A STUDY OF THE RELATIONSHIP BETWEEN
TEACHER ABSENTEEISM, TEACHER ATTRIBUTES,
SCHOOL SCHEDULE AND STUDENT ACHIEVEMENT

By

Shirley R. Bayard

A Dissertation Submitted to the Faculty of the
College of Education
in Partial Fulfillment of the Requirements for the Degree of
Doctor of Education

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This dissertation was prepared under the direction of the candidate’s advisor, Dr. Patricia Maslin-Ostrowski, Department of Educational Leadership, and has been approved by the members of her supervisory committee. It was submitted to the faculty of The College of Education and was accepted in partial fulfillment of the requirements for the degree of Doctor of Education.

SUPERVISORY COMMITTEE:

Pat Maslin Ostrowski
Chairperson

Mary Roeben

John J. Moni

Gary Dalton

Chairperson, Department of Educational Leadership

Dean, College of Education

Division of Research and Graduate Studies

Date 12/9/03
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To my husband, Pierre Richard Bayard
our children Marc and Pascale
our grandchildren, Dimitri, Arielle, and Sean
To my parents, Gerard and Erika Theard
You are my reason to succeed!
ABSTRACT

Author: Shirley R. Bayard

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The purpose of this non-experimental archival study was to determine if student mathematics in middle and high schools could be predicted by teacher absenteeism. Additional relationships, such as teacher absenteeism, selected attributes and student achievement; teacher absenteeism, school schedule and student achievement were investigated.

This archival study was conducted in Broward County Public Schools, Florida, for the 2001-2002 school year and included 722 mathematics classes with their teachers in eighth and tenth grades.
The study addressed 3 research questions. Multiple linear regression analyses were used to test each hypothesis. All statistical tests were performed at the .05 level of statistical significance.

The following conclusions were reached regarding teacher absenteeism and student achievement:

1) Teacher absenteeism, beyond 2 days, has a small negative effect on achievement test scores, \( p = .007 \).

2) Mathematics background in elementary and middle school has a large positive effect on achievement test scores, \( p < .001 \).

3) Teacher attributes, except gender, are not linked to achievement test scores. The interaction between male teachers and teacher absenteeism has a small negative effect for more than 2 days absent, \( p = .02 \).

4) School schedule is not linked to achievement test scores.

Further research is needed on the effect of absenteeism on student achievement, the effect of absenteeism on other student outcomes, and the effect of teacher gender on student achievement.
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Chapter 1

Introduction

Background of the Study

Each year about 200,000 teachers in the United States take time out of school resulting in an annual loss of 75 million hours of student contact time (Lewis, 1981). These absentee teachers and the need for substitute teachers to cover their absences cost school boards, collectively, $2 billion yearly (Onofry, 1994). Despite increased awareness of this dilemma, teacher absenteeism continues to rise (Armstrong, 1992; Pitkoff, 1993; Spencer, 1988). Issues challenging education today, such as teacher attrition, substitute teacher shortage, and projected growth of student enrollment, further intensify the absenteeism problem.

Research estimates illustrate a national teacher-absenteeism rate of 8% to 13% per day (Glass, 2001). This amount may be increasing as teachers are required
to engage more frequently in professional development training programs to improve their classroom effectiveness.

When permanent teachers are out of the classroom, substitute teachers are employed. Each day about 5 million children walk into 274,000 classrooms nationwide to find substitute teachers (Elizabeth, 2001). Unfortunately, as much as one full year of a child’s K-12 education will be taught by substitute teachers (Smith, 2002), who, it has been established, are not as qualified to teach as the regular classroom teacher (Hawkins, 2000; Olson, 1971).

In order to meet the demand of classroom staffing because of teacher absenteeism, the need for substitute teachers has increased. In view of this problem, many school districts across the nation have lowered their certification requirements in order to staff classrooms. Many substitute teachers are not even trained in the subject areas they are called on to teach (Hawkins, 2000; Trejos, 2001). According to a national survey
of 500 school districts conducted by Utah State University, substitutes need nothing more than a high school degree or a GED in many cases (Trejos, 2001).

This is not the case, however, for Broward County School District, the site of the present study, where certification requirements for substitutes are 60 semester hours or more of college credits. In addition to this prerequisite, although substitutes may not be trained in the subject area they are assigned to do a replacement, the district allows them to list preferences of subject areas and schools.

A report conducted by the Research and Evaluation Department of the Broward County, Florida, Public Schools, the site of this study, showed that every school day, an average of 1,140 of the district's 12,000-plus teachers are absent on any given day. During the 1997-1998 school year, teachers accumulated more than 182,000 absences, costing the district about $12.9 million for substitute teachers (Broward County Public Schools [BCPS], 1999). Currently, the Broward County Public School District (2002) seeks 1,400 substitutes daily to staff teacher openings.
Teacher absenteeism is a primary concern for school board members and administrators across the nation (Foldesy & Foster, 1989). In a statewide study of school personnel directors, Norton (1994) indicated that 71% of educational leaders reported teacher absenteeism as one of the major organizational problems they confront daily. Teacher absenteeism has been tied to strained school-district budgets and declining student achievement (Davis, 1997; Foldesy & Foster, 1989), yet no nationwide study has been conducted on how teacher absenteeism and the teacher replacements affect student achievement.

The teacher absenteeism issue and its potential negative effect on student achievement may be exacerbated in schools using block scheduling. Block scheduling is defined as a restructuring of the school day into classes longer than the traditional classes (Adams & Salvaterra, 1997; Georgia Department of Education, 1998). In general, block scheduling consists of 80 to 120 minutes, block periods, with only three or four periods each day per semester, whereas the traditional schedule of 45- to 55-minute classes consists of a six- to eight-period days per year (Marshak, 1997).
The rationale for moving from traditional to block scheduling is grounded on the assumptions that student test scores will be improved, discipline problems will be reduced, and learning through longer class periods will be enhanced (Alternative scheduling, 1996). Because of these promises, the number of schools that have converted to block scheduling has grown nationally over the last decade. In his 1994 national survey, Cawelti found that 40% of schools in the United States were using some form of block scheduling. A report by the North Carolina Department of Public Instruction indicated that 74% of the state's secondary schools had converted to some form of block scheduling. In 1998 Queen and Isenhour predicted that 75% of all high schools would use some form of block scheduling within the next few years (Queen, 2000). Currently, in Broward County Public Schools, only 28% of the middle Schools and 64% of the high schools have converted to the block scheduling mode.

Various forms of block scheduling exist, but for purposes of this proposed study, all variations employed in Broward County secondary schools since 1997 have been considered. At the middle school level,
block scheduling consists of grouping grade levels into teams. This option provides the teacher with the flexibility to structure interdisciplinary units, address student individual needs for individualized instruction, remediation, and enrichment, and to promote peer-group identity and rapport (Pitton, 2001). Under this scheduling alternative, instructional time is not reduced.

At the high school level in Broward County, there are three block models in use: the 4 X 4, the 4 + 1, and the A/B Day. Students on the 4 X 4 block schedule take four courses per semester, each meeting for 90 minutes, allowing students to take eight courses per year. The total number of contact hours per course per year is 135 hours, which is a decline from the 154 hours under the traditional schedule (BCPS, 1997). Under the 4 + 1 block variation, students take four classes per day (four days each week) per semester. Each class meets for 110 minutes in length for a total of eight classes per year. Finally, under the block A/B Day design,
students take three classes of 100 minutes, meeting every other day, and one constant class of 60 minutes, meeting daily, for a total of seven classes per year.

Statement of the Problem

The financial costs associated with teacher absenteeism are significant, but do not reflect the possible damaging effects of teacher absenteeism on student achievement. As previously identified by researches, the learning model of education in the United States is based on student-teacher interaction (Woods, 1996). In a classroom setting, the interaction process is continuous and occurs through the delivery of instruction, verbal information, discussions, feedback, and more.

When students or teachers are absent, a violation of one of the learning model's assumptions occurs (Elliott, 1979). An absence interrupts the continuous flow of interaction between teacher and student, breaks the pace of instruction, reduces productive class time, and increases the need of student remediation (Hill, 1982; Lewis, 1981; Skidmore, 1984). Student achievement depends on continuity of instruction
(Hawkins, 2000; Skidmore, 1984). Yet, very few research studies are found that directly assess the impact of teacher absenteeism on student achievement, particularly in the middle and high schools.

While the goal of adopting block scheduling is to increase and enhance contact time between teacher and student in order to improve student achievement, an obstacle to reaching this goal is the reduction of contact time between teacher and student, causing a potential loss of learning opportunities when the teacher is absent. One commonly-cited disadvantage of block scheduling is that missing 90 minutes of class on the block is equivalent to missing one and one-half periods with respect to the traditional schedule (Hurley, 1997). Therefore, the consequences of teacher absenteeism in schools where the block scheduling is in effect may adversely affect student academic achievement.

Purpose of the Study

The purpose of this non-experimental archival study was to relate teacher absenteeism to student achievement in middle and high schools situated within Broward County, Florida, Public Schools using a set of demographic and professional attributes. The relationship
between teacher absenteeism and student mathematics achievement in middle and high schools using a block schedule compared with those using a traditional schedule was also explored.

Research questions

This study attempted to answer three key research questions:

Q1. Is there a relationship between teacher absenteeism and student achievement in mathematics in Grades 8 and 10?

Q2. Is there an interaction between teacher attributes (age, gender, educational level attained, and years of teaching experience) and teacher absenteeism on student mathematics achievement in Grades 8 and 10?

Q3. Is there a difference in the relationship between teacher absenteeism and student mathematics achievement for 8th- and 10th-grade students in schools using different types of school schedule, whether traditional or block?
Hypotheses

To fulfill the purpose of this study, the following hypotheses were stated in the null form and were tested at the .05, or better, level of significance.

$H_01$: There is no relationship between teacher absenteeism and student mathematics achievement in Grades 8 and 10 combined.

$H_01(a)$: There is no relationship between teacher absenteeism and student mathematics achievement in Grade 8.

$H_01(b)$: There is no relationship between teacher absenteeism and student mathematics achievement in Grade 10.

$H_02$: There is no interaction between teacher attributes (age, gender, level of education attained, and years of teaching experience) and teacher absenteeism on student mathematics achievement in Grades 8 and 10 combined.

$H_02(a)$: There is no interaction between teacher attributes (age, gender, level of education attained, years of teaching experience) and teacher absenteeism on student achievement in Grade 8.
H0.2(b): There is no interaction between teacher attributes (age, gender, level of education attained, and years of teaching experience), and teacher absenteeism on student mathematics achievement in Grade 10.

H0.3: There is no difference in the relationship between teacher absenteeism and student mathematics achievement for Grades 8 and 10 in schools using different types of schedule, whether traditional or block.

H0.3(a): There is no difference in the relationship between teacher absenteeism and student mathematics achievement for Grade 8 in schools using different types of schedule, whether traditional or block.

H0.3(b): There is no difference in the relationship between teacher absenteeism and student achievement for Grade 10 in schools using different types of schedule, whether traditional or block.
Significance of the Study

This study is important for two reasons. First, with the current national emphasis on increasing student achievement, if this study showed that teacher absences negatively impacted student academic achievement in mathematics in middle and high schools, then school officials could develop strategies to increase the attendance rates of teachers to enhance the academic achievement of students. Second, given the trend of the schoolwide reform initiatives designed to improve school effectiveness, such as block scheduling and the pursuit for accountability in all areas of education, the findings of this study could be useful to district and school administrators as they work to resolve the financial and instructional losses because of teacher absenteeism.

Definitions

The following operational definitions are provided to aid in clarity of this investigation:

Teacher absences: Days in which teachers are away from their classrooms and substitute teachers are in charge.

Teacher absence measure: Teachers' total number of days absent from the classroom during school
year 2001-2002. In Broward County, teachers are employed on a full-time basis and are entitled up to 10 days of sick/personal days with pay per year (BTU, 2001).

Teacher attributes: Personal or professional characteristics affecting teaching and student learning outcomes.

Teacher substitute: A teacher performing duties for an absent teacher on a temporary basis and who may not be certified to teach.

Student achievement: Student total test scale score earned on the mathematics section of the FCAT.

Block school schedule: A model of increased length of class periods, ranging between 80 to 120 minutes, with only three or four periods each day (Marshak, 1997).

