1193	739.723		
	Total	901,580.608	1197			

Correlations were performed between the dependent variable, the total number of absences over three years, with the continuous independent variables of age and years of experience. There were no significant relationships between total number of absences and either age or years of experience (see Table 19.)

Table 19

Correlations of Absences by Age and Years of Experience

		Absences	Age	Years of Experience
Absences	Pearson Correlation	1	-.027	.040
	Sig. (2-tailed)		.350	.167
	N	1,198	1,198	1,198
Age	Pearson Correlation	-.027	1	.599*
	Sig. (2-tailed)	.350		.000
	N	1,198	1,198	1,198
Years of Exp.	Pearson Correlation	.040	.599*	1
	Sig. (2-tailed)	.167	.000	
	N	1,198	1,198	1,198

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

Multivariate Analyses

The next step in the data analyses was to perform a series of multivariate analyses. In order to identify predictors of absenteeism, the dependent variable, the total number of absences over three years, was combined with a series of the independent variables. The first analyses took the form of factorial analyses of variance.

The factorial analyses of variance produced much the same results as the bivariate ANOVAs. For instance, when school type and core mean were the independent variables, there was a significant main effect for school type ($F=4.141$, $p<.05$,) but not for

core mean. There was no interaction between school type and core mean (see Table 20.) However, when school type and gender were the independent variables, there was a significant main effect for school type ($F=5.213$, $p<.05$) as well as for gender ($F=4.935$, $p<.05$.) There was no interaction between school type and gender (see Table 21.)

Table 20

Factorial Analyses of Variance of Absences by School Type and Core Mean

Dependent Variable: Absences

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	24,110.153[a]	9	2,678.906	3.627	.000
Intercept	143,329.460	1	143,329.460	194.053	.000
School_Type_first	12,233.522	4	3,058.381	4.141	.002
Core_mean	63.158	1	63.158	.086	.770
School_Type_first * Core_mean	3,707.765	4	926.941	1.255	.286
Error	877,470.455	1,188	738.611		
Total	2,836,664.000	1,198			
Corrected Total	901,580.608	1,197			

a. R Squared = .027 (Adjusted R Squared = .019)

Table 21

Factorial Analyses of Variance of Absences by School Type and Gender

Dependent Variable: Absences

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	33,752.126[a]	9	3,750.236	5.134	.000
Intercept	271,192.049	1	271,192.049	371.244	.000
School_Type_first	15,233.423	4	3,808.356	5.213	.000
Sex_mean	3,604.772	1	3,604.772	4.935	.027
School_Type_first * Sex_mean	3,392.463	4	848.116	1.161	.326
Error	867,828.482	1,188	730.495		
Total	2,836,664.000	1,198			
Corrected Total	901,580.608	1,197			

a. R Squared = .037 (Adjusted R Squared = .030)

Upon examination of the Scheffe post hoc test, the results supported the results of the bivariate ANOVAs (see Table 22.) Significant mean differences demonstrated that teachers at the alternative and special education centers were more likely to be absent than high school teachers (34.97) and middle school teachers (31.17.) Further, elementary teachers were more likely to be absent than high school teachers (6.74.) Post hoc tests were not performed on gender because there were fewer than three groups

present. However the significant effect present in the factorial ANOVA supports the previous finding of the bivariate ANOVA, which demonstrated that women were more likely to be absent than men.

Table 22

Scheffe Post Hoc Test of Absences by School Type

(I) School_Type_first	(J) School_Type_first	Mean Difference (I-J)	Std. Error	Lower bound	Upper bound
Alt./Special Ed	ES	28.23	9.633	.073	-1.49
	HS	34.97*	9.656	.011	5.18
	MS	31.17*	9.682	.035	1.30
	CTE	21.63	11.391	.462	-13.51
ES	Alt./Special Ed	-28.23	9.633	.073	-57.95
	HS	6.74*	1.847	.010	1.05
	MS	2.94	1.981	.697	-3.17
	CTE	-6.59	6.319	.896	-26.09
HS	Alt./Special Ed	-34.97*	9.656	.011	-64.76
	ES	-6.74*	1.847	.010	-12.44
	MS	-3.80	2.087	.507	-10.24
	CTE	-13.34	6.354	.354	-32.94
MS	Alt./Special Ed	-31.17*	9.682	.035	-61.04
	ES	-2.94	1.981	.697	-9.05
	HS	3.80	2.087	.507	-2.64
	CTE	-9.54	6.394	.694	-29.26
CTE	Alt./Special Ed	-21.63	11.391	.462	-56.77
	ES	6.59	6.319	.896	-12.90
	HS	13.34	6.354	.354	-6.26
	MS	9.54	6.394	.694	-10.19

Based on observed means.

The error term is Mean Square(Error) = 730.495.

*. The mean difference is significant at the 0.05 level.

Because age and years of experience are continuous variables, they could not be included in factorial analyses of variance. In order to continue with multivariate analyses, it was necessary to perform linear regressions. Linear regressions may be performed on variables which are either continuous or binary. In order to perform these analyses, it was necessary to create two sets of dummy variables. While age and years of experience are continuous, ethnicity and school type are not. For ethnicity, dummy variables were created for the categories of white, black, and all other categories. For school type, dummy variables were created for elementary, middle, high, and all other categories.

The first linear regression combined the dependent variable, total absences, with the independent variables of age, years of experience, and gender. The dummy variables for ethnicity were also added to the regression. There were significant effects between absences and age, years of experience, and gender. There was no significant effect between absences and ethnicity (see Table 23.) There was a negative correlation between absences and age, which meant that as age advanced, teachers were less likely to be absent. There was a positive correlation between absences and years of experience, which meant that as years of experience advanced, teachers were more likely to be absent. There was a positive correlation between absences and gender, which meant that women were more likely to be absent than men.

Table 23

Linear Regression of Absences by Age, Years of Experience, Gender and Ethnicity

Model	B	Standard Error	Beta	T	Significance
1 (Constant	39.623	3.672		10.790	.000
Age_last	-.194	.092	-.076	-2.100	.036
Years_of_Exp_last	.234	.118	.072	1.986	.047
Sex_mean	7.962	1.901	.120	4.188	.000
Ethnicity_B	2.674	3.268	.024	.818	.413
Ethnicity_O	-5.830	5.252	-.032	-1.110	.267

The second linear regression combined the dependent variable, total absences, with the independent variables of age, years of experience, and gender. Once again, significant effects were present for age, years of experience and gender. In addition, significant effects were present for two of the three dummy variables for school type. There was a negative correlation between absences and high school teachers, which meant that high school teachers are less likely to be absent from work. There was no significant effect for absences for middle school teachers. There was a positive correlation between absences and teachers in all of the other types of schools, which meant that they were more likely to be absent from work (see Table 24.)

Table 24

Linear Regression of Absences by Age, Gender, Years of Experience and School Type

Model	B	Standard Error	Beta	T	Significance
1 (Constant)	41.901	3.859		10.859	.000
School_Type_Middle	-1.264	2.015	-.020	-.627	.531
School_Type_High	-4.177	1.939	-.071	-2.154	.031
School_Type_Other	18.523	5.494	.100	3.371	.001
Age_last	-.215	.092	-.084	-2.344	.019
Sex_mean	7.728	2.002	.117	3.861	.000
Years_of_Exp_last	.237	.116	.073	2.044	.041

Results with Removal of FMLA Leave

The next step in data analysis was based on the idea that the inclusion of FMLA leave data might have a significant effect on the overall outcome of the previous data analysis. Several steps were taken in order to analyze the patterns of FMLA absence versus the patterns and predictors of teacher absence minus the FMLA data. First, cases were selected where FMLA was the absence reason code. Those 283 cases were aggregated in order to run descriptive statistics about the group of teachers who took FMLA leave over the three-year period designated in the data set. Next, cases were selected where FMLA was not the absence reason code. Those cases were aggregated in

order to run bivariate analyses to determine the impact of FMLA leave on significant effects which had been found in the larger data set.

Descriptive statistics indicate that there were a total of 23 teachers who took FMLA leave during the three-year period of the study. An examination of ethnicity indicated that 4.3 percent, or one teacher, of that sample was black, and 95.7 percent, or 22 teachers, were white (see Table 25.) Of those 23 teachers, 43.5 percent held bachelor's degrees, 13 percent were working towards master's degrees, and 43.5 percent held master's degrees (see Table 26.) School type statistics indicate that 65.2 percent of these teachers were assigned to elementary schools, 17.4 percent were assigned to middle schools, and 17.4 percent were assigned to high schools (see Table 27.) Core teachers made up 91.3 percent of this group, while non-core teachers comprised 8.7 percent of teachers who took FMLA leave (see Table 28.) Women made up 100 percent of this group (see Table 29.) The mean age of the teachers in this group was 31.09, and the mean number of years of experience was 4.78 (see Tables 30 and 31.)