Rotating 7 schedule: A schedule model consisting of 7 one-hour courses per year during a six-hour day. The first class meets every day, while the remaining second through seventh classes rotate, resulting in 154 hours of instruction per course in an academic year (BCPS, 1997).
Traditional school schedule: The model of the Rotating 7 schedule used in Broward County Public Schools.

Delimitations of the Study

The investigation was restricted to studying the absenteeism of middle and high school mathematics teachers and middle and high school student achievement in mathematics in Broward County, Florida, Public Schools, by Grades 8 and 10 students who took the FCAT during the 2001-2002 school year. It included ESOL students because they are mainstreamed in mathematics classes and their scores count in the overall school performance rating.

Limitations of the Study

There were limitations in this research that should be noted. The exclusion of student absence as a confounding variable which may have interacted with teacher absences to influence student achievement may have posed a threat to the validity of this investigation. However, since the literature on this issue reported mixed results, the researcher chose not to include the student absence. Instead, student past achievement during the previous school year served as the input.
for student background and was examined in order to measure teacher net effect on predicted student achievement.

Another limitation was to restrict the measure of teacher absenteeism to total number of days absent and not take into account reason for absence in the explanation of teacher absenteeism effect on student achievement. Reasons for absence included absence because of illness, personal reasons, temporary duty leave, or a leave for professional improvement. It is possible that a temporary duty leave granted to teachers to participate in professional meetings, seminars, and educational workshops designed for professional improvement may have had a positive effect on student outcomes as opposed to a leave of absence granted for personal reasons or illness. For example, if teachers, upon their return to the classroom, implemented innovative strategies into their practices, this may have led to an increase in student test scores. If this is the case, then the lack of such data may have led to an invalid identification of the relationships between the examined variables. Likewise, if teachers
were not likely to incorporate new skills and strategies into their lessons, the study’s findings will not have been affected.

Although the researcher considered the examination of reasons for absence an important component and an interesting topic for future investigations, the intent in this study was to focus on the effect of teacher absenteeism on student mathematics achievement, regardless of the reason for the absence.

Because of the limited focus of this study to one school district, two school levels, and one academic area, it was not possible to generalize the results to other school levels and academic subject areas. Additionally, because of the reliance of this study on the validity of the standardized test, the FCAT mathematics subtest, for the assessment of student learning outcomes, generalizability cannot be made for other types of standardized tests. Therefore, the results cannot be completely generalized.
Assumptions

The research assumptions for this study were as follows:

1. Teacher absenteeism has a negative effect on student mathematics achievement in Grades 8 and 10.

2. Teacher absenteeism and teacher attributes (age, gender, educational level attained, and years of teaching experience) interact with student mathematics achievement in Grades 8 and 10.

3. The effect of teacher absenteeism on student mathematics achievement in Grades 8 and 10 is different in schools using block scheduling as compared to schools using traditional scheduling.

Research Design and Methodology

This is a nonexperimental archival study that examined a concern of school administrators and the educational community regarding teacher absenteeism and its potential negative effect on school productivity.

This study related teacher absenteeism to student achievement for all mathematics sections \((N = 722)\) taught by 324 mathematics (algebra and geometry) teachers at Broward County Public Schools. The
independent variable, teacher absenteeism, was defined, generally, as the total number of days absent from Grades 8 and 10 mathematics (algebra and geometry/measurement) teachers in Broward County Public Schools. The dependent variable was defined, generally, as student mathematics achievement in Grades 8 and 10. The intervening variables, teacher attributes (i.e., age, gender, educational level attained, and years of teaching experience) and school schedule (traditional v. block) were also examined.

Mathematics was the academic course selected because of its critical importance as a sequential core subject and because the teaching methodology and student prior knowledge requirement differ widely from other core subjects.

Grades 8 and 10 were selected as the educational levels to be investigated based on their critical grade levels for determining promotion from middle school to high school and for fulfilling graduation requirements from high school. The FCAT administered at those two specific grade levels provided the achievement measures for analysis.
Middle and high schools on block schedules were compared with middle and high schools using the traditional schedule. In Broward County Public Schools, a variation of the traditional schedule is employed and is known as the rotating 7 model, but was referred to as the traditional schedule in this study.

Using the total number of days teachers were absent, grade levels they taught, teacher attributes, and school schedule, this study examined whether teacher absenteeism affected student mathematics achievement using 2001-2002 FCAT scores.

Analysis of the data determined which grade level was more influenced by teacher absenteeism. The interaction of teacher absenteeism and four teacher demographic attributes and their possible effect on student mathematics achievement were explored. Finally, the differences in student scores on the FCAT mathematics subtest between teachers with over and below two days absent in schools using block or traditional scheduling were examined.

**Statement of Specific Procedures**

The subjects in this study included all Grade 8 and 10 mathematics (algebra and geometry) sections
and their teachers who were employed in Broward County Public Schools during the 2001-2002 school year.

In order to test the hypotheses, standardized test scores obtained from the FCAT Mathematics Sub-test were used to measure student academic achievement. To obtain the data needed to conduct the investigation, the researcher asked for cooperation from the Research and Evaluation Department at the Broward County Public Schools District.

Raw data regarding teacher absenteeism rates, as well as the student FCAT mathematics scores in Grades 8 and 10 and base-year data from Grades 7 and 9, teacher attributes (age, gender, educational level attained, and total years of experience) were obtained from the Broward County Public School computerized database system.

Organization of the Study

Chapter 2 presents an extensive review of the literature focusing on teacher absenteeism, demographic attributes, consequences of teacher absenteeism, teacher absenteeism and student achievement, student performance measures, and block scheduling, teacher absenteeism,
and student achievement. The research methodology is outlined in Chapter 3. Chapter 4 provides a detailed discussion of the results of the collection and analysis of data. Finally, chapter 5 provides a detailed discussion of the conclusions and recommendations.
Chapter 2

Review of the Literature

This non-experimental archival study investigated the relationship of teacher absenteeism to student mathematics achievement in middle and high schools situated within the Broward County, Florida, Public Schools.

Research suggests that the effect of teacher on student learning outcomes cannot be attributed to any one factor but involves the interaction of several different teacher characteristics or attributes (Rothman, 1969). Therefore, certain attributes that encompass teachers and that may affect not only teachers' views on absenteeism but also the rate at which they are absent are reviewed in this chapter.

If it is reasonable to assume that extending instructional time when teachers and students are in attendance yields higher academic achievement, then reducing contact time between teachers and
students should lower student academic performance. An organizational variable that can be used to structure (increase or decrease) instructional time to fit curricula needs is school schedule. The literature on block scheduling (Carroll, 1990; Marshak, 1997), in which extended periods of time for learning are available, argues that this form of scheduling provides the means to improve student achievement.

But how do students fare academically when teachers are absent for long blocks of time? To what extent do teacher absenteeism and teachers’ attributes explain differences in achievement among schools beyond that explained by school schedule? The review of the literature will help establish an understanding of the effect of teacher absenteeism on student achievement.

To do so, the review of the literature has been divided into six sections. The first section discusses teacher absenteeism. The second section explores demographic and professional attributes. Consequences of teacher absenteeism are addressed in the third section. Teacher absenteeism and student achievement
are examined in the fourth section. The fifth section
details student performance measures. Block scheduling,
teacher absenteeism, and student achievement are
outlined in the sixth section. Finally, the chapter
concludes with a summary of the literature review.

Teacher Absenteeism

Employee absenteeism research has been conducted
for over 50 years by the corporate sector and has
provided background for subsequent research in the
educational sector (Scott & Wimbush, 1991). Educational
research efforts emerged in the mid-1970s and focused
primarily on identifying determinants of absenteeism
(Boyer, 1994). The endeavor was to determine causes
related to absence so that appropriate solutions for
this problem could be developed (Scott & Wimbush, 1991).

Over 200 variables believed to influence teacher
absenteeism have been studied, including demographic
variables (age), organizational variables (grade
level), and intrapsychic variables (job-related
stress). From a broad literature review on absenteeism,
Steers and Rhodes (1978) attempted to organize
systematically empirical determinants of employee
absenteeism and developed a process model of employee
attendance. Their model draws upon factors from both the individual and the organizational domains. In their model, job satisfaction was identified as being the single most important factor that affects employee attendance motivation. The Steers and Rhodes model has generated substantial research interest; however, to date, this model has theoretical problems and lacks strong empirical support (Fichman, 1984). None of the subsequent studies tested a model of absenteeism. As a result, findings are elusive, and the causes of absenteeism are still poorly understood. The scope of the problem of absenteeism and school-leave policies are presented next.

Scope of the problem

Twenty years ago, research studies on educational absenteeism flourished. Recommendations to school boards and principals were made to no avail as the problem of teacher absenteeism not only persists but continues to grow (Armstrong, 1992; Pitkoff, 1993; Spencer, 1988).

There is consistent research evidence that the rate of teacher absenteeism is higher in economically or academically disadvantaged schools and is destined
to increase (Elizabeth, 2001). According to a national survey of 500 school districts conducted by Utah State University and the U.S. Department of Education (2001), students in at-risk schools are with substitutes for about 13.5% of each school year; the figure is 10% for most children.

Griswold (as cited in Elizabeth, 2001), estimated that at-risk children will spend nearly 2-school years, that is, 1 or 2 full years in class with a substitute, who often is untrained, and is certainly not as qualified as the regular classroom teacher. In fact, in most states, substitutes do not need certification to take over a classroom. The findings of the Utah State University survey (as cited in Elizabeth, 2001) support this contention by claiming that most districts hire substitutes with a high school degree or a GED. A reason for lowering employment requirements for substitutes is because of substitute shortage (Smith, 2001).

A recent study by Haselkorn, president of Recruiting New Teachers Inc. (as cited in Elizabeth, 2001), indicated that 73% of school districts had an immediate, urgent need for substitute teachers. As a result of this
“shortage crisis,” the number of untrained non-teachers taking over the country’s classrooms is growing at an astounding rate (Elizabeth, 2001).

School-Leave Policies

Most states have mandated that their school boards grant sick leave to full-time employees. The provisions may vary from one state to another but, generally, most states provide 10 days for illness and personal reasons. Some states provide a “buyback” option of unused sick leave, while others provide a “cash in” possibility upon retirement or contract termination.

In Broward County, Florida, the site of this study, Broward Teachers Union [BTU] and the School Board of Broward County Florida (1998), Collective Bargaining Agreement, described a sick-leave program for full-time employees, which states:

Any employee employed on a full-time basis who is unable to perform his/her duty in the school because of illness or death of father, mother, sister, brother, husband, wife, child, other close relative, or member of his/her own household and consequently has to be absent from his/her work, shall be granted leave of absence for sickness by the Superintendent, or by someone designated in writing by him/her to do so. (p.28-1)

Altogether, teachers get 10 days for each contract year of employment for illness and personal reasons;
nevertheless, personal leaves are charged only to accrue sick leave. Sick days are cumulative from year to year and are unlimited, while personal days are non-cumulative. Other provisions in the BTU's (1998) Collective Bargaining Agreement specifically address illness-in-the-line of duty, temporary duty leave, legal commitments, professional, personal, and military leaves. Temporary duty leave may be granted for attending or participating as a facilitator in educational workshops, seminars, or conferences sponsored by professional organizations, colleges, universities, government or private agencies. Funds are provided for such leaves but are limited.

In the state of Florida, provision has been made permitting a school board to establish and to administer a volunteer "sick-leave bank" for full-time employees (Florida Statutes, 1981). Twenty years ago, the Florida State Legislature gave school boards the authority to design programs with the purpose of creating an annual buyback of unused sick days (Florida School Code, 1981); such policy has been implemented in Broward County.
Studies document the historical growth of sick leave programs in the educational sector (National Education Association, 1928). There is research that reports effects of sick leave, such as contractual provisions on teacher attendance (Boyer, 1994; Ehrenberg, Ehrenberg, Reese, & Ehrenberg, 1991; Jacobson, 1989; Malick, 1997).

Additionally, research is available which cites the varying absentee rates of instructional personnel in relation to such factors as salaries, fringe benefits, incentive plan, job satisfaction, and personnel benefits (Blankinship, 1985; Jones, 1989; Rasmussen, 1996; Stern, 1980).

Demographic and Professional Attributes

As stated earlier, many studies of teacher absenteeism have attempted to establish a correlation between demographic variables and absenteeism (Compton, 2001; Worthington, 1997). This body of research, however, has revealed conflicting results. Does that imply that demographic and professional attributes have no impact on absenteeism? That question remains unclear. Since no consensus can be achieved, as a result of these studies, four of the teacher
attributes, age, gender, educational level attained, and years of teaching experience, will be explored.

Age

Age has been found to yield mixed results in studies of teacher absenteeism. Twenty-one studies on teacher absenteeism published by the Educational Research Division of the National Education Association (1960) indicated a wide variance of results. For example, one study in Miami-Dade County, Florida, showed that older teachers used more leave time than their younger counterparts, while Martin (1999) found that teachers in the age group of 22 to 28 were absent more frequently than those 43 to 49 years of age.

Similarly, research conducted in Akron, Ohio, and in St. Louis, Missouri, indicated that absence rates increased steadily through each age group. A study in Newark, New Jersey, during the 1971-1972 school year reported that older teachers had an absence rate of 10.3% as compared with the average rate for all teachers of 6.8%. Several studies, however, have indicated that age is not a factor related to absenteeism. A
comprehensive study of 108 elementary and 165 secondary teachers (Unicomb, 1992) found no differences in absence levels as the age group varied. Compton (2001) supported these findings.

Gender

A number of studies have focused on the relationship between gender and attendance; there is disagreement among researchers concerning gender as a predictor of absenteeism. Teacher gender in several investigations showed that females were absent more than males (e.g., Bigger 1993; Kirkwood, 1980; Martin, 1999; Richardson 1980; Spencer, 1988). Spencer surveyed 1,368 principals in the 436 public school districts of Iowa and found that teacher gender was linked to absence rates. Several studies support the position that gender is linked to absences (e.g., Bigger, 1993; Compton, 2001; Malick, 1997). A study done in nine Nova Scotia schools (Unicomb, 1992) looked at short-term teacher absenteeism. The results showed women and men in the study demonstrated different patterns with age. For females, the number of days claimed rose with age. On the other hand, males in their 30s used more days than men at any other age.
In contrast, a study of six Michigan school districts found sex of the teacher was not statistically linked to attendance (Martin, 1987). Gender was also defined as an insignificant variable in a review of faculty absenteeism rates within nine South Carolina school districts (Turbeville, 1987). Only one study found that males were absent more often than females (Spencer & Steers, 1980).

Overall, surveys of the absence rates of male and female teachers suggested that females were absent more than males, but for fewer days at a time. According to Scott and McClellan (1990), average days of absence for females was 5.29 per year, and men averaged 3.39 days.

*Educational Level Attained*

Results of several studies that investigated the relationship between the educational level attained and absenteeism have varied. A study conducted in Chicago, Illinois (National Education Association, 1960) showed that absenteeism tended to decrease as the educational levels of teachers increased.

No relationship was found to exist between the educational level attained and absenteeism in
Redmond's 1978 study. Scott and McClellan (1990) reported that the level of teaching license held was one of two primary predictors of teacher absence. The higher the degree held by the teacher, the higher the days of absence.

**Years of Teaching Experience**

The influence of years of teaching experience upon attendance is another example of a researched factor that has led to inconsistent findings. Stern's (1980) investigation of the attendance habits of 309 Illinois educators revealed higher rates of absence for those with 5 to 15 years of experience than for those teachers at the beginning of their careers and those approaching retirement. In almost total agreement, Doran (1986) analyzed the attendance records of 795 Florida teachers and reported a relationship between absenteeism and years of service that resulted in fewer absences for staff members with either less than 6 or more than 20 years of teaching experience. In his 1986-1987 study of patterns of teacher attendance in New York City, Greenberg (1989) reported that, of his seven studied variables, the single statistically significant
correlation was between teacher seniority and teacher absence. In fact, Greenberg identified teacher seniority as the sole predictor of teacher absenteeism. More recently, similar conclusions were reached in studies conducted by Compton (2001) and Malick (1997), which also indicated an influential relationship between years of service and faculty attendance.

The experience level did not affect the attendance of the 336 kindergarten teachers in Brown’s (1987) study. Pitkoff (1989) reached a similar conclusion in a study of absenteeism conducted in 17 Brooklyn, New York, high schools. Pitkoff also found a low correlation between attendance and years in the teaching profession.

Demographic, Organizational, Intra-psychic Variables

The literature revealed a host of findings in determining the relationship between teacher absenteeism and other demographic, organizational, and intrapsychic variables. This review delineated consistent and inconsistent findings in each one of the three categories as reviewed and summarized by Ehrenberg, et al. (1991), Norton (1994), and Pitkoff (1993).
Demographic Variables

Consistent findings have been identified for ethnicity (non-Whites are absent more than Whites), distance from work (people who travel more are absent more), and license status (teachers with temporary teaching certificates were absent more times than regularly licensed teachers). Findings regarding teacher absenteeism and variables such as marital status, family size, geographic location, tenure, and salary, remain inconclusive (Pitkoff, 1993).

Organizational variables

In addition to recognizing that the correlation between teacher absenteeism and demographic attributes may be positive or negative, researchers have examined other school-level factors which may also have an impact on staff attendance. These factors are often referred to as organizational variables and include school characteristics, such as location, enrollment, type, conditions, facilities, socioeconomic status, management, and school leadership.

Consistent findings have been made between teacher absenteeism and days of the week (higher absenteeism was prevalent on Mondays and Fridays),
district size (urban area employees were absent more than suburban and rural employees), school level (absence was higher in elementary schools), attendance policies (schools that do not require teachers to report an absence to their immediate supervisor showed a higher absentee rate than those schools that made it a requirement), and school socioeconomic status (rates of teacher absenteeism were higher in schools of economically disadvantaged students). Studies investigating the relationship between teacher absenteeism and organizational variables, such as class assignment, subject area, time of year, and leave policies, revealed inconsistent results (Pitkoff, 1993).

**Intrapsychic Variables**

In an attempt to identify other predictors of excessive teacher absenteeism, research has focused on intrapsychic variables, defined as psychological factors originating from within the mind or self (Webster, 1989). Causes of excessive absenteeism can be traced to teachers' own personal and family life, their social and economic environment, and the atmosphere found at schools.
Corresponding findings (e.g., Foldesy & Foster, 1989; Pitkoff, 1993) have been made between teacher absenteeism and job satisfaction and school climate (teachers are less likely to miss work when principals are supportive and when job satisfaction is positive), satisfaction with pay (as pay increases, the rate of absenteeism decreases), absenteeism and individuals who received low performance ratings (the lower the rating, the higher the level of absenteeism), and absenteeism and sick leave provisions (the more sick leaves are available, the greater the rate of absenteeism).

Although the teaching profession has been identified as a stressful occupation, findings of studies attempting to associate teacher absenteeism and stress revealed mixed results.

Consequences of Teacher Absenteeism

Thus far, only correlates of teacher absences have been discussed. The review will now move from a discussion of research on determinants of teacher absence to a review of literature addressing consequences of teacher absenteeism on school productivity. The word consequence is used to mean something that follows from absenteeism, depends
upon absenteeism, and is causally related to absenteeism (Goodman & Atkin, 1984). In this section, the focus will be on evaluating costs as a consequence of teacher absenteeism on school productivity. A national survey of principals identified six major costs as a consequence of teacher absenteeism: financial, managerial, organizational, program, credibility, and instructional (Elliott & Manlove, 1977).

**Financial Costs**

Most research on teacher absenteeism showed that teachers, as a group, displayed a higher rate of absenteeism than employees in most other professions (Pitkoff, 1993), and the overall cost of absences for elementary and secondary school systems surpassed that of all other professional organizations (Scott & Wimbush, 1991). The reason for the monetary discrepancy between corporate and school sectors was that not only does an absent teacher receive full payment for a legitimate leave but a substitute teacher must also be employed and paid a salary to cover instruction.

In a study of three school systems, Detroit, Philadelphia, and New York, Lewis (1981) reported that their combined absenteeism costs, which included
salaries of the absent teachers, wages for the substitute teachers, and contributions of teacher benefit accounts, amounted to approximately $500 million per year. A national survey of 470 school districts conducted by the Educational Research Service (1980) found that the average number of paid absences per teacher was 8 days. According to Lewis, on any given day, more than 200,000 teachers were absent from school.

Hill (1982) estimated the nationwide cost of absenteeism at $2 billion in that year. Considering the increase in the absentee rate between 1981 and 2002, and salary increase per diem for both regular teachers and substitute teachers, added benefits, a more recent estimate would surely approach the $3.5 billion figure.

It was reported that financial costs of teacher absences have been and continue to represent a burden for school systems (Employee absenteeism, 1995). In 1999, a research brief on teacher absenteeism in Broward County, Florida, Public Schools reported an 18% increase in the amount of substitute costs over 4 years.
In 1997-1998, on an average day, 1,200 to 1,400 teachers were absent, and the cost for substitutes reached approximately $13 million in that year.

Managerial Costs

Absenteeism represents not only a financial burden for schools but also an important organizational issue (Rhodes & Steers, 1990). Any teacher absenteeism provokes a disruption in school management. According to Hill (1982), for any school administrator, each day starts with determining who is out, who can substitute, and how much it will cost. Manlove and Elliott (1979) further explained the implication of addressing these issues. They stated that "when the principals are dealing with substitute teachers, they cannot be handling more important matters affecting the entire school" (p. 7).

Other constituents of the school organization are also affected by the disruption caused by an absence. When a vacancy cannot be filled, other teachers, administrators, or teachers' aides have to assume additional tasks. Teachers are often asked by the principal to combine their class with that of an absent teacher in order to ensure continuity...
of instructional delivery (Trejos, 2001). This additional burden can cause teachers to give up their preparation time or professional development opportunity.

The current shortage of substitutes aggravates the problem even more (Kelly & Reilly, 1999). While there are no national statistics showing how many substitutes are currently needed on a daily basis, state data and anecdotal evidence confirm the problem. A school personnel supervisor in Hillsborough County, Florida, reported: "We were short of substitutes almost every day last year. On our worst day, we needed 1,222 substitutes and I could only fill 914 of those vacancies" (Kelly & Reilly, p. 1).

Organizational Costs

The role of the teacher is not limited to classroom instruction. Teachers are often responsible for guiding, supervising, tutoring, and sponsoring student extracurricular activities, clubs, associations, and councils. When the regular teacher is absent from work, the sponsored activities are either eliminated or postponed (Koerner, 1982). Thus, because of increasing higher rates of teacher absenteeism,
educational opportunities are denied to students more frequently.

According to Elizabeth Arons, director of personnel for Montgomery County Public schools (as cited in Trejos, 2001), “Anytime you pull a teacher out of a class, I don’t care how good the substitute is, at the very least, you are disrupting instruction; you may even have a wasted day” (p. 5).

Program Costs

Parents and schools are not convinced that substitutes can keep the curriculum moving forward in the absence of regular teachers (Association for Supervision and Curriculum Development, 2001). The concern seems more serious for younger and for special-needs children because often substitutes are neither qualified nor trained to employ special learning strategies for those learners. Similarly, some classes, such as music, languages, special education, and the sciences, are more difficult to fill with substitutes because these classes require specific teaching techniques.
In a study designed to survey substitute teachers' needs to improve their effectiveness in 10 counties in West Virginia, Deay and Bontempo (1986) indicated a need for more familiarity with textbooks and programs being used in the schools and deeper knowledge of lesson strategies, materials, and learners.  

Credibility Costs

When the community is made aware of the high rate of teacher absenteeism, credibility of the school instructional quality is questioned, as well as the professionalism of the teacher. The Pacific Region Educational Laboratory R & D Cadre (1995) study of high school students at-risk reported that teacher absenteeism among other factors, placed Pacific students at risk for school failure. In an open-ended questionnaire, Pacific students indicated that they felt vulnerable to teacher absenteeism.  

Instructional Costs

The most critical cost of all is the cost in student learning when the regular teacher is absent (Manlove & Elliott, 1979). According to Pitkoff (1993), "when teachers are absent from school, their students achieve less" (p. 39).
It is estimated that students will have 7 to 10 of their total classroom days each year supervised by a substitute teacher (Drake, 1981; Kraft 1980). This amount represents 8% to 10% of students’ class time under the guidance of a substitute teacher (Trejos, 2001; Warren, 1988). The very term substitute teacher denotes negative connotations. The educational community views substitutes as marginal because they are not integrated into any formal school structure (Clifton & Rambaran, 1987; Koelling, 1983).

Some parents and students have labeled substitutes as “warm bodies” and “babysitters” (Olson, 1971). Drake (1981) labeled substitute teachers as the “spare tire” (p. 74) of American education. In general, the literature suggested that the performance of substitute teachers is inadequate and the perceived effectiveness of substitute teachers is worse than that of first year and student teachers.