Table 25

Ethnic Composition of Sample

Ethnicity	Frequency	Percent
Black	1	4.3
White	22	95.7
Total	23	100

Table 26

Frequency of Highest Degree Earned

Degree earned	Frequency	Percent
Bachelors	10	43.5
Bachelors + 15	3	13
Masters	10	43.5
Total	23	100.0

Table 27

Frequency of School Type Placement

School type	Frequency	Percent
Elementary	15	65.2
High	4	17.4
Middle	4	17.4
Total	23	100.0

Table 28

Frequency of Core Versus Non-core Teachers

Core/non-Core	Frequency	Percent
Non-Core	2	8.7
Core	21	91.3
Total	23	100.0

Table 29

Frequency of Gender

Gender	Frequency	Percent
Male	0	0
Female	23	100
Total	23	100.0

Table 30

Mean of Teacher Age

	N	Minimum	Maximum	Mean	Std. Dev.
Age	23	25	40	31.09	3.825

Table 31

Mean of Years of Experience

	N	Minimum	Maximum	Mean	Std. Dev.
Yrs. Experience	23	1	10	4.78	2.593

In 2005-06, FMLA leave for these teachers accounted for 22 of the total leave days, or .1 percent of the total leave days for that year. In 2006-07 there were 86 FMLA leave days, or .6 percent of the total leave days for the year, and in 2007-08 there were 175 FMLA leave days, or 1.0 percent of the total leave days.

In order to gauge the impact of the use of FMLA leave on the results of the complete data set, the same bivariate analyses were performed on the newly created data set that excluded the cases of FMLA leave. While the means may have changed somewhat, these tests netted the same overall results as those from the larger data set. For instance, the mean of absences taken by women was 41.73, while the mean of absences taken by men was 33.92 (see Table 32.) Table 33 demonstrates that there is still

a statistical significance between the absentee rates of men and women (F=17.449, p<.05.) Once again, the means indicate that teachers who are assigned to specialty schools have higher mean absences (71.00, 49.37) than teachers in traditional school settings. Table 34 demonstrates that the mean for absences of elementary teachers was the highest in traditional settings (42.46) followed by middle school teachers (40.08) and high school teachers (35.70.) Table 35 demonstrates that there is a statistical significance between absentee rates and school type (F=6.770, p<.05.) Finally, there is no significant correlation between absences and age or years of experience (see Table 36.) The performance of the bivariate analyses on the data set without this type of leave would indicate that during the time period of this study, the use of FMLA leave did not have a significant impact on overall absenteeism.

Table 32

Mean Difference of Absences by Gender

Gender	Mean	N	Std. deviation	Range
Male	33.92	264	22.054	155
Female	41.73	931	28.012	286
Total	40.00	1,195	26.996	286

Table 33

Analysis of Variance for Absences by Gender

		Sum of Squares	df	Mean Square	F	Sig.
Absences *	Between groups (Combined)	12,543.677	1	12,543.677	17.449	.000
Gender	Within groups	857,643.322	1,193	718.896		
	Total	870,186.999	1,194			

Table 34

Mean Difference of Absences by School Type

School Type	Mean	N	Std. Deviation	Range
Alternative/Special Education	71.00	8	41.563	153
Elementary	42.46	486	27.198	205
High	35.70	383	28.369	286
Middle	40.08	299	23.849	203
Career/Tech Education	49.37	19	13.684	54
Total	40.00	1,195	26.996	286

Table 35

Analysis of Variance for Absences by School Type

		Sum of Squares	df	Mean Square	F	Sig.
Absences * School_Type	Between groups (Combined)	19,361.331	4	4,840.333	6.770	.000
	Within groups	850,825.668	1,190	714.980		
	Total	870,186.999	1,194			

Table 36

Correlations of Absences by Age and Years of Experience

		Absences	Age	Years of Experience
Absences	Pearson Correlation	1	-.020	.042
	Sig. (2-tailed)		.498	.146
	N	1,195	1195	1,195
Age	Pearson Correlation	-.020	1	.601*
	Sig. (2-tailed)	.498		.000
	N	1,195	1,195	1,195
Years of Exp.	Pearson Correlation	.042	.601*	1
	Sig. (2-tailed)	.146	.000	
	N	1,195	1,195	1,195

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

Summary of Findings

The results of the data analyses demonstrate that there are particular patterns of absenteeism in this school division. Some of those results had to do with particular frequencies of occurrence, while others had to do with significant effects between the dependent variable, teacher absence, and combinations of independent variables.

First, frequency distributions indicated that absences occurred most frequently on Fridays and least frequently on Mondays. Further, sick leave accounted for 62.3 percent of all absences, while personal leave was the second most frequently used form of leave

at 12.1 percent of the total. The use of sick leave is higher on Fridays than on other days of the week. While the overall number of absences is not high on Mondays, the use of personal leave is highest on Fridays and second highest on Mondays. There is no indication that there is a higher rate of absenteeism on teacher work days or professional development days, but the number of absences does rise just prior to a holiday.