A few studies have investigated the impact of teacher absenteeism and its effect on student attendance, attitude, behavior, and achievement.
Manlove and Elliott (1979) raised the possible impact of teacher absenteeism on student attitudes and behavior. They suggested that frequent teacher absences from the classroom could be attributed to increased vandalism and falling test scores. In a study conducted in New York State School Districts in 1986-1987 by Ehrenberg et al., the authors concluded that higher teacher absenteeism was associated with higher student absenteeism.

Teacher Absenteeism and Student Achievement

Literature on how teacher absenteeism reflects on student performance is sparse. While there are hundreds of studies examining the determinants of teacher absenteeism, 14 studies directly analyzed the effects of absenteeism on student learning results. While most empirical studies examined the correlations between teacher attendance versus student achievement in grade schools, few dealt with the same in secondary schools. Additionally, studies conducted on teacher absenteeism and student achievement had varied results.
The 14 available studies are divided into two categories: The first category comprises studies showing evidence of a significant relationship between teacher absenteeism and student achievement; the second includes studies showing evidence of no significant relationship between teacher absenteeism and student achievement.

Research Evidence of a Significant Relationship Between Teacher Absenteeism and Student Achievement

In a study of urban schools that were classified as high achieving or low achieving, consisting of 50,000 students and 2,000 teachers, Lewis (1981) found that teacher absenteeism in school had a discernible effect on student achievement, although in average-achieving schools, teacher absenteeism did make a difference. The critical point of absenteeism in those schools was 13.5 days, that is, student achievement suffered when teachers were absent more than 13 days out of the year.

Beavers' 1981 study examined the relationship of selected educational variables and student achievement in the Garland Independent School District, as measured by the Iowa Tests of Basic Skills administered to the
entire fifth grade class in October 1981. The findings indicated that there was a statistically significant relationship between teacher absenteeism and student achievement in mathematics and reading.

Summers and Raivetz (1982) found that fourth-grade reading achievement in Philadelphia schools was adversely affected by teacher absenteeism. However, increased fourth-grade reading growth was associated with increased direct contact between student and teacher, which, in turn, was associated with fewer personal or professional absences taken from teaching time.

Woods (1990) looked at the impact of teacher absence from class on changes in student reading achievement. The sample for the study consisted of 817 third-grade students and 45 teachers in two elementary schools in Indiana and Wyoming. The results showed that student achievement declines when teachers were absent more than 4 days.

Ehrenberg, et al. (1991) studied the effect of teacher absenteeism on student absenteeism and how teacher and student absenteeism, combined, affected
student test score performance in 700 school districts in New York State in 1986-1987. The authors found a relationship between teacher absenteeism and student achievement in only one of seven standardized tests examined. As a consequence, Woods (1996) indicated that Ehrenberg et al.'s results were inconclusive on this issue.

Madden, Flanigan, and Richardson (1991) attempted to determine the correlation between teacher attendance and student achievement for secondary schools in South Carolina. The authors collected data about schools that offered monetary incentives to teachers who maintained a low absentee rate and compared schools that did not offer any incentive to teachers who maintained a high attendance rate during the school year of 1987-1988. The authors found a statistically significant relationship between teacher attendance and student achievement in schools that offered monetary reward to teachers with a high attendance rate.

Pitkoff (1993) studied the relationship between subject matter and teacher absenteeism using a large high school sample of 2,988 school employees. He found no significant variance between school employees
of different subjects and rates of absenteeism, although results showed a tendency toward significance among teachers of technical areas, that is, math and science. Teachers in those subject areas were absent the least number of days; teachers of humanities, that is, English, library, art, and special education, demonstrated the highest number of days absent.

Boswell (1993), in a study of 143 secondary schools in South Carolina, indicated that there was a significant negative relationship between teacher absenteeism and student achievement as it related to student socioeconomic status. Pitkoff (1993) also reported lower levels of reading achievement in higher concentrations of financially disadvantaged and minority students, of schools that did not require teachers to speak to their immediate supervisor about pending absence, and of districts with enrollment in excess of 251,000 students.

Manatt (1997) completed an extensive appraisal involving five schools in Minnesota and one in Iowa, known as the School Improvement Model (SIM). The purpose was to demonstrate the effect of administration and teacher performance evaluation on student
achievement in reading and mathematics for students in Grades K-12. Manatt reported teacher attendance and student attendance had a considerable impact on student achievement. More specifically, 5 to 7 days of teacher absences appeared to have a serious negative effect on student academic progress.

Rasmussen (2000) conducted a study for the Los Angeles Unified School Board that involved 711,000 students to examine the issue of the effect of teacher absenteeism on student achievement. Rasmussen found a high correlation between teacher absenteeism and student achievement as a result of the moderator free and reduced lunch. The correlation was especially significant at the high school level.

Research Evidence of No Significant Relationship Between Teacher Absenteeism and Student Achievement

Kirk (1998) examined the relationship between teacher absenteeism and student achievement in reading for Grades 4 and 7 in Broward County, Florida, Public Schools. No significant contribution was noted on the reading achievement scores for fourth or seventh grade.
In Syracuse, New York, Occhino (1987) studied the relationship between teacher and student absence and student achievement for 169 teachers and 4,563 students for Grades 3 through 6. Occhino found that there was no correlation between student achievement in reading or mathematics to teacher absenteeism.

The New York City Public Schools, Division of Assessment and Accountability (2000), *Flash Report #3*, investigated the impact of student attendance, teacher certification and teacher absence on reading and mathematics performance in elementary and middle schools. The report indicated that student attendance and teacher certification rates have significant effects on tests of reading and mathematics, even after the effects of student demographics were factored out. Teacher attendance showed no significant effects for elementary and middle school student achievement.

**Student Performance Measures**

Student achievement, how much and what pupils learn, is probably the single most important concern of educators. Achievement scores have been at the forefront of educational issues because they vary as a measure of school learning outcomes. Furthermore,
they are often used as a data source to determine teacher effects on student achievement (Peterson, 2000).

There are opposing philosophies in terms of how pupils should be evaluated. The testing and measurement movement advocates the use of external tests (norm-referenced standardized or criterion-referenced tests). On the other hand, internal to the teaching and learning situation are those advocates who believe that pupils and their teachers are in the best position to assess learner progress and favor performance-based assessment.

Three types of tests are used to evaluate student rates of learning. They are teacher-made, norm-referenced and criterion-based tests.

1. Teacher-made tests are supposed to reflect the actual curriculum and the test results provide a comparison of one student’s progress with that of others in the same class.

2. Norm-referenced tests offer a comparison of each student’s progress with a national or statewide sampling of comparable students. Such comparisons may reflect teacher effectiveness, the level of the curriculum, and the student’s actual rate of progress.
3. Criterion-referenced tests (CRT) are used to appraise the level of achievement of each learner's progress. Results from the tests may be used to indicate how well each school district is doing. Comparisons may be made among the different school districts and even between classrooms of pupil achievement. These tests measure proficiency in certain areas, such as reading comprehension, writing, and mathematics. They can also be used to compare skill levels acquired with a national norm for students completing the same grades.

The issue of standardized test is a source of dispute among educators (Neill, 1996; Popham, 1996; Stiggins; 1994). Glass (1990) reported that all standard-setting methods were inherently arbitrary and without foundation. Measurement-driven instruction was viewed by some as a desirable focusing of attention (Popham, 1990) and by others as a distortion with undesirable side effects (Bracey, 1995).

For the most part, the issues that surround standardized testing are common to all forms of testing: validity, reliability, and fairness. The most important property of standardized tests is the
objectivity of the test scores. Test reliability is also an aspect of the testing device, which can be predetermined on a standardized test. Although teacher-led tests can help one learn (a) how well students have mastered what the teacher taught them and (b) how effective instruction has been, they cannot replace standardized testing which allows a more scientific, statistical validation of student performance. For this reason, the researcher chose to use one type of measure, the FCAT mathematics score, a standards-referenced test, similar to the criterion-referenced test used throughout the state of Florida, in order to tie teacher absenteeism effect and student achievement in an objective way.

Block Scheduling, Teacher Absenteeism, and Student Achievement

The challenge of school reform initiatives has driven educators across the nation to implement a wide range of changes to improve student achievement. One of the changes is in scheduling with modification to the traditional model of seven 45 to 55 minutes, six or seven periods per day for 180 days, which
had been the norm since 1906 (Viadero, 2001). The block schedule model, consisting of longer block hours, from 80 to 120 minutes with only three to four periods each day for 90 days (Copernican plan) and its variations (i.e., A/B block, Modified A/B block, and Accelerated block) has displaced the traditional model.

The use of block scheduling has increased from 4% in the early 1980s to over 40% by 1999 (Texas Education Agency Report, 1999). To date, research results on the effects of block scheduling are mixed. Although many high schools have made the transition from a traditional schedule to a block schedule, a paucity of data exists in which the efficacy of block scheduling has been examined.

Advocates of the block schedule (e.g., Canady & Rettig, 1995; Carroll, 1990; O'Neil, 1995) have argued that block instructional schedules improve student behavior, increase student achievement, and ameliorate teacher morale. Critics of the block schedule (e.g., Edwards, 1993; Gruber & Onwuegbuzie, 2001), nonetheless claim that material is covered at a faster pace and that student knowledge retention is lower.
Regardless, the researcher's aim in this study was to examine the effects of instructional scheduling on student academic achievement when the teacher was absent. The assumption was that instructional time loss from the interaction between teachers and students varied between one and one-half times or two times higher than in the traditional schedule; hence, the impact of teacher absenteeism on student achievement should also be higher.

Summary

At a time when this nation is calling for excellence in schools and when the current research on effectiveness highlights "time-on-task" as a significant variable in student achievement (Anderson, Evertson, & Emmer, 1990), the teacher absenteeism issue requires greater attention. Fifty years ago, learning theorists, such as Piaget (as cited in Wadsworth, 1971), conceptualized the child's cognitive growth and intellectual development as a continuous process on a continuum and also recognized the importance of the learning environment for student achievement. Based on this premise, Woods
(1990) concluded, "To the extent that this organization is disrupted by a teacher's absence, educational achievement is attenuated" (p. 309).

The literature review has not attempted to provide an exhaustive listing of teacher variables that influence directly or indirectly school productivity. Instead, the variables described and their reported correlation with student academic achievements were selected in order to illustrate the conflicting findings in teacher absenteeism research.

From studies reviewed, it can be concluded that the causal effects of teacher absenteeism on productivity in the areas of instruction, finance, and administration, are important and serious problems, yet research is inconclusive. As Boyer (1994) summed up in a study linking teacher attendance rates and buyback sick leave provisions, "teacher absenteeism is a formidable obstacle to cost-effective education, academic achievement, orderly school operation, and good school-community relations" (p. 5).

Similarly, what this review found, according to a 2001 Washington Post survey, is that there are no national studies linking teacher absenteeism and
substitute teachers to poor student achievement, but few challenge the notion that a student is better off with the regular teacher. If the purpose of teaching is to produce learning and the premise that the teacher is the constant that controls the learning process in the classroom is accepted, then estimating academic loss caused by an absence is a defensible endeavor. This study has attempted to adjust that. A thorough description of the research methodology is presented in Chapter 3.
Chapter 3

Research Methodology

The purpose of this non-experimental archival study was to relate teacher absenteeism to student achievement in middle and high schools situated within Broward County, Florida, Public Schools using a set of demographic and professional attributes. The relationship between teacher absenteeism and student achievement in mathematics in middle and high schools using a block schedule compared with those using a traditional schedule was also explored. Through the use of descriptive and inferential statistics, this non-experimental study examined teacher absenteeism records and student scores on standardized tests for mathematics in order to investigate the relationships between teacher absenteeism, teacher attributes, school schedule and their effect on achievement outcomes.
Site and Sampling

The choice to limit the study to a single school district negated the effect district policies and procedures could have on absenteeism. For example, numerous studies (Baker, 1988; Freeman & Grant, 1987; Skidmore, 1984) have reported that school districts with attendance incentives, either as a policy or as part of a negotiated contract, showed a decline in middle and high school absenteeism. Because all teachers in the Broward County School District work under uniform personnel attendance policies, procedures, and negotiated contracts across all of its schools, the need to control for these variables was not necessary.