The use of leave under the Family Medical Leave Act did not account for a large number of leave days, but it is notable that there is a steady rise in the use of that leave, beginning at .1 percent of the total leave days in the first year and ending with 1 percent of the total leave days in the last year. While the overall number of absences remained fairly constant for the first two years of data, the third year increased by almost 4 percent after the introduction of an electronic absence reporting system. Finally, frequency distributions also indicated that the number of absences is higher in the spring than it is in the fall.

Second, bivariate analyses contributed to a variety of predictors of teacher absenteeism for this school division. While the ethnicity of the teacher and the level of education of the teacher do not contribute to absenteeism, gender does. Women are more likely to be absent than are men. While the specific teaching assignment of teachers does not contribute to absenteeism, school assignment does. Teachers at the specialty schools, such as the career and technical center and the alternative school, have the highest rates of absenteeism. Elementary teachers have higher absence rates than middle school teachers, and high school teachers have the lowest absence rates. Finally, these analyses

indicated that there were no significant relationships between absence behaviors and either age or years of experience.

Third, multivariate analyses provided an added layer of support for the bivariate findings as well as pointing to some additional predictors. Just as before, results indicated that women were absent more frequently, and that teachers in specialty schools were absent more frequently than any other group. Linear regressions indicated that as age advanced, teachers were less likely to be absent, but as years of experience advanced, teachers were more likely to be absent.

Finally, the removal of FMLA leave from the data set did not produce significantly different results in a second set of analyses. While there was a steady trend of increases in the use of FMLA leave over the three-year period, there was no significant impact on overall leave-taking behaviors.

Chapter V: Discussion and Recommendations

Overview

The purpose of this study was to examine the teacher absence data of a school division in central Virginia in order to determine teacher absence behaviors. The study was secondary data analysis focused on teacher absenteeism data that have been collected about the employees of the school division for the 2005-06, 2006-07, and 2007-08 school years. The study focused on two specific research questions. What is the frequency of teacher absence? What are the predictors of teacher absence? The sample included 1,198 classroom teachers who had 10 or 11-month teaching contracts, and the data set was supplied by the Information Systems department of the school division.

Data analysis began with a series of frequency distributions and descriptive statistics in order to determine the frequency of teacher absence for this population. Further data analysis included a series of factorial analyses of variance, comparisons of means, and regression analyses in order to determine the predictors of teacher absence. Finally, additional analyses were performed to determine the impact of teachers using leave under the Family and Medical Leave Act. In other words, would the frequency of teacher absence or the predictors of teacher absence be altered by eliminating this particular variable?

Discussion of Results for Question One: Frequency of Absences

The results of the first research question indicate that absence behaviors are, in fact, contextual in nature. In the examination of the frequency of teacher absence behaviors, the results were supported by at least one previous study. There were, however, other studies which indicated differing results.

Several researchers have found that teachers' use of discretionary days in order to extend leisure time peaks on days associated with weekends, and in most cases, both Fridays and Mondays (Miller et al., 2007; Alcazar et al., Winkler, 1980). On the other hand, Unicomb and others found that teachers were absent on Wednesdays more frequently than any other day (as cited in Norton, 1998).

While results of this study indicated that teachers in this school division were more likely to be absent on Fridays and less likely to be absent on Mondays, it is important to examine the use of various types of leave in relation to the days of absence. For instance, sick leave was the most frequently used type of leave and accounted for 62.3 percent of the overall instances of absence. The use of sick leave mirrored the overall pattern of absence, with sick leave occurring on Fridays most frequently and occurring on Mondays the least. Personal leave was the second most frequently used type of leave and accounted for 12.1 percent of the overall instances of absence. While personal leave occurred most frequently on Fridays, the next highest frequency of occurrence was on Mondays. Further, the use of leave on workdays or on professional development days was not unusual unless these days occurred on Fridays. On the other hand, leave taking did increase on the days just prior to holidays. The results suggest that

teachers are, in fact, using personal leave to extend leisure time on days associated with weekends and holidays. It could be argued that teachers are also using sick leave to extend their weekend time since illness appears to occur most frequently on Fridays.

One study of teachers in California and Wisconsin found that teacher absenteeism could be reduced by 25 percent by requiring the teacher to report absenteeism directly to the principal (Winkler, 1980). The results of this study indicate a pattern which supports these findings. For the 2005-06 and 2006-07 school years, the rate of absenteeism remained constant. However, that rate increased by almost four percent during the 2007-08 school year. While a cause-and-effect relationship cannot be achieved with these data, it is important to note that AESOP, an electronic absence reporting system, was introduced during that school year. Rather than speaking to a school official, teachers were required to log their absence information online or to report the absence on an automated phone system. The increased rate of absenteeism in the first year of the division's use of this system might point to a change in attitude toward taking leave. Other organizational features, such as salary, class size, or student load, did not change significantly in that school year, so it is possible that the use of the electronic system might have contributed to higher numbers of days of leave.