Site

This archival study sampled middle schools and high schools in a large school district, Broward County Public Schools, located in South Florida. Broward County Public Schools is the fifth largest school system in the nation and the second largest in Florida. Its total enrollment surpasses 260,000 students, with membership in middle schools and high
schools exceeding 104,961 students. The instructional personnel totals approximately 14,000, with the middle (3,000) and high school (3,200) staffing totaling approximately 6,200 (BCPS, 2002).

The school district is divided into four areas: North, North Central, South Central, and South. The composition of each area is based on the geographical and socioeconomic status of the community in which the school is located. Each area is composed of schools that are classified as representative of low-, middle-, and high-socioeconomic status. Thirty-five middle and 25 high schools comprise the Broward County Public Schools, and all were included in this study’s sample (BCPS, 2002).

As indicated in the literature review, research on teacher absenteeism and student achievement is scarce at the middle and high school levels and has not yielded consistent findings. A reason for selecting middle and high schools is the 1998 report of the Third International Mathematics and Science Study (TIMSS), which recommended placing the focus of mathematics reform on middle and high schools and to
provide all students equal opportunity to learn algebra and geometry (National Council of Teachers of Mathematics, 1998).

Teacher Sample

In this study, the middle and high school mathematics teacher’s class is the unit of analysis. The sample included all Grades 8 and 10 algebra and geometry sections \((N = 722)\) taught by 324 different mathematics teachers in Broward county Public Schools.

Student Sample

The student sample was composed of the 8\(^{th}\) and 10\(^{th}\) grade students in Broward county Public Schools who were enrolled in a mathematics course during 2001-2002 school year and who took the FCAT mathematics subtest. Only students in their first year of the grade 8 or 10 were included; that is, students who were not repeating. Because of courses where the majority of students were in a grade other than 8 or 10, there were classes with very low counts. Approximately 23.7\% of the classes had three or fewer students in 8\(^{th}\) or 10\(^{th}\) grade. In the Broward County School District, mathematics classes consist of students of varying grade levels; therefore, in order to
maintain the largest possible sample of sections, all 8th and 10th grade students in all mathematics sections comprised a total of 9,427 students.

Data Collection

*Independent Variables: Teacher Absenteeism and Teacher Attributes*

Teacher total number of days absent during school year 2001-2002 were used as an indicator for absenteeism. For purposes of this dissertation, the operational definition for absenteeism reflects the Broward Teachers Union and the School Board of Broward County, Florida (2001) policy on leaves of absence. The provisions governing sick leaves state: “Each employee on a full-time basis shall be entitled to earn no more than one (1) day of sick leave times the number of months of employment” (p. 23). Since teachers work on a 10-month contract, absences exceeding 10 days represent a high number of absences.

Absenteeism data for all Grades 8 and 10 mathematics teachers were obtained on a disk from the Broward County Public Schools Research and Evaluation Department. The data file included hours of absences, which were converted to days based on 7.5
hours. The "absence" variable indicated the number of days a teacher was absent. Dates of absence were obtained from Substitute Central, a division of the Personnel Department of BCPS, responsible for hiring and placing substitutes in temporary teaching positions.

Teacher variables referred to as teacher attributes (i.e., age, gender, educational level attained, and years of teaching experience) were retrieved individually for each subject from the files of the Research and Evaluation Department. The databases were missing demographic information for 15 teachers, degree information for 17 teachers and work experience information for 15 teachers. The majority of the missing data were for the same teachers, most of whom were employed at charter schools.

Dependent Variable: Student Achievement

The FCAT mathematics subtest was used as the criterion measure for determining the relationship of teacher absenteeism on student achievement in mathematics because it is a measure of student achievement that all Florida students take in Grades 8 and 10. The FCAT is a required test designed to measure the challenging instructional benchmarks.
specified in the Florida Sunshine State Standards that are taught to and learned by Florida students. FCAT score results are reported for the school District, as a whole, as well as for individual schools, individual classrooms, and individual students, at the end of the school year and produce scores to describe student strengths and weaknesses in reading and mathematics, in fulfillment of graduation requirements. Exclusively aggregated scores by class sections in mathematics were obtained from the District’s computerized database for each middle and high school.

Student achievement scores in schools using a block schedule were compared with those student scores in schools using a traditional schedule. In Broward County Public Schools, 10 middle schools used a variation of the block schedule, while 25 used the traditional schedule and sixteen high schools used a variation of the block design, while 9 used the traditional schedule during the 2001-2002 school year.
Student mathematics scores (the mean of the FCAT mathematics subtest) in Grades 8 and 10 were the baseline data for student achievement. Test scores were aggregated to the class level. On FCAT, the total score that a student could achieve in mathematics ranges from 100 to 500 and the passing score is 300.

Procedures

The procedure to conduct this research project within the Broward County Public Schools involved writing a letter to its Research Review Committee (see Appendix A) requesting permission to do so. Once permission had been granted (see Appendix B), the Research and Evaluation Department of the School Board of Broward County Public Schools assisted in processing the data and establishing files to use with SPSS. The data files saved on a disk included teachers’ and students’ variables.

The procedures used to manage, compute, and analyze the data included the following steps:

1. Checking continuous variables for teacher absenteeism (i.e., number of days absent), teacher attributes (i.e., age and experience), and generating a descriptive statistics output for interpretation.
2. Checking categorical variables for teacher attributes (i.e., gender and education), school schedule and generating, and interpreting descriptive statistics output.

3. Using Grades 7 and 9 FCAT mathematics scores as student past achievement scores to predict Grades 8 and 10 FCAT mathematics scores.

4. Computing the mean FCAT score for FCAT 2001 and 2002 scores from aggregated class mean scores.

5. Correlating teacher absenteeism to student FCAT 2002 mean scores while controlling for FCAT 2001 mean scores.

6. Creating new variables to calculate the interaction of teacher attributes (i.e., age, gender, education, and experience) and teacher absenteeism and its effect on FCAT 2002 mean scores.

To preserve anonymity, an arbitrary confidential code number was preassigned to each case, each class was assigned a section number, and all student identifiers were eliminated from the district data files.
Data Analysis

In this study, the statistical method of standard multiple regression was employed to analyze the data. This statistical technique was selected because it provides four advantages that complemented the purpose of the study. First, it provided the linear correlation coefficient that allowed to predict values of the dependent variable from values of another independent variable. Second, it allowed a sophisticated exploration of the interaction among a set of variables and the separate effects of each independent variable on the dependent variable. Third, this technique provided a statistical method to control for another variable when exploring the predictive ability of the model. Fourth, it measured the relative degree to which each independent variable contributed to the variance in the dependent variable. An a priori alpha level of .05 was used to determine whether to reject or to fail to reject the null hypothesis.
Three separate regressions were employed to address the three research questions of this study. The first was conducted with a single continuous independent variable (teacher number of days absent) to explore its relationship to one dependent continuous variable (student mathematics achievement) in Grades 8 and 10 combined and separately.

The second was carried out with one set of four independent variables labeled teacher attributes (age, gender, educational level attained, and years of teaching experience) to examine whether any one of the attributes interacted with teacher absenteeism in predicting student achievement in Grades 8 and 10, after controlling for student previous achievement (as measured by 2001 FCAT scores).

The third regression was employed to ascertain whether there was a difference in the relationship between teacher absenteeism and student mathematics achievement for Grades 8 and 10 in schools using different types of schedule, whether traditional or
block. A regression equation with teacher absenteeism, schedule type, and the multiplication of the two (for an interaction term) as predictors was applied.

Raw data were inputted into SPSS. All data analyses were performed using 2002 SPSS. The results and the analysis of the data are presented in chapter 4.
Chapter 4

Results

Presentation of Data

The purpose of this study was to determine the relationship of teacher absenteeism to student mathematics achievement in the 8th and 10th grades. A second purpose was to determine if there was an interaction between teacher attributes (age, gender, educational level attained, and years of teaching experience) and teacher absenteeism on student achievement in Grades 8 and 10. A third purpose was to determine if there was a difference in the relationship between teacher absenteeism and student mathematics achievement for 8th and 10th grades in schools using different types of schedule, whether block or traditional.

All Grades 8 and 10 middle school mathematics teachers employed by Broward County, Florida, during the school year 2001-2002 participated in the study. Because the teacher’s class is the unit of analysis, the sample for this study included all sections
(N = 729) taught by 324 different mathematics teachers. Since there were seven missing 2001 and 2002 FCAT scores, 722 classes were entered in the regression. Multiple regression analyses were employed to examine the relationships.

Description of the Sample

Descriptive statistics were obtained to summarize the attributes of the teachers and the type of schedules used in the schools. Table 1 shows the distribution of mathematics classes taught by teachers with the described characteristics and distributions of teachers in schools with the described schedules. For instance, 401 classes were taught by female teachers representing more than half (55%) of the classes. The majority of the classes were taught by teachers who had earned only a bachelor’s degree. Most of the classes were in high schools (80%), with about 58% in schools using the traditional schedule and 42% in block-scheduled schools.
Table 1

Distribution Across Classes of Teacher Attributes and School Schedule Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>401</td>
<td>55.0</td>
</tr>
<tr>
<td>Male</td>
<td>279</td>
<td>38.3</td>
</tr>
<tr>
<td>Highest education level attained</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td>11</td>
<td>1.5</td>
</tr>
<tr>
<td>Bachelor's</td>
<td>382</td>
<td>52.4</td>
</tr>
<tr>
<td>Master's</td>
<td>266</td>
<td>36.5</td>
</tr>
<tr>
<td>Above Master's</td>
<td>5</td>
<td>0.7</td>
</tr>
<tr>
<td>Grade Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eighth</td>
<td>148</td>
<td>20.3</td>
</tr>
<tr>
<td>Tenth</td>
<td>581</td>
<td>79.7</td>
</tr>
<tr>
<td>School Schedule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block</td>
<td>304</td>
<td>41.7</td>
</tr>
<tr>
<td>Traditional</td>
<td>425</td>
<td>58.3</td>
</tr>
</tbody>
</table>
Table 2 summarizes the continuous variables for mathematics classes and their teachers. Classes are typically taught by middle aged teachers with a total teaching experience of 14 years. Overall, mathematics teachers showed a low rate of absenteeism. Absences for this group ranged from 0 to 30 days, with the average number of days absent about 3 days (M = 3.35, SD = 3.72). As the results show, students' scores appeared to increase from year 2001 to year 2002.

Table 2

Distribution Across Classes of Teacher Age, Experience, Days Absent, and Student Achievement

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>42.88</td>
<td>10.38</td>
</tr>
<tr>
<td>Experience</td>
<td>14.19</td>
<td>10.19</td>
</tr>
<tr>
<td>Days absent</td>
<td>3.35</td>
<td>3.72</td>
</tr>
<tr>
<td>FCAT score 2002</td>
<td>341.85</td>
<td>25.73</td>
</tr>
<tr>
<td>FCAT score 2001</td>
<td>330.52</td>
<td>36.4</td>
</tr>
</tbody>
</table>
As shown in Table 3, 36.2% of the teachers missed one day or none during the entire school year. In contrast, number of days absent exceeding 10 days represented 3.5% of the 722 cases.

Table 3. Distribution of Number of Days Absent

<table>
<thead>
<tr>
<th>Valid</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>170</td>
<td>23.3</td>
</tr>
<tr>
<td>1</td>
<td>94</td>
<td>12.9</td>
</tr>
<tr>
<td>2</td>
<td>101</td>
<td>13.9</td>
</tr>
<tr>
<td>3</td>
<td>79</td>
<td>10.8</td>
</tr>
<tr>
<td>4</td>
<td>67</td>
<td>9.2</td>
</tr>
<tr>
<td>5</td>
<td>74</td>
<td>10.2</td>
</tr>
<tr>
<td>6</td>
<td>54</td>
<td>7.4</td>
</tr>
<tr>
<td>7</td>
<td>22</td>
<td>3.0</td>
</tr>
<tr>
<td>8</td>
<td>17</td>
<td>2.3</td>
</tr>
<tr>
<td>9</td>
<td>12</td>
<td>1.6</td>
</tr>
<tr>
<td>10</td>
<td>13</td>
<td>1.8</td>
</tr>
<tr>
<td>11</td>
<td>5</td>
<td>.7</td>
</tr>
<tr>
<td>12</td>
<td>3</td>
<td>.4</td>
</tr>
<tr>
<td>13</td>
<td>5</td>
<td>.7</td>
</tr>
<tr>
<td>16</td>
<td>2</td>
<td>.3</td>
</tr>
<tr>
<td>17</td>
<td>2</td>
<td>.3</td>
</tr>
<tr>
<td>18</td>
<td>4</td>
<td>.5</td>
</tr>
<tr>
<td>25</td>
<td>3</td>
<td>.4</td>
</tr>
<tr>
<td>28</td>
<td>1</td>
<td>.1</td>
</tr>
<tr>
<td>30</td>
<td>1</td>
<td>.1</td>
</tr>
<tr>
<td>Total</td>
<td>729</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Regarding the use of absence data, Hammer and Landau (1981) stressed the importance of examining the data for the violation of assumptions of normality. To display pictorially the descriptive statistics derived from the distribution of mathematics teacher absences for school year 2001-2002, a histogram was used (see figure 1). A positively skewed distribution was observed in the histogram, suggesting a nonnormal distribution and requiring deeper inspection.