Finally, the amount of leave taken under the Family and Medical Leave Act increased substantially over the three-year period of the study. While the number of FMLA leave days used does not indicate a significant impact overall, the pattern of increase does. During the three years of the study, FMLA leave accounted for a total of 283 days. However, some of the teachers who used FMLA leave were allowed to use

other types of leave for a portion of their extended absence. For instance, teachers who took maternity leave were allowed to use accumulated sick leave for six weeks after the birth of their children. If they chose to extend the maternity leave, they had to request FMLA leave. Therefore, the FMLA numbers were not always inclusive of the number of days that teachers took in some of these situations. While the results of this study have demonstrated that FMLA leave does not have a significant impact on leave-taking behaviors for the teachers of this division, it is notable that there is a significant increase over the years. The number of FMLA leave days more than quadrupled from 22 in the 2005-06 school year to 86 in the 2006-07 school year. Further, the increase to 175 days in the 2007-08 school year was almost eight times the number in the first year of the study. In other words, FMLA leave has increased from .1 percent of total leave days in 2005-06 to 1 percent in 2007-2008. According to the Labor Department's Bureau of Labor Statistics, the use of FMLA leave among American workers rose from 3.5 percent in 1995 to 6.5 percent in 2000 and to 8.9 percent in 2006 (Sottong, Eberhart, Group,& Naasz, 2007). The pattern is this school division is similar to the national trend in the growth of the use of FMLA leave.

Discussion of Results for Question Two: Predictors of Absence

An examination of the predictors of teacher absence for this school division indicates, again, that the context of the setting is important. The results of the research in this area are supported by some previous studies, and they contradict the results of other previous studies.

Previous studies have produced a variety of outcomes for predictors with respect to gender. Studies in Israel and Peru indicated that there were no significant gender differences in absence rates (Rosenblatt & Shirom, 2005; Alcazar et al., 2006). A World Bank survey of teachers in Bangladesh, Ecuador, India, Indonesia, Peru and Uganda indicated that men were absent more often than women (Chaudhury et al., 2006). However, other researchers have found that female teachers are absent more frequently than male teachers (Scott, 1990; Clotfelter, 2007). Like these studies, women in this school division are more likely to be absent than men. One explanation for this phenomenon might be that women tend to be the caregivers for children or aging parents, which in turn, creates a higher rate of absenteeism from work. In addition, women who participate in maternity leave or who take FMLA leave contribute longer periods of leave than many of their male counterparts.

An examination of the effects of age on teacher absenteeism has often produced contradictory results, largely because researchers have included other factors in their studies. While one study suggests that younger, less educated teachers are absent more frequently (Rosenblatt & Shirom, 2005), another study suggests that women accrue more days of absence as they age while men claimed more days in their thirties (Unicomb, as cited in Norton, 1998). This study indicated that as age advanced, teachers were less likely to be absent. However, regression analyses also indicated that as years of experience advanced, teachers were more likely to be absent.

While these results appear to be contradictory, they do, in fact, have some significant meaning. First, studies of teachers in North Carolina and New York indicated

that the amount of sick leave increased with the level of experience (Clotfelter et al., 2007; Miller et al., 2007). Second, Ehrenberg and others found (1991) that lower usage of leave was attributed to more generous provisions for the buyback of unused sick leave days, increasing the number of unused days to accumulate by an additional 30 days, increasing the dollar per day buyout by $50, and providing for an explicit number of days of annual visitation, conference and professional days. While the first set of studies tended to concentrate on the differences between new, inexperienced teachers and those who had 5 to 10 years of experience, the Ehrenberg study focused on the effects of leave policies on more experienced teachers. Therefore, it could be argued that as teachers in this school division age, they are more likely to use accrued sick leave and personal leave days. However, as they advance toward the number of years of experience required to retire, they are less likely to use leave days which could be bought back by the school division at retirement. Those teachers might also elect to use accrued sick leave to improve their retirement benefits. Virginia Retirement System policy indicates that teachers may purchase service credit at the time of their retirement by using unused sick leave (2010).

Studies have also demonstrated that the grade configuration of schools has an effect on absenteeism. Miller and others (2007) found that teachers in schools with a K-8 grade configuration had lower rates of absenteeism than teachers in schools with a K-5 configuration. Other studies have indicated that teachers in elementary schools accrue more absences than middle school teachers, who are absent more frequently than high school teachers (Clotfelter, et al., 2007; Rosenblatt & Shirom, 2006). The results of this

study indicated similar results with an additional layer of findings. First, this school division has separate school settings for career and technical education, alternative education, and some special education. Teachers at the career and technical school had the second highest rate of absenteeism, while teachers in the other specialty schools had the highest rate. In the regular school setting, elementary school teachers have the highest rate of absenteeism, and high school teachers have the lowest rate.

While the results of the regular school setting mirror the results of other studies, it is notable that the highest rates of absenteeism occur in the specialty schools. The career and technical school offers a series of half-day courses, primarily for juniors and seniors in high school. Those students are transported from their regular high schools in order to participate in these courses. The specialty schools in which the highest rate of teacher absenteeism occurred offer a variety of services from Head Start programs, alternative education for students in middle school and high school who have been removed from the regular school setting, alternative programs for seniors who are at risk, and services for emotionally disturbed and autistic students across all grade levels. Some studies have suggested that the student population or characteristics of the teacher's job role have contributed to absenteeism (Alcazar et al., 2006; Winkler, 1980; Miller et al., 2007; Clotfelter et al., 2007). It might be argued that these factors contribute to the higher levels of absenteeism in these schools. For instance, teachers at the career and technical school may not see their student population as the same kind of unified population that exists at most high schools. Each student has an identity based upon their home school, but do they have the same identity at the career and technical school? Is it possible that

the teachers who serve the alternative and special education populations face greater challenges on a daily basis than do those teachers who are in the regular school setting? Studies have also indicated that teachers who have a higher work load are more inclined to be absent (Rosenblatt et al., 2006), and teachers who experience increased stress tend to be absent (Borg & Riding, 1991). Because the student populations at the specialty schools differ from the regular school setting, it might be argued that both work load and stress contribute to higher levels of absenteeism.

Implications and Recommendations

Teacher absenteeism is a growing concern because of its impact on other aspects of the education of students. First, numerous studies have demonstrated that there is a negative impact on student achievement as teacher absenteeism grows (Miller et al., 2007; Clotfelter et al., 2007; Ehrenberg et al., 1991; Manatt, 1987; Das et al., 2007; Woods & Montagno, 1997). Second, the costs of teacher absenteeism are significant. Providing substitute teachers and the associated administrative costs amount to $4 billion annually, which represents approximately one percent of federal, state, and local spending on K-12 public education (Miller, 2008). The costs of providing substitutes in this school division have totaled approximately two percent of the total teacher pay cost for each of the three years of the study, or $2,438,729 in 2005-06, $2,126,957 in 2006-07, and $1,969,813 in 2007-08. In order to mitigate the current fiscal crises that many school divisions must endure due to a sluggish economy, it is important to examine policies that might reduce teacher absenteeism.

Current Leave Policies

In this school division, teachers earn one day of sick leave for each month of contracted work and two days of personal leave for the school year. Sick leave days may accrue up to 240 days, and personal leave days may accrue up to five days. Unused personal leave days beyond the cap of five automatically become unused sick leave. Leave is credited at the beginning of each school year, so a teacher with no experience begins the year with 10 or 11 sick leave days, depending on the contract, and two personal leave days.

The Duke University study of North Carolina teachers suggested that accrued sick leave, particularly that which was awarded at the beginning of the school year, increased the sense of entitlement that teachers had toward using leave for other reasons (Clotfelter et al., 2007). They posited that a different approach might net improved levels of sick leave usage for teachers. In North Carolina, teachers are awarded a 10 sick leave days each year, one for each month of service, which may accumulate if unused. Rather than giving teachers a lump sum of days to be used, they would be given $500 in additional salary, and they would be charged for sick leave at a rate of $50 per day. If teachers averaged approximately eight days of absence per year, then their base salaries could be improved by at least $100. If they used fewer than ten days, then, in effect, they would earn a bonus (Clotfelter et al., 2007). Some might argue that this arrangement does not take into account extended leave for maternity, illness, or injury. However, studies have shown that policies which allow for the use of sick leave banks and accrued sick leave

contribute to higher usage of leave (Ehrenberg et al., 1991; Clotfelter et al., 2007; Miller et al., 2007; Winkler, 1980).

The system proposed by the Duke researchers deserves consideration for a number of reasons. First, teachers may become more cognizant of the financial risk of absenteeism. Rather than having a pool of accrued leave days from which to pull, they would have to prepare financially for the risk of long-term leave. If they chose not to take unnecessary sick leave days, bonuses could be placed in savings accounts which could be used to finance both planned and unplanned long-term leave. Second, teachers may respond more positively to the bonus associated with unused sick leave days. Some teachers, particularly those who are less experienced and who typically earn less, might see financial rewards as more tangible than accrued sick leave days that may be used in the future. The use of incentive plans, such as bonuses, has been shown to improve teacher attendance (Jacobsen, 1989). Finally, instituting such a system may alter the current culture that is present in many American school systems. Accrued leave, in many cases, represents opportunities to extend leisure time.