Figure 1. Number of Days Absent
Data Transformations

To assess the relationship between teacher absenteeism and student achievement, a scatterplot, using the LOWESS (Locally Weighted Scatterplot Smoothing) fit option, was inspected. Blank, Gruber, and Wilkinson (1996) advocate the use of this technique because it allows the computer to decide what is the best fit line and minimizes biases caused by outliers. The vertical axis of the scatterplot is the residual from the regression of the mean 2001 FCAT score (pretest) on the mean 2002 FCAT score (posttest) and the horizontal line is days absent. Upon careful examination, it was discovered that the relationship shows an inflection point at 2-days absent (see Figure 2).
The trend line suggested two different slopes:
a) classes where teachers missed 2 or fewer days, and
b) classes where teachers missed more than 2 days.
In order to accommodate this change in slope with
the linear regression analyses, separate regressions
for each hypothesis were performed for a) classes
where teachers missed 2 or fewer days and b) classes
where teachers missed more than 2 days. Both initial
linear regressions for the test of Hypothesis 1 violated the assumption of homoscedasticity.
Figure 3 shows the distribution of residuals from both regressions. The variance of residuals is clearly larger for small numbers of days absent than it is for large numbers of days absent.

Figure 3
Distribution of Residuals from Linear Regression
Following the convention for inverse transformations, the variable \textit{days absent} was converted to:

\[
\text{Transformed days absent} = \frac{-1}{\text{# of days absent}}
\]

The inverse of the number of days absent was multiplied by \(-1\) in order to maintain the interpretation that larger values represent more days absent and smaller values represent fewer days absent. For instance comparing 5 days to 10 days absent, the transformed values are \(-1/5\) (which is smaller) and \(-1/10\) (which is larger).

When days absent is equal to zero, the mathematical operation to divide by 0 is not a legitimate mathematical operation. The lowest observed value (.067) for days absent, equivalent to 1/2 hour absent, was substituted for all zero absences. Since .067 is essentially 0, the meaning of zero absence was retained to accommodate the data and to include the whole data set.
Figure 4 shows that the transformation has reduced the heteroscedasticity, but not resolved it completely. Especially notice the increased variability for ten or more days absent compared to the narrow variability shown in Figure 3.

Figure 4
Distribution of Residuals after Transformation
Analysis and Findings

Hypothesis 1

$H_{01}$ states that there is no relationship between teacher absenteeism and student mathematics achievement in Grades 8 and 10 combined.

$H_{01}(a)$: There is no relationship between teacher absenteeism and student mathematics achievement in Grade 8.

$H_{01}(b)$: There is no relationship between teacher absenteeism and student mathematics achievement in Grade 10.

Null $H_{01}$ and null $H_{01}b$ were rejected for Grades 8 and 10 combined and for Grade 10 separately for more than 2 days absent. The Pearson correlation was $-0.150$, at $p < 0.001$, for Grades 8 and 10 combined; and $-0.220$, at $p < 0.001$ for Grade 10 when teachers are absent more than 2 days. However, null $H_{01a}$ was not rejected for Grade 8 when examined separately, regardless of the absence range.
The importance of running the regressions separately for the two ranges of days absent previously identified can be assessed from the partial correlations for each range (see Table 4). Partial correlations were used to get an accurate indication of the relationship between transformed days absent and achievement (as measured by mean FCAT score 2002) after controlling for past achievement (as measured by mean FCAT score 2001).

Table 4

Partial Correlations Transformed Days Absent and Student Achievement Controlling for Past Achievement

<table>
<thead>
<tr>
<th>Range of Days Absent</th>
<th>Partial Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 or fewer days absent</td>
<td>0.18***</td>
</tr>
<tr>
<td>More than 2 days absent</td>
<td>-0.13**</td>
</tr>
</tbody>
</table>

** p < .01

*** p < .001

There was a negative correlation between transformed days absent and mean FCAT score 2002 \( (r = -0.13) \) for more than 2 days absent and a positive correlation \( (r = 0.18) \) for 2 or fewer days absent. Although the correlations were statistically significant, the contribution to \( R^2 \) was 0.4% and 0.3%.
respectively. There was a strong Pearson correlation between mean FCAT score 2001 and mean FCAT score 2002 (r = .91), which was statistically significant, p = .001.

To test hypothesis 1, standard multiple linear regression was used and was run separately for each range of days absent. The variables, transformed days absent and mean FCAT score 2001 were entered into the equation to determine the net effect of absenteeism on the mean 2002 FCAT score (see table 5).

The average sample multiple correlation coefficient was .91 for Grades 8 and 10 combined indicating that approximately 84% of the variance in 2002 FCAT scores can be accounted for by transformed days absent and 2001 FCAT scores.

Table 5
Summary Regression Analysis for Absenteeism Variables Predicting student Achievement for Two or Fewer Days Absent

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed days absent</td>
<td>0.25</td>
<td>0.08</td>
<td>0.07***</td>
</tr>
<tr>
<td>Mean FCAT 2001</td>
<td>0.65</td>
<td>0.02</td>
<td>0.91***</td>
</tr>
</tbody>
</table>

Note. $R^2 = .84$  ***p < .001
The two variables made a statistically significant contribution ($p < .05$) to the model. However, the effect size of transformed days absent can be further evaluated from the regression coefficient reflected in Table 6 for more than 2-days absent when Grades 8 and 10 are combined.

Table 6

Summary Regression Analysis for Absenteeism Variables Predicting Student Achievement for More than Two Days Absent

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>SEB</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed days absent</td>
<td>-13.02</td>
<td>4.83</td>
<td>-0.06**</td>
</tr>
<tr>
<td>Mean FCAT 2001</td>
<td>0.62</td>
<td>0.01</td>
<td>0.90***</td>
</tr>
</tbody>
</table>

Note. $R^2 = .84$

**$P < .01$

***$P < .001$

The slope measure of effect size for teachers who were absent more than 2 days was $-13.02$. To calculate the difference between a teacher missing 3 and a teacher missing 4 days, this formula was used:

$$[-1/\# \text{ days absent}] - [-1/\# \text{ days absent}] \times \text{(unstandardized coefficient)}$$

$$[ -1/4 ] - [-1/3] \times (-13.02) = .083 \times -13.02 = -1.08 \text{ points}$$
A predicted average of 1.08 points on the FCAT 2002 for a class whose teacher missed 4 days as opposed to 3 days of work has little practical significance. The slope measure of effect size for the classes of teachers that missed 2 or fewer days is +0.25.

To calculate the difference between a teacher missing 1 day and a teacher missing 2 days, this formula was used:

\[-1/\# \text{ days absent}] - \{1/\# \text{days absent}\} \times (\text{unstandardized coefficient})
\[-1/2 \} - \{-1/1 \} \times (+0.25) = 0.5 \times 0.25 = +0.125 \text{ points}

A measure of effect and of predictive importance of any variable is its unique contribution to $R^2$. This is an important index of effect size for absenteeism. The variable teacher absenteeism makes a contribution of only .03 to .04 to $R^2$. The result showed teacher absenteeism makes a small contribution to the understanding of the variation in mathematics achievement.

The contribution to $R^2$ of pretest score (Mean FCAT 2001) is .85. This value indicates that 85% of variation in 2002 scores is attributable to student past achievement measured by the FCAT 2001 scores.
Comparing Grade 8 and Grade 10, no important difference between the two grade levels was found for teacher absence for two or fewer days (see Table 7).

Table 7

Coefficients of the Predictive Model by Grade Levels for Two or Fewer Days Absent

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grade 8</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transformed Days Absent</td>
<td>-0.15</td>
<td>0.12</td>
<td>0.08</td>
</tr>
<tr>
<td>Mean FCAT Score 2001</td>
<td>0.61</td>
<td>0.04</td>
<td>0.93***</td>
</tr>
<tr>
<td><strong>Grade 10</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transformed Days Absent</td>
<td>0.28</td>
<td>0.09</td>
<td>0.07**</td>
</tr>
<tr>
<td>Mean FCAT Score 2001</td>
<td>0.66</td>
<td>0.02</td>
<td>0.91***</td>
</tr>
</tbody>
</table>

Note. Grade 8: $R^2 = 0.84$ SE = 5.23

Grade 10: $R^2 = 0.87$ SE =10.17

**p < .01

**p < .001

The difference between standardized coefficients was less than the standard errors, indicating the difference was due to random variation, and no statistical test was necessary. The reduction in
significance for teacher absenteeism may be due to reduction in power that derives from a smaller sample. The result showed teacher absence made a small contribution to the understanding of the variation in mathematics achievement.

Table 8

Coefficients of the Predictive Model by Grade Levels for More Than Two Days Absent

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transformed days absent</td>
<td>-12.17</td>
<td>6.57</td>
<td>-0.07</td>
</tr>
<tr>
<td>Mean FCAT Score 2001</td>
<td>0.81</td>
<td>0.04</td>
<td>0.92***</td>
</tr>
<tr>
<td>Grade 10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transformed days absent</td>
<td>-11.95</td>
<td>5.85</td>
<td>-0.05*</td>
</tr>
<tr>
<td>Mean FCAT Score 2001</td>
<td>0.64</td>
<td>0.02</td>
<td>0.90***</td>
</tr>
</tbody>
</table>

Note. Grade 8: $R^2 = 0.84$

Grade 10: $R^2 = 0.87$

*p < .05

***p < .001
Hypothesis 2

$H_02$ states: There is no interaction between teacher attributes (age, gender, level of education attained, and years experience) and teacher absenteeism on student mathematics achievement in Grades 8 and 10 combined.

$H_02(a)$ There is no interaction between teacher attributes (age, gender, level of education attained, and years of teaching experience) and teacher absenteeism on student mathematics achievement in Grade 8.

$H_02(b)$ There is no interaction between teacher attributes (age, gender, level of education attained, and years of teaching experience) and teacher absenteeism on student mathematics achievement in Grade 10.

For Grades 8 and 10 combined, the null $H_02$ for age, educational level attained, and years of teaching experience when teachers are absent less than 2 days and also when teachers are absent for more than 2 days, was not rejected. The null
$H_{02}$ for gender when teachers are absent more than 2 days was rejected ($p < .05$); however, the null hypothesis when teachers are absent 2 or fewer days was not rejected.

$H_{02}(a)$ for Grade 8 separately was not rejected for age, educational level attained, and years of teaching experience. The null hypothesis for gender was rejected when teachers are absent for 2 or fewer days. With an alpha level of .05, the interaction of gender and transformed days absent was statistically significant $p < .05$. However, the null hypothesis was not rejected for gender when teachers are absent more than 2 days. The effect size for male was statistically significant $p < .01$.

$H_{02}(b)$ for Grade 10 only was not rejected for age, educational level attained, and years of teaching experience. The null $H_{02}(b)$ for gender when teachers are absent 2 or fewer days was not rejected. However the null when teachers are absent more than
2 days was rejected. The Pearson correlation was -0.220 which was statistically significant at the 0.01 level.

A series of eight moderated multiplicative regression analyses were conducted to determine if any teacher attribute interacted with absenteeism in significantly contributing to student achievement variance. Each restricted model was tested separately.

The first analysis tested for the presence of an interaction between age and transformed days absent within each range of days absent. The main effect of age was also examined. The results for two or fewer days absent are presented in Table 9.
Table 9

Regression Results of Student Achievement Moderated by Teacher Attribute (Age) and Absenteeism of Two or Fewer Days Absent

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed days absent</td>
<td>0.25</td>
<td>0.39</td>
<td>0.07</td>
</tr>
<tr>
<td>Mean FCAT 2001</td>
<td>0.63</td>
<td>0.02</td>
<td>0.90***</td>
</tr>
<tr>
<td>Interaction of age and transformed days absent</td>
<td>0.01</td>
<td>0.01</td>
<td>0.91</td>
</tr>
<tr>
<td>Age</td>
<td>-0.03</td>
<td>0.08</td>
<td>0.67</td>
</tr>
</tbody>
</table>

Note. $R^2 = .86$ (n = 673, $p < .01$)

***$p < .001$

The main effect of age was not statistically significant. The interaction of age with absenteeism on student achievement was not statistically significant; therefore, the null hypothesis was not rejected for age regardless of the absence range. The results for more than 2 days absent are presented in Table 10.
Table 10

Regression Results of Student Achievement Moderated by Teacher Attribute (Age) and Absenteeism of More than Two Days Absent

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed days absent</td>
<td>0.63</td>
<td>20.52</td>
<td>0.01</td>
</tr>
<tr>
<td>Mean FCAT 2001</td>
<td>0.63</td>
<td>0.01</td>
<td>0.91***</td>
</tr>
<tr>
<td>Interaction of age and transformed days absent</td>
<td>-0.32</td>
<td>0.46</td>
<td>-0.07</td>
</tr>
<tr>
<td>Age</td>
<td>-0.20</td>
<td>0.12</td>
<td>-0.09</td>
</tr>
</tbody>
</table>

Note. $R^2 = .86$ (n = 673, $p < .01$)

***$p < .001$

The second analysis tested if gender interacted with absenteeism in significantly contributing to student achievement in Grades 8 and 10 combined. Table 11 displays the results for 2 or fewer days absent.
Table 11

Regression Results of Student Achievement Moderated by Teacher Attribute (Gender) and Absenteeism for Two or Fewer Days Absent

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed days absent</td>
<td>0.28</td>
<td>0.11</td>
<td>0.08**</td>
</tr>
<tr>
<td>Mean FCAT 2001</td>
<td>0.63</td>
<td>0.02</td>
<td>0.90***</td>
</tr>
<tr>
<td>Interaction of gender and Transformed days absent</td>
<td>0.01</td>
<td>0.17</td>
<td>0.01</td>
</tr>
<tr>
<td>Gender</td>
<td>-2.13</td>
<td>1.68</td>
<td>-0.04</td>
</tr>
</tbody>
</table>

Note. $R^2 = .84$ ($n = 273$, $p < .01$)

**$p < .01$

***$p < .001$

The results indicated that there was no interaction between gender and absenteeism on student achievement for 2 or fewer days absent. Neither did gender have a direct effect for 2 or fewer days absent. However, for more than 2 days absent, both the interaction between gender and absenteeism and the direct effect of gender were statistically significant at the .05 alpha level. In both cases, the effect on achievement
was negative for male teachers. The results can
be verified in Table 12 for more than 2 days absent.

Table 12

Regression Results of Student Achievement Moderated
by Teacher Attribute (Gender) and Absenteeism for
More Than Two Days Absent

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed days absent</td>
<td>-3.84</td>
<td>6.37</td>
<td>-0.02</td>
</tr>
<tr>
<td>Mean FCAT 2001</td>
<td>0.62</td>
<td>0.02</td>
<td>0.90***</td>
</tr>
<tr>
<td>Interaction of gender and Transformed days absent</td>
<td>-22.66</td>
<td>9.81</td>
<td>-0.13*</td>
</tr>
<tr>
<td>Gender</td>
<td>-5.85</td>
<td>2.60</td>
<td>-0.12*</td>
</tr>
</tbody>
</table>

Note. $R^2 = .84$ (n = 401, p < .01)
*p < .05
***p < .001

The third analysis tested if educational level
attained interacted with absenteeism and significantly
contributed variance to student achievement. In this
analysis, only bachelor’s and master’s degrees were
included because of a very small sample size for other
degrees. The results for 2 or fewer days absent are
presented in Table 13.
Table 13

Regression Results of Student Achievement Moderated by Teacher Attribute (Educational Degree) and Absenteeism for Two or Fewer Days Absent

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>$SEB$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed days absent</td>
<td>0.40</td>
<td>0.12</td>
<td>0.12***</td>
</tr>
<tr>
<td>Mean FCAT 2001</td>
<td>0.62</td>
<td>0.02</td>
<td>0.90***</td>
</tr>
<tr>
<td>Interaction of degree and transformed days absent</td>
<td>-0.18</td>
<td>0.17</td>
<td>-0.04</td>
</tr>
<tr>
<td>Education level attained</td>
<td>-2.53</td>
<td>1.69</td>
<td>-0.05</td>
</tr>
</tbody>
</table>

Note. $R^2 = .84$ (N = 255, p < .01)

*** p < .001

The results indicated there was no interaction between education level attained and teacher absenteeism on student achievement. The results for more than two days are presented in Table 14.
Table 14
Regression Results of Student Achievement Moderated by Teacher Attribute (Educational Degree) and Absenteeism for More Than Two Days Absent

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>( \beta )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed days absent</td>
<td>-12.37</td>
<td>5.95</td>
<td>-0.05*</td>
</tr>
<tr>
<td>Mean FCAT 2001</td>
<td>0.63</td>
<td>0.02</td>
<td>0.90***</td>
</tr>
<tr>
<td>Interaction of degree and</td>
<td>5.25</td>
<td>10.71</td>
<td>0.03</td>
</tr>
<tr>
<td>transformed days absent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education level attained</td>
<td>-0.85</td>
<td>2.70</td>
<td>-0.02</td>
</tr>
</tbody>
</table>

Note. \( R^2 = .84 \) (\( N = 388, \ p < .01 \));

*p < .05

*** < .001

The fourth analysis tested if total years of teaching experience interacted with absenteeism and significantly contributed to variance in student achievement. The results for two or fewer days absent are presented in Table 15.
Table 15

Regression Results of Student Achievement Moderated by Teacher Attribute (Experience) and Absenteeism for Two or Fewer Days Absent

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed days absent</td>
<td>0.38</td>
<td>0.15</td>
<td>0.11**</td>
</tr>
<tr>
<td>Mean FCAT 2001</td>
<td>0.63</td>
<td>0.02</td>
<td>0.90***</td>
</tr>
<tr>
<td>Interaction of experience and transformed days absent</td>
<td>-0.01</td>
<td>0.01</td>
<td>-0.04</td>
</tr>
<tr>
<td>Total Teaching Experience</td>
<td>0.04</td>
<td>0.09</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Note. $R^2 = .84$

**p < .01

***p < .001

The results of this analysis demonstrated that the interaction of total years of teaching experience with absenteeism was not statistically significant. The results for more than two days absent are presented on Table 16.
Table 16

Regression Results of Student Achievement Moderated by Teacher Attribute (Experience) and Absenteeism for More Than Two Days Absent

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>(\beta)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed days absent</td>
<td>-11.30</td>
<td>8.30</td>
<td>-0.05</td>
</tr>
<tr>
<td>Mean FCAT 2001</td>
<td>0.63</td>
<td>0.01</td>
<td>0.91***</td>
</tr>
<tr>
<td>Interaction of experience and transformed days absent</td>
<td>-0.11</td>
<td>0.45</td>
<td>-0.01</td>
</tr>
<tr>
<td>Total Teaching Experience</td>
<td>-0.11</td>
<td>0.12</td>
<td>-0.05</td>
</tr>
</tbody>
</table>

Note. \(R^2 = .84\)

*** \(p < .001\)

The same statistical series of tests were utilized for Grade 8 and Grade 10 separately. There was no interaction between teachers' age, educational level attained, and years of teaching experience in grade 8 or 10. There was, however, an interaction between gender and teacher absenteeism on student achievement for different absence ranges. The negative correlation between gender and student achievement was statistically significant for both 8th and 10th graders at the .01 level. For Grade 8, there was a significant interaction
between gender and absenteeism for 2 or fewer days absent, \( t(103) = 2.06, p = .05 \), which indicated that absenteeism had a greater negative effect for male teachers. For Grade 10, there was a significant interaction between gender and absenteeism for more than 2 days absent \( t(297) = 2.87, p < .001 \). Again absenteeism had a greater negative effect for male teachers \( r = -.220, p < .001 \).

**Hypothesis 3**

**Hypothesis 3** states: There is no difference in the relationship between teacher absenteeism and student mathematics achievement for Grades 8 and 10 in schools using different types of schedule, whether traditional or block.

**\( H_{0.3}(a) \):** There is no difference in the relationship between teacher absenteeism and student mathematics achievement for Grade 8 in schools using different types of schedule, whether traditional or block. **\( H_{0.3}(b) \):** There is no difference in the relationship between teacher absenteeism and student mathematics achievement for
Grade 10 in schools using different types of schedule, whether traditional or block. $H_03$, $H_03(a)$, $H_03(b)$ were not rejected.

Multiple regression with a multiplicative interaction term was used to test whether type of schedule moderated the relationship between teacher absenteeism and student FCAT 2002 mathematics scores. The results of the regression analysis for two or fewer days absent are shown in Table 17.

Table 17

Coefficients of the Predictive Model for Schools On Block and Traditional Schedules

<table>
<thead>
<tr>
<th>Variables</th>
<th>$B$</th>
<th>SEB</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed days absent</td>
<td>0.26</td>
<td>0.12</td>
<td>0.07*</td>
</tr>
<tr>
<td>Mean FCAT score 2001</td>
<td>0.65</td>
<td>0.02</td>
<td>0.92***</td>
</tr>
<tr>
<td>Interaction of traditional</td>
<td>-0.01</td>
<td>0.16</td>
<td>-0.01</td>
</tr>
<tr>
<td>and transformed days absent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional schedule</td>
<td>-1.01</td>
<td>1.70</td>
<td>-0.02</td>
</tr>
</tbody>
</table>

Note. $R^2 = .85$, $F (4, 316) = 504.19$.  
* $P < .05$  
*** $P < .001$
The interaction of school schedule with teacher absenteeism is not statistically significant and not related to student achievement. The results of the regression analysis for two or fewer days absent are shown in Table 18.

Table 18

Coefficients of the Predictive Model for Schools on Block and Traditional Schedules

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformed days absent</td>
<td>-5.36</td>
<td>8.22</td>
<td>-0.02</td>
</tr>
<tr>
<td>Mean FCAT score 2001</td>
<td>0.63</td>
<td>0.02</td>
<td>0.91***</td>
</tr>
<tr>
<td>Interaction of traditional and transformed days absent</td>
<td>-5.33</td>
<td>10.32</td>
<td>-0.03</td>
</tr>
<tr>
<td>Traditional schedule</td>
<td>-4.34</td>
<td>2.79</td>
<td>-0.09</td>
</tr>
</tbody>
</table>

Note. $R^2 = .85$, $F (4, 396) = 493.06$.

***p < .001

Similar data treatments were utilized to test hypotheses 3a and 3b. The results of these analyses for Grades 8 and 10 separately, demonstrated that the relationship between absenteeism and student achievement was not moderated by school schedule for either grade level.
Chapter 5

Conclusion

The purpose of the present nonexperimental archival study was to investigate the relationship between teacher absenteeism and student achievement. Specifically, it sought to answer three research questions:

1. Is there a relationship between teacher absenteeism and student mathematics achievement in Grades 8 and 10?

2. Is there an interaction between teacher attributes (age, gender, educational level attained, and years of teaching experience) and teacher absenteeism on student mathematics achievement in Grades 8 and 10?

3. Is there a difference in the relationship between teacher absenteeism and student mathematics achievement for 8th and 10th grade students in schools using different types of school schedule?

The data used in this dissertation were drawn from all middle and high schools in the Broward County, Florida,
Public Schools. A total of 722 8th and 10th grade mathematics classes and their teachers were included in the study. Student achievement in mathematics was based on the performance data of 8th and 10th graders who took the mathematics subtest of the 2002 FCAT.

Conclusions and Discussion

Teacher Absenteeism Linked to Lower Achievement Test Scores

The study concludes that teacher absenteeism is negatively related to student mathematics achievement when teachers are absent more than 2 days. Although the relationship is statistically significant, the effect size is small. The negative inverse relationship between teacher absenteeism and student achievement confirms the premise that higher teacher absenteeism is associated with lower student outcomes. Consistent with Beavers (1981), Boswell (1993), Kirk (1998), Rasmussen (1996), Webb (1995), and Woods (1990), a small but negative relationship exists between teacher absenteeism and student achievement.