FMLA Leave

The use of FMLA leave among American workers has increased almost three percent every five years since 1995. For the three years of this study, the use of FMLA leave in this school division rose from .1 percent to 1 percent of the total number of days of leave used. In this division, teachers who use this type of leave may also use accrued sick leave for portions of their absence from work. As a result, the effect of FMLA leave may be even greater. In most cases, these instances of leave are long-term absences

which call for substitutes who would be hired for the duration of the absence. A parade of various substitutes for the duration of the absence would produce inconsistencies which would ultimately affect student achievement.

As a result of federal NCLB legislation, school systems are required to provide highly-qualified teachers for students in most classrooms. In an era of teacher shortages, providing highly-qualified substitute teachers can be a daunting task. Ultimately, the mandates of the two pieces of federal legislation, the No Child Left Behind Act and the Family Medical Leave Act, appear to produce opposing results. If current trends continue for this school division, FMLA leave requests will increase, and the need for highly-qualified substitutes will increase. Many school divisions across the state and nation have hosted or participated in job fairs in order to find highly-qualified teachers. This school division might consider expanding those job fairs to include a search for highly-qualified teachers who are seeking long-term substitute positions.

Electronic Absence Reporting

A study of public school teachers in California and Wisconsin found that requiring teachers to report absences directly to the principal results in a large reduction in short-term absenteeism. A district with an average of 2.80 days of absence per teacher could reduce that number by almost 25 percent by requiring the teacher to report absenteeism directly to the principal (Winkler, 1980). The results of this study appear to confirm these results. The 1,198 teachers included in this study took 15,147 days of leave during the 2005-06 school year, or an average of 12.64 days per year. That represented 31.5 percent of the total number of days of leave for the study. For the 2006-

07 school year, they took 15,567, or an average of 12.99 days per year. That represented 32.3 percent of the total number of days of leave for the study. They took 17,434 days of leave during the 2007-08 school year, or an average of 14.55 days per year. That represented an increase to 36.2 percent of the total number of days of leave for the study. While a cause-and-effect relationship cannot be determined by the data analysis, it is interesting to note that AESOP, an electronic reporting system, was introduced during the 2007-08 school year. Rather than speaking directly to an administrator, teachers logged absences online or through a phone system.

It might seem obvious that the best course of action in this situation is to recommend the termination of the electronic reporting system. If there were approximately 2,000 additional days of leave used by the same group of teachers during that school year, it seems plausible that its termination would reduce the rate of absence. However, there are additional considerations to be made. Many school systems which opt to use electronic reporting systems do so in order to give administrators additional time to focus on other issues besides securing substitutes. The time that is spent making phone calls to contact substitutes might be better spent dealing with instructional issues which ultimately contribute to student achievement. Further, electronic reporting systems often provide statistics on the usage of leave by school and by individual. These tools might give administrators the data necessary to address areas of weakness in the performance of various teachers. Ultimately, this school division must weigh the costs of the alternatives in order to determine the best use of time and resources.

Absence Culture

Martocchio (1994) defined absence culture as the beliefs and practices of employees on the amount and duration of absence taken within an employee group or organization. This study identified both patterns and predictors of absenteeism for teachers in this school division. Now that those practices are identified, it is important to search for ways to mitigate them.

First, some organizational policies lend themselves to higher usage of leave. Studies have demonstrated that some leave provisions result in higher use of leave days, while other provisions lead to lower use. Ehrenberg and others (1991) found that the use of sick leave banks, the number of annual days of leave available, and the use of bereavement leave that wasn't deducted from any leave category increased the rate of leave taking. However, increasing the buyout provisions for unused sick leave and allowing the number of unused sick leave days to accumulate by an additional 30 days lowered the rate of leave taking (Ehrenberg et al., 1991). Winkler (1980) found that income protection plans that protected teachers from losing salary if the length of illness exceeded accumulated sick-leave days increased absenteeism by as much as 10 percent. On the other hand, requiring the teacher to demonstrate proof if illness, particularly in those absences associated with weekends, could reduce the absentee rate by 20 percent (Winkler, 1980). In this division, absenteeism is greatest on Fridays, and it rises prior to holidays. The rate of absenteeism also rises in the spring. This school division must assess their current leave policies to determine if they contribute to these trends.