A significant contribution of the study is the determination of a cutoff point, situated at
two days absent. It is possible that this cutoff point is unique to mathematics teachers or is an artifact of this particular sample and would not be replicated. The cutoff point designates when students' scores change. For example, when teachers are absent more than two days, students' scores decline; in this case, the linear correlation coefficient, Pearson r, is negative. Conversely, when teachers are absent 2 or fewer days, Pearson r is positive; students' scores increase, indicating that when teachers are absent 0 to 1 day, their classes will learn no less than the classes of teachers who miss 1 or 2 days. On both sides of the cutoff point, the effect of a single day's absence is small.

When Grades 8 and 10 were examined separately, the direction and the strength of the relationship between teacher absenteeism and student achievement were the same. For more than 2 days absent, a small negative relationship between teacher absenteeism and student achievement exists in both 8th and 10th grade.
For 2 or fewer days absent, a positive relationship between teacher absenteeism and student achievement exists in both 8th and 10th grade.

A notable result was the very large effect of previous achievement on predicted achievement, which suggests that students who have a better academic background are more likely to perform better on the 2002 FCAT. The present research supports the belief that success on past achievement predicts current and future success.

Teacher Attributes and Teacher Absenteeism Not Linked to Student Achievement Except for Gender

The study concludes that teacher attributes (age, educational level attained, years of teaching experience) and teacher absenteeism are not linked to student achievement, except for gender. Specifically, the interaction of teacher gender and teacher absenteeism on student mathematics 2002 FCAT scores is negatively significant at the .001 alpha level. The negative interaction means that absences of male teachers has a more damaging effect on FCAT scores than absences of female teachers in Grades 8 and 10.
These conclusions were not expected and must be treated with caution because the coefficient of effect size for gender on FCAT scores, although statistically significant at the .001 level, was relatively small.

One speculation is that if men are more effective mathematics teachers, their absence is more damaging to student achievement. Another speculation is that women are better at minimizing the damaging effect of their absence, perhaps by modifying lesson plans or perhaps women are better at promoting independent learning in their mathematics classes.

*Teacher Absenteeism and School Schedule Not Linked to Student Achievement*

The study concludes that there is no difference in the relationship between teacher absenteeism and student mathematics achievement for 8th and 10th grades in schools using different types of schedule, whether traditional or block. When Grades 8 and 10 were examined separately, the conclusions were similar. Clearly, this finding opposes the investigator's assumption that students' scores would
be lower in schools using a block schedule as a result of a greater loss of contact time between students and teachers.

The debate on which school schedule, block or traditional school, contributes more to improving student achievement test scores, will not be resolved by the conclusions reached in this study. Inarguably, a schedule per se cannot be responsible for a difference in student achievement; other indices, such as the teaching-learning model applied to promote self-directed learners cannot be responsible for a difference in student achievement.

Recommendations

Given the conclusion that student achievement is tied to teacher absenteeism, interventions for school policy, school practice, and recommendations for future research, are suggested.

School Policy

Given that the decline in student achievement occurs after more than 2 days of absence, a policy should be implemented with provisions for attendance and incentives, merit pay, curriculum, and substitute training.
Attendance and Incentives

Attendance incentives could include provisions for "buy-back" days of absence, "cash in" unused sick leaves, given that it was established by Ehrenberg et al. (1991) and Foster (1987), that a decrease in teacher absenteeism would result from such provisions.

Merit pay

Merit pay would be based on teaching excellence and low absenteeism. The criteria for excellence might be a teacher with a class whose standardized mean test score is higher than the district average. Low absenteeism could be a record of absences not exceeding 2 days in any given school year. Boyer (1990) reported that a yearly stipend for perfect attendance could weigh even more heavily on attendance than other types of reward.

Curriculum

Given that previous learning (educational background) is such a strong predictor for current mathematics achievement, the curriculum focus should be on what is learned in mathematics in elementary and middle schools.
Substitute Training

Given that substitute teachers have the power to maintain the continuity of instruction when the teacher is absent, a mandate for training of substitutes should be in place. Training can be face to face or virtual, ensuring easy access and focus on presentation skills and classroom management, as recommended by Ostapczuk (1994).

Teacher absenteeism can be reduced but not totally eliminated. An absence is a legitimate and natural need, therefore a sound plan to upgrade substitute services should be devised.

School Practice

Since school effectiveness is largely dependent on the creative input and dedication of teachers, school administrators should promote job satisfaction, for example by involving teachers in the management decision making for instruction. When teachers are satisfied with their jobs, stress is reduced, teacher attendance rises, and effectiveness prevails (Smith, 1997). Job satisfaction can be addressed with job incentives and
benefits, educational environment support systems, and leadership involvement. A comprehensive plan should address those three components.

_Benefits and Incentives_

A recognition and reward plan could be created for teachers who miss no more than 2 days. The reward can be a monetary stipend, given that Jacobson (1989) reported that monetary incentives are closely tied to lower absenteeism. The downside of a monetary reward is that teachers may feel compelled to report to work when they are ill, thereby reducing their teaching effectiveness; therefore, tying the reward to teaching excellence is suggested. Just as Lewis (1981) advocated an attendance policy that includes provisions for recognition of teaching excellence, a "teacher of the month" award could be implemented.

_Educational Environment Support systems_

Family obligation is a major reason for absence among parents with young children. Norton (1994) suggested an incentive program designed to provide services on the work site. To address this problem, childcare services could be available during the day and after school hours. Thus, it is recommended that
districts consider to provide childcare services to employees.

Leadership Involvement

Given that there is evidence that teachers who participate in the leadership decision-making of the school derive better satisfaction from their job (Pitkoff, 1993), they should be encouraged to lead staff development workshops, conduct action research to identify student needs, and serve as instructional coaches for novice teachers. That may motivate them to have better attendance.

Future Research

Because the study revealed that teacher absenteeism is linked to student mathematics achievement and gender at the middle and high school levels, the following recommendations are made.

1. The study recommends that future investigators examine the interaction between teacher absenteeism and gender in its effect on other student outcomes, such as attendance and behavior.

2. Further research on the relationship between male teachers and student achievement is suggested. The inclusion of additional teacher- and student-related
variables that impact on student achievement may shed light on this complex issue.

3. Investigate whether the 2-days absence cutoff point varies by academic discipline of by school district. The use of confidence intervals when reporting results is suggested; this would allow comparisons with related results in prior studies.


5. A study on the effectiveness of the substitute teacher and how that effectiveness relates to student achievement would contribute valuable information to the educational field. As research indicates, the role of the substitute in the classroom is critical. If the substitute is effective, the learning process continues. Conversely, if the substitute is ineffective, the learning process is disrupted.

6. A study to determine whether medical services established on site for teachers and students reduce teacher absenteeism and student absences.
7. A qualitative study to investigate whether absences for different causes have different effects on student achievement or other student outcomes.

In conclusion, a new vision for the teaching profession should be attained which would behoove teachers to not miss school/work, thereby increasing chances of improving student achievement. The school principal’s leadership approach to reduce teacher absenteeism should be positive not punitive. In France, the teacher is called “Maitre”, the master, “le Maitre d’ecole”, the school master. The attorney-at-law is also called “Maitre”. The same title is used when addressing a lawyer and a teacher. This reflects the high status placed on these two professions in respect to their expertise. Teachers are the providers and facilitators of knowledge; they are the driving force for the progress and future of mankind. Teachers deserve the highest respect of society.
References


Hill, T. S. (1982). *You can't afford for teachers to be out, so take these steps to stop absenteeism*, 1982. (ERIC Document Reproduction Service No. ED 214233)


Appendix A

Request to Research Review

Review Committee, Broward County Public Schools, for Permission to Conduct Research
January 17, 2003

Dr. Cary Sutton, Director  
The School Board of Broward County, Florida  
Research Services  
600 SE Third Avenue  
Fort Lauderdale, FL 33301-3125

Dear Dr. Sutton,

On January 15, 2003, I received with great pleasure the approval letter for my research proposal "A Study of the Relationship Between Teacher Absenteeism, Selected Teacher Attributes, School Schedules, and Their Effect on Student Achievement," granted by the School Board of Broward County, Florida Research Services.

Since my proposed research is an archival study and calls for the collection of demographic and attendance data for teachers as well as subtest scores for students, I hereby request Research Services staff to supply me with these data and authorize them to bill me at a rate of 75 dollars per hour for this activity which is estimated to take approximately three hours to complete.

Based on a rigorous timeline that I must follow in order to complete my study by July 31, 2003, I would greatly appreciate a time estimate as to how soon the Research Services staff can begin working on this activity and by when I may expect to be supplied with the requested data.

Looking forward to working with you and your staff on my proposed study, I thank you very much for your support and remain,

Sincerely yours,

Shirley r. Bayard
Shirley r. Bayard
Appendix B

Permission Granted by

Broward county Public

Schools to Conduct Research
January 15, 2003

Ms. Shirley Bayard
1911 Collins Avenue #3103
North Miami, FL 33160

Dear Ms. Bayard:

Thank you for submitting your proposal *A Study of The Relationship Between Teacher Absenteeism, Selected Teacher Attributes, School Schedules, and Their Effect on Student Achievement* for consideration by the School Board of Broward County, Florida. Staff has reviewed your research proposal and approval has been granted.

Your requests calls for the supply of demographic and attendance data for teachers as well as subtest scores for students. If Research Services staff is asked to supply you with these data, the activity must be billed to you at a rate of 75 dollars per hour. A separate letter to me expressing your authorization for this activity is needed before work may begin. The initial estimate for the supply of the data is three hours. However, your billing will reflect the actual number of hours expended. Most estimates are slightly overestimated.

This approval means that we have found your proposed research methods to be compatible with a public school setting, and your research questions interesting. Based on the information you have supplied, your approval to conduct research will expire on July 31, 2003. If you are unable to complete your research by the date indicated, you must contact the Research Services Department.

Implementing your research, however, is a decision to be reached by the affected principals on a strictly voluntary basis. To assist principals in their decision, please outline the operational steps to be performed by staff at their schools. You are asked to share this information at the same time you provide principals with the attached memorandum. The “Approval Memorandum” includes the Area Superintendent’s signature and must be provided to each principal of each selected research site. These principals will not cooperate unless you provide the “Approval Memorandum” to them.

Following the completion of your work, please contact me regarding the communication of your research findings to our staff. If additional assistance is needed from our staff, please contact me at (954) 760-7439.

Thank you for your request.

Sincerely,

Cary Sutton

Cary Sutton, Ed. D., Director
Research Services

cc: Dr. Katherine A. Blasik, Assistant Superintendent, Research and Evaluation
CURRICULUM VITAE

Shirley Rose Bayard
19111 Collins Avenue, Suite 3103
Miami Beach, Fl 33160
E-mail: shirobay@aol.com
Telephone: (305) 933-1494

Education:
Degree: Education Specialist
Major: Educational Leadership
Florida Atlantic University
College of Education, Boca Raton, Florida.

Degree: Master of Arts
Major: Foreign Language Education
Florida State University, College of Education
Tallahassee, Florida.

Degree: Bachelor of Arts
Major: Modern Languages Education
Mount Saint Mary College
Hooksett, New Hampshire. June 12, 1969

Professional Certification:
Professional Educator’s Certificate
Educational Leadership (all levels)
French (Grades K-12) - Spanish (Grades K-12)
State of Florida, Department of Education Number 265976,
current: July 2000 to June 30, 2005.

Professional Training:
Clinical Educator Program, FPMS Initial Training,
Lead Year I & II, Principal’s Training Center Institute
For International & Overseas Schools.
Professional Experience:
Teacher of French & Spanish Languages (grades 9-12)
Chair, Department of Foreign Languages & ESOL at
McArthur High School, School Board of Broward County,
Hollywood, Florida.

Teacher of French, Spanish, ESOL, Haitian Studies,
and Secondary School Coordinator,
The Union School, in Port au Prince, Republic of Haiti
An American Overseas School (K-12) accredited by the
Southern Association of Colleges & Schools (SACS)

Teacher of French and Spanish, Rickards High School,
Nims Middle School and Pompano Beach High School.

Associations:
Member, National Association of School Principals.
Florida Foreign Language Education Association.
Broward Association of Foreign Language Education.
American Association of Teachers of French.

Awards:
Member, Kappa Delta Pi, in Rho Omega Chapter (FAU)
Member, School Improvement Team (SIT) McArthur High
Member, Curriculum Council at McArthur High
“IMPAC” Award Certificate of Academic Excellence
Nominee for Teacher of the Year at McArthur High School