This school division does have provisions for a sick-leave bank. Teachers must choose to join the bank, and they are assessed one day of leave per year for membership. In order to use leave from the bank, they must have used all but three of their accumulated sick leave days, and they must use accumulated sick leave for the first 30 days of their absence. If they do not have that much leave accumulated, they must take leave without pay. Further, they may not take more than 45 days of leave from the sick leave bank. The results of this study found that the use of the sick leave bank accounted for 1,387 absences over three years, which is 2.9 percent of the total number of absences. The use of limiting factors on the use of the bank appears to have reduced the number of sick-bank leave days; however, it might be prudent to examine data in order to ensure that it is not being used unnecessarily. For instance, have the members who have used the sick bank used inordinate numbers of sick leave over a period of time? If they had used fewer days at other times, might they have had sufficient accumulated days to cover long-term illness?

The current policy in this school division mandates providing teachers with their annual number of leave days at the beginning of the school year rather than earning them as they accumulate months of experience. In order to curb the use of sick leave as entitled days off, the leave might accrue each month rather than at the beginning of the contract term. In addition, this division's policy indicates that any teacher who are absent for five or more days must provide proof of illness, and that proof may be required at any time for an illness if deemed necessary. In order to reduce sick leave days, the division might consider reducing the number of days from five to three. Principals might also

require proof of illness if teachers take sick leave days on the days before or after holidays or if repeated Fridays are taken off.

Second, the culture of the school can have an effect on leave-taking practices. Imants and Zoelen (1995) found that in schools where there was a familial and informal school climate, there was also a high degree of tolerance for absenteeism. However, in schools where the rules and norms express a commitment to tasks and procedures, low absenteeism resulted (Imants & Zoelen, 1995). Farrell and Stamm (1988) found that job involvement and work environment have significant effects on absence behavior, including control policies that stress both sanctions and positive actions. Gaziel (2004) found that teachers who expressed a high level of commitment to their school accrued fewer voluntary absences from school, and that if voluntary absence was viewed as somewhat legitimate and unavoidable, it would result in higher absences.

The administration of this school division might consider examining data that leads to conclusions about school culture and its effect on absenteeism. First, yearly surveys of job satisfaction might help pinpoint areas of concern which lead to a higher rate of leave. Second, overall absence figures could be collected for the division as a whole, each school, and each teacher. An examination of trends might give administrators the tools to mitigate higher rates of leave. For instance, if one type of school has a higher rate of absenteeism than others, what are the underlying causes? If schools within a particular type have significantly better or worse attendance, what are the contributing factors? What is one school doing to encourage attendance, and what is happening at the school where attendance is poor? It is incumbent on the division

administration to monitor the effectiveness of the building-level administration with regard to enforcing policy and creating a positive school culture. Similarly, it is incumbent upon the building-level administrators to collect information to praise employees who maintain excellent attendance and to counsel those who abuse leave policies.

Conclusion

Teacher absenteeism is costly to school divisions, not only in terms of its financial burden, but also in terms of lost educational opportunities for students. Under the current economic climate and the burden of increased accountability for achievement, it is critical that school divisions sharpen leave taking policies in order to mitigate these losses.

Because the research on teacher absenteeism has produced disparate results, and because research in the United States has been scant, it is important for school divisions to examine the leave-taking habits of their teachers in the context of the locality and its policies. While this school division has some policies that result in lower rates of the number of days of leave, careful consideration of leave-taking behaviors might result in reduced financial and achievement losses.

There are several steps that this division can take. First, yearly collection of data at the division, school, and employee level will make it possible to identify both areas of weakness and strength. Second, there must be an examination of the current policies which might contribute to higher levels of absenteeism. Instituting policies such as proof of illness or accrual of leave each month versus at the beginning of the contract term

might alter the possible perception that sick leave and personal leave can be used interchangeably. Third, the division must consider the prudence of using the electronic reporting system. Is it an effective way to manage absenteeism? Are the costs associated with the purchase of the software and the increased absenteeism justified by the additional time that administrators may spend on instructional issues in the absence of securing substitutes? Does the system provide the type of data that makes it possible to examine leave-taking behaviors? And finally, a formal system of the examination of school culture should be instituted in order to identify factors which contribute to increased absenteeism.

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Vita

Kristy Lee Pitts was born in on August 22, 1958, in Murphy, North Carolina, and is an American citizen. She graduated from Martinsville High School, Martinsville, Virginia, in 1976. She received her Bachelor of Arts in English from Mary Washington College, Fredericksburg, Virginia, in 1980. She earned her Masters of Education in Curriculum and Instruction from George Mason University, Fairfax, Virginia, in 2001, where she received a Program Award of Excellence. She has served as a teacher, a Coordinator of Testing, and an Instructional Coordinator for Spotsylvania County Schools, Virginia, since 1980